

EDUCATION

B.S., Electrical Engineering, 1991, Drexel University
M.B.A., Business Administration, 1994, York College

ADDITIONAL TRAINING / CERTIFICATIONS

LEED 2.0 Accredited Professional (Leadership in Energy and Environmental Design)
Certified Assessor for the DEP P2E2 Site Assessment Program
BH/BA Project Management Training Program, 1997
National Electrical Code, Harrisburg, PA., 1999, 2002



REGISTRATIONS

PE, DE, 1996
PE, LA, 1996
PE, PA, 1996
PE, MD, 1997
PE, NJ, 1997
PE, VA, 1998
PE, AL, 2001
PE, FL, 2001
PE, MS, 2001

ASSOCIATIONS

BOCA – Building Officials and Code Administrators
NFPA – National Fire Protection Association
GBA-CPA - Green Building Association of Central Pennsylvania; Resource Committee Member
IEEE – Institute of Electrical and Electronic Engineers
PSPE – Pennsylvania Society of Professional Engineers
BICSI – The Building Industry Consulting Services International, Inc.
IAEI - International Association of Electrical Inspectors
NAFI - National Association of Fire Investigators
IAAI - International Association of Arson Investigators
York Chamber of Commerce

EXPERIENCE

Mr. Silar is presently President and Owner of Paragon Engineering Services, a Structural, Mechanical, and Electrical Engineering Firm base in York, Pennsylvania. Mr. Silar's firm has a very diverse client base throughout the country. Mr. Silar is also presently an Adjunct Faculty Member of Penn State University in the Engineering Department of the York Campus. Mr. Silar has recently passed the LEED (Leadership in Energy and Environmental Design) exam and is an accredited professional with the US Green Buildings Council.

While working for another employer, Mr. Silar served as the Mechanical and Electrical Group Manager of a Medium size engineering firm responsible for the day-to-day operations for the group. He also

assisted in estimating new projects, reviewed end-of-month billings, developed short- and long-range plans, directed all sales and marketing activities, monitored project schedule and budgetary compliance, and ensured proper coordination between disciplines.

Prior to that role, Mr. Silar served as the Executive Vice President of an Electrical Contracting Company responsible for the design of all Design/Construction Projects. His responsibilities also included general day-to-day operations within the office.

Mr. Silar began his career with a large Engineering Firm and gained 12 years of experience in design and installation of electrical systems, including power, lighting, telephone, data, fire alarm, security, sound, nurse call, patient wondering, grounding, co-generation systems, etc. In this capacity, he was responsible for the design and development of drawings, specifications, studies, reports, and as-built documents for a wide range of projects such as military facilities, sewage treatment plants, manufacturing facilities, warehousing facilities, religious institutions, cellular phone sites, telephone switch stations, retirement communities, nursing homes, and airports.

General Projects Include:

Rock Hill Retirement Community, Sellersville, Pennsylvania – Managed duties including contacting the utility companies, develop plans, design and coordinated systems including the lighting, power distribution, fire, television, emergency lighting and coordinating with other disciplines.

Fifth Regiment Armory, Baltimore, Maryland - Managed duties including contacting the utility companies, develop plans, design and coordinated systems including the lighting, power distribution, emergency lighting and coordinating with other disciplines.

Lower Bucks County Pump Station, Pennsylvania - Managed duties including contacting the utility companies, develop plans, design and coordinated systems including the lighting, power distribution, emergency lighting and coordinating with other disciplines.

Admire Springs Pump Station, Pennsylvania - Managed duties including contacting the utility companies, develop plans, design and coordinated systems including the lighting, power distribution, emergency lighting and coordinating with other disciplines.

G.R.O.W.S. Landfill Waste Water Treatment Facility, Morrisville, Pennsylvania - Managed duties including the design of the overall electrical systems which included the site and building lighting, power distribution, and the control and instrumentation for the facility, as well as coordinating the site requirements with the power and telephone companies and attending design team coordination meetings.

United Postal Service Distribution Center, Lancaster, Pennsylvania - Managed duties including contacting the utility companies, develop plans, design and coordinated systems including the lighting, power distribution, emergency lighting and coordinating with other disciplines

Port Royal Waste Water Treatment Facility, Port Royal, Pennsylvania - Managed duties including design of the overall electrical systems, which included the site and building lighting, power distribution, and the control and instrumentation for the facility, as well as coordinated the site requirements with the power and telephone companies.

Building #39, McGuire AFB, New Jersey - Managed duties including design and development of the electrical modification design of the existing electrical systems which included the site survey, the site and building lighting, along with power distribution for the facility, which included the paint room, a vehicular wash bay, welding areas, and special receptacle for equipment testing.

Port Royal Wellfield, Pennsylvania - Managed duties including design and development of the overall electrical plans for the power distribution and control and instrumentation for the facility. This included seven different well pumps and monitoring the levels of two basins.

Smithsburg Waste Water Treatment Facility, Washington County, Maryland - Managed duties including design of the electrical systems, which included the site and building lighting, power distribution, and the control and instrumentation for the facility, as well as coordinated the site requirements with the power and telephone companies.

Giant Food Store Renovation, Smokendam, Pennsylvania - Managed duties including design and development of the electrical systems which included the lighting and power distribution modifications to the existing systems to accommodate the renovations, including mechanical equipment moves and additions, typical office area layouts, general store area lighting, specialty task lighting for display units, and modifications to their Energy Management Systems.

Riverwoods Retirement Community, Lewisburg, Pennsylvania - Managed duties including design and development of the electrical systems for a four story, seventy two-unit apartment building, exercise/pool building, community center, and dining facility. The design included the interior and exterior lighting systems for typical apartments, utility rooms, office areas, upscale community area, pool facility, dining area, kitchen, and general store areas. The design also included the power distribution system for all above-mentioned areas.

Strine Manufacturing and Packaging Facility, Emigsville, Pennsylvania - Managed duties including design and development of the electrical systems for a 91,000-sq. ft. production and storage facility. The design included primary power distribution, secondary power distribution, mechanical and processes equipment hook-up, general lighting, task lighting, site lighting, typical office requirements, phone/data system (excluding electronics), and general fire alarm system.

Smith Transport Terminal Building, Spring Grove, Pennsylvania - Managed duties including design and development of the electrical systems for a 250,000-sq. ft. warehouse facility. The design included power distribution, generator, general lighting, site lighting, typical office requirements, and general fire alarm system.

Zion Lutheran Church Fellowship Hall Addition, York, Pennsylvania - Managed duties including design and development of the electrical systems for a 6,600-sq. ft. multi-purpose room. The design included power distribution, lighting, site lighting, and general fire alarm system modifications.

York Mall Retail Stores, York, Pennsylvania - Managed duties including design and development of the electrical systems for a nine- (9) tenant strip-mall. The design included power distribution, multiple tenant metering, lighting, sign lighting, and general fire alarm system.

Grace United Methodist Church, Shrewsbury, Pennsylvania - Managed duties including design and development of the electrical systems for a 50,000-sq. ft. multi-purpose and classroom facility. The design included service entrances 1,000 feet from, secondary power distribution, mechanical and

processes equipment hook-up, general lighting, task lighting, site lighting, typical office requirements, phone/data system (excluding electronics), and general fire alarm system.

Pennridge High School and Middle School, Perkasie, Pennsylvania - Managed duties including oversight of the design and development of the electrical systems for a 97 million dollar renovation/addition to the school system. Project included primary distribution, power, telephone, data, card access, clock, sound, fire alarm, lighting, etc. systems.

East Manchester Township Building, East Manchester, Pennsylvania - Managed duties including the design and development of the mechanical and electrical systems for a renovation to the existing police station. Project included demolition, rooftop HVAC unit, plumbing alterations, power, lighting, and systems.

Homewood Independent Living Facility, Hanover, Pennsylvania - Managed duties including the layout of devices (receptacles, outlets, switches, etc.), fixtures, providing locations, sizes and catalog cuts of designed mechanical equipment, and layout of fire alarm devices. Duties also included performing engineering calculations, circuitry, panel schedules, panel sizing, one-line diagram, emergency generator sizing, and require fixture schedules and symbol schedules. The facility consisted of 105,000 square feet of living space and 52,000 square feet of community space. This project includes 32 large apartments, a restaurant/kitchen, a bank, a beauty parlor, pool, exercise room and administrative office complex. This project has a 2500 amp, 277/480 volt service for the house power and a 1200 amp, 120/208 volt service for the apartments. It also has an empty conduit system for voice/data, a fire alarm system and a backup generator system.

Lower Chanceford Township Building, Lower Chanceford, Pennsylvania - Managed duties including the design and development of the building heating, ventilating and air conditioning systems; building plumbing systems to include domestic water piping and sanitary waste piping; building electrical systems to include interior lighting, exterior lighting, power service, power distribution, and accommodations for telephone, data, fire, and security systems by owner; all for an office area, a service bay, and garage. The facility consisted of 3,000 sq. ft. office, 1,500 sq. ft. service bay, and a 4,600 sq. ft. garage.

Snyder's of Hanover, Hanover, Pennsylvania - Managed duties including the design and development of the building heating, ventilating and air conditioning systems to include rooftop heating, ventilation, and air conditioning systems for the addition with direct expansion cooling and natural gas heat; building plumbing systems to include extending the existing water and natural gas services to the addition, potable hot and cold water, sanitary waste and vent, and storm drainage systems including related plumbing fixtures, floor drainage piping systems, re-route waste piping, and relocating of the existing water heater and hot water storage tank and reconnect to the existing hot water piping system; building electrical systems to include the evaluation of the existing electrical loading of the building, primary switch addition to existing exterior switchgear, primary service entrance to the plant, primary and secondary main switchgear, power distribution to include 480/277V distribution panels with associated step-down transformers and 208/120V distribution panels, relocated scales, new SBR Tank, relocated sewage pump, relocated tractor and delivery van block heater receptacles, future pavilion, existing Blower building, interior lighting, exterior lighting for new parking areas, new dock area, and basketball court; and accommodations for telephone, data, fire, and security systems by owner. The project consisted of approximately 75,000 square foot addition to the existing facility. The addition includes approximately 12,500 square feet of office area, expanded line area, new packaging area, and new warehouse area. To facilitate this expansion, the site had to be modified as well. The site work is to include new electric, gas, water, and sewer services, new parking lighting, new dock area, new treatment tank, expansion of the

existing blower building, relocation of truck scale system, provisions for a future pavilion and new basketball court lighting.

Allfirst Bank, Hanover Highlands, Pennsylvania - Managed duties including the design and development of a 3200 square foot branch office. The project consisted of heating, ventilating and air conditioning systems to include a new split HVAC system with a ground mounted condensing unit outside the mechanical room and an air handling unit in the mechanical room, ducted air distribution system will be utilized with one point of temperature control, domestic water piping and sanitary waste piping to five feet outside of building, fixtures and piping systems for two single toilets and a break room consisting of one sink, new power service from location designated by site development plans, power distribution within the building to include convenience receptacles, power for all building systems as outlined above and for owner supplied equipment, interior lighting design to include fluorescent general illumination, emergency lighting and lighting controls, drive thru canopy lighting to include surface mounted metal halide fixtures with photo sensor and time clock control, and empty outlet box and conduit system for owner supplied telephone, data, fire, access control, intrusion detection, and paging/sound system.

P. H. Glatfelter, Spring Grove, Pennsylvania - Managed duties including the design/build support services for a 3,000 square foot Yard Office addition. Design included power distribution to include convenience receptacles, interior lighting design to include fluorescent general illumination, emergency lighting and lighting controls, and empty outlet box and conduit system for owner supplied telephone, data, fire, access control, intrusion detection, and paging/sound system.

The Good Sheperd Ministries, Washington County, Maryland - Managed duties including the design/build support services for a 8,000 square foot New Church Facility. Design included power distribution to include convenience receptacles, power for all building systems and owner supplied equipment, interior lighting design to include fluorescent general illumination, emergency lighting and lighting controls, parking lot lighting to include pole mounted metal halide fixtures with photo sensor and time clock control, and empty outlet box and conduit system for owner supplied telephone, data, fire, access control, intrusion detection, and paging/sound system.

Cadillac Place, York, Pennsylvania - Managed duties including the design/build support services for an 11,700 square foot renovation to an existing facility. Design included power distribution to include convenience receptacles, power for all building systems and owner supplied equipment, interior lighting design to include fluorescent general illumination, emergency lighting and lighting controls, and time clock control, and empty outlet box and conduit system for owner supplied telephone, data, fire, access control, intrusion detection, and paging/sound system.

Exact Packaging, Inc., Stonebridge Business Park, Stewartstown, Pennsylvania - Managed duties including the design/build support services for a 15,000 square foot manufacturing facility and a 6,080 square foot office building. Design included power distribution to include convenience receptacles, power for all building systems and owner supplied process equipment, interior lighting design to include fluorescent general illumination, emergency lighting and lighting controls, and empty outlet box and conduit system for owner supplied telephone, data, fire, access control, intrusion detection, and paging/sound system.

Hanover Health Clinic, Hanover, Pennsylvania - Managed duties including the design and development of a 6,500 square foot branch office. The project consisted of heating, ventilating and air conditioning systems to include a new roof-top HVAC system and VAV system ducted air distribution

system for multi-point temperature control, domestic water piping and sanitary waste piping to five feet outside of building, fixtures and piping systems for toilets, testing and break room, new power service, power distribution within the building to include convenience receptacles, power for all building systems as outlined above and for owner supplied equipment, interior lighting design to include fluorescent general illumination, emergency lighting and lighting controls, and empty outlet box and conduit system for owner supplied telephone, data, fire, access control, intrusion detection, and paging/sound system.

Shank & Tittle, York, Pennsylvania - This project consisted of the complete fit-out of the existing Creative Touch Craft Store at the York Galleria Mall. Project entailed relocating the existing 2'x2' fluorescent fixtures for general illumination and emergency lighting, installation of new display fixtures, new power and phone/data as well as adapting the existing panels to accommodate the new loads and new layouts. Mechanically this project included replacement of the existing roof top units and relocation of the air distribution system. The project had to be designed to Mall Standards.

Peterman Building, York, Pennsylvania - The existing Peterman Building in downtown York is being completely gutted. Our portion of the project was electrical. We are completely replacing all lighting, power and providing an empty conduit system for the installation of voice/data wiring for Bennett Williams on the third, fourth and mezzanine floors. We are also providing new electric and telephone service for the entire building. Our design included pass lighting for the basement, first and second floors, which at this time are to be shells for future tenants. There is also a space on the fourth floor for two additional tenants. Our design included emergency lighting, fire alarm and wiring for new mechanical systems. Project included a new elevator.

Stewartstown Township Building Generator Addition, Stewartstown, Pennsylvania - Design of a new 100 kW natural gas generator to furnish power in the event of an emergency to the borough and the police offices.

ECI Corporate Offices Generator Addition, Dillsburg, Pennsylvania - In this project, ECI had all the pieces of an existing 350 KW diesel generator. Our design was to take all the existing pieces and design a building that would house all the equipment. We had to lay out all the parts with the proper clearances, design the power distribution system to four remote buildings, modifications to the existing services to the building to install an automatic transfer switch at each building and the mechanical fuel system to make the generator operate. We also designed the structural for the building as well as the building itself. This was a design/build project with ECI.

International Trucking Terminal, York, Pennsylvania - 390,000 square foot warehouse terminal facility. Our portion of this project was electrical design. This project consisted of an all new 390,000 square foot parts distribution system for International Trucks. Project consisted of new metal halide fixtures in the warehouse portion of the building with fluorescent fixtures in the two office areas of the building. New power and telephone service was provided. An empty conduit system was provided for a voice/data system. Power was provided for two separate computer rooms. There were approximately 1100 metal halide lights in the warehouse area that had to be controlled by four switches. The building had many motor operated overhead doors and dock levelers. Power had to be provided for a battery charging area and conveyor system. This was a design/build project with Dietz/Nauman Electrical Contractors.

York College, York, Pennsylvania - Managed duties including review of an insurance claim issue as a representative of Old Republic Insurance Company consisting of a fire alarm system failure. Report included interviews, site investigation results, equipment research and available remedies.

Faith United Methodist Church, Washington County, Maryland - This was a design/build project for a new church in Washington County Maryland. In this project, an electrical contractor had the project and needed engineer designed and sealed drawings. This was a fairly large church with an 800 amp service. On this project we designed only the electrical.

St. John the Baptist Educational Center, New Freedom, Pennsylvania - The existing building was gutted. All new panels will be installed. New lighting, power, fire alarm and sound systems will be installed throughout. The building will have a new stage dimming system installed with an alternate for new stage lighting. The building will have major additions added for classrooms, administration, kitchen and storage. A new 800 amp, 277/480 volt, 3 phase electrical service will be installed. There will be an alternate for a new generator for the emergency lighting and fire alarm. Horizontal heat pumps will be installed above the ceilings throughout 18 classrooms with associated ductwork. Office and staff areas will be conditioned with thru the wall and horizontal heat pumps. The Multipurpose Rm, Lobby and Restrooms are going to be heated and cooled by a 25 ton gas/electric rooftop unit. The kitchen area will be heated and cooled with a 5 ton gas/electric rooftop unit and will have a kitchen hood with a combination make-up exhaust packaged unit on the roof. This project has four large rest room which will have ventilation per code requirements. The Floor mounted flush valve type water closets in bathrooms and sinks in classrooms. Floor drains are going to be provided in large bathrooms. Two gas fired water heaters with re-circulating pumps are going to be installed.

Apple Cadillac, York, Pennsylvania - This project consists of a new building located at the present Apple Cadillac complex to prepare cars for customer delivery. Project consisted of a show room, sales offices and preparation bays. A separate 400 amp, 120/208 volt, 3 phase electric service will be installed for this building. Building will have specialty lighting for the show room.

Brooklyn Avenue Community Center, York, Pennsylvania - This project consisted of renovating a public housing unit into a community center. It consisted of replacing the lighting, modifications to the security system, rearranging the mechanical system and adding some structural components to compensate for the removal of a barring wall. This is a design/bid project with Slonaker/McCall

Stewartstown WWTP Upgrade, Stewartstown, Pennsylvania - The existing plant was upgraded from 400,000 gals/day to 750,000 gals/day. The existing service was replaced along with the existing switchgear. A new generator was installed to power almost all the equipment in the plant. The project included new controls and a new control panel. The process additions included one new SBR tank and the retrofit of the two existing tanks so they operate as one new SBR tank. The process was changed from activated sludge to SBR. The new process produces Class A sludge. Project also included a new head works with grit removal and screening grit removal, new blower building, changing the chlorine disinfection process to U.V. disinfection and the construction of a new garage.

Lot 5 Associates, Manheim, Pennsylvania - This project consisted of renovating a large abandoned industrial plant into rental units. There were many large and small buildings on the site. We initially surveyed the existing buildings that were to be renovated to establish service locations and any equipment that could be reused. Then the structure was divided into 4 independent buildings ranging in size from 15,000 square feet to 70,000 square feet. Each of the new buildings were further divided into numerous automotive and industrial shops for the Manheim Auto Auction. Each shop is an independent rental unit and as such has a separate electric service and equipment layout. Our design included build-outs for each shop including lighting, emergency lighting, power, fire alarm, HVAC, plumbing, sprinkler and all utility

services to each shop. The second phase in the development of a second building into independent rental units.

York ENT Associates, York, Pennsylvania – This project consisted of design and development of the renovation to two existing facilities and an addition to combined the two facilities into one new larger facility. The project consisted of heating, ventilating and air conditioning systems, plumbing piping and fixtures, new power service, power distribution within the building to include convenience receptacles, power for all building systems as outlined above and for owner supplied equipment, interior lighting design to include fluorescent general illumination, emergency lighting and lighting controls, and empty outlet box and conduit system for owner supplied telephone, data, fire, and paging/sound system.

TELECOMMUNICATIONS RELATED PROJECTS INCLUDE:

BellSouth Mobility, Inc., TN, KY, and LA - Managed duties including design and development of the standards for the exterior electrical plans for the power, telephone, and grounding systems for standard cellular phone sites; design and development of the interior electrical plans for the power, telephone, lighting, grounding, emergency, fire, and security systems for the non-standard "Build-Out" or "Rooftop" sites; performed site surveys and attended on site meetings with the client representative; performed site evaluations, "punch-outs," ground testing, and advise the other consultants for BellSouth Mobility, Inc., including attending meetings between the client, contractors, and other sub-consultants; and design and development of the overall electrical plans for the power, telephone, lighting, grounding, emergency, fire, and security systems for their main switch stations (MTSOs).

PCS PrimeCo., LA - Managed duties including design and development of the standards for the exterior electrical plans for the power, telephone, and grounding systems for standard cellular phone sites; design and development of the interior electrical plans for the power, telephone, lighting, grounding, emergency, fire, and security systems for the non-standard "Build-Out" or "Rooftop" sites; performed site surveys and attended on site meetings with the client representative; performed site evaluations, "punch-outs," and ground testing.

AT&T Mobile, ME, GA, MD, NC, CT, WV, NY, and PA - Managed duties including design and development of the standards for the exterior electrical plans for the power, telephone, and grounding systems for standard cellular phone sites; design and development of the interior electrical plans for the power, telephone, lighting, grounding, emergency, fire, and security systems for the non-standard "Build-Out" or "Rooftop" sites.

Radiofone, LA - Managed duties including design and development of the standards for the exterior electrical plans for the power, telephone, and grounding systems for standard cellular phone sites; design and development of the interior electrical plans for the power, telephone, lighting, grounding, emergency, fire, and security systems for the non-standard "Build-Out" or "Rooftop" sites; performed site surveys and attended on site meetings with the client representative; performed site evaluations, "punch-outs," ground testing, and advise the other consultants for BellSouth Mobility, Inc., including attending meetings between the client, contractors, and other sub-consultants; and design and development of the overall electrical plans for the power, telephone, lighting, grounding, emergency, fire, and security systems for their main switch stations (MTSOs).

Tower Engineering, Layette, LA - Provide mechanical and electrical engineering support for the construction of standard, special, and speculative tower sites throughout Louisiana, Florida, and Mississippi. Managed duties including design and development of the standards for the exterior electrical plans for the power, telephone, and grounding systems for tower and cellular phone sites; design and development of the interior electrical plans for the HVAC, power, telephone, lighting, grounding, emergency, fire, and security systems for the tenant spaces; provide expert witness testimony as required.

Nextel, LA - Managed duties including design and development of the standards for the exterior electrical plans for the power, telephone, and grounding systems for standard cellular phone sites; design and development of the interior electrical plans for the power, telephone, lighting, grounding, emergency, fire, and security systems for the non-standard "Build-Out" or "Rooftop" sites; performed site surveys and attended on site meetings with the client representative; performed site evaluations, "punch-outs," and ground testing.

Alltel, DE, PA, MD, WV, AL, and LA - Managed duties including design and development of the standards for the exterior electrical plans for the power, telephone, and grounding systems for standard cellular phone sites; design and development of the interior electrical plans for the power, telephone, lighting, grounding, emergency, fire, and security systems for the non-standard "Build-Out" or "Rooftop" sites.

Sprint PCS, LA - Managed duties including design and development of the standards for the exterior electrical plans for the power, telephone, and grounding systems for standard cellular phone sites; design and development of the interior electrical plans for the power, telephone, lighting, grounding, emergency, fire, and security systems for the non-standard "Build-Out" or "Rooftop" sites; performed site surveys and attended on site meetings with the client representative; performed site evaluations, "punch-outs," and ground testing.

Verizon Wireless, LA, FL, MS, AL, PA, and NJ - Managed duties including design and development of the standards for the exterior electrical plans for the power, telephone, and grounding systems for standard cellular phone sites; design and development of the interior electrical plans for the power, telephone, lighting, grounding, emergency, fire, and security systems for the non-standard "Build-Out" or "Rooftop" sites.

Delaware Valley PCS, PA, NJ, DE - Managed duties including design and development of the standards for the exterior electrical plans for the power, telephone, and grounding systems for standard cellular phone sites; design and development of the interior electrical plans for the power, telephone, lighting, grounding, emergency, fire, and security systems for the non-standard "Build-Out" or "Rooftop" sites.

Shentel, PA, NJ, DE - Managed duties including design and development of the standards for the exterior electrical plans for the power, telephone, and grounding systems for standard cellular phone sites; design and development of the interior electrical plans for the power, telephone, lighting, grounding, emergency, fire, and security systems for the non-standard "Build-Out" or "Rooftop" sites.

D&E Omnipoint, PA - Managed duties including design and development of the standards for the exterior electrical plans for the power, telephone, and grounding systems for standard cellular phone sites; design and development of the interior electrical plans for the power, telephone, lighting, grounding, emergency, fire, and security systems for the non-standard "Build-Out" or "Rooftop" sites.

Mannesmann Mobilfunk, Germany - Managed duties including design and development of the electrical plans for the power, telephone, and grounding systems.

Main Switch Center for BellSouth Mobility, Inc., Nashville and Chattanooga, TN - The switch office is approximately 32,000 SF consisting mainly of: a switch room; a control room; a power room; an auxiliary switch room; storage; and administrative spaces. Electrical engineering services included the design of the main power distribution system as well as stand-by power for the entire facility and connection to a DC distribution system for powering Motorola supplied cellular telephone switching equipment. An inverter system was provided for converting DC power back to 120-volt AC power for all the computer systems within the facility. The project also included facilities for redundant telephone services to the building as well as fiber optic connections to an existing building and to the existing cellular tower location. Telephone and data systems included Category 5 cabling throughout the facility. An extensive grounding system was provided for the switching equipment. Security, fire alarm, and closed circuit TV systems were also provided.

Main Switch Center for Radiophone, Metairie, LA - The switch office is approximately 35,000 SF consisting mainly of: a switch room; a control room; a power room; an auxiliary switch room; storage; and administrative spaces. Electrical engineering services included the design of the main power distribution system as well as stand-by power for the entire facility and connection to a DC distribution system for powering Motorola supplied cellular telephone switching equipment. An inverter system was provided for converting DC power back to 120-volt AC power for all the computer systems within the facility. The project also included facilities for redundant telephone services to the building as well as fiber optic connections to an existing building and to the existing cellular tower location. Telephone and data systems included Category 5 cabling throughout the facility. An extensive grounding system was provided for the switching equipment. Security, fire alarm, and closed circuit TV systems were also provided.

Main Switch Center for Verizon Wireless, Harrisburg, PA - The switch office is approximately 7,000 SF consisting mainly of: a switch room; a control room; a power room; an auxiliary switch room; storage; and administrative spaces. Electrical engineering services included the design of the main power distribution system as well as stand-by power for the entire facility and connection to a DC distribution system for powering Motorola supplied cellular telephone switching equipment. An inverter system was provided for converting DC power back to 120-volt AC power for all the computer systems within the facility. The project also included facilities for redundant telephone services to the building as well as fiber optic connections to an existing building and to the existing cellular tower location. Telephone and data systems included Category 5 cabling throughout the facility. An extensive grounding system was provided for the switching equipment. Security, fire alarm, and closed circuit TV systems were also provided.

K. B. M. Associates, Waretown, NJ - Provide mechanical and electrical engineering support for the construction of speculative tower sites. Managed duties including design and development of the standards for the exterior electrical plans for the power, telephone, and grounding systems for standard cellular phone sites; design and development of the interior electrical plans for the power, telephone, lighting, grounding, emergency, fire, and security systems for the non-standard "Equipment Sheds"; provide expert witness testimony as required.

Gillen Design Systems, Metairie, LA - Provide mechanical and electrical engineering support for the construction of a patented tower and structure combination. Managed duties including design and development of the standards for the exterior electrical plans for the power, telephone, and grounding systems for patented tower and structure cellular phone sites; design and development of the interior electrical plans for the HVAC, power, telephone, lighting, grounding, emergency, fire, and security systems for the tenant spaces; provide expert witness testimony as required.

Main Switch Center Expansion for AT&T Wireless, Louisville, KY - The switch office is approximately 17,500 SF consisting of 7,500 SF of administrative area, 7,300 SF of storage and other miscellaneous areas, and 2,700 SF of switch/control area. The project included Survey & Layout and Demolition & Renovation of new DC Power Room, Control Room, Phased Switch Room Expansion, File Room, Office, Facility Entry, Storage room, and Bathrooms. The Switch Room was design to be expanded in three phases, Phase I expanded to 5,625 SF, Phase II expanded to 7,875 SF, and Phase III expanded to 9,750 SF. The project work included Architectural (sub-contracted), Mechanical, Fire Protection, Plumbing, Electrical, and Low-Voltage Systems. All systems were designed to accommodate the expansion points in the same phasing structure.