



SCOTT M. YOUNGHOUSE

Career Summary:

Scott currently works out of GDOT Headquarters as a consultant within the Office of Design Policy and Support in the Lighting Group. Responsibilities include reviewing photometric submittals, lighting plans, design layouts and policy updates. Along with design support, maintains GDOT lighting specifications including Chapter 14 of the Design Policy Manual and any of the lighting specifications related to Electrical/Lighting. His roadway lighting skills include using MicroStation and AGI32 to develop photometric submittals, lighting plans and details, developing and checking voltage drop and quantity calculations, putting together pole and photometric data tables. He has also performed several site visits to identify potential light pole conflicts and service point connection points. Scott has taken to everything in the lighting industry quickly and has a keen attention to detail.

Scott previously developed and managed new products at Panduit for over eleven years. He was responsible for project management within their Cable Accessories and Identification product lines, along with supporting product life cycle management. This included overseeing these products from inception, producing cost reduction analysis for these new products versus current products, work with product specifications and product testing. He was also responsible for tracking sales and working with customers and sales groups to better improve the product line.

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Education:

- ◆ B.S. Electrical & Computer Engineering - Valparaiso University, 2001

Software Proficiencies:

- ◆ MicroStation
- ◆ AGI32
- ◆ Microsoft Office
- ◆ Bluebeam
- ◆ SAP
- ◆ Oracle



Project Summary:

Project Engineer for Interstate Lighting Retrofit using Carbon Reduction Program Funding for Georgia DOT. GDOT Management wanted to retrofit and repair approximately fifty miles of existing lighting along the interstate system within the I-285 Atlanta metro perimeter ahead of the World Cup arrival in the summer of 2026. The Department identified and utilized available funding from the federal carbon reduction program (CRP) initiative to deliver this seemingly impossible task in less than a year and a half. This timeframe included development of full plans, specifications and estimates for fourteen total projects which were competitively bid and awarded to comply with federal funding requirements. Starting in October of 2024, each of the fourteen projects had to be developed in extremely short order to ensure they were competitively bid, awarded, procured, installed and operational before May 2026 to meet the World Cup deadline. This required an incredible amount of effort and coordination with over a dozen GDOT Offices to ensure the delivery schedule was met. All plan development was done in accordance with all GDOT and FHWA requirements, including coordination and approval from all parties, including environmental, right-of-way, structural, railroad, utility, and state construction offices. Despite the consolidated schedule, all construction delivery requirements had to be fulfilled, including final field plan review (FFPR), approval from all offices, including FHWA, and Construction Bidding Administration (CBA) and Let date timelines.

All fourteen projects required full electrical survey to determine the condition and power source of each individual luminaire and circuit along each corridor to establish accurate quantities to ensure adequate funding was provided within each of the individual projects' budget while not exceeding the overall available CRP funding. As much of the system was in disrepair, this required a lot of cable replacement as well as replacement of each of the service points to ensure all lights are metered. Each project was designed to meet current IES/ANSI lighting requirements whenever possible without creating environmental, ROW or constructability issues with variances granted when necessary. In order to adhere to these IES recommendations, several trees, branches and other foliage were removed within a certain distance of each pole or tower to ensure the luminaire distribution pattern was not disrupted in the near future.

Wi-Skies is also responsible for construction oversight of all projects to address the myriad of RFI's and construction issues with all fourteen projects. These projects are concurrent to many other large-scale projects, such as repaving all fifty miles of the same stretches of the same interstate system and a fiber installation project, all with competing lane closures. We are also responsible for providing as-built drawings for all work completed, including final wiring schematics for each service point throughout the interstate system, as this information did not previously exist, but is necessary for any future maintenance or proposed project.

Scott was placed in charge of field evaluation of the entire project. This included visiting every pole within the project and determining if it was still powered and if the pole could be reused. He also identified all the service points along with understanding the various circuits controlled from these locations. Along with providing initial field drawings, he developed all the lighting plan drawings based on the photometric designs. This included the removal sheets, cabling/circuitry for all poles, single line diagrams, bridge details, voltage drop calculations, and all quantities for the projects. After

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bids had been received; he is now responsible for reviewing all of the material submittals along with supporting any construction questions.

(PI0020767) I-75 from Musket Ridge to I-85. This six-mile-long segment included all lighting infrastructure along the mainlines, ramps, and under bridge locations along I-75 south of the I-75/85 Connector split. This project included one interchange that was lit by high mast light towers, which needed extensive repair in addition to being retrofitted. Additionally, some light poles were relocated from behind sound barriers to in front to alleviate accessibility and maintenance concerns.

(PI0021308) I-85 from I-75 Split to Lenox Rd. This 3.5-mile-long segment included all lighting infrastructure along the mainlines, ramps, and under bridge locations along I-85 north of the I-75/85 Connector split. This segment included the illumination of the Buford Highway ramps and side streets spanning underneath the I-85 mainline, adjacent to the Buford Spring Connector Tunnel, which was Let separately, but includes both daytime and nighttime lighting. Field analysis was conducted to ensure all existing, damaged, or removed lighting infrastructure was accounted for. During design, several service points were eliminated and combined with others to minimize the number of locations that could be vandalized while also helping to reduce the cost of the project.

(PI0020955) I-75/85 from I-20 North to I-85 Split. This segment was 4.5 miles long and included all lighting infrastructure along the mainlines, ramps, and under bridge locations along the I-75/85 Connector through downtown Atlanta. This segment was designed in conjunction with three other tunnel lighting projects: Capitol and Memorial Tunnel, Piedmont and Baker Tunnel, and Courtland and Ralph McGill Tunnel projects. While this will pose a challenge with conflicting lane closures, it presents the opportunity for multiple Contractors to work together in an area with a lot of lighting work to be completed in a short amount of time. Field analysis was conducted to ensure all existing, damaged, or removed lighting infrastructure was accounted for, which is critical to ensure final quantities correlated with actual service point loads across the several design and construction plans. There was a stretch in this project where existing high mast towers which were up to 200' in height, lighting the mainline from each side. There were also several frontage roads adjacent to the interstate mainline that have ramps that tie into the interstate that were continuously lit.

(PI0020954) I-75/85 from Merge to I-20. This four-mile-long segment includes all lighting infrastructure along the mainlines, ramps, and under bridge locations along the I-75/85 Connector through downtown Atlanta from the I-75/85 merge north to I-20. This segment includes a large interchange between I-75/I-85 and I-20 which utilizes a combination of high mast towers, underpass luminaires mounted on short poles, and conventional poles, all which need to be retrofitted to LED luminaires. There were also several frontage roads adjacent to the interstate mainline that have ramps that tie into the interstate that were continuously lit. Field analysis was conducted to ensure all existing service points, high mast tower light poles, underpass luminaires, roadway luminaire light poles, and any damaged or removed lighting infrastructure was accounted for. Field analysis was especially critical for this segment to ensure the overall design was improved to meet current ANSI/IES standards, and new design layouts were implemented where the team discovered the opportunity to without interfering with existing infrastructure.

(PI0020766) I-75 from Frontage Rd to I-85. This four-mile-long segment includes all lighting infrastructure along the mainline, ramps, and under bridge locations along I-75 south of the I-75/85 Connector near the Atlanta airport. This segment includes a center-splitting freeway exit and entrance ramps illuminated by cobra heads mounted on existing light poles with titled arms, which were retrofitted to horizontal mount fixtures and arms as part of this retrofit project. In addition to the mainline lanes, there was also a separate HOV lane that was part of this project which exited directly onto an overpass bridge. As this project was adjacent to the Atlanta airport, shorter high mast towers (60' MH) were used at the I-285/I-75 Interchange, which were retrofitted as part of this project. Due to the proximity to the runway, additional analysis was done to minimize any uplight which may be detrimental to incoming and outgoing pilots. Two existing towers which were located in an area known to be predominately underwater were removed as part of this project and replaced with conventional light poles.

(P#0020951) I-85 from Riverdale Rd to I-75. This 5.5-mile-long segment includes all lighting infrastructure along the mainlines, ramps, and under bridge locations along I-85 near the Atlanta airport. This segment had a very large amount poles which were knocked down or subject to copper thievery, which presented the opportunity to shift the new poles back from the mainline and ramps to minimize the risk of future knockdowns. Several other locations which were subject to frequent knockdowns, guardrail was added to help prevent future knockdowns. Many trees which were found to be located within clear zone were removed as part of this project and all trees were trimmed at all light pole locations. Special attention was given to the photometric distribution of new LED luminaires, and short mast arms were recommended for use on existing poles located close to the roadway to optimize the uniformity of the new lighting design. Field analysis was especially critical for this segment to ensure all existing, damaged, or removed lighting infrastructure was accounted for. The overall design was improved to meet current ANSI/IES standards, and new design layouts were implemented where the team discovered the opportunity to without interfering with existing infrastructure. Careful consideration was also provided to ensure there was minimal uplight to the incoming and outgoing pilots near the Atlanta airport.

(PI0021309) I-20 from Linkwood Rd to I-85. This six-mile segment includes the mainlines, ramps, and under bridge locations along I-20 west of downtown. A large section of I-20 within this segment did not have center median light poles, instead placed

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conventional poles on the outside of the freeway. Therefore, additional attention was given to which poles required new fixtures with a higher-lumen output or lower-lumen output to ensure all lanes were properly illuminated while optimizing the performance of the existing lighting infrastructure. This project also had high mast tower lighting at the I-75/85 interchange which needed to be repaired and retrofitted. Field analysis was especially critical on this segment to ensure all existing, damaged, or removed lighting infrastructure was accounted for. The overall design was improved to meet current ANSI/IES standards, and new design layouts were implemented where the team discovered the opportunity to without interfering with existing infrastructure.

(PI0021310) I-20 from Capitol Ave to Flat Shoals Road. This five-mile segment includes the mainlines, ramps, and under bridge locations along I-20 immediately east of the I-75/85 Connector. This section of I-20 includes both center median light poles and single conventional light poles on the outer lanes as well as high mast towers at the interchange of I-75/I-85. Special attention was given to which poles required new fixtures with a higher-lumen output or lower-lumen output to ensure the existing infrastructure is optimized to ensure all lanes are properly lit. Field analysis was especially critical to ensure all existing, damaged, or removed lighting infrastructure was accounted for. Several of the service points were moved from their existing location to a more accessible location for maintenance and operational considerations. The overall design was improved to meet current ANSI/IES standards, and new design layouts were implemented where the team discovered the opportunity to without interfering with existing infrastructure.

(PI0021311) I-20 from Flat Shoals Rd to Columbia Dr. This four-mile-long segment included lighting along the median of the mainlines, lighting along ramps, and under bridge lighting along I-20, all of which was retrofitted to LED. Field analysis was conducted to ensure all existing, damaged, or removed lighting infrastructure was accounted for. The overall design was improved to meet current ANSI/IES standards, and new design layouts were implemented where the team discovered the opportunity to without interfering with existing infrastructure.

(PI0020952) I-75/85 at Capitol Ave and Memorial Dr Tunnel Lighting Retrofit. Located immediately north of the I-20 interchange, this 0.35 mile long segment of I-75/85 is the most heavily traveled roadway in Atlanta. The tunnel has six northbound lanes, six southbound lanes, and five ramp lanes running under it. Due to the tunnel's overall width, length and relatively short height and only outside wall-mounted luminaires, rear-end accidents and traffic backups are common in this area. A 3D model of the entire tunnel was generated using actual tunnel entrance and exit portal height measurements and aerial imagery. A daytime analysis was done within AGi32 to determine how much natural daylight penetrated within the tunnel. From this information, Wi-Skies developed an experimental solution to provide minimal lighting only where necessary rather than current IES/ANSI recommendations. The lighting design took into consideration a variety of budgetary and constructability concerns and developed custom overhead installation assemblies braced between existing concrete beams directly over traffic without drilling the existing concrete beams anywhere. Because a maximum of three lanes of traffic could only be shut down at any time for either construction or maintenance, Wi-Skies had to limit the design to place lights only over the three inside and outside lanes only. Despite the many design challenges, the proposed design delivered a much more effective lighting solution within the tunnel despite reducing the overall luminaire count by almost half.

(PI0020953) I-75/85 at Baker St and Piedmont Ave and I-75/85 at McGill Blvd and Courtland St Tunnel Lighting Retrofit. These two independently unique partially divided tunnels cover 0.209 miles of some of the busiest section of roadway in Atlanta. The Baker and Piedmont tunnel includes six northbound lanes, six southbound lanes, two merging northbound on-ramp lanes, and two southbound off-ramp lanes. The Courtland and McGill tunnel covers seven northbound lanes and seven southbound lanes. Due to the tunnel's overall width, length and relatively short height and only outside wall-mounted luminaires, rear-end accidents and traffic backups are common in this area. A 3D model of the entire tunnel was generated using actual tunnel entrance and exit portal height measurements and aerial imagery. A daytime analysis was done within AGi32 to determine how much natural daylight penetrated within the tunnel. From this information, Wi-Skies developed an experimental solution to provide minimal lighting only where necessary rather than current IES/ANSI recommendations. The lighting design took into consideration a variety of budgetary and constructability concerns and developed custom overhead installation assemblies braced between existing concrete beams directly over traffic without drilling the existing concrete beams anywhere. Because a maximum of three lanes of traffic could only be shut down at any time for either construction or maintenance, Wi-Skies had to limit the design to place lights only over the three inside and outside lanes only. Despite the many design challenges, the proposed design delivered a much more effective lighting solution within the tunnel while greatly reducing the overall luminaire count.

(PI0021192) The Buford Spring Connector Tunnel. This 435' long tunnel is a braided ramp from the SR13 Buford Connector SB ramp passing under the I-85 mainline to I-85 SB. A 3D model of the entire tunnel was generated using actual tunnel entrance and exit portal height measurements and aerial imagery. AGi32 was used to perform daylighting analysis to determine the amount of natural daylight penetration within the tunnel. It was not surprising that this box culvert tunnel required supplemental daytime lighting and nighttime lighting within it due to the overall poor natural daylight that penetrates within it. A minimalistic approach was taken to provide new lighting within the tunnel by placing new lights along each of the wall sides to light the single lane. Given the nature of the tunnel and limitations of the scope, the existing embedded conduit and junction boxes were re-used in the retrofit, but everything surface mounted was removed. As the existing system was

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operational and the tunnel is so dark, Wi-Skies worked diligently with the contractor to ensure a hybrid of the existing and proposed lighting system remained operational throughout the construction process.

(PI0020000) I-75 at Windy Hill Tunnel. The I-75 northbound exit ramp to Windy Hill Rd creates a 615' culvert style tunnel as it passes under a number of ramps, including four entrance ramps from I-285. A 3D model of the entire tunnel was generated using real tunnel entrance and exit portal height measurements and aerial imager to create an AGI32 daytime model. Being a long culvert tunnel, it requires both daytime lighting and nighttime lighting. However, due to the existing infrastructure, placement of the new luminaires had to remain on both walls of the culvert tunnel so as to not reduce the overhead clearance within the tunnel. Despite these challenges, there was an increase of overall photometric performance while reducing the overall luminaire count within the tunnel.

(P#0020764) I-75 at NB and SB Cumberland Braided Ramp Tunnels. These dual tunnels cover the I-285 movements to I-75 just north of Cumberland Ave. The Northbound tunnel ramp connects I-75 NB to I-285 east by spanning under the Cumberland entrance ramp to I-75 northbound and 490' long. The southbound tunnel connects the I-285 westbound movement to I-75 southbound by spanning under the four lane exit ramp to Cumberland Ave. A 3D model of both tunnels was generated using real tunnel entrance and exit portal height measurements and aerial imagery. AGI32 was used to perform daylighting analysis with real location data. Unsurprisingly, both tunnels modeled very dark within them and required supplemental daytime lighting and nighttime lighting. The LED retrofit design provided a much more efficient design while delivering better overall lighting within the tunnels.

Project Engineer for Langford Parkway (SR 166) Lighting Replacement. Langford Parkway is a major thoroughfare which connects I-285 to I-85 north of the Atlanta airport in the southwest side of the city. The corridor was originally built as an urban collector, but over time has become an access control freeway with entrance and exit ramps. However, urban curb still exists in portions of the roadway and the lighting was installed based on the original urban collector setting and subsequent setbacks. Because of this, most of the lighting installed on the outside of the roadway is within unprotected clear zone and subject to frequent knock-downs. As the entire 6.5 mile corridor is continuously lit, this results in a lot of maintenance. To properly address this situation, coupled with inadequate lighting, the recommendation was made to provide a new lighting system through the corridor which will increase pole setbacks coupled with barrier protection as warranted. This new lighting system will also replace and upgrade the existing lighting along the median wall, where applicable. Scott is helping with the lighting design of this project which includes photometric calculations, voltage drop calculations, plan preparation and quantity calculations. He also went in the field to identify existing Service Points and review the proposed pole locations to determine if the locations were feasible. Working with both local power companies to update existing Service Points and to create any new ones that are needed for the project.

Project Engineer - I-285 at SR 400 Interchange Lighting and ITS Power (GDOT) As part of the largest design-build effort the state has ever taken on, Scott has visited the site multiple times to review potential locations of proposed pole/cabinet locations and assisted in finding locations for Service Points that will power the equipment. Reviewed equipment and drawing details and created Single Line Diagrams. Worked with quantities and voltage drops for the design. This interchange is the busiest and fastest-growing interchange in the Atlanta area, subject to traffic volumes of over 250,000 vehicles daily. The overall design intent is to provide collector-distributor (CD) lanes throughout the project limits for a total of 8.3 miles along both SR 400 and I-285, which will eliminate much of the congestion in the area due to a poor existing interchange layout. Throughout the design process, several lighting and ITS design alternatives were designed and considered. The lighting design also included daytime lighting installations under three tunnels. Worked on Lighting Plans for both ITS and Lighting. Reviewed voltage drop calcs and quantities throughout the project. Has made multiple trips into the field to work with contractors and to make sure of service point locations. Also worked with the contractor on various updates throughout the design build.

Project Engineer for I-285 at I-20 East Interchange Lighting (GDOT) Wi-Skies is designing the lighting at the I-285 interchange with I-20 on the east side of the loop as part of GDOT's Major Mobility Investment Program (MMIP). As part of a massive design-build effort, the interchange is being reconstructed to improve traffic flow throughout the interchange as well as adjacent interchanges. These improvements include increased entrance and exit ramps for all interchanges as well as the main interchange itself, which includes the addition of several flyover ramps as well as increased roadway width. Most of the interchange area will be lit using high mast towers, however, because of the elevation differences between the mainline and some the flyover ramps, supplemental conventional lighting is necessary on the taller flyover ramps. Full photometric analysis including all roadway elevations along with the tower heights based on actual proposed cross-section elevations were done throughout the project to verify lighting criteria was met. The cross-sections were also analyzed to determine where any existing towers may be re-used based on the local grade. Due to the increased roadway widths, ROW constraints coupled with both structural and noise wall obstructions, placement of high mast towers was difficult or impossible to, leading to extensive coordination with the roadway and bridge designers to accommodate. Spill lighting analysis was done at the ROW in certain quadrants where residential properties were prevalent. These residential properties in some quadrants, along with dense forestation in other quadrants, also limited the service point locations to power the very large electrical load, which resulted in extensive coordination with the local power company. Scott is responsible for developing the complete lighting design for the entire 2.8 miles of interchange lighting, including photometric calculations, installation details, voltage drop calculations and cost estimates.

Project Engineer for Tucker Summit CID Lighting Evaluation – City of Tucker, GA. The Tucker Summit CID has been trying to retrofit their existing lighting system to LED for years, but have been having trouble moving forward with the power company making it happen. As they have also heard about LED retrofit design issues, they engaged Wi-Skies to assist them in assuring a proper lighting

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design is ultimately delivered on the streets within the CID. Our task is to work with the power company to either review their supplier's lighting design or provide a design in typical sections for the power company to install in specific corridors. In total, there are over 18 miles of roadways, both commercial and industrial, to be retrofitted. Scott initially visited the TSCID project areas. He worked on the design for the initial quote for this project. He has continued to work with the photometric design and dealing with the local power company, Georgia Power.

Project Manager for Main Rd Re-Alignment Design-Build for Charleston County, SC. This design-build project entails the reconstruction and widening of Main Rd with intersection improvement at US 17 and a new multi-use path. Improving the intersection congestion at US 17 is critical for evacuation routes, commuter traffic, and access to surrounding commercial and residential zones. The addition of the multi-use path is to welcome future growth expected to come an add value to the community. The project also pays special attention to the environmental impact under the county's tree preservation program, and special drainage facilities to protect the new infrastructure from the marshy soils. The new four-legged roundabout at the S-20 and S54 is designed with full perimeter and approach lighting, which follows toward the bridge over the West Ashley Greenway and all the way to S-57 (Bees Ferry Rd) for a total project length of approximately 2.4 miles. LED luminaires on light poles with varying mast arm lengths and foundation types were applied throughout the project to cater to project initiatives and limitations while still providing quality continuous lighting that meets industry standards. Scott helped design the entire lighting system which includes photometric calculations, service point coordination, voltage drop calculations and wiring diagram and final plans, specifications and details.

Project Engineer for Carolina Crossroads Phase 1 Design-Build for South Carolina DOT SCDOT is designing improvements along the interstate corridor of I-20/26/126 which includes system interchanges at I-20/I-26 and I-26-I/126 in Lexington and Richland Counties in five phases, of which this is the first. These improvements are proposed to increase mobility and enhance traffic operations by reducing existing traffic congestion within the I-20/26/126 corridor, while accommodating future traffic needs. The corridor's approximately 14 miles of mainline interstate include I-26 from Exit 101 - Broad River Road (US 176) to east of the Saluda River, I-20 from the west of the Saluda River to west of the Broad River, and I-126 from I-26 to east of the interchange with Colonial Life Blvd. Wi-Skies is overseeing the full continuous lighting design along the interstates, the interchanges and includes lighting for Colonial Life Blvd and Greystone Blvd. both north and south of the interchanges. The design includes both high mast towers along the interstate and interchanges as well as conventional roadway lighting along the ramps and side streets. Every effort has been made to minimize spill lighting to the residential areas on the side streets. Scott helped with the Lighting Plans and QAQC. He also reviewed the voltage drops and quantities.

Project Engineer for Carolina Crossroads Phase 2 Design-Build for South Carolina DOT SCDOT is designing improvements along the interstate corridor of I-20/26/126 which includes system interchanges at I-20/I-26 and I-26-I/126 in Lexington and Richland Counties in five phases. These improvements are proposed to increase mobility and enhance traffic operations by reducing existing traffic congestion within the I-20/26/126 corridor, while accommodating future traffic needs. The corridor's approximately 14 miles of mainline interstate include I-26 from Exit 101 - Broad River Road (US 176) to east of the Saluda River, I-20 from the west of the Saluda River to west of the Broad River, and I-126 from I-26 to east of the interchange with Colonial Life Boulevard. Phase 2 of the design includes the design of I-20 as well as a new Diverging Diamond Interchange at Broad River Road (US 176). The lighting design includes both high mast towers along the interstate and interchange as well as conventional roadway lighting along the side streets, with an effort to minimize spill lighting to the residential areas on the side streets. Scott helped with the Lighting Plans and QAQC. He also reviewed the voltage drops and quantities.

Project Engineer for Woodruff Road Bypass – Greenville, South Carolina (SCDOT) Wi-Skies is providing a complete lighting design for the Woodruff Road Bypass project, which spans a total of six miles of roadway. Woodruff Road is a highly traveled roadway and experiences extreme congestion during peak travel times. SCDOT is proposing a parallel route to bypass the overly crowded Woodruff Road. The roadway contains ten total roundabouts with four travel lanes with a decorative median for most of the route, along with both a sidewalk and multiuse path. As an additional challenge, this roadway intersects a railroad and crosses under transmission lines. Wi-Skies will be responsible for the lighting the entire parkway limits including photometric calculations, service point coordination, voltage drop calculations, conduit routing, and lighting plan development. Scott worked with the photometric design for this project.

Project Engineer for Jonesboro Rd Widening – Henry County, GA. This 7.7-mile-long project is a large-scale road improvement initiative largely along Jonesboro Rd (SR 920) from just west of US 19/ US 41 in Clayton County to the I-75 interchange in Henry County. The existing two-lane roadway is being expanded to four travel lanes with raised medians, bike lanes, sidewalks, proposed and re-aligned turning lanes at intersections, and a bridge replacement over Walnut Creek. This project will improve traffic operations and safety, accommodate for future growth and traffic demands, and improve access for pedestrian and multi-modal transportation. The new roadway lighting design enhances the safety by improving the visibility during nighttime or low-light conditions across the entire project for the entire roadway and pedestrian areas including at all intersections, pedestrian crossings, changes in roadway geometry, and unexpected hazards. Due to limited ROW and time constraints, the Wi-Skies team had to work closely with Georgia Power (GPC) to develop a dual-purpose solution, consisting of standalone light poles wherever possible, but joint use poles installed where we directed by GPC in areas where ROW or easement could not be procured. Scott was onsite for the field evaluation study along with working on entire lighting design including photometric calculations, coordination with Georgia Power and development of final plans.

Project Engineer for Experimental Daytime Lighting at both I-85 at SR 237 and I-285 at SR 13 for GDOT. As part of ongoing high-level research work with IES, GDOT and other agencies, Wi-Skies is leading the effort to overhaul the international standard for daytime lighting within short tunnels, which are considered to be under 400'. Measuring of over a dozen tunnels has led to the belief that the

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amount of daytime lighting recommended within short tunnels is excessive and Wi-Skies is leading the charge to provide only lighting which would be minimally necessary to ensure good visibility throughout the tunnel and nothing more. As part of this effort, GDOT has chosen two tunnels which certainly need some sort of daytime lighting and tasked him to provide what he believes will be the minimum amount of lighting necessary within them. Scott is involved with the lighting design on this project which includes various daytime models to determine the best way to only light these areas. He has visited these locations and taken initial lighting values in the current state of these bridges. He has reviewed full plan preparation; voltage drops and quantity calculations. When the project has been installed, he will be taking field measurements again to compare to the original lighting numbers and compare to the AGI designs and how they compare to the installation in the field.

Project Engineer – City of Jesup Streetscape GA (GDOT) The City of Jesup is rehabilitating three street sections off of State Route 38 to match the existing areas that have already been updated previously. The scope is to provide lighting along the sidewalk areas only without negatively impacting the drivers along these roads, as is a Georgia DOT requirement. This is typically a challenge, as pedestrian scale light fixtures are designed to throw light in all directions with little or no cut-off features, especially with acorn style fixtures. To combat this, nominally lower lumen output fixtures are utilized and if possible, mounting height increased to get out of the driver's field of view when measuring the glare metric, the maximum veiling luminance ratio (MaxLv). Calculation of this ratio is necessary to ensure drivers are not blinded by the pedestrian scale light as they drive through this area. All of the lighting work is being done in accordance with Georgia DOT and IES design standards. Scott is designing the lighting layout, creating photometric plans along with quantities and voltage drop calculations.

Project Engineer - SR 120 from SR 141 to Peachtree-Industrial (GDOT) The reconstruction and widening of over 2.5 miles of this major thoroughfare is substantial and comprises of several large intersections and a roundabout. As part of the project, a multi-use path is being installed along one side of the roadway and a sidewalk will be installed on another, both of which will be properly lit, along with the roadway. Due to narrow ROW and presence of many utilities, this presents many interesting underground and overhead challenges throughout the project. The project spans two cities and ranges from commercial to residential, making the lighting objectives quite different. Scott has reviewed the photometric plans and verified the characteristics of the projects along with the pole layouts.

Project Engineer for I-75/85 and I-285 Tunnel Lighting Projects for GDOT. This project consisted of re-designing six existing tunnel lighting systems through the downtown Atlanta area due to age and neglect. A variety of daytime lighting solutions were evaluated for these tunnels to determine initial cost, maintenance costs to deliver the best value and design for each underpass. Several luminaire types were modeled at different locations to demonstrate their capability including LED, induction, ceramic metal halide and high pressure sodium. Many discussions involving the mounting configuration to the existing structures were had, resulting in many out of the box construction details. Additionally, much coordination had to be done with local power companies to provide the large electrical load being introduced at three of the sites. Scott made field visits to all sites to review current lighting and service points. He help prepare plans for these tunnel locations, including photometric calculations and lighting plans, in accordance with the recommendations put forth by RP-22 of the Illuminating Engineering Society (IES).

Project Engineer - Multiple Intersections in Jones Co GA. (GDOT) Various intersections along Grey Bypass had safety concerns that required additional lighting to be added. Scott has designed lighting for these intersections, performed the lighting layout design, photometric calculations that met the desired requirements, created lighting plans, Voltage Drop calcs, and quantities for the project. He also made a site visit to coordinate the Service Point location with GA Power.

Project Engineer - Lighting at I-75 and I-16 Interchange – GDOT. This existing interchange is being overhauled as part of a multi-phase construction project totaling six miles of interstate, all of which will be continuously lit. There are three smaller interchanges, all of which require complete lighting or modifications to complete lighting. Additionally, five total tunnels will require supplemental daytime lighting. There is a lot of pedestrian lighting going in this area as well as the City continues its beautification approach, especially near the River. However, there are also several locations which are sensitive to light pollution, such as residences or other environmental concerns, all of which are being analyzed to verify there is minimal concern. Scott reviewed lighting plans and voltage drops. He also verified the layout design and quantities throughout the project

Project Engineer for I-75 at Highway 151 Interchange Lighting – City of Ringgold, GA. This project required a permit application and approval for the installation of four high mast towers at the Highway 151 interchange at I-75 for the City of Ringgold, GA. There were originally four towers installed at the interchange before a tornado destroyed them a number of years ago. The interchange had been overhauled and expanded since that time and the lighting was missed. Scott was the designer for the lighting, which was submitted through GDOT's permit process (GUPS) and ultimately approved for installation. He also visited the site to make sure of the changes in the field so that the design was accurate.

Project Engineer - Lighting at I-77 and SC Hwy 9 Interchange. This existing interchange is adding lighting at the I-77 and Hwy 9 interchange along with tying into another project that is adding lighting along Hwy 9. This project is a combination of high mass towers and traditional roadway lighting. The use of high mass towers will cover the bridge over I-77 while the traditional roadway poles will be used along the ramps. We are working with Duke Energy to make sure that this project ties directly to the other lighting project along Hwy 9 to ensure full coverage throughout the corridor. Scott worked on the design, reviewed lighting plans and voltage drops along with providing quantities for this project. He also coordinated with Duke Energy for service points and to meet the other project limits.

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Project Engineer - Iowa DOT – LED Retrofit projects. Assisted on multiple projects where we are updating existing lighting with LED replacements. This includes projects along I-35, I-235, and Burlington Bridge off SR-34.

Project Engineer - Diverging Diamond Intersection at I-285 and GA 6 - GDOT The Department is reconstructing an existing slip diamond interchange to a diverging diamond interchange (DDI) in an effort to greatly reduce traffic concerns at the interchange. Due to the proximity to the Atlanta airport, the use of high mast towers is not possible. Further, the City's desire to use decorative fixtures not intended for roadway use put on us to work with multiple lighting manufacturers to develop fixtures and poles which will meet photometric requirements for the busy roadway as well as meet the City's decorative desires. The existing bridge over I-285 will not be reconstructed as part of the project, which makes lighting the 260' bridge area span challenging. This is especially critical in the area where drivers are on the opposite side of the roadway between crossovers. Additionally, there is a concurrent project consisting of many decorative lighting features the design team is responsible for providing power to. Scott created the voltage drops and quantity calculations along with reviewing cable layouts within the project. He also made site visits to the location.

Project Engineer - Continuous Flow Intersection - GA 400 at GA 53 - GDOT An existing intersection which is being changed to a Continuous Flow Intersection (CFI). The basis of a CFI is to eliminate the need for a dedicated left turn arrow at a normal signalized intersection. In order to accomplish this, the left turn movement must be done several hundred feet prior to the main intersection by creating a small crossover intersection. For lighting purposes, these smaller adjacent intersections must be well lit, as well as the main intersection. This creates a very large area which must be continuously well lit with good uniformity. Since these intersections are generally very busy, the main challenge is providing enough light across the entire intersection when the width of the intersection is so large. Additionally, this intersection had several crosswalks which had to be analyzed to alleviate any pedestrian conflicts. Scott reviewed photometric drawings and confirmed pole data table. Assisted in the CADD work throughout this project. Reviewed lighting plans and quantities for the project.

Project Engineer - Intersection Lighting at GA 12 and Cove Lake Rd. An existing four-way intersection is being expanded due to increased capacity demands. Full intersection lighting is being provided as well to combat an ongoing trend of increased pedestrian and vehicular strikes near the intersection due to a bus stop at the intersection. Scott reviewed cable layouts and created the voltage drops and quantity calculations along Single Line Diagrams in MicroStation.

Project Engineer - Pedestrian Bridge over Northside Dr at Mercedes-Benz Stadium. As part of a design-build project, Wi-Skies designed the lighting for a pedestrian bridge being constructed safely allow pedestrians to cross the busy six-lane roadway immediately adjacent to the new Atlanta Falcons stadium. The bridge spans a total of almost 1000' of walkable path, including a 140' long covered portion as it crosses Northside Drive. All of the pathway is being lit to high pedestrian traffic lighting design criteria, including vertical illuminance design criteria, which is being accomplished with a combination of pedestrian scale LED fixtures for outside of the covered portion and architectural ceiling mounted fixtures inside the covered portion. The sidewalk areas along the perimeter of the west loop are also being lit to ensure good visibility of fellow pedestrians while not providing a glare concern to the drivers along Northside Dr. In addition to the pedestrian lighting, Wi-Skies is also responsible for designing the impressive architectural lighting features on, in and around the bridge. Both sides of the bridge will have continuous multi-color rope lights which span a total of over 2000'. Additionally, accent lights are being provided at crucial areas, such as the bridge decorative columns and outer aluminum skin of the bridge as it crosses Northside Dr. All of the decorative features will be centrally controlled for the client to have the ability to change the colors freely, depending on the venue. The architectural features of this bridge will mesh well with the new stadium's architectural features, as it is immediately adjacent to the new stadium, which will be aerially viewed often to show off its architectural features, yet the lighting on the bridge will set it apart. Scott assisted in the development of several details for a design-build project for a pedestrian bridge.

Project Engineer for Effingham County Roundabouts Lighting Design Effingham County, GA is developing plans for eight total roundabouts throughout a business development area. These roundabouts will increase travel speeds through the area, as well as decrease the seriousness of traffic accidents at some of the intersections. Each of the eight roundabout sites require lighting, both within the roundabout circle, but also at each crosswalk, along each approach leg, in accordance with IES standards. Scott has helped with the delivery of multipole design packages for the eight roundabouts including photometric calculations, coordinating service point locations, performing voltage drop calculations and developing plans.

Project Engineer - Pedestrian Bridge over Castleberry Rd in Cumming, GA. The City of Cumming is constructing an elevated pedestrian bridge to the City Fairgrounds from the parking lot across Castleberry Rd. Ramps will tie into the existing sidewalk and lead up to a covered portion of the bridge over Castleberry and tie into an existing elevation difference on the other side. All of the ramps, adjacent sidewalks and covered portion of the bridge all require pedestrian lighting, accomplished by several light fixture types. Additionally, there are variable message signs on both sides of the pedestrian bridge to alert drivers along Castleberry of pertinent information. Scott has created the lighting layout for the ramp and the raised bridge, performed the photometric drawings and confirmed pole data table, verified the layout designs requirements throughout the project. He also made site visits to review existing power in the area and coordinated with GA Power potential Service Point options.

Project Engineer - City of East Point Streetscape. The City of East Point is rehabilitating a mile segment of sidewalk along the west side of Main St (State Route 14 & 139, US 29) and Wi-Skies is designing the lighting to be included. The scope is to provide lighting along the sidewalk areas only without negatively impacting the drivers along the State Route, as is a Georgia DOT requirement. This is typically a challenge, as pedestrian scale light fixtures are designed to throw light in all directions with little or no cut-off features, especially with acorn style fixtures. To combat this, we use lower lumen output fixtures nominally. We also try to increase mounting

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height to get out of the driver's field of view when measuring the glare metric, the maximum veiling luminance ratio (MaxLv). Calculation of this ratio is necessary to ensure drivers are not blinded by the pedestrian scale light as they drive through the corridor. All of the lighting work is being done in accordance with Georgia DOT standards. Scott made a site visit to review layouts and look for any potential conflicts. He reviewed cable layouts along with assisting with the quantity calculations.

Project Engineer - Jeffersonville Rd and Millerfield Rd Lighting (City of Macon/Bibb County) As part of a large-scale area of urban improvement, these two segments will encompass a total of 1.8 miles of urban collector roadway. The five-lane roadway cross-section consists of dual lanes in each direction with a middle turn lane throughout. To complicate the design, there are several smaller roadways and driveways littered throughout the project, a continuous multi-use path along one side with a sidewalk on the other of the roadway throughout. This creates a challenge of providing good uniformity throughout a wide area using a large setback. Especially challenging is meeting vertical illuminance requirements along the multi-use path, sidewalk and at the many crosswalks throughout the project while also providing recommended average luminance and uniformity in the center dual turn lane. This is all being accomplished by using LED fixtures mounted at a maximum mounting height of 45', due to Macon-Bibb's maintenance limitations. Scott provided MicroStation support for the photometric and final plan submittals while also reviewing voltage drop calculations and developing photometric and pole data tables.

Project Engineer for Pedestrian Bridge Lighting in Sugar Hill, GA A pedestrian bridge is being constructed over SR 20 in Sugar Hill, GA to allow pedestrians to cross the busy SR 20. There are many stores, an amphitheater and a movie theater on one side of SR 20 with a parking lot planned on the other side. Pedestrian light fixtures along with lighted handrails are being provided as part of the bridge work, of which Wi-Skies is responsible for. All lighting was analyzed to ensure it didn't cause a glare issue with travelers on SR 20 below.

Project Engineer for North Point Parkway Lighting – City of Alpharetta, GA. As part of a roadway diet and enhancement project, Wi-Skies is developing lighting plans for 1.4 miles of North Point Parkway. The highly visible commercial corridor begins at Mansell Rd and ends at Haynes Bridge Rd and includes eight intersections, along with many more commercial driveway entrances and exits. The lighting plan includes over one hundred sixty decorative roadway and post top fixtures, alternated throughout the corridor to achieve both roadway and sidewalk lighting design criteria, along with intersection lighting at all eight intersections. Each pole location was carefully coordinated with many utilities, but also with the landscape designers, with decorative trees placed to stagger the light pole conflicts. Photometric calculations were conducted to verify all lighting design criteria is being met for all criteria along the corridor. Scott was participated in field work at this site along with helping with the photometric and voltage drop calculations, conduit and cable plans and installation details.

Project Engineer - Stand-alone Lighting I-75 from Pierce Ave to Arkwright Rd (GDOT) Led a majority of the MicroStation effort on this stand-alone lighting project provided 3.5 miles of mainly high mast lighting along I-75 from Pierce Ave to Arkwright Rd. This included developing the photometric and pole data tables for the photometric submittal, developing many of the plan sheets and unique construction details and verifying the voltage drop calculations.

Project Engineer for Henry Parkway at McDonough Parkway Roundabout Lighting (Henry County, GA). An existing three-legged intersection is being converted a roundabout. As both intersecting roadways are dual lane, this results in a very wide roundabout, presenting challenges to meet uniformity requirements within the roundabout. As the roundabout is immediately adjacent to Mercer University with heavy pedestrian traffic at times, proper lighting within the crosswalks is essential to the operational safety of the roundabout, in addition to proper transition lighting along each leg. Scott is responsible for the lighting design, including photometric calculations, service point coordination, voltage drop calculations and final plans.

Project Engineer - Lighting along GA 30/90/US 280/16th St from I-75 to Midway Rd in Cordele, GA for Georgia DOT. Due to the heavy volume of truck and other traffic at the interchange due to the large commercial presence, the Department is widening the roadway from the northbound interchange ramp intersection to the Midway Rd intersection, where a Pilot exists. Due to the high pedestrian traffic in the area, lighting is being extended from the interchange to Midway. As the existing lighting system is HPS, the new portion will be HPS to match. In addition to the roadway being analyzed for proper luminance through this half mile segment, new sidewalk facilities will be analyzed, including both horizontal and vertical illuminance requirements. The intersection at Midway has transmission lines running along the west side of the road, creating a large area where light poles cannot be installed and therefore, creating uniformity issues within the intersection. Scott developed the voltage drop and quantity calculations, and assisted with the CADD effort on the expansion of a half mile segment of heavy commercial roadway.

Project Engineer for SR 92 at Demooney and Jones Roundabouts (GDOT). An existing project is transforming two existing intersections into two roundabouts in an expanding commercial area. The expansion is bookended by two roundabouts, of which Wi-Skies is providing lighting for. Scott is one of the designers of this project which includes photometric calculations, voltage drop calculations, plan preparation and quantity calculations.

Project Engineer - Swainsboro Streetscape Lighting – City of Swainsboro, GA Provided photometric plan sheets, voltage drop calculations and cabling plans tying into three existing service cabinets across the City for pedestrian lighting project at six locations in downtown Swainsboro.

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Project Manager for Roundabout Lighting Projects for Georgia DOT:

PI 0016122 – Burnt Hickory Rd at Stout Pkwy– Operated as the project manager for this project, overseeing design for the lighting layout for this roundabout. He created the pole data and photometric tables, verified that the photometric design met the requirements for the classification. Scott coordinated the service point location with the local power company and performed the cable layouts, voltage drops, and quantities calculations for the project.

PI 0013682 SR 9 at Dawson Forest Rd – Project Manager for this project, designed the lighting layout for the dual roundabout. Created the pole data and photometric tables. Verified that the photometric design met the requirements for the project. Made multiple site visits to understand the site and coordinate the Service Point locations. Performed the cable layouts, voltage drops, and quantities calculations for the project.

PI 0016348 SR 9 at AC Smith – A three-legged roundabout is being constructed at an existing intersection to reduce crash rates and severity at a rural roundabout. Proper lighting was designed for the roundabout to include the roundabout, crosswalk facilities, and the approaches within the roundabout area. However, recommendations were provided and ultimately accepted to remove transition lighting along the two approach legs on SR 9, as visibility of the roundabout was adequate at an AASTHO safe stopping distance. This transition lighting was not removed along the AC Smith approach leg due to roadway curvatures. Spill lighting was analyzed along all residential property lines to minimize undesirable impacts. Scott worked on the Photometrics and the Lighting Plans for this project. He coordinated with the local utility on service point locations and completed voltage drops and quantities. He also visited the location to confirm some design requirements.

Buford Springs Connector at Peachtree St Roundabout - The existing exit and entrance ramps from Buford Springs Connector to Peachtree St will be reconstructed to terminate into a roundabout before reaching Peachtree St. It will also tie into Inwood Drive and an adjacent parking lot. This project responsibility is to provide the complete lighting plans, specifications, voltage drop and photometric calculations. Served as the Project Manager for this project. Made multiple site visits including coordinating the Service Point locations. The lighting will optimize the roundabout, along with the approaches from four different access points and will connect back to existing lighting on both the exit ramp and the entrance ramp to Buford Springs Connector. Existing Service Points will be updated for the new lighting and for the remaining lighting on the ramps. Designed the Photometrics and Lighting Plans which include the voltage drop calculations, single line diagrams, quantities list.

PI 332180 – SR 16 at SR 54– An existing four way stop sign intersection in Coweta County was reconstructed to be a roundabout, which re-aligned both roads several hundred feet in each direction and include a bridge reconstruction north of the roundabout along SR 54. Many of the movements within the roundabout have dual lanes, creating the challenge of achieving recommended vertical illuminance values at all of the crosswalks. Approach legs from SR 54 both also have dedicated right turn lanes, further complicating the roundabout's design. To complicate the design further, the maximum mounting height the locals can maintain is 30', meaning the light from the luminaires will not travel as far. To combat the design issues, while maximizing the vertical illuminance in these crosswalks, Type IV LED luminaires were used on poles placed optimally before the crosswalk. Designed the lighting layout for this roundabout. Created the pole data and photometric tables. Verified that the photometric design met the requirements for the project. He coordinated the Service Point locations with the local utility. Performed the cable layouts, voltage drops, and quantities calculations for this project.

Additional Roundabout Lighting Projects for Georgia DOT as Project Engineer:

PI 0016116 - SR 53BU at Dragon Dr. A three-legged roundabout is being constructed at an existing intersection to reduce crash rates and severity at a rural roundabout. This roundabout is at the entrance to a local high school. Proper lighting was designed for the roundabout to include the roundabout, crosswalk facilities, and the approaches within the roundabout area. However, recommendations were provided, and ultimately accepted to remove transition lighting along all three approach legs, as visibility of the roundabout was adequate at an AASTHO safe stopping distance.

PI 0013333 - I-20 EB at Maynard Terrace - The existing exit ramp from I-20 onto Maynard Terrace is being reconstructed to terminate into a roundabout on the Eastbound ramp terminal. As Project Manager for this project, I provided photometric calculations while taking in consideration the multi-purpose walkway in this area along with the historic areas around this roundabout. The lighting will optimize the roundabout, along with the approaches from four different access points and incorporate the multi-purpose walkway and crosswalks in the roundabout.

PI 0009855 – Solar Roundabout - CR 238 at Cool Springs Rd – The existing intersection is being converted to a four-legged roundabout, which requires lighting. Due to the limited power options in the rural area, power for this lighting must be accomplished by other means, namely solar as well as potentially wind energy. Finding the square footage of land necessary for the solar panels which will not become shadowed is a challenge within itself due to wetlands, trees and potential businesses in the future. The objective to create the first completely off-grid lighting project within the state which would be self-autonomous for ten days or more. Mr. Marsh is designing the alternative energy solution along with overseeing the lighting design, consisting of photometric calculations, lighting plans and specifications. For this project, provided photometric submittal, voltage drops, quantities, single line diagram

Wiley Bridge Rd at Cox Rd – An existing three-legged intersection in the middle of a residential area is being converted to a roundabout. As the area is also littered with many large trees and distribution lines which have decent clearances, light pole

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placement is an extreme challenge. Additionally, the tight proximity of residences near the roundabout creates more complication to the design in the form of minimizing spill lighting. These areas of concern are carefully analyzed to ensure there is minimal or no impact to the residences in the area. Approach lighting on some of the legs is being removed where good visibility exists to the drivers approaching in that leg from a safe sight stopping distance (SSSD). Made site visit to verify the sight distance required for this design. Checked/reviewed the lighting plans, voltage drop and quantity calculations.

PI 0000315 – SR 52 at SR 183 – The existing intersection is being revised to a roundabout due several high speed accidents, for which the roundabout will force traffic in all directions to slow down to at least a crawl before proceeding. The addition of lighting in the rural and very dark area will also assist visibility and therefore safety to the roundabout's performance. Developed voltage drop calculations, wiring diagram, pole data table, performed quantity calculations and visited the site to identify potential overhead and underground conflicts and determine service point tie-in with local EMC

PI 0009938 – SR 53 at SR 183 – GDOT revise a three-legged intersection to a roundabout due several high-speed accidents. SR 183 terminates into SR 53 at the intersection while SR 53 continues east to west, all of which are rural roads with speed limits of 55 MPH, with only yield signs at each leg, creating a dangerous situation. Add in that drivers along westbound SR 53 experience a blind curve entering the intersection without the need to yield makes it treacherous. The new roundabout will force traffic in all directions to slow down to at least a crawl before proceeding. The addition of lighting in the rural and very dark area will also assist visibility and therefore safety to the roundabout's performance. Both horizontal illuminance requirements for the roundabout and vertical illuminance requirements at each crosswalk can be reached by using an LED fixture with a lower lumen package mounted at 30', which saves energy costs to the locals while also minimizing light pollution to the adjacent residences. Visited the site to coordinate the service point tie-in with the EMC, led the effort to develop the photometric submittal and plan sheets including details in MicroStation including the wiring diagram and verified the quantity calculations

PI 532650 - Solar Roundabout at SR 99 and SR 25 – Phase 2. Project Manager for this project. Designing the lighting plans for this project, including the cable layouts, voltage drops and quantities calculations.

PI 0009874 - Solar Roundabout at SR 99 and SR 25 – Phase 1. Reviewed layout and pole data table. Verified the photometric design of the roundabout.

PI 0015600 – SR 5 at SR 166 - Visited the site to identify potential overhead and underground conflicts, provided initial design for roundabout pending environmental/survey responses.

PI 0009988 – SR 212 at CR 594 - Assisted with developing photometric submittal and pole data table

PI 0015323 – Exchange Blvd Ext from Harry McCarty to SR 11 – Checked/reviewed the lighting plans, voltage drop and quantity calculations.

PI 532370 – SR 144 at Capt. Mathew Freeman – Checked the voltage drop and quantity calculations and performed much of the MicroStation effort to deliver final plans.

Bell Rd at Cauley Creek Park – Checked/reviewed the lighting plans, voltage drop and quantity calculations.

Woodstock Rd at Victory Dr – Made site visit to verify the sight distance required for this design. Checked/reviewed the lighting plans, voltage drop and quantity calculations.

PI 0007319 – SR 347 at New Bethany – Assisted with CADD and details for the lighting plans and performed quantity calculations

PI 0012834 – SR 195 at Smithville & 2nd St – Led the CADD effort to develop the photometric submittal on this challenging project.