September 30, 2015

Selection Committee
Florida International University, Facilities Planning,
Campus Support Complex, Room #142
Modesto A. Maidique Campus, Miami, Florida 33199

REFERENCE: Proposal for the BT-904 | FIU: UNIVERSITYCITY PROSPERITY PROJECT

Dear Selection Committee:

As a proud FIU Alumnus, a Member of the Dean’s Council for the School of Business, and recent recipient of the Torch Award for Distinguished Alumni, I am pleased to submit the MCM Team’s Technical Proposal for the UniversityCity Prosperity Project, BT-904, which includes many benefits for achieving your vision of an innovative signature pedestrian bridge that will serve as an icon, a destination in its own right, and a respected and valued landmark.

MCM is a family-owned, Miami-headquartered design-build contractor specialized in Heavy Civil and General Building Construction with vast expertise building signature projects for over 30 years. MCM is a Gold-level LEED member, an ENR top-400 contractor, and our quality management system is ISO 9001-certified. Over 40% of our team members are FIU graduates which enhances our passion for success. FIGG delivers functional, iconic landmark bridges and is at the forefront of signature bridge design. FIGG bridges have received 356 awards for their Clients recognizing economy, innovation, sustainability, and aesthetics, including three Presidential Awards through the National Endowment for the Arts.

You will receive from the MCM+FIGG Team a one-of-a-kind bridge that is a contemporary sculpture that pays tribute to FIU and includes many remarkable features like:

- Full 30’ pathway width for maximum space for many enjoyable uses
- 53% of pathway covered by structural canopy along the entire bridge
- Large bridge overlooks that provide enhanced staircase connections and greater gathering spaces
- Accelerated Bridge Construction (ABC) to build the entire span over the highway in a single night – this will showcase FIU’s prominence in the international ABC marketplace
- A tapering pylon soaring to 109 feet with dramatic stays
- Feature lighting of the bridge at night with LED changeable, programmable lighting of the stays, pylon and walkway canopy
- Custom-designed elevator with glass walls
- Opportunities to incorporate solar technology and eco-friendly concrete

It is both an honor and privilege to submit our proposal for an innovative signature bridge to FIU. We are committed to exceeding your every expectation!

Best Regards,

Jorge Munilla, President-MCM
THE VISION

Every bridge has a story. It begins with a vision. A vision that reflects the beauty of the community’s sense of place. A bridge tells the story of the technology of its time and respects the natural and built environment in a holistic design. The features of FIU’s New Pedestrian Bridge are a tribute to these principles. The values and vision for the new bridge has been described with words like: Signature, Innovative, Contemporary, Iconic, Outstanding, Landmark, Event Venue, Linear Park, and a Place to Linger and Gather.

THE DESIGN APPROACH

From this vision a theme came to life as a unifying connection between the new bridge, the FIU campus, and the Miami community – A Bridge Worth Walking. This design approach is inspired by the values and vision of FIU and this theme. Archetypal design principles of blending shapes, creating shadows, selecting textures, choosing pleasing colors, opening new vistas, using native materials, creating feature lighting and incorporating landscaping were combined to create a bridge that celebrates and is inspired by FIU. Design and construction inspiration came from FIU’s innovative research and technology, educational excellence, and commitment to sustainability.
Accelerated Bridge Construction (ABC) techniques will be used to build the main span in one night. This will showcase FIU’s national research center for ABC technologies. The main bridge will be constructed in an adjacent staging area and moved into place with a modular transporter.

Contemporary iconic cable structure provides an aesthetic gateway attracting people to enjoy a unique experience. The tapering pylon reaches a height of 109' feet.

The concrete deck is both transversely and longitudinally post-tensioned with straight tendons. The concrete truss members and canopy will also be compressed with high strength steel cable and bars.

The functional shape of the structure includes a pedestrian concrete canopy 16' wide providing shade to 53% of the deck.

The bridge shape allows for easy accessibility to all areas for direct inspections. A low maintenance bridge with innovation for over 100 year life.

High performance concrete throughout the bridge with fly ash and silica fume admixtures creates a dense low permeable mix design for added strength and durability.

The stay cable pipes increase bridge stiffness for pedestrian loads. Powder coated white for long term durability and to maximize opportunities for a variety of night time light colors on stays.

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South pedestrian overlook (enhanced 717 sq. ft.) has a cantilevered canopy and allows for direct future connection to the Parking Garage 4 and escalators.

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A full 30' pathway width maximizes user opportunities. A slender structure depth of just 2' brings the bridge elevation closer to the landing areas and creates shorter elevators.

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Aesthetic Feature Options for Pausing (PAWS-ing)

Hammock hooks between trusses to enjoy the peaceful nature of the canal while resting on the bridge.

Coffee carts or vendor carts can be located on bridge overlooks between trusses or in the plaza area.

Special seating areas for lingering and gathering enhance user experience throughout project.

Signature lighting at night with LED’s creates a dramatic icon.

LED lighting in the central canopy highlights the truss shapes and provides safety lighting for users.
MCM

MCM will serve as the Design-Build (DB) Team leader and prime legal entity contracting with FIU. MCM is a Miami-Dade County owned contractor with a 32-year proven track record successfully delivering some of the largest infrastructure projects in South Florida. Incorporated in 1983 by the Munilla family in Miami-Dade County, bound by its mission statement of, “A builder committed to delivering total client satisfaction with an uncompromising dedication to quality”, the firm specializes in providing DB and construction management services. The firm’s commitment to ethics and standards is a cornerstone that has been instilled in the company culture – making quality, integrity, and reliability an essential part of our work. Over 40% of the team at MCM are FIU graduates creating great pride in the opportunity to create an outstanding bridge for FIU and the community.

With an equipment fleet valued at over $75 million, and state-of-the-art scheduling, budgeting, value engineering, and design-build expertise we are second to none. The growing number of enthusiastic, knowledgeable MCM personnel is our most valuable resource. They provide our on-site team with the finest technical support that includes cutting edge management information systems for cost control, scheduling and management reporting services. The dedication and hard work of MCM’s personnel has resulted in our ENR Top 400 ranking, as well as being named one of the fastest growing Hispanic-Owned Construction Firms in Florida.

FIGG

FIGG is a family of engineering firms that specializes exclusively in bridges with a focus on signature sustainable design. Since 1978, FIGG companies have been pioneers in the bridge industry in the United States creating designs that blend timeless artistry and precise engineering. Form and beauty are applied with the technical solution to express the individuality of the people and places the FIGG-designed bridge will serve.

Bridges designed by FIGG are purposeful works of art, functional sculptures within the landscape, that are created through a careful analysis of the site, contextual and environmental sensitivity, and a regional approach that encompasses a community’s particular needs, as well as the realities of funding and maintenance. FIGG’s exclusive focus on bridge design and construction engineering inspection enables us to provide state of the art technology, innovative aesthetics and materials, and a unique capacity to partner for research.

You will receive the resources of FIGG’s talented team that has won 356 bridge design awards for signature bridges. FIGG is the only firm to receive 3 Presidential Awards for bridges through the National Endowment for the Arts which includes Florida’s Iconic Sunshine Skyway Bridge across Tampa Bay.
MCM will serve as the Design-Build (DB) Team Leader. Success on any design-build project is achieved with the quality and commitment of the core team leaders. The following leadership, with the support of key personnel, will be essential to efficient design and construction for a new, innovative, signature bridge and remarkable pedestrian experience for the FIU community. Resumes for the leaders given here and other team members is given in Section 2.

As the Design-Build Manager, MCM’s Joseph (Joe) Martin, P.E., has extensive experience in both design and construction. He will serve as the hub for communication between the design and construction teams, as well as the MCM+FIGG Team’s single point of contact. Joe is a proactive communicator with all team members. He will lead the weekly meetings with key personnel of the team to ensure: 1) comprehensive coordination between design and construction; 2) progress of work meets the production schedule (and milestones); 3) resolution of pending issues and critical action items; and 4) that design and construction meet or exceed RFP requirements.

As the Construction Project Manager, MCM’s Rodrigo Isaza, will provide project construction leadership and oversight. His similar recent experience includes the award winning I-95 Express Lanes Design-Build project in Miami-Dade County.

As the Visual Quality Designer and Sustainability Manager, FIGG’s Linda Figg, will personally lead the bridge aesthetics design and sustainability for the project. Linda’s passion is bridge aesthetics and sustainability. She is an international speaker on Creating Bridges As Art® and has a passion for creating functional bridge sculpture. She will work closely with FIU, the design team, shareholders and agencies to ensure that every detail is thoughtfully, carefully, and fully addressed. The cornerstone of her bridge designs are that every detail matters.

As the Design Manager, FIGG’s Dwight Dempsey, P.E. will provide essential leadership for the design of the new signature pedestrian bridge, ensuring the design schedule, quality and commitment. His experience includes design management of many Signature Bridges including a new pedestrian Signature Bridge for the Gateway to Florida’s Capital City.

As the Lead Technical Designer, FIGG Engineering’s Denney Pate, P.E., will benefit the project with his extensive experience in design of over 30 complex, signature cable-supported bridges. He was a lead designer of the Sunshine Skyway Bridge, FL and the Zakim Bridge in Boston. Denney and Linda work as a team merging function and form into each bridge masterpiece. His creative engineering ideas will deliver a cost-effective, eco-friendly and innovative bridge, focused on constructability, quality and beauty.

The project was completed significantly ahead of schedule including all FDOT established interim milestones.

As the Visual Quality Designer and Sustainability Manager, FIGG’s Linda Figg, will personally lead the bridge aesthetics design and sustainability for the project. Linda’s passion is bridge aesthetics and sustainability. She is an international speaker on Creating Bridges As Art® and has a passion for creating functional bridge sculpture. She will work closely with FIU, the design team, shareholders and agencies to ensure that every detail is thoughtfully, carefully, and fully addressed. The cornerstone of her bridge designs are that every detail matters.

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Broadway Bridge, Daytona Bridge, FL “Daytona’s newest Permanent Art Exhibit” —Orlando Sentinel

Wabasha Freedom Bridge, MN
PROJECT REQUIREMENTS

The innovative signature bridge proposed by the MCM+FIGG Design-Build Team will become a valued design landmark in Miami. Through our commitment to design excellence, it will also provide numerous benefits and opportunities, including:

- A safe and efficient crossing for pedestrians and cyclists venturing to and from campus
- A destination for the community to linger, gather, and enjoy
- An urban social space and linear park
- An event venue

In addition to a new iconic bridge, the project will have open spaces of outstanding architectural value that will connect Sweetwater and FIU, including:

- Advanced Intermodal Station (AIMS) Platform
- FIU Pedestrian Bridge Plaza
- Pedestrian Bridge North Landing Plaza (City of Sweetwater)
- SW 109th Avenue - south block (SW 7th Terrace to SW 7th Street)
- SW 109th Avenue - north blocks (SW 7th Street to SW 6th Street)

Concepts for additional alternate areas are also approved for adjacent areas, including:

- Campus Pedestrian Access - SW 109th Avenue / PG-4
- Campus Pedestrian Access - SW 10th Street (north side) / PG-4
- Campus Pedestrian Access - SW 10th Street (south side) / Academic Health Center
- Conservatory Plaza
- Conservatory - Lake Pedestrian Link
- Lake Overlook Boardwalk
- Lake - Library Pedestrian Link

PROJECT BACKGROUND

As with any project, there are always important aspects that could play a role affecting construction but may not be directly attributable to the actual construction of the project. Through our past local experiences, our Team has properly identified these aspects and prepared plans to address them. The following are some things that we have planned for:

Special events – In order to ensure all FIU and surrounding community special events (including but not limited to concerts, football, basketball, or baseball games, parades, etc.) are not impacted by our construction, as identified in our coordination plan, we will follow up with the FIU, FDOT and City of
Sweetwater PIO personnel to ensure construction is scheduled to keep traffic flowing. This transparency between the local stakeholders and our project will ensure the public, as well as our project Team is well informed so that each other’s operations runs smoothly.

**Hurricane Evacuation Plan** – as part of our Teams Incident Management Plan, an entire section will be dedicated to our hurricane preparedness and recovery activities. Our plan includes not only when we secure our site, but how to prepare our traffic control devices and possible vacating of the SFWMD C-4 Canal right-of-way.

**Other construction work within FIU** – As our project progresses we are aware adjacent properties will be under construction simultaneously with ours. We are very familiar with working on projects with other ongoing projects progressing on adjacent properties, and are committed to be good neighbors with the adjacent activities.

**Utility relocation** – As a major component to this project, the FPL Transmission Main will need to be adjusted to increase the vertical clearances between the proposed pedestrian bridge structure and the facility. Our Team has taken this into consideration with the pre-casting of the main span of the bridge in a phase that provides sufficient time for FPL to complete these activities prior to transporting the pre-cast superstructure into its final location.

**Permitting** – As with any Design Build project, the responsibility of obtaining environmental permits rests with the Design-Build Team. We have prepared the requisite permit applications, constructed in, around and over several SFWMD Canals within the past few years. We have created valuable relationships and a appreciation and understanding of the overall process to ensure the success of this bridge.

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**PROJECT LAYOUT AND SOLUTIONS MAP**

- **Staging Area For Preassembling Bridge Components For Accelerated Bridge Construction Mainspan Installed In One Night**
- **Signature Bridge Includes Provisions For Future Elevated Extension To PG-4**
- **South Plaza Area Provides Organic Gathering Spaces For Students To Socialize And A Grand Staircase Entrance To The Bridge**
- **Accelerated Bridge Construction Methods Utilized To Avoid The Overhead Power Lines And Keep Traffic Moving**
- **Innovative Signature Bridge Unique Structural Form Provides Signature Aesthetics While Minimizing Structure And Stair Heights**
- **Signature Bridge Provides Full 30’ Clear Pedestrian Pathway To Maximize Vendor And Gathering Spaces**
- **Drilled Shaft Foundation Design And Construction Techniques For New Bridge Were Selected To Avoid Impacts To SW 109 Avenue And Historic Sweetwater Bridge**

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**Technical Solutions | 6**
CONTEXT-SENSITIVE BUDGET

The biggest challenge of this project has been to determine how to deliver FIU with an iconic signature bridge structure, representing the intent, clarity, value, innovation, safety, constructability, sustainable universal design and construction, and active design as outlined in the RFP to be a gateway into the campus, a design landmark in Miami to serve the needs of FIU pedestrians and spark development in University City that will be a gathering place for students, faculty, families and friends within the Maximum Bid Price of $9,388,076. Our goal is to provide the essential elements as listed above and within the RFP requirements and, in addition, provide FIU with other options unique to this signature design, that are not required in the RFP, but can be added after award or in the future as funding becomes available. These added elements would further enhance the uses of the bridge.

In terms of optimizing the budget for purposes of delivering a signature bridge, we see budget improvement opportunities in features within the project but not specifically adjacent to the signature bridge. Specifically, the hardscape proposed in the concept plans represents 5% of the Maximum Bid Price. The MCM team has done its best to trim the cost of these items and has managed to remain compliant with the RFP requirements. The requirement for Silva Cells or equivalent structural soil is also a significant cost proportional to the project, and, in fact, raises the question of cost benefit ratio, considering the true difference in expectations of long term health and well-being of trees and plants with Silva Cell construction and those with proper soil excavation and preparations. MCM has incorporated an “or equal” into our proposal and based upon cost savings can actual include more areas within the project to utilize this soil.

Other aspects of budget that have presented a challenge include the elevators and the lighting for the bridge and plaza areas. The elevators have unique requirements that have added what we believe to be greater than normal expense. This includes the front and back access doors as well as the glazing required for both the elevator cars and elevator shafts. The lighting requirements have also added cost greater than expected with specific makes and models of fixtures and the number of fixtures. MCM is actively investigating equivalent fixtures to meet the standard of “or equal” and remain fully compliant with the RFP.

UTILIZING LOCAL LABOR

MCM is headquartered in South Miami-Dade County. The majority of our workforce resides within the County, with most of MCM current projects located within the County. MCM is fully aware of the improved construction market demand and has selectively pursued projects that it can fully staff and deliver timely, safely, with quality, and always with the goal to exceed our customers expectations. MCM’s current capacity with FDOT is $749,150,000. Our total work on hand is $161,104,576. Our work on hand represents 21.5% of our capacity and this project would represent an additional 1.25% of our capacity. We have the manpower, supervision and equipment to complete this project, as intended, well in advance of the maximum allowable time.

MCM self performs the construction of a majority of key structural bridge elements as well as roadway items of work. For this project, MCM will self-perform foundation work including piling, spread footings, bulkhead wall and cap. MCM will self-perform pre-cast and cast-in-place structural concrete with its own forces. This will include both substructure and superstructure elements. MCM has pre-qualified subcontractors to perform specialty work such as drilled shafts and post tensioning on site as well as superstructure transport. We will staff the foundation and substructure concrete crew ranging between 7 and 10 persons. This crew will be on site to complete foundations and substructure work. Concurrently with this work we will be constructing superstructure elements of the bridge adjacent to SW 8th Street. MCM will expect to have a superstructure crew ranging between 12 to 18 people depending on access and productivity. This crew will ramp up in size as the fabrication site is prepared and bridge work elements become available. Once the main span is fabricated this crew will follow to assist the cast in place span over the canal. MCM will also dispatch a crew of 7-10 people to cast the pylon and install the bridge stays once the superstructure main span is set followed by the stays for the canal span.

MCM will engage the services of prequalified subcontractors for the hardscape, flatwork, lighting, signalization, irrigation, and landscaping elements of the project. Most of the proposed subcontractors have longstanding relationships with MCM and are currently available to complete the work according to the project schedule.
Providing a safe, healthy, and environmentally-friendly workplace is a high priority for our Team. MCM takes a “Safety First” approach to health and safety on all projects. With a lower value equating to a higher safety score, MCM has received the Florida Transportation Builders Association (FTBA) Award for Excellence in Safety for the past seven years. MCM’s current EMR is 0.73. Our ability to maintain such impressive safety figures is the result of a broad-based approach to ensuring workplace safety. Moreover, MCM employs formally educated safety professionals who are trained in Safety Management and OSHA compliance. Eddie Martinez, MCM’s Corporate Safety Manager, is responsible for our robust safety program and will implement a project-specific safety plan that is in strict compliance with all OSHA regulations. For this project, MCM will assign a full-time safety manager. Our philosophy with each project we build is to achieve zero incidents with regard to employee health and safety. Under our safety program, MCM has, over the past four years, performed over 2.5 million staff-hours of work with no loss time accidents.

**SPECIAL SAFETY PROCEDURES**

MCM believes that worker and public safety is paramount and protocols are established for all parties entering the facility including FIU and FDOT personnel and our Team workers. This belief is coupled with our Number One Goal of providing an injury-free project. Our work zone will be near pedestrians and motorists that need to be kept safe during our construction operations. As part of our commitment to an injury-free work environment, we believe all accidents are preventable and by employing site-specific safety programs we address hazards and implement prevention methods by:

- Providing dedicated pedestrian routes shielded from Construction Work Areas.
- Providing on-site staff certified in Advanced Work Zone Traffic control and conduct weekly safety meetings.
- Minimizing traffic shifts and temporary lane closures throughout the entire project.
- Coordinating with FIU and FDOT’s Public Involvement Personnel for advance notification of any traffic shifts or temporary lane closures.
- Minimizing night time operations, however if required, provide adequate shielded and directed illumination
- Incorporating off-duty officers and portable changeable message signs (PCMS).
- Using radar speed display units to alert motorists.
- Incorporating temporary barrier wall in critical areas for separation of vehicles, pedestrians, and workers.
- Complying with OSHA regulations and providing employees with approved protection equipment.
- Implementing Critical Lift Plan to address dual crane lifts.
- Submitting erection drawings with 150% of required carrying capacity.
- Staging construction equipment and material in protected areas outside of clear recovery areas and away from pedestrians.
- Conducting pre-task safety meetings.
- Confirming all project personnel possesses an OSHA 10 Hour certification at a minimum, with all foremen and above having a minimum of an OSHA 30 certification.
- Enforcing mandatory site safety orientation for all work site personnel.

Areas of additional particular significance on the project are construction activities near the powerlines and when the bridge superstructure mainspan is placed in Accelerated Bridge Construction (ABC) in a singular piece across the highway. Detailed safety briefings and procedures will be addressed before operations in each of these key, high hazard zones of extra significance. We have already improved the safety of building near the powerline by using ABC construction without cranes.

**Safety Programs**

**Plan view of bridge location and site**

**Main span construction in Accelerated Bridge Construction will incorporate added safety measures.**

**Special safety attention to power line**
The MCM+FIGG Team understands the importance of constructing this facility ensuring the highest levels of safety and with consideration to the FIU community, the traveling public, and all workers. Our Team’s design and construction professionals have spent considerable time developing and refining maintenance of traffic concepts and investigating specific design elements such as retaining walls, drainage, roadway geometry, and cross section elements to ensure safety, constructability, and quality. Our Team’s experience on other major Design Build projects have enlightened us, as lessons’ learned, that creating a successful Maintenance of Traffic (MOT) Plan requires that the MOT be developed in concert with a well thought out construction sequence by minimizing lane alignment shifts and expediting the pedestrian bridge construction, landscape/hardscape construction and roadway milling and resurfacing.

By developing the construction sequence and MOT plans collectively, through an iterative process, a logical and safe Execution Plan will result. Traffic Control for this project can be divided into 3 Major Phases (Phase I, Phase II, and Phase III) and 1 Minor Phase (Phase IIIB ). These phases, including key elements of the construction sequence are discussed below:

Phase I (Major Phase) – Pedestrian Bridge Construction by shifting WB SW 8TH Street Traffic to the Inside and the permanent closure of SW 7TH Terrace:

- Prepare Secure Work Zone (pre-cast yard) within FIU Campus on the southwest corner of SW 8th Street and SW 109th Avenue. Begin pre-cast of main span and construction of South Tower. (staging area)
- Restripe the 3 existing WB SW 8th Street thru lanes to 2-10’ Lanes, and 1-11’ Lane. Work to be done with night time lane closures. Shift traffic to the inside and install channelization devices and temporary barrier wall along the outside of WB Traffic in order to capture Pylon foundation work zone.
- During off peak hours restrripe the west end of SW 7th Terrace and install Type III Barricades for the closure of SW 7th Terrace. Begin construction of the North Tower for the Pedestrian Bridge.
- Maintain sidewalk along North Side of SW 7th Terrace and SW 109th Avenue open for pedestrian use throughout duration of this phase.
- Once South Tower, Center Pylon below proposed deck grade, and Main Span precast are complete, initiate off-peak road closure of SW 8th Street utilizing detours to divert traffic, to allow transport of Main Span erecting/jacking into place.
- Once Main Span is erected, additional work to complete the Main Span construction will be performed over off peak lane closures. The sidewalk running adjacent to SW 8th Street along south side, will be covered with a temporary canopy to ensure pedestrians are protected from any debris falling from the bridge.
- As North Tower is completed, continue north span cast in place construction.

Phase II (Major Phase) – Construction along the West Side of SW 109th Avenue:

- During off peak hours restripe 109th Avenue North of SW 8th Street. Shift Southbound thru lane into existing center DLT (Dual Left Turn) lane. Install channelization devices along the west side of SW 109th Avenue.
- Maintain sidewalk along East side of 109th Avenue open for use.
- Retrofit existing barrier along West Side of Bridge (SW 109th Avenue) over C-4 Canal.
- Construct proposed drainage improvements.
- Install proposed lighting.
- Construct proposed curbs and sidewalk. Install landscaping in planter areas.
- Complete work along SW 7th Terrace, west of 109th Avenue.

Phase III (Major Phase) – Construction along the East Side of SW 109th Avenue:

- Open sidewalk along the west side of SW 109th Avenue, connecting to hardscape built with North Tower.
- Restripe 109th Avenue & Shift traffic to the West.
- Install Channelization Devices along East side of SW 109th Avenue.
- Construct proposed barrier wall and retrofit existing bridge barrier (109th Avenue) along East side of Bridge (SW 109th Avenue) over C-4 Canal.
- Construct proposed drainage Improvements along East side of 109th Avenue.
- Install proposed curbs and sidewalk. Install landscaping in planter areas.
Phase IIIB (Minor Phase) – Milling & Resurfacing and Final Striping:

Complete Milling & Resurfacing and final striping.

As our Team's commitment to creating a safe and efficient work zone, the following items highlight some of our MOT Plan enhancements:

- Where lane closures are necessary, provide proper and timely notification to FIU, FDOT, City of Sweetwater, local agencies, and public information outlets.
- Providing an experienced MOT supervisor on site during active work periods to oversee initial setup of MOT devices, work zone monitoring, direct immediate adjustments as necessary, and inspect and maintain all MOT devices on a daily basis.
- Special emphasis will be placed on maximizing separation between work crews and the traveling public. All required barrier wall offsets and clearances to drop-offs, etc., will be maintained and monitored for compliance on a regular basis.
- Deliveries of materials will be scheduled with consideration of peak traffic times. When possible, we will perform “high visibility” activities that could distract drivers during off-peak hours.
- We will utilize appropriate lighting levels throughout construction activities and furnish temporary barrier walls where needed within work zones to provide a safe environment for workers and motorists.
- We will maintain VMS boards on the project site to be used for incident response and to provide notice of pending changes in traffic patterns.
- Off-duty law enforcement officers will be utilized to enhance safety during lane closures and other potentially disruptive operations.

By incorporating these and other components into our plan, the MCM Team will maximize the safety of workers and the traveling public, as well as keep traffic moving. Our Team is experienced at working both day and night operations and will stage all work to take advantage of opportunities to efficiently pursue construction with the least impact to motorists and residents.

**MAINTAINING TRAFFIC AND ACCESSIBILITY**

Maintaining pedestrian access in compliance with American Disabilities Act (ADA), in a safe and efficient manner that will promote the use of the designated pedestrian route is imperative. In order to achieve this goal, our construction will be sequenced to limit the impacts to the existing pedestrian routes along SW 109th Avenue from north of SW 6th Street to south of Campus Drive to the greatest extent possible. Once our proposed bridge is nearing completion, we will close the pedestrian route on the west side of the SW 109th Avenue, provide roadway crossing in conformance with ADA and FDOT Standard Index 600 and 660, and maintain the existing pedestrian route on the east side of the roadway. The exception to this closure will be between SW 6th and SW 7th Street where the business frontage is adjacent to the west roadway R/W, in this area the sidewalk will be maintained and reconstructed in sub-phases using a combination of weekend and night work to ensure access to the business will be maintained during regular business hours. Once the newly constructed landscape/hardscape and pedestrian route is completed on the west side of SW 109th Avenue, pedestrian traffic will be shifted to the west side, using the same ADA and FDOT criteria of the facility. Once pedestrian traffic is switched, landscape/hardscape work on the east side of SW 109th Avenue will commence.

Along SW 8th Street, the existing sidewalk will be maintained using orange construction fencing channelizing pedestrians away from our proposed main span superstructure pre-cast area. A temporary canopy will also be erected in the vicinity of the main span crossing the sidewalk to provide extra pedestrian protection against any debris that may fall from the newly erected main span crossing the sidewalk. It should be noted that temporary closure of this sidewalk will only take place during the actual main span erection/jacking into its final location.

This same methodology and design criteria used for SW 109th Avenue will be utilized for all phases of the Alternate 1 as well as the AIMS construction. Throughout the entire construction process, pedestrian traffic and access will be maintained on at least one side of the roadway at all times. All signage, mid block crossings, and sidewalk closures will meet all ADA and FDOT criteria. Properly placed way signs and advance closure signage will ensure that the pedestrian access is maintained in the most efficient manner to encourage the use of the designated routes to divert pedestrian away from active work zones. Furthermore, temporary orange construction fencing will be erected around our construction work zone to add further protection for pedestrians from inadvertently entering the work zone.
Utilizing the Accelerated Bridge Construction (ABC) method for your bridge offers numerous benefits over conventional construction methods over traffic.

- Main span will be precast, which includes no required formwork set over roadway for cast-in-place superstructure components. This creates a quicker construction schedule as the bridge superstructure can be cast in the adjacent Bridge Staging Area and the entire main span can be placed in one night.

- The precast main span will be placed using a Self Propelled Modular Transporter (SPMT), so no cranes needed to place superstructure. This avoids the overhead height restrictions of using a crane near the power lines on the south end of the project.

- Shortest on-site construction time, which improves work zone safety for vehicular traffic/pedestrians and construction workers.

**Step-by-Step for Accelerated Bridge Construction**

1. **Superstructure Pre-Casting**
   - Cast main span superstructure including deck and canopy. Stress bottom slab transverse post-tensioning and longitudinal post-tensioning with straight tendons. Create outstanding durability.

2. **Superstructure Pre-Casting**
   - Build all footings and base of pylon. Build column frame for both landings.

3. **Position Main Span**
   - Rotate main span from the casting position (1) to the final position (3). Install bearing pads at pier 1 and remove temporary support. Secure truss at pylon support.

4. **Casting Of Back Span**
   - Erect temporary falsework on banks of canal. Install bearing pads at pier 3. Cast deck, truss and canopy. Construction of pylon and stays follows with superstructure fully secured as a construction platform.
Quality Control will be established, implemented, and maintained through a Quality Management Plan, which will include a Design Quality Management Plan (DQMP) and a Construction Quality Control Plan (CQCP). Additional details regarding this plan are available in Section 5: Quality Management Plan.
PROJECT CLOSE-OUT

MCM firmly believes that project closeout is as important as pre-construction and construction services. We begin the closeout procedure during pre-construction and start of the construction phase of the project, establishing certain guidelines and requirements to ensure that trades, subcontractors and suppliers complete all aspects of the project.

Project Closeout consists of several steps. First, during all stages of the project, MCM creates lists of items that are pending and/or need finishing prior to substantial completion. We share this list internally and with the applicable corresponding sub-contractor with a time frame to complete. Once that list is completed then Substantial Completion is requested from the owner and secured. Upon substantial completion MCM along with FIU, City of Sweetwater and FDOT as applicable create a punch list that will contain minor items, since MCM will have been finalizing items through our quality control program throughout construction. The completion of this list is a priority and is done expeditiously so that stakeholders can begin utilizing portions of the project.

Second is the Closeout Documents. Closeout documents consist of product literature, warranties/guarantees, maintenance manuals and a list of subcontractors with their contact information to name a few. These documents are submitted in tabbed binders to facilitate FIU’s follow up process in the future. Included in the closeout documents are the as-builts. During Construction MCM obtains, as normal course of business, to update as-builts on a weekly basis. At the end of the project as-builts are updated and sent to the owner with all closeout documents.

Lastly, MCM prepares a training program for operating and maintaining all major facility systems. This program, which is tailored specifically for FIU, will include MCM personnel and subcontractors with specific expertise on the installed systems and videotaped by MCM for future reference by facility operating personnel. This will serve as an Owners Manual for your project.

MAINTENANCE & WARRANTY WORK

At the beginning of the project MCM will establish maintenance and warranty programs which will set requirements for consultants, contractors, and suppliers regarding the maintenance and operation of systems and facilities. This program content shall be considered the foundation of the Operations and Maintenance (O&M) system.

MCM will then follow these program requirements through the procurement process via Primavera Expedition, our document control system, to make sure that contracts are written with specific obligations for maintenance and warranties. This will ensure that FIU will receive immediate service for any issues that may arise during the warranty period.

POST WARRANTY

MCM has a commitment to stand by our product. In the event that an issue arises after the warranty period has expired, MCM will review the matter on a case by case basis to determine if the warranty should be extended to cover the issue.
CONSTRUCTION

The shape and structural elements of this singular superstructure unit work effectively to showcase a special way of using Accelerated Bridge Construction (ABC) to build the entire span over the highway in a single night. This will highlight FIU’s prominence in the international market place in ABC technologies and provide a hands-on learning center for students during construction.

CONCRETE BENEFITS

High performance concrete with fly ash and silica fume admixtures create a dense, low permeable mix design for added strength and greater material durability. This will also reduce CO2 emissions during construction. For example: on the new I-35W Bridge the mix design reduced the CO2 emissions by 3.5 tons per truck load.

The concrete structure reduces the heat island effect resulting in a cooler material and less heat generated than steel or other materials creating pedestrian user comfort.

The solid concrete structure serves as a natural noise buffer to the traffic below.

LONG-TERM DURABILITY

The concrete deck was designed using techniques that will specifically be beneficial for corrosion resistance. The deck was designed as a precast deck with high strength, low permeable concrete mix in combination with transverse and longitudinal prestressing, designed to operate in a state of net compression. This provides strength, redundancy, and avoids cracking. This is in contrast to conventional decks that must crack to engage the reinforcing bars. The diagonals and canopy will also be precast utilizing the same concrete mix and include longitudinal prestressing, allowing them to also operate in a state of net compression.

The steel pipe stays will be powder coated white, providing a durable high-quality finish and to address maximum opportunities for a variety of nighttime light colors to be used in showcasing lighting designs for seasons and events. Powder coating does not contain pollutants known as Volatile Organic Compounds, making it safer for the environment.
**NATURAL FREQUENCY**

The major structural elements, including geometry of the stays and truss, the pylon stiffness, and shape and behavior of the superstructure, were all designed such that the natural frequency of the structure under harmonic pedestrian loads met the required criteria and ensures serviceability of the structure for its entire design life. For more details on the importance of this functional design feature see Section 6.3.

**FOUNDATIONS**

The drilled shaft foundations were chosen for their cost-savings benefit over other foundation alternatives and were the best solution in the context of the project site. The low vibrations and quiet installation are beneficial near existing bridge and housing.

**DRAINAGE**

The design of the canopy is set to naturally transport drainage to a cased piping system at the end of the bridge hidden next to the last vertical strut. At the deck level a drainage system along the centerline of the bridge goes to a central linear pipe that is a feature point at the base of the tapering superstructure cross section.

**MECHANICAL ROOMS**

Telecom and electrical rooms, sized to FIU standards, have been seamlessly integrated into each staircase.

**MAINTENANCE ACCESSIBILITY**

This all concrete structure is low maintenance and easily accessible for inspections. This bridge is designed for well over a 100 year design life.

The bridge elements are accessible to allow hands on inspection to the majority of the bridge components. The stays could be inspected through the use of cameras that can mount directly to the stays and travel along the stays, or through drones or other site inspection. The canopy is a platform for inspections.

**ENERGY EFFICIENCY**

The LED lights that are used for aesthetic lighting are highly efficient, consuming less power than comparable metal halide lamps, being waterproof helps with durability and with a useful life of over 70,000 hours there are minimal maintenance requirements.

**SAFETY FEATURES**

With the pylon erected above the deck, additional cameras can be installed at an eagle eyed location for additional pedestrian and student safety. The overhead canopy can provide camera locations for areas not secured by pylon cameras.
BRIDGE DESIGN ELEMENTS

All elements of the concrete bridge superstructure serve a structural purpose and provide a functional benefit for user enjoyment and comfort.

BRIDGE SHAPE

The unique shape of the bridge allows for a shallow, smooth deck of 2’ at the center, saving approximately 8’ over a typical structure depth. This brings the bridge closer to the land areas and creates shorter staircases and elevators. This results in a significant cost savings benefit for our design.

CONCRETE CANOPY

A sleek concrete canopy is an integral structural element of the design, providing stiffness and strength, while also providing beneficial shade and coverage for 53% of the walkway along the length of the bridge.

BRIDGE WALKWAY

A full 30’-wide walkway is provided, 50% larger than the required minimum, allowing for more functional space on the structure.

BRIDGE OVERLOOKS

Bridge overlooks are provided on the North side (450 SF) and South side (717 SF), providing enhances staircase connections and greater gathering space. The South overlook at FIU has a cantilevered canopy, and allows for a direct future connection to Parking Garage 4 and escalators.

GRAND STAIRCASE

The grand staircase at the Bridge Plaza at the bridge’s south end provides a 30’ entrance at the ground level and a 15’ entrance to the bridge at the deck level. This feature element of the design allows for a large and efficient movement of people as well as additional gathering space. Future additional opportunities could include portable benches and planter to liven the area further as a place to be experienced and enjoyed.
ELEVATORS

The custom-design elevators provide a cost-effective and elegant solution for alternative and ADA-compliant access to the bridge. The large and spacious commercial elevator cabs will provide adequate space for bicycles and the movement of large cargo to the bridge for events. The cabs have one transparent wall each, facing the FIU campus, which provide an additional feature and allow for views of FIU never seen before. Similarly, the elevator structure has several transparent walls around the elevator shaft and attached vestibule areas. A ride up in these elevators will set the tone of excellence for arrival onto this signature bridge.

MISSILE PROTECTION

An artistic 8-ft missile protection fence was designed for the bridge to protect vehicular traffic below. In addition to benefits provided by a solid concrete deck, the mesh characteristics will reduce some of the traffic noise from below. The large panel sizes reduce the number of vertical posts used for the railing system. This results in a cost savings benefit for our design. The geometric pattern of the diagonal bracing members complements the truss structure providing an additional layer of aesthetic character for the bridge.

STAYS AND PYLON

The stays and pylon provide the required structural design to meet the pedestrian loads for harmonic conditions of natural frequencies and create dramatic signature aesthetics that tie directly to the rhythm of the strut pattern.

The tapering pylon reaches a height of approximately 109’ with 81’ above the bridge deck creating spectacular views for the users of the bridge and those driving beneath. The pylon height is in scale with the built environment of multi-story buildings and parking structures on each side.

LIGHTING

The feature lighting of the bridge at night with LED programmable lighting of the stays, pylon, and linear walkway lighting at the underside of the canopy provide safety lighting and a dramatic beacon for a gateway to the FIU campus.

ADVANCED INTERMODAL STATION (AIMS) PLATFORM

The new AIMS platform will enhance accessibility to the bridge location via the Miami-Dade Transit express bus system and will provide a new covered area that will encourage student and usage at the location of PG-6.
COLOR
The Bridge uniform concrete color will appear white with direct sunlight. Consistent use of common sourced materials creates singular color for the entire bridge.

The bridge canopy could be stained a sky blue to blend with the landscape of the sky in looking upward from the bridge walkway. This also provides a naturally clean space that is avoided by bugs, insects and birds who think that they are exposed to predators in the sky and will not nest in the canopy.

GEOMETRIC PATTERNS
The large scale stainless steel “Banker wire” railing follows the FIU specification requirements of materials, height and mesh sizes. The enhancement to this is the use of the largest rectangular panels available. This results in fewer vertical support frame members and creates a contemporary open look. To support the mesh of larger frames a dual wire support is used in a rib of angles reflecting the geometric angles of the central concrete truss. This wiring is positioned on the thin side for a softer view of the angle pattern, seeming more like a hint of angled movement along the edges of the walkway.

TEXTURES
The bridge walking surface could continue the garden feel of the plaza area using an exposed aggregate surface with pathway banding using the custom designed “FIU” flower pattern. This is optional for discussion of preferences with FIU.

SOLAR INNOVATION
The canopy ceiling could incorporate solar ceiling fans. The solar energy source would be on top of the canopy for direct sunlight. Then the stainless steel fan blades, specifically designed to move 40% more air through an area, are below the canopy ceiling. A pathway full of cool breezes offers an enjoyable and inviting space to pause and gather. This is a future amenity not included in the base bid.
FUTURE DETAILS

Future amenities not included in the base bid.

A central open concrete truss provides bridge stiffness and also serves as unique spaces for future art displays, table and seating connections, hammock supports, vendor set-ups, events, gatherings, and so much more.

More future details are described in the Architectural Plans in Section 7.

Coffee and vendor carts can be located along the bridge pathway, on overlooks or plazas.

Hammock hooks between trusses to enjoy the peaceful nature of the canal while resting on the bridge. Hooks are contained in the struts and students bring their own hammocks.

Panther benches to Pause (Paws) on could be created with FIU Art Students for functional art.

Thematic benches and planters could enhance user experience along the bridge.
The art piece ultimately becomes the plaza itself. The concept would be that the new key stone walls at the stairwell reflect the historic image of the university. The claw marks talk about the evolution from historical aspects of the university to the future and the oval shaped pedestal or planter would be a recipient site for a sculpture of a globe. This would signify the impact of university on the international community. The grand staircase is not only a functional architectural element in the plaza, but also takes a sculptural shape through the use of two wall components, distinct in shape, color and material. These wall components are visible from the campus as well as from passing motorists on the street. The presence of a crape myrtle bosque provides sun/shade and is a key element to the experience of the plaza. Therefore the plaza itself becomes the sculpture itself. The north plaza has a unique north edge that reflects the gull wing patterns from the brothers to the rescue plaza.

A bridge worth walking with many places to pause (paws) and enjoy the beautiful natural and built environment. A special journey that adds value to each day. The native plants and trees, the functional sculpture benches with tree canopy shades, and the grand staircase are part of the many features of this experience. In the design of complete streets and connectivity the plazas and bridge invite and support active, dynamic community and campus life with tree-shaded, pedestrian-friendly ADA accessible streets and paths with site furnishings, good lighting, opportunities for on-going learning through art works and resting and gathering spaces.
2. RÉSUMÉS OF KEY PERSONNEL

Key Personnel Organizational Chart

EXECUTIVE COMMITTEE
Bob Murphy, P.E. (MCM)
Project Director
Linda Figg (FIGG)
President/CEO

Jorge Munilla (MCM)
Principal-in-Charge

QUALITY MANAGEMENT
Eddie Martinez (MCM)
Safety Manager
Ken Heil, P.E. (FIGG)
Design Quality Manager
Carlos Hernandez (MCM)
Construction Quality Manager

OVERSIGHT
Jorge Munilla (MCM)
Principal-in-Charge

DESIGN
Joe Martin, P.E. (MCM)
Design-Build Manager

FIGG
Dwight Dempsey, P.E., S.E. | Design Manager
W. Denney Pate, P.E. | Lead Technical Designer
Manuel Feliciano, P.E. | Bridge Engineer

ROADWAY & DRAINAGE
Carlos M. Gil-Mera, P.E.
APCTE
MEP DESIGN
Dave McGowan, P.E., LEED AP
SGM Engineering
LIGHTING DESIGN
Randy Burkett Lighting Design
Randy Burkett
LANDSCAPE DESIGN
Miller Legg
Michael Kroll, RLA

CONSTRUCTION
Rodrigo Isaza (MCM)
Construction Project Manager

Ernie Hernandez (MCM)
Superintendent
Kristian Navarro (MCM)
Project Engineer

MOT Supervisor

WORK NOT SELF-PERFORMED BY MCM
SIGNAGE
SIGNALIZATION
PAVING
LIGHTING
LANDSCAPING
PAVEMENT MARKING

LEGEND
- Executive Team
- Design Team
- Construction Team
Jorge Munilla (MCM)  
Principal-in-Charge

Relevant Experience Summary

With over 35 years of construction and business experience, Jorge Munilla provides a full spectrum of leadership and executive support to the company in all areas of operations. Jorge oversees and is responsible for the construction, project management and project administration activities for all building and civil projects throughout Florida, Texas, and Panama. His leadership ensures the company is meeting or exceeding its goals and the expectations of its clients. Jorge’s goal-oriented and client satisfaction mentality has ensured the continued growth and strength of MCM over the past 30 years. While doing so, Jorge has also ensured the company and its 1,000 employees worldwide remain committed to safety and quality, which is evidenced by the company’s excellent EMR rating of 0.73 and repeat client base. Under Jorge’s direction and leadership, MCM has built itself into an industry leading builder in South Florida and has grown to become the 5th Largest Hispanic-Owned Contractor throughout the United States, as ranked by Hispanic Business Magazine - 2013.

Jorge has experience and knowledge of commercial construction estimating, means and methods, project administration, and a thorough understanding of industry practices, as well as experience in the management of superintendents, project managers, and project support staff. In addition, he brings extensive experience in the Design-Build delivery method, having overseen the successful completion of 25 Design-Build projects in Miami-Dade County over the past 30 years.

The growing body of work in MCM’s construction portfolio includes several projects similar to the FIU UniversityCity Prosperity Project. Many of these projects included the construction of bridges over major arterial roads for both pedestrian and vehicular traffic, construction of open spaces including outstanding architectural and landscape design components, design and construction of plazas, walkways and pavilions, underground utility installation, and general roadway improvements.

• MCM was founded in 1983 in Miami, Florida
• Family owned and managed
• 30-year history as design-builders, construction managers, and general contractors
• Reputation for managing the most complex and challenging construction projects in South Florida
• An equipment fleet valued at over $75 million, and state-of-the-art scheduling, budgeting, value engineering, and design-build expertise
• ENR Top 400 ranking
• Named one of the fastest growing Hispanic-Owned Construction Firms in Florida

Contributing to FIU’s continued growth has become a passion at MCM, where more than 40% of MCM’s management personnel are made up of FIU Alumni.

Recipient of FIU: Torch Award for Distinguished Alumni  
Dean’s Council of FIU’s School of Business  
Past President of South Florida Association of General Contractors  
Affiliated with the Greater Miami Chamber of Commerce  
Active in construction industry, including Latin Builders Association
Robert Murphy, P.E. (MCM)
Project Director

Relevant Experience Summary

Robert ‘Bob’ Murphy, P.E. has over 30 years of construction industry experience; with a majority of that time specializing in management and executive administration of public works and transportation construction contracts in Florida. His construction expertise comes from a variety of positions beginning as a field engineer, to the senior position of Chief Operating Officer.

Bob’s experience includes estimating; CPM scheduling and analysis; project management; negotiation; and corporate P/L responsibilities. He provides overall management, direction and administration, including serving as a liaison to the Owner on all civil construction projects; he monitors overall construction activities, and establishes project objectives, policies, procedures and performance standards on all civil construction projects.

For the FIU University City Prosperity Project, Bob will utilize his extensive knowledge in successfully delivering over 25 road and bridge projects and his experience managing teams on similar civil construction projects, including:

- **HEFT Widening from Sunset Boulevard to Bird Road**
  $53,000,000 | Design-Build

- **Bridges of the Isles of Las Olas/Sunrise Key Blvd.**
  $ 8,000,000 | Design-Build

- **NW 36th Street Improvements - Bridge Replacement**
  $ 6,800,000 | Design-Build

- **HEFT AET Phase 1 & 2 Conversion**
  $33,100,000 | Design-Build

- **Palmetto Expressway / I-75 - Segmental Bridge Reconstruction**
  $26,000,000

- **US 441 - Road Reconstruction & New Bridge Construction**
  $22,000,000

- **Immokalee Road Expansion**
  $ 26,000,000 | Design-Build
Joseph ‘Joe’ Martin, P.E. has over 27 years of experience in the engineering and construction industry, which includes design, engineering and project management, design-build coordination, and executive management of a diverse and full array of projects.

For the FIU University City Prosperity Project, Joe will be the lead contact between design and construction, preconstruction matters, technical review and constructability review. His experience relevant to this project includes involvement on numerous projects with FDOT and coordination of construction and design for bridge and roadway projects:

- **Bridges of the Isles of Las Olas/Sunrise Key Blvd., Fort Lauderdale, FL**
  Responsible for design-build management for the replacement of five existing bridges in the City of Fort Lauderdale. These bridges, which were constructed between 1946 and 1959, have been evaluated and found to be structurally deficient requiring complete replacement. All five bridges are fixed, low level bridges. The four Nurmi Isle bridges have two 10’ lanes and 6’ sidewalks and the Sunrise Key bridge has two 11’ lanes and 7’ sidewalks. Each bridge replacement has two construction phases. Phase I pre-construction involved the set-up of MOT devices for the work zone, temporary signage and signals and the relocation of the existing utilities on the closed side. In the first phase, one half of the bridge was closed for demolition and new construction, while the other half remained open as a bidirectional ingress/egress lane from the isles to the mainline. The closed half of the bridge is constructed with precast bridge segments to ensure higher quality, efficiency of construction and easier maintenance for the Owner after completion. Upon completion of the new bridge side, the MOT is switched to Phase II to allow traffic onto the newly constructed lane as a bidirectional travel lane, while the existing side is closed as mentioned above for demolition and construction. Other scopes included in the bridge reconstruction include the preservation and reuse of the historic bridge urns and pedestals, low level decorative bridge lighting, a vertical face traffic barrier and below bridge deck curtain walls to conceal the view of intermediate bends.

- **NW 36th Street Improvements - Bridge Replacement, Miami, FL**
  Responsible for design-build management of two separate and distinct projects which were let together. The first project consists of milling and resurfacing, median modifications, sidewalks and ADA ramp construction along NW 36th Street from Lee Drive to Okeechobee Road. This project also includes signing and pavement marking, minor signalization improvements at the intersection of NW 36th Street with Okeechobee Road. The second project consists of the replacement of the bascule bridge over the Miami Canal C-6 with a fixed bridge, the construction of a new retaining wall due to the re-alignment of the Westbound SR-112 off-ramp to NW 36th Street, and the roadway reconstruction of NW 36th Street from Okeechobee Road to NW North River Drive. The DB team’s innovative design allows for the bridge to remain open during the bridge replacement. The designers have taken into consideration building the proposed bridges and approaches in three different phases. Phase I is the north side of the bridge, Phase 2 is the south side and Phase 3 is the middle portion of the bridge.
Leonor Flores, LEED AP BD+C (MCM)
Pre-Construction Manager & FIU Liaison

Relevant Experience Summary

Leonor Flores, LEED AP BD+C has managed over 66 projects for FIU and will be a dedicated liaison for the FIU University City Prosperity Project. Her experience relevant to this project includes:

- **Florida International University Continuing Services Contract, Miami, Florida**
  This Continuing services contract began in 2009 and has consisted of over 66 projects totaling $37 million dollars. Some of the projects in this continuing services contract include but are not limited to: Hospitality Management dining room, hospitality management teaching kitchen, Carnival Student Center, basketball arena score board, baseball stadium scoreboard, boat ramp at Marine Science, Biology classrooms, renovation of teaching labs, emergency generator upgrade and lift station.

- **Florida International University Steven & Dorothea Green Library Expansion, Miami, Florida**
  This phased expansions project consisted of expanding the existing library for the Florida International University from three stories to eight and fourteen stories. This also included expansion and upgrades to the TV broadcasting facilities. This project received an award from the Florida Educational Facilities Planners Association, Architectural Showcase Certificate of Achievement.

How Leonor Will Make Your Project A Success

As a member of the Florida International University Alumni, Leonor has a strong and dedicated passion for working with FIU. From 2009 to 2015, she managed over 66 projects for FIU. While working on the Continuing Services Contracts Projects, Leonor has established strong relationships & connections that will be an added value to this project. Leonor is dedicated to listening to the University’s desires while stimulating creative thought for the project’s benefit.

**AWARDS**

- 2014 Outstanding Merit Award - Restaurant/Fine Dining - A.R.E Design Awards
- 2014 Retail Store of the Year - Restaurant Category - Chain Store Age (CSA)
- 2014 Award of Merit - Best University Project - FERPA Architectural Showcase
Rodrigo Isaza (MCM)  
Construction Project Manager

How Rodrigo Will Make Your Project A Success
Rodrigo has managed the construction of complex award-winning road and bridge projects for the FDOT and Turnpike Enterprise for the past 19 years. He is a seasoned professional who will deliver your project on time and within budget with outstanding quality.

Rodrigo Isaza
(MCM)

Construction Project Manager

Relevant Experience Summary
Rodrigo Isaza is a proactive, results-oriented Project Manager with 19 years of comprehensive experience in the construction industry. He has extensive knowledge in successfully delivering road and bridge projects as demonstrated from his experience managing teams on the HEFT AET Phase 1 & 2 Conversion, SR 836 Auxiliary Lanes, I-95 Managed Lanes, Sawgrass ORT Sunrise Mainline Toll Plaza Modifications, SR 836 Toll Plaza and Extension and SR 786 Interchange with SR 91.

Rodrigo is responsible for overall project coordination and supervision. He is a member of the American Society of Civil Engineers and maintains certifications in Asphalt and Earthwork Quality Control, Maintenance of Traffic Supervision, Pile Driving and various levels of safety training. He takes pride in well managed and coordinated project operations, which has allowed his jobs to consistently meet schedule and budget objectives.

For the FIU UniversityCity Prosperity Project, Rodrigo’s specific project job tasks will include: coordination of all logistics for project start-up; instilling and ensuring a safe project environment; assuring that all project documentation such as permits, daily reports, as-builts and shop drawings are kept and maintained; implementing checklists and guidelines to optimize quality and minimize rework; maintaining an updated project schedule, documenting impacts and changes bi-weekly; and attending regular meetings with the project owner to address critical items and maintain a positive and professional relationship. His experience relevant to this project includes:

- **I-95 Managed Express Lanes, Miami, FL**
  Responsible for overall project management for this design-build project, which included the reconstruction of the I-95/I-195 flyovers, widening of ten bridges on mainline I-95, and substructure modifications of the HOV Connector ramp bridge from SR 112 to I-95. Reconstruction of the I-95 flyovers consisted of strengthening of existing substructure through the use of a combination of micro piles (allowed for the first time by FDOT as bridge foundation piling), pipe pile, and pre-stressed concrete pile. Included horizontal and vertical post-tensioning of the piers and caps.

- **CRA Grand Promenade, Miami, FL**
  Responsible for project management on this project, which consisted of streetscape improvements to the CRA Grand Promenade. The promenade ran between 10th and 11th streets for about three blocks, from Northeast First Avenue to Northwest First Avenue. Specific scope included general street lighting, new sidewalks, asphalt paving, landscaping and irrigation.

- **Florida Tri-Rail Cypress Creek Station Expansion, Miami, FL**
  A fast-track Design-Build project for which we provided construction management and design services for the construction of two 400 LF platforms and aerial covered pedestrian bridge that connects them within a very narrow construction corridor. Additional scope included installation of escalators, elevators, and all associated site improvements. All of this work was performed without disruption to existing train service and the project received several architectural and lighting design awards following completion.

AWARDS
**I-95 Managed Lanes**
- FTBA - Best in Construction Design-Build Project of the Year, 2010
- AASHTO - People’s Choice Award: America’s Top Transportation Project, 2009
**Sunrise Mainline Toll Plaza Modifications**
- DBIA - Design-Build Project of the Year - Best Transportation Project Under $50 Million, 2009

“Mr. Isaza demonstrated a sound knowledge of the project ... As the CE&I Consultant for FDOT, I had the pleasure of working closely with Mr. Isaza for over 2 years on I-95 Express. Mr. Isaza is an intelligent and dedicated individual who was very easy to work with ... In summary, MCM and Mr. Isaza delivered a high profile, innovative project to FDOT District 6 on time. The project has been a success ... will serve as a model for other communities...”

David Tinder, PE, CE&I for I-95 Express
Eddie Martinez oversees and controls Corporate Safety Compliance for all MCM projects. He manages a staff of qualified Safety Managers and Representatives on each project, who report directly to him. Eddie and his team conduct weekly safety meetings at all job sites and routinely perform random safety inspections in order to enforce the highest standards of safety at all times. Among his many Certifications are those for OSHA-500 and Maintenance of Traffic-Advanced, as well as the United States Army Corps of Engineers Quality Control Manager designation.

For the FIU University City Prosperity Project, Eddie’s project tasks will include performing an documenting site visits and safety inspections; reviewing and investigating incidents and setting corrective actions to prevent re-occurrences; and providing office and onsite training to employees and management.

His experience relevant to this project includes:

• NW 36th Street Improvements - Bridge Replacement, Miami, FL
  Responsible for overall safety approach for two separate and distinct projects which were let together. The first project consists of milling and resurfacing, median modifications, sidewalks and ADA ramp construction along NW 36th Street from Lee Drive to Okeechobee Road. This project also includes signing and pavement marking, minor signalization improvements at the intersection of NW 36th Street with Okeechobee Road. The second project consists of the replacement of the bascule bridge over the Miami Canal C-6 with a fixed bridge, the construction of a new retaining wall due to the re-alignment of the Westbound SR-112 off-ramp to NW 36th Street, and the roadway reconstruction of NW 36th Street from Okeechobee Road to NW North River Drive. The DB team’s innovative design allows for the bridge to remain open during the bridge replacement. The designers have taken into consideration building the proposed bridges and approaches in three different phases. Phase I is the north side of the bridge, Phase 2 is the south side and Phase 3 is the middle portion of the bridge.

• I-95 Managed Express Lanes, Miami, FL
  Responsible for overall safety approach for this design-build project, which included the reconstruction of the I-95/I-195 flyovers, widening of ten bridges on mainline I-95, and substructure modifications of the HOV Connector ramp bridge from SR 112 to I-95. Reconstruction of the I-95 flyovers consisted of strengthening of existing substructure through the use of a combination of micro piles (allowed for the first time by FDOT as bridge foundation piling), pipe pile, and pre-stressed concrete pile. Piers and caps were enlarged to handle additional load capacity. The existing bridge superstructure of AASHTO beams and deck were removed and replaced with steel plate girders and a new concrete deck. The existing approach spans were jacked to meet the new profile and pedestrian buildups with bearing pads were installed. The bridge 6 widenings consisted of pre-stressed concrete and pipe pile foundations. New piers and caps were installed to receive AASHTO beams and 8” concrete deck. The modification to the HOV Connector required construction of new substructure and removal of the existing in order to accommodate the widening of I-95. The new foundations were a combination of concrete and pipe piling. The substructure was Class IV mass concrete, which included horizontal and vertical post tensioning of the piers and caps.
Carlos Hernandez has over 42 years of experience in the construction industry and holds a wide assortment of Quality Management Certifications, including ones from the United States Army Corp of Engineers, American Concrete Institute, and the Florida Department of Transportation. At the project level, Carlos coordinates with MCM’s project management teams to ensure that all quality control standards are implemented and being met. Carlos plays a strategic role in many of MCM’s projects guaranteeing that quality construction practices are being followed, ensuring total client satisfaction.

For the FIU University City Prosperity Project, Carlos’s project tasks will include: supervision and control of all construction activities with regards to Quality Control; coordination and scheduling of subcontractors and suppliers for corrective measures when necessary; monitoring performance to ensure that work is performed correctly and on time; and overseeing the projects quality control program. His experience relevant to this project includes:

• **SR 823 Red Road Phase II & III (W. 23Rd St To W. 54Th St), Hialeah, FL**
  Responsible for overall quality control program for the reconstruction and widening of SR 823 (NW 57th Ave) from West 23rd St. to West 54th St., which required the implementation of multiple traffic switches to allow for construction phasing. Scope included the construction of a new retaining wall; installation of twin culverts, curb & gutter and sidewalks along the east side of NW 57th Avenue; widening the Little River Creek Bridge; removing trees in conflict with the installation of new utilities and drainage structures; installation of several new traffic signals; installing a new water main; driving over 800 concrete precast piles; installation of new landscaping, street and hardscape lighting and milling & resurfacing of Red Road.

• **I-95 Managed Express Lanes, Miami, FL**
  Responsible for overall quality control program for this design-build project, which included the reconstruction of the I-95/I-195 flyovers, widening of ten bridges on mainline I-95, and substructure modifications of the HOV Connector ramp bridge from SR 112 to I-95. Reconstruction of the I-95 flyovers consisted of strengthening of existing substructure through the use of a combination of micro piles (allowed for the first time by FDOT as bridge foundation piling), pipe pile, and pre-stressed concrete pile. The existing bridge superstructure of AASHTO beams and deck were removed and replaced with steel plate girders and a new concrete deck. The existing approach spans were jacked to meet the new profile and pedestal buildups with bearing pads were installed. The modification to the HOV Connector required construction of new substructure and removal of the existing in order to accommodate the widening of I-95.

• **FL SR 953 (Lejeune) Flyover, Miami, FL**
  Responsible for the overall quality control program for the reconstruction of Le Jeune Road, between NW 36th Street and Okeechobee Road. The new construction involved replacing the existing Le Jeune Road Bridge at the Miami Canal with two new bridges, one southbound and the other northbound. Bridges supports, required 18” pre-stressed driven piles. Additionally, a new flyover bridge connecting Le Jeune Road northbound with Okeechobee Road westbound was built.

**How Carlos Will Make Your Project A Success**

Carlos is a consummate professional with 42 years of experience in construction, focusing on Quality Management for Transportation projects during the last 20 years. He holds an extensive list of quality related certifications, ensuring the project will be built following the strict FDOT standards.

Carlos’ expertise in supervising quality construction of complex concrete structures will be an asset to your project.

**AWARDS**

- **I-95 Managed Lanes**
  - FTBA - Best in Construction Design-Build Project of the Year, 2010
  - AASHTO - People’s Choice Award: America’s Top Transportation Project, 2009

- **Sunrise Mainline Toll Plaza Modifications**
  - DBIA - Design-Build Project of the Year - Best Transportation Project Under $50 Million, 2009

- **FTBA - Best in Construction Design-Build Project of the Year, 2010**
  - AASHTO - People’s Choice Award: America’s Top Transportation Project, 2009

- **DBIA - Design-Build Project of the Year - Best Transportation Project Under $50 Million, 2009**
How Ernie Will Make Your Project A Success

Ernie has over 39 years of experience supervising the construction of complex road and bridge projects. He has a unique background since he has built projects with many similar features to the FIU Pedestrian Bridge, such as the Pedestrian connector for Jackson Memorial Hospital Parking Garage and Miami Beach South Pointe Park, which required extensive landscaping and beautification improvements. These projects, combined with his expertise serving the FDOT, will guarantee a successful project to FIU.

Relevant Experience Summary

Ernesto ‘Ernie’ Hernandez has over 39 years of complex construction experience that enables him to oversee all field operations. He has the ability to provide on-site solutions to almost any design or construction issue in order to avoid construction delays and stay within budget. Ernie is a graduate of Miami-Dade College and has an extensive array of project experience in the Road & Bridge market. He is responsible for the overall scheduling, coordination and supervision of all field activities to ensure the successful and timely completion of the project. Ernie is responsible for productivity, efficient use of materials and equipment, and contractual performance. Ernie’s professionalism and demeanor produce safe and well organized job sites where quality and cost effectiveness are optimized.

For the FIU University City Prosperity Project, Ernie’s specific project job tasks include: coordination of all on-site functions, assisting project management in developing schedules, project standards and implementing working documents, forecasting and enforcing timely execution of work, maintaining updated as-builts and daily reports, monitoring compliance with MCM’s Safety Program, maintaining quality control in every aspect of the project. His experience relevant to this project includes:

• I-95 Managed Express Lanes, Miami, FL
  Responsible for supervising all bridge activities for this design-build project, which included the reconstruction of the I-95/I-195 flyovers, widening of ten bridges on mainline I-95, and substructure modifications of the HOV Connector ramp bridge from SR 112 to I-95.

• Jackson Memorial Hospital North Parking Garage, Miami, FL
  This multi-phase project included construction of steel bridge superstructure spanning over 180 feet in length to facilitate safe pedestrian access to the hospital from a new parking garage, as well as the construction of the parking garage.

• Miami Beach South Pointe Park, Miami Beach, FL
  Superintendent for the renovation of a 19-acre park, including extensive site work, underground utilities, construction of new walk along the coastline, parking lot renovation and addition, construction of a new Pavilion, Playground and other Accessory Buildings.

• Miami International Airport Central Collection Plaza, Miami, FL
  Responsible for field supervision for the construction of a new centralized parking collections plaza, 17,000 SF administration building, several acres of site improvements, upgraded utilities, and new roadways entering and exiting Miami International Airport. The design of the project has won numerous awards and includes the use of freestanding canvas awning structures and pastel colored pavers in the entry and exit lanes of the Plaza.

AWARDS

I-95 Managed Lanes

FTBA - Best in Construction Design-Build Project of the Year, 2010
AASHTO - People’s Choice Award: America’s Top Transportation Project, 2009
Kristian Navarro is a Project Engineer with 5 years of experience in the construction industry. He assists the entire project team, working directly with the Project Manager and Superintendent, with contract administration and coordinating work. Kristian is a team player with great organizational and communication skills, who is dedicated to the successful on-time completion of his projects.

For the FIU University City Prosperity Project, Kristian’s specific project job tasks will include: coordinating and reviewing all submittals for compliance with Contract Documents; scheduling, coordinating and monitoring material/equipment deliveries of long lead items for compliance with schedule and approved submittals; and assisting superintendent with implementing safety and quality control procedures for the project. His experience relevant to this project includes:

- **FL SR 836 Auxiliary Lane, Miami, FL**
  Project Engineer for this design-build project, which consists of the widening, milling, and resurfacing of the eastbound lanes along State Road 836/Dolphin Expressway between the NW 57th Avenue exit ramp and NW 42nd Avenue/LeJeune Road exit ramp, as well as the construction of an eastbound outside auxiliary lane for a total length of 1.70 miles. MCM’s scope also included the widening of the bridges over NW 57th Avenue, C-4 Canal, and NW 45th Avenue, which required constant communication with the FAA for use of cranes within the Miami International Airport flight path; the construction of retaining wall systems, and associated work including relocation/replacement of signs, lighting poles, underground utilities, drainage, upgrades to the existing inside traffic railings and Intelligent Transportation System (“ITS”) infrastructure.

- **Port Miami Tunnel, Miami, FL**
  The Port of Miami Tunnel project involves the design and widening of the MacArthur Causeway by one lane in each direction leading up to the tunnel entrance, the relocation of Parrot Jungle Trail, and the reconstruction of roadways on Dodge Island. The tunnel itself will have two side by side tubes carrying traffic underneath the cruise side of the Government Cut shipping lane. Specific project duties included assisting the Construction Manager with engineering, planning and project management tasks; review project plans and redesign plans to optimize cost, schedule and constructability; develop detailed Method Statements to plan for upcoming field activities; and planning and overseeing subcontracted work for Asphalt, Rigid Paving, Barrier Walls, Curb and Gutter, Guardrail, Fencing and Overhead Signage.

- **FKAA Duck Key Utility Improvement, Duck Key, FL**
  Responsible for management of a $6 Million Construction Contract to install Gravity Sewer, Force, Potable Water and Reclaimed Water Mains in Duck Key, FL. Specific project duties included optimizing cost efficiency and utilization of labor, materials and equipment resources; implementation of controls and operations for efficient production; and communicating with residents to avoid potential future conflicts.
How Linda Will Make Your Project A Success
Linda’s passion is bridge aesthetics and sustainability. She has led hundreds of meetings and Design Charettes, listening to the community, while stimulating creative thought for the project’s benefit.

She will lead all of the aesthetic design and work closely with the Owner, the design team, select shareholders and agencies to ensure that every detail is thoughtfully, carefully, and fully addressed.

Relevant Experience Summary
Linda Figg is an acclaimed international speaker on bridge aesthetics and sustainability, her experience includes the projects below:

Capital Cascades Connector Bridge, Tallahassee, FL
This bridge is an eco-friendly signature pedestrian bridge serving as a gateway to Florida’s capital city, just three blocks from the Capitol and connecting a chain of parks. Solar canopies, LED lighting, unique concrete structural shaping, and stone wall connections are some of the features of this bridge gaining international attention. Linda led the aesthetic design, community involvement, and sustainability.

Penobscot Narrows Bridge & Observatory, Prospect-Verona, ME
Tallest public bridge observatory in the world. Bridge theme of “Granite Simple and Elegant”, creating this one-of-a-kind cable-stayed signature bridge. Linda led the aesthetic design, community involvement, and the design details/features and sustainability.

New I-35W Bridge, Minneapolis, MN
The New I-35W Bridge was designed using a theme of Arches-Water-Reflection. Curved 70’ tall piers and a 504’ span of curved concrete are blended in harmony with the Mississippi River site along this National Park. The bridge design will accommodate a future pedestrian crossing suspension bridge underneath the main bridge. Linda led the aesthetics and sustainability. Winner of 27 awards and a feature of one-hour National Geographic special.

AWARDS & RECOGNITION
355 Awards for iconic bridges, sustainability and aesthetics
3 Presidential Awards from the National Endowment for the Arts – only 5 of these awards have been given for bridges by the U.S. President
Over 300 magazine covers
7 television shows in past 14 years – Modern Marvels, National Geographic, NOVA/PBS
Recognized in books on the World’s Greatest Bridges
Many 1st and records for the longest spans and widest bridges in America
Multiple bridge patents for technology
Denney Pate, P.E.  (FIGG)
Lead Technical Designer

Relevant Experience Summary

Denney Pate, P.E. has 35 years of extensive experience with major bridges including cable-stayed bridge design and construction. He is recognized as one of the leading bridge designers in the world. Of the many projects he has worked on, the following are most relevant to your project:

**Capital Cascades Connector Bridge, Tallahassee, FL**
This signature pedestrian bridge will provide a link between the Capital Cascades Park and Cascades Trail System. Denney was lead technical designer and Engineer of Record (EOR) responsible for the bridge design.

**Leonard P. Zakim Bunker Hill Bridge, Boston, MA**
Denney was the lead technical designer and EOR for FIGG on the design of the concrete cable-stayed back spans. With ten lanes, the bridge is the widest cable-stayed bridge in the world. The bridge is recognized as the crown jewel of Boston’s renovation and has received 15 design awards, including the ASCE revered OPAL award for outstanding civil engineering project.

**I-280 Veterans’ Glass City Skyway, Toledo, OH**
8,798’ long precast segmental concrete cable-stayed bridge over the Maumee River; the largest bridge project ever undertaken by ODOT. Denney served as the lead technical designer and EOR and also led the technical review of all Contractor submittals of the bridge during construction.

**Sunshine Skyway Bridge, Tampa, FL**
1,200’ main span precast concrete segmental cable-stayed bridge. Denney was a key bridge engineer working full-time from the conceptual design through completion of construction involving a period of nearly five years.

How Denney Will Make Your Project A Success
Denney is a leader in designing signature bridges. His creative engineering ideas will deliver a cost-effective, eco-friendly and innovative bridge solution for your project, which will be focused on constructibility and quality.

AWARDS & RECOGNITION

*Engineering News Record, Newsmaker 2007*
*Modern Marvels’ Top 25 (of 4,000) Inventions of the Year, Time Magazine, 2006*

ARTBA Top 100 Private Sector Leaders in Transportation Construction of the 20th Century (only living engineer named)
How Dwight Will Make Your Project A Success
Dwight brings experience and leadership in bridge design and project management totaling more than $1.4 billion in construction value to your project. He has provided design services on 4 signature cable-stayed bridges.

Dwight served in leadership roles for the New I-35W Bridge and South Norfolk Jordan Bridge design-build projects. His passion, incomparable work ethic, and leadership will provide design management that will result in the highest quality design possible.

Relevant Experience Summary
Dwight Dempsey, PE, SE, is director of FIGG’s Southeastern Regional Office. Dwight has significant experience in the design, project management and construction inspection of signature concrete bridge projects. The following are most relevant to your project:

Capital Cascades Connector Bridge, Tallahassee, FL
This signature pedestrian bridge will provide a link between the Capital Cascades Park and Cascades Trail System. Dwight was responsible for providing leadership and oversight on the final design and currently for design office support during construction.

NASA Indian River Bridge, Kennedy Space Center, FL
FIGG has been contracted by the National Aeronautics and Space Administration (NASA) to prepare Type Size & Location (TS&L) Study, Preliminary Engineering Report and Foundation Load Test Study for this 3,997’ bridge, which will be the gateway entrance to the Visitors Center at KSC. As Project Manager, Dwight is responsible for providing leadership and coordination of multi-discipline subconsultants.

New I-35W Bridge, Minneapolis, MN
Emergency replacement of ten lane interstate bridge on congested urban site. The 1,220’ structures feature a 504’ main span over the Mississippi River. Dwight coordinated design efforts from FMJV/MnDOT to FIGG design offices to ensure efficient design and review process.

Peace Bridge Project, linking Buffalo, NY and Fort Erie, Canada
Preliminary design of signature stay cabled bridge concepts through a bi-national integrated environmental process involving U.S. and Canadian agencies. As FIGG Project Manager, Dwight was responsible for development of signature bridge concepts and evaluation of environmental aspects with close coordination with the U.S. and Canadian agencies.
Manuel Feliciano, PE (FIGG)
Bridge Engineer

How Manuel Will Make Your Project A Success
Manuel brings over 21 years of bridge design experience to your project. He is one of the most sought-after engineers within FIGG and is well respected both within the firm and externally with clients. His related past experiences include involvement with 2 pedestrian bridges, 5 cable-stayed bridges, and numerous large signature bridges. The strength of his background in bridge design, combined with his commitment to quality, will be invaluable to the success of your project.

Relevant Experience Summary
Manuel Feliciano, PE is an Assistant Regional Bridge Engineer in FIGG’s Southeastern Regional Office, providing technical leadership to the design office. Manuel has over 21 years of experience in bridge design and project management. The following are most relevant to your project:

**Capital Cascades Connector Bridge, Tallahassee, FL**
This signature pedestrian bridge will provide a link between the Capital Cascades Park and Cascades Trail System. As assistant project manager and project engineer, Manuel was responsible for substructure analysis and design and checked superstructure design. Manuel is leading the design office support effort for construction.

**Penobscot Narrows Bridge & Observatory, Prospect-Verona, ME**
2,120’ cable-stayed concrete bridge with multi-level glass public observatory at the top of 420’ tall pylon. Manuel was responsible for the design of the approach spans box girder and design of erection equipment. He also performed an independent check on the pylon table design, developed the specification and designed the mechanical room that sits atop the pylon footing to accommodate the observatory.

**Lesner Bridge Replacement, Virginia Beach, VA**
This is a gateway for the City of Virginia Beach at one of the primary entrances to the City. The current bridge will be replaced with precast segmental twin bridges approximately 1,575’ in length that must be built in the same alignment, requiring that the design allow for staged construction and maintenance of traffic. Manuel was responsible for managing the bridge design effort and design of the substructure. Manuel is leading the design office support effort for construction.

AWARDS & RECOGNITION
FIGG Vanguard of Quality Award, 2004 - award to recognize leader in pursuing and achieving excellence

Penobscot Narrows Bridge & Observatory
Winner of 20 Awards including:
George S. Richardson Medal from the International Bridge Conference, 2007
Globe Award, 2007 - ARTBA
Top Bridge of the Year, 2004 - Roads & Bridges
Kenneth Heil, PE (FIGG)
Design Quality Manager

How Ken Will Make Your Project A Success

Ken recently served as the Quality Assurance Coordinator for the first two phases of the Honolulu High-Capacity Transit Corridor in Hawaii. These projects combined feature 10 miles of aerial structure carrying twin tracks.

Ken’s expertise at ensuring the Quality Management Plan is successfully carried out will provide a high quality design for your bridge.

Relevant Experience Summary

Kenneth ‘Ken’ Heil, PE has been providing technical leadership, design and quality management of major bridge projects for 17 years. The following are most relevant to your project:

I-91 Bridge Improvements, Brattleboro Bridge 9, Brattleboro, VT

Design-Build project includes the replacement of Bridge 9 over the West River. Bridge 9 will be a new 3-span, 1,036’ long arching concrete bridge built utilizing cast-in-place balanced cantilever construction. Standing 100 feet above the scenic valley, the 515’ main span forms an open gateway anchored by curving, cathedral piers. This bridge will feature viewing platforms for pedestrians, hikers and visitors at the base of each pier overlooking the West River and mountainous valley. Ken is the Engineer of Record and led the technical design.

Allegheny River Bridge, Pittsburgh, PA

New 2,350’ long twin six-span structures with a 532’ main span, built as cast-in-place concrete box girder in balanced cantilever, a first of its type bridge for Pennsylvania. Ken provided technical direction for the final design and provided support during construction.

New I-35W Bridge, Minneapolis, MN

Emergency replacement of 10-lane interstate bridge on congested urban site. The 1,220’ structures feature a 504’ main span over the Mississippi River. Completed 3 months ahead of schedule. Ken led the design of the east span unit.

Penobscot Narrows Bridge & Observatory, Prospect-Verona, ME

2,120’ cable-stayed concrete bridge with multi-level glass public observatory at the top of 420’ tall pylon. Ken was a key engineer on the pylon and superstructure design.
Randy Burkett, FIALD, IES, LC (Burkett)
Aesthetic Lighting Design

Relevant Experience Summary

Randy Burkett is an accomplished lighting designer, whose aesthetic design experience includes the projects below:

**Capital Cascades Connector Bridge, Tallahassee, FL**
Randy is the aesthetic lighting designer for the FIGG design team for this new signature pedestrian bridge. Solar fabric integrated into the canopies combines innovative tensile structures with cutting edge photovoltaic materials. The solar panels will provide enough energy to light the entire bridge. Aesthetic lighting with changing LED capabilities provides adjustable soft colors for holidays, seasons and local special events.

**New I-35W Bridge, Minneapolis, MN**
Randy was the aesthetic lighting designer for the Flatiron-FIGG DB Team to deliver this $234 emergency replacement of I-35W bridge over the Mississippi River on a fast-track design-build schedule. The lighting design included one of the country’s first major LED bridge deck and piers illumination system.

**Jefferson National Expansion Memorial - Gateway Arch, St. Louis, MO**
The gateway arch had stood unlighted for 30 years. The innovative solution formulated by Randy after 3.5 years of mockups and computer analysis was the use of a short-arc xenon computer controlled lighting system that is virtually invisible by day and absent of reflective glare to surrounding highways at night. Additionally, safeguards in the design minimized sky glow & light trespass into surrounding eco-sensitive bird nesting habitats.

**Martin Luther King Jr. Memorial, Washington, DC**
Carefully integrated lighting elements express the spirit of this memorial to Dr. Martin Luther King Jr., constructed on the National Mall in Washington, D.C. creating a powerful visitor experience. The stringent operating mandates of the National Park Service and the desire to achieve nighttime harmony with adjacent memorials were important technical considerations.

AWARDS & RECOGNITION

Randy is an active member of the International Association of Lighting Designers, former board member and president

Over 100 awards including:

* IALD Award of Excellence 2002, Jefferson National Expansion Memorial Gateway Arch
* IALD Award of Excellence 2010, Utah State Capitol Restoration
* IALD Award of Merit 2012, Martin Luther King Jr. Memorial Illumination Design Award of Merit 2010, Utah State Capitol
* International Illumination Design: Award of Distinction, Sea World, FL Award of Excellence, Gateway Arch
Carlos M. Gil-Mera, PE brings over 27 years of experience in the Design of Highway Facilities and Infrastructure Projects. He spent the first fifteen years of his career working for the Florida Department of Transportation (FDOT) District 6 internal design office on the production of roadway plans including minor design and major reconstruction projects. During the last two years of his career at FDOT, he worked as District 6 Roadway Design Project Manager where he was head of an Internal Design Team working on a large number of milling and resurfacing and reconstruction projects. As one of the principals of APCTE, Carlos has designed and managed numerous Transportation Projects for Governmental and Private Clients. He is currently the Design Project Manager on MCM’s NW 36th Street Bridge Replacement project, which is a design-build project for FDOT District 6.

**N.W. 36TH STREET BRIDGE REPLACEMENT, Miami, FL**
The first project consists of milling & resurfacing, median modifications, sidewalk, and ADA ramp construction along NW 36th Street. The limits of this project go from west of Lee Drive to just east of Coolidge Drive. The second project consists of major reconstruction including the replacement of the NW 36th Street bascule bridge over the Miami Canal, as well as milling and resurfacing, drainage, lighting, signalization, and minor intersection modifications of NW 36th Street at NW South River Drive and NW North River Drive. This project entails replacing a functionally obsolete Hanover Bascule Bridge crossing the Miami Canal C-6 with two fixed concrete bridges.

**MIAMI INTERMODAL CENTER (MIC), Miami, FL**
Carlos was in charge of supervising the development of the roadway, drainage and utility master plan for this $1.3 billion dollar project. In charge of supervising the development of the construction plans for all the Limited Access Roadway Plans for the MIC-MIA Interchange, Northbound and Southbound Connector Distributor. Responsible for coordination with all different agencies having projects in the area such as MDX, Miami Dade County Public Works, City of Miami, Miami International Airport, etc.

**NW 14TH STREET RECONSTRUCTION, Miami, FL**
Total reconstruction of NW 14th Street approximately 0.6 miles from NW 42nd Court to NW 34th Avenue. This project included the preparation of Roadway Plans, Drainage improvements, including a Pump Station, Signalization, Lighting and Signing and Pavement Markings and Intelligent Transportation System (I.T.S) Plans.

**US-41 / SW 8TH STREET (57TH AVENUE TO 42ND AVENUE), Miami, FL**
Total reconstruction of this section that extends approximately 1.5 miles of SW 8th Street “Calle 8”, Carlos was in charge of the design of a new drainage system, new lighting, and new signalization, and also the post design services. The project also included the coordination and design of a new 16” water main along the corridor.

**WATER AND SEWER IMPROVEMENTS FOR PERRINE-CUTLER RIDGE - BASIN A, Miami, FL**
An upgrade to the existing sanitary sewer system in the area to better meet the aggregate demand of several large scale future developments. The new sanitary sewer system includes: various 8” D.I. gravity mains along the northern portion of the neighborhood. This gravity line routes to a new pump station (PS# 1142, 793 GPM); which replaced the existing pump station (PS 751). Flows are then transmitted via a new 12” DIP force main, running primarily in the north-south direction, which connects to the 12” DIP force main constructed in Basin B of the project. The new Pump Station PS# 1142 was nominated as “Project of the Year” by the CAACE in 2013.
Dave McGowan, PE, LEEP AP (SGM)
MEP Design

Relevant Experience Summary

Dave McGowan has vast experience as Engineer of Record and is an LEED Accredited Professional who specializes in design, testing, and modification of HVAC systems. Dave was responsible for energy modeling on a project that received USGBC LEED Platinum Certification - the highest level of LEED certification.

FLORIDA INTERNATIONAL UNIVERSITY SATELLITE CHILLER PLANT, Miami, FL
A $6.7 million new satellite utility plant was designed by SGM in conjunction with Leo Daly. The purpose of the project was to provide the cooling equipment needed to meet the requirements of the existing campus facilities and for future growth of the campus. The design consisted of five 1500 ton water cooled chillers, five cooling towers, three variable frequency drive secondary chilled water pumps, three primary chilled water pumps, three variable speed condenser water pumps, refrigeration monitoring system, and a complete web based BACNET energy management system.

FLORIDA INTERNATIONAL UNIVERSITY PARKVIEW HOUSING, Miami, FL
This $36.5 million, 240,000 SF project created 148-four bedroom, two-bath apartments with a living room and kitchen, and 26 studio units for a total of 620 beds. Amenities included house lounges, study rooms, laundry facilities and outdoor gather spaces, such as a grass amphitheater. The six-story buildings line a “Main Street” which links the arena to the north and the stadium to the south.

UNIVERSITY OF CENTRAL FLORIDA BASEBALL STADIUM EXPANSION, Orlando, FL
This $15 million, 60,000 SF project is taking place in two separate phases and will add 2,400 seats to the present seating capacity of 800. The first phase calls for 1,000 bleacher seats with a restroom expansion. The second phase includes a new elevated press box, seven luxury suites and club level seating. The second phase will add 1,200 seats on the present concourse, along with the addition of new public restrooms, concession space, and new front gate.

DESIGN-BUILD FITNESS CENTER RENOVATION, MACDILL AIR FORCE BASE, Tampa, FL
This $1.1 million, 12,000 SF, fitness center renovation project created an award winning sports facility serving 2,300 patrons daily. SGM was the Project Manager and Mr. McGowan was the Mechanical Engineer of Record. The project included the addition of a second floor (mezzanine) which consists of new large cardio workspace rooms. Additionally, the project added two virtual instructor kiosks installed in the existing spin room, which was converted into an aerobics room.

How Dave Will Make Your Project A Success
Dave has worked closely with FIU’s staff and faculty since 2011. Dave has established relationships with FIU’s Facilities personnel throughout various MEP/FP renovations and upgrades, chiller plants, and dorm/student housing facilities on the campus. His experience working with FIU will be a tremendous benefit to your project.
Oracio Riccobono, PE has over 28 years of experience and has worked on numerous medium to large geotechnical engineering projects for the public sector, domestically and overseas. His expertise includes subsurface explorations; laboratory studies; geotechnical design, analysis and recommendations for design and construction of foundation elements for transportation projects, including highway, railroad, marine and airport facilities.

DISTRICTWIDE AND AREAWIDE GEOTECHNICAL & MATERIALS TESTING CONTRACTS, FDOT DISTRICTS 4 AND 6, Tri-County Area, FL
Project Manager/Senior Geotechnical Engineer responsible for executing over 150 work orders for projects located throughout FDOT Districts 4 and 6 during PD&E and Final Design phases. Includes field exploration, laboratory testing, geotechnical analyses for roadway and structures and preparation of geotechnical reports.

CONSTRUCTION ENGINEERING AND INSPECTION (CE&I) SERVICES FOR SR 874 AND KILLIAN PARKWAY IMPROVEMENTS, Miami-Dade County, FL
He served as Geotechnical Engineer during construction responsible for planning and executing the test pile program of driven concrete piles for bridges, providing driving criteria and foundation certification packages. He provided construction-phase testing (coring, SPT borings & GPR) and recommendations for geogrid reinforcement as a response to vibration-induced longitudinal cracking that appeared on Killian Parkway.

NW 97TH AVENUE WIDENING AND BRIDGE OVER SR 836 PROJECT, Miami, FL
Geotechnical Engineer responsible for planning and executing the field exploration and laboratory testing programs and interpreting the test results. He performed foundation analyses and geotechnical design for a new bridge, MSE walls and roadway construction. Prepared the geotechnical reports.

SR 836 TOLL PLAZA, FROM NW 87 TO 107TH AVENUES, Tampa, FL
Geotechnical Engineer responsible for planning and executing the field exploration and laboratory testing programs, interpreting the test results. He performed foundation analyses to evaluate the site preparation requirements and to provide foundation design recommendations for a new toll plaza facility including administration buildings and canopies.

KENDALL DRIVE NB ON-RAMP BRIDGE TO NB SR 874, Orlando, FL
Geotechnical Engineer responsible for planning and executing the field exploration and laboratory testing programs, interpreting the test results. He performed foundation analyses and design of 3 major bridges, embankments, MSE walls, sheet pile walls, noise walls and sign structures. Prepared geotechnical engineering reports.
Manuel G. Vera Jr. has 30 years of experience as a surveyor. He has managed a variety of survey contracts and projects for the Florida Department of Transportation, Miami – Dade County, Miami-Dade Expressway Authority, City of Miami, and numerous Engineering and Design firms. Mr. Vera has performed and managed all types of surveying services including: Design Surveys, Right-of-Way Control Surveys, Right-of-Way Mapping, Platting, Construction Layout, As-built Surveys, Drainage Surveys, etc. Manuel is a Senior Surveyor and Mapper as well as our Senior Project Manager.

FDOT DISTRICT 6: SR5/OVERSEAS HIGHWAY MM99.6 TO MM106.3, Monroe, FL
MGV established, verified and/or recovered the existing Horizontal Project Network Control (HPNC) and Vertical Control Project Network Control (VPNC) to update existing PNC sheets on the locations in the proposed project.

FDOT DISTRICT 6: SR9, FROM MP 11.345 (NW 141ST ST) TO MP 13.28 (ON RAMP FROM PARK & RIDE), Miami, FL
Provided a Full Design Survey including: the establishment of horizontal (NAD 83/90) and vertical control (NAVD 88) networks, survey baselines and Right of Ways were established as per Department Right of Way Maps; Topographic and Digital Terrain Model (DTM/3D) Survey was prepared from right of way to right of way, along the area proposed; drainage structures and above ground features where identified and shown on the survey.

FDOT DISTRICT 6: SR9A/I-95 RIGID PAVEMENT REHABILITATION STUDY, Miami, FL
MGV Established and/or recovered Horizontal Project Network Control and Vertical Project Network Control, for the purpose of establishing control on the Florida State Plane Coordinate System (datum of 1983/1990 adjustment). The existing survey baseline was established as part the FDOT right of way maps. MGV surveyed the 12 V-piers that are going to be replaced and obtained spot elevations at the bottom of seabed elevation at each pier.

FDOT DISTRICT 6: SAFETY IMPROVEMENTS TO SR-7/ NW 7TH AVE FROM NW 131ST ST TO NW 118TH ST, Miami, FL
MGV prepared full topographic and DTM Survey for SR-7 from NW 117th Street to NW 119th Street and the intersection of SR7 and NW 125th Street; with cross-sections were performed every 500-ft intervals. They located existing drainage structures identifying the type of structure, rim location, pipe invert elevations, pipe materials, direction, size and condition.
Michael Kroll, RLA, FASLA (MILLER LEGG)
Landscape Design

Relevant Experience Summary

During his extensive career, Mike Kroll, as Vice President of Landscape Architecture, Planning and Environmental Services, has been actively involved in numerous landscape designs, including several successful projects at Florida International University:

**FIU US Century Bank Arena Plaza**
Miller Legg provided landscape architecture services as a subconsultant to Gould Evans for the design of the FIU US Century Bank Arena Plaza. The firm supplied planting, irrigation, lighting design, and assistance with the design of hardscape and site furnishing improvements. The project was awarded a 2012 State of Florida AIA Merit Design Award.

**City of Lauderdale Lakes C-13 Pedestrian Bridge, Area 1, Lauderdale Lakes, FL**
For the design of this FDOT LAP-funded pedestrian bridge over the C-13 canal at NW 35 Avenue, Miller Legg provided a pedestrian link between the subdivisions of Oriole Estates and Northgate, giving residents on the south side of the canal access to the greenway trail being constructed on the north bank. Services included landscape architecture, surveying, certified arborist services, environmental permitting, SFWMD Canal ROW permitting, engineering and utility designation services, as well as geotechnical engineering services. This project ties into Broward County’s Greenways System.

**FIU SW 10th Street Realignment & Roundabout**
Miller Legg designed and permitted civil engineering plans for the spine road realignment at the northeast corner of the Modesto A. Maidique (Main) Campus of the Florida International University (FIU). Completion of this project assisted FIU in paving the way for future expansion of the northeast corridor of the main campus.

**SR 838/Sunrise Blvd. Bridge Over Middle River, Fort Lauderdale, FL**
Miller Legg’s Team provided in-house design services for the replacement of the Sunrise Blvd. Bridge over the Middle River. This project is a pilot project for the FDOT’s BOLD Initiative instituted by the Governor. On-going extensive coordination with the City of Fort Lauderdale involves design efforts that include special architectural wall/vertical features, landscape, hardscape and irrigation to ensure a Context Sensitive Solution for an entry point to the eastern Fort Lauderdale beach communities along the Middle River. This project is part of a multi-year in-house continuing service contract for FDOT District 4.

**FIU Student Academic Support Center**
As part of the current Florida International University (FIU) Facilities Program, construction of a Student Academic Support Center is planned for the Modesto Maidique campus. Miller Legg is providing landscape architecture services for the Student Activity Center, including design development, irrigation and construction administration.
Alicia Gonzalez is a public relations professional specializing in public involvement programs for infrastructure projects. She has served as a Principal of Media Relations Group, LLC, since its inception in 1999, successfully executing campaigns for the Florida Department of Transportation (Districts Four and Six), Miami-Dade Expressway Authority (MDX), and Florida’s Turnpike Enterprise at all phases including Project Development and Environment (PD&E), Design, Design-Build and Construction. Alicia’s experience includes serving as the Project Manager for the SR 826/SR 836 Interchange Reconstruction Project, the Ramp Signaling deployment in District Six, and she has also led several public information efforts for FDOT on the Design/Build team including 95 Express Phase 2.

**FDOT DISTRICT FOUR - STATE ROAD (SR) 826/SR 836 INTERCHANGE RECONSTRUCTION, Miami-Dade County, FL**
Alicia oversees all public information strategies in coordination with the MDX and FDOT District Six design-build project. She is responsible for managing the production of all collateral materials and for overseeing website development. Alicia continues to work with the entire project team to develop an overall effective, cohesive marketing/public relations campaign.

**FDOT DISTRICT FOUR - I-595 CORRIDOR, Broward County, FL**
Alicia oversaw all public information strategy in coordination with the District’s Public Information Office for this design-build project. She was responsible for Quality Assurance/Quality Control measures for all public outreach materials, including the interactive website as well as extensive coordination with the media. She developed the elected official strategy and conducted many elected official briefings with affected municipalities.

**FDOT DISTRICT FOUR AND SIX - 95 EXPRESS PHASE I & II/ SUNGUIDE TRANSPORTATION MANAGEMENT CENTER, Miami-Dade & Broward County, FL**
Alicia oversaw the efforts to successfully execute the public involvement campaign for the state of Florida’s first ramp signaling system. She was responsible for conducting interviews with Spanish media during the launch of both phases of the Ramp Signaling program and for participating in the 95 Express System’s official rollout, which became operational in January 2010. Phase II of this project commenced in 2011 and will involve creating all public information materials, such as project related newsletters. To date, Alicia has been involved in preparing the project Community Awareness Plan, attending project public meetings and presentations, coordinating elected official strategy and preparing initial outreach vision.
### Activity Name

#### Roadway / Walls / Maintenance of Traffic
- **A2460**: Prepare 90% Roadway Plans / 90% Wall Plans / 90% MOT Plans
  - Start: 20-Aug-16
  - Finish: 28-Aug-16
  - Duration: 15 days
- **A2470**: Owner Review 90% Roadway Plans / 90% Wall Plans / 90% MOT Plans
  - Start: 29-Apr-16
  - Finish: 15-May-16
  - Duration: 15 days
- **A2480**: Address Owner Comments and Prepare 100% Roadway / 100% Wall / 100% MOT Plans
  - Start: 20-May-16
  - Finish: 10-Jun-16
  - Duration: 15 days
- **A2490**: Owner Review 100% Roadway Plans / 100% Wall Plans / 100% MOT Plans
  - Start: 13-Jun-16
  - Finish: 1-Jul-16
  - Duration: 15 days
- **A2500**: Issue RFC Roadway Plans / RFC Wall Plans / RFC MOT Plans
  - Start: 05-Jul-16
  - Finish: 05-Jul-16
  - Duration: 0 days
- **A2750**: Prepare Shop Drawings
  - Start: 06-Jul-16
  - Finish: 26-Jul-16
  - Duration: 20 days
- **A2760**: Owner Review of Shop Drawings
  - Start: 27-Jul-16
  - Finish: 27-Jul-16
  - Duration: 0 days

#### Substructure
- **A2510**: Prepare 90% Substructure Plans
  - Start: 01-Jun-16
  - Finish: 01-Jun-16
  - Duration: 0 days
- **A2520**: Owner Review 90% Substructure Plans
  - Start: 06-Jun-16
  - Finish: 01-Jul-16
  - Duration: 15 days
- **A2530**: Address Owner Comments and Prepare 100% Substructure Plans
  - Start: 05-Jul-16
  - Finish: 25-Jul-16
  - Duration: 20 days
- **A2540**: Owner Review 100% Substructure Plans
  - Start: 26-Jul-16
  - Finish: 22-Aug-16
  - Duration: 20 days
- **A2550**: Issue RFC Substructure Plans
  - Start: 23-Aug-16
  - Finish: 23-Aug-16
  - Duration: 0 days
- **A2770**: Prepare Shop Drawings
  - Start: 24-Aug-16
  - Finish: 15-Sep-16
  - Duration: 12 days
- **A2780**: Owner Review of Shop Drawings
  - Start: 16-Sep-16
  - Finish: 13-Oct-16
  - Duration: 12 days

#### Signing / Pavement Markings / Signals / Landscape / Streetscape / Pavilion
- **A2660**: Prepare 90% S&PM / 90% Signal & ITS / 90% Landscape / 90% Streetscape
  - Start: 06-Jul-16
  - Finish: 23-Aug-16
  - Duration: 15 days
- **A2570**: Owner Review 90% S&PM / 90% Signal & ITS / 90% Landscape / 90% Streetscape
  - Start: 24-Aug-16
  - Finish: 15-Sep-16
  - Duration: 12 days
- **A2580**: Address Owner Comments and Prepare 100% Plans
  - Start: 16-Sep-16
  - Finish: 06-Oct-16
  - Duration: 20 days
- **A2590**: Owner Review 100% S&PM / 100% Signal & ITS / 100% Landscape / 100% Streetscape
  - Start: 07-Oct-16
  - Finish: 27-Oct-16
  - Duration: 20 days
- **A2600**: Issue RFC S&PM / RFC Signal & ITS / RFC Landscape / RFC Streetscape
  - Start: 28-Oct-16
  - Finish: 28-Oct-16
  - Duration: 0 days
- **A2790**: Prepare Shop Drawings
  - Start: 31-Oct-16
  - Finish: 21-Nov-16
  - Duration: 12 days
- **A2800**: Owner Review of Shop Drawings
  - Start: 22-Nov-16
  - Finish: 15-Dec-16
  - Duration: 12 days

#### Superstructure
- **A2610**: Prepare 90% Superstructure Plans
  - Start: 06-Jun-16
  - Finish: 22-Aug-16
  - Duration: 20 days
- **A2620**: Owner Review 90% Superstructure Plans
  - Start: 23-Aug-16
  - Finish: 21-Sep-16
  - Duration: 12 days
- **A2630**: Address Owner Comments and Prepare 100% Superstructure Plans
  - Start: 22-Sep-16
  - Finish: 12-Oct-16
  - Duration: 12 days
- **A2640**: Owner Review 100% Superstructure Plans
  - Start: 13-Oct-16
  - Finish: 06-Nov-16
  - Duration: 12 days
- **A2650**: Issue RFC Superstructure Plans
  - Start: 10-Nov-16
  - Finish: 10-Nov-16
  - Duration: 0 days
- **A2680**: Prepare Shop Drawings
  - Start: 14-Nov-16
  - Finish: 07-Dec-16
  - Duration: 12 days
- **A2810**: Owner Review of Shop Drawings
  - Start: 08-Dec-16
  - Finish: 12-Jan-17
  - Duration: 12 days

#### Lighting / MEP
- **A2660**: Prepare 90% Lighting Plans / 90% MEP Plans
  - Start: 24-Aug-16
  - Finish: 13-Oct-16
  - Duration: 12 days
- **A2670**: Owner Review 90% Lighting Plans / 90% MEP Plans
  - Start: 14-Oct-16
  - Finish: 03-Nov-16
  - Duration: 12 days
- **A2680**: Address Owner Comments and Prepare 100% Lighting Plans / 100% MEP Plans
  - Start: 04-Nov-16
  - Finish: 30-Nov-16
  - Duration: 12 days
- **A2690**: Owner Review 100% Lighting Plans / 100% MEP Plans
  - Start: 01-Dec-16
  - Finish: 21-Dec-16
  - Duration: 12 days
- **A2700**: Issue RFC Lighting Plans / RFC MEP Plans
  - Start: 22-Dec-16
  - Finish: 22-Dec-16
  - Duration: 0 days
- **A2830**: Prepare Shop Drawings
  - Start: 23-Dec-16
  - Finish: 23-Jan-17
  - Duration: 12 days
- **A2840**: Owner Review of Shop Drawings
  - Start: 24-Jan-17
  - Finish: 13-Feb-17
  - Duration: 12 days

#### Construction
- **A1150**: Mobilization
  - Start: 06-Oct-16
  - Finish: 17-Jul-18
  - Duration: 1 year
- **A1160**: Install Erosion Control
  - Start: 16-Dec-16
  - Finish: 06-Jan-17
  - Duration: 1 month
- **A1170**: FPL Relocation
  - Start: 09-Jan-17
  - Finish: 27-Jun-17
  - Duration: 4 months
- **A1170**: Clearing & Grubbing
  - Start: 09-Jan-17
  - Finish: 30-Jan-17
  - Duration: 1 month
### University City Infrastructure Improvements

**Data Date:** 30-Sep-15  **Current Date:** 29-Sep-15

<table>
<thead>
<tr>
<th>Activity ID</th>
<th>Activity Name</th>
<th>Original Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Total Float</th>
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<tbody>
<tr>
<td>A1190</td>
<td>Prefabricate Main Span Superstructure</td>
<td>120</td>
<td>31-Jan-17</td>
<td>19-Jul-17</td>
<td>0</td>
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<tr>
<td>A1190</td>
<td>Drive Piles @ Bulkhead Wall</td>
<td>10</td>
<td>06-Oct-16</td>
<td>19-Oct-16</td>
<td>127</td>
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<tr>
<td>A1200</td>
<td>Install Precast Wall Panels @ Bulkhead Wall</td>
<td>10</td>
<td>20-Oct-16</td>
<td>02-Nov-16</td>
<td>127</td>
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<tr>
<td>A1210</td>
<td>Canal Excavation @ Bulkhead Wall</td>
<td>5</td>
<td>03-Nov-16</td>
<td>06-Nov-16</td>
<td>127</td>
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<tr>
<td>A1220</td>
<td>Install Cap @ Bulkhead Wall</td>
<td>15</td>
<td>10-Nov-16</td>
<td>06-Dec-16</td>
<td>127</td>
</tr>
<tr>
<td>A1230</td>
<td>Form, Rebar &amp; Pour Hand Rail @ Bulkhead Wall</td>
<td>5</td>
<td>07-Dec-16</td>
<td>13-Dec-16</td>
<td>127</td>
</tr>
<tr>
<td>A1240</td>
<td>Excavate, Form, Rebar &amp; Pour Foundation @ South Landing</td>
<td>5</td>
<td>31-Jan-17</td>
<td>06-Feb-17</td>
<td>30</td>
</tr>
<tr>
<td>A1250</td>
<td>Form, Rebar &amp; Pour Pier 1 and Elevator Shaft @ South Landing</td>
<td>30</td>
<td>07-Feb-17</td>
<td>20-Mar-17</td>
<td>30</td>
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<tr>
<td>A1260</td>
<td>Set up MOT &amp; Shift Traffic on WB SW 8th St to Accommodate Foundation @ Center Pylon</td>
<td>2</td>
<td>31-Jan-17</td>
<td>01-Feb-17</td>
<td>3</td>
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<tr>
<td>A1265</td>
<td>Install Temp Critical She夫le @ Center Pylon</td>
<td>5</td>
<td>02-Feb-17</td>
<td>08-Feb-17</td>
<td>3</td>
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<tr>
<td>A1270</td>
<td>Drill Shafts @ Center Pylon</td>
<td>10</td>
<td>09-Feb-17</td>
<td>22-Feb-17</td>
<td>3</td>
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<tr>
<td>A1280</td>
<td>Drill Shaft Cure Time @ Center Pylon</td>
<td>20</td>
<td>23-Feb-17</td>
<td>22-Mar-17</td>
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<tr>
<td>A1290</td>
<td>Form, Rebar and Pour Footing @ Center Pylon</td>
<td>5</td>
<td>23-Mar-17</td>
<td>29-Mar-17</td>
<td>3</td>
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<tr>
<td>A1300</td>
<td>Form, Rebar &amp; Pour V-Pier @ Center Pylon</td>
<td>20</td>
<td>30-Mar-17</td>
<td>26-Apr-17</td>
<td>3</td>
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<tr>
<td>A1310</td>
<td>Excavate, Form, Rebar &amp; Pour Foundation @ North Landing</td>
<td>5</td>
<td>27-Apr-17</td>
<td>03-May-17</td>
<td>3</td>
</tr>
<tr>
<td>A1320</td>
<td>Form, Rebar &amp; Pour Pier 3 and Elevator Shaft @ North Landing</td>
<td>30</td>
<td>04-May-17</td>
<td>15-Jun-17</td>
<td>3</td>
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<tr>
<td>A1330</td>
<td>Move Main Span from Casting Position to Final Position</td>
<td>5</td>
<td>20-Jul-17</td>
<td>26-Jul-17</td>
<td>55</td>
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<tr>
<td>A1340</td>
<td>Falsework Construction @ Span 2</td>
<td>20</td>
<td>21-Jun-17</td>
<td>19-Jul-17</td>
<td>0</td>
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<tr>
<td>A1350</td>
<td>Cast in Place Span 2</td>
<td>60</td>
<td>30-Jul-17</td>
<td>13-Oct-17</td>
<td>0</td>
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<tr>
<td>A1360</td>
<td>Cast in Place Pylon Section at Deck Level</td>
<td>15</td>
<td>16-Oct-17</td>
<td>03-Nov-17</td>
<td>25</td>
</tr>
<tr>
<td>A1370</td>
<td>Cast in Place Top Section of Pylon</td>
<td>15</td>
<td>06-Nov-17</td>
<td>30-Nov-17</td>
<td>25</td>
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<tr>
<td>A1375</td>
<td>Assemble Stays Onsite (on Ground Level)</td>
<td>20</td>
<td>06-Nov-17</td>
<td>07-Dec-17</td>
<td>25</td>
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<tr>
<td>A1380</td>
<td>Set up MOT (for Stays Over Traffic &amp; Install Stays</td>
<td>10</td>
<td>08-Dec-17</td>
<td>21-Dec-17</td>
<td>25</td>
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<tr>
<td>A1390</td>
<td>Install Miscellaneous Parts</td>
<td>5</td>
<td>22-Dec-17</td>
<td>06-Jan-18</td>
<td>30</td>
</tr>
<tr>
<td>A1400</td>
<td>Install Expansion Joints @ South &amp; North Landings</td>
<td>5</td>
<td>16-Oct-17</td>
<td>20-Oct-17</td>
<td>0</td>
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<tr>
<td>A1410</td>
<td>Install Bridge Lighting</td>
<td>15</td>
<td>23-Oct-17</td>
<td>13-Nov-17</td>
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<tr>
<td>A1420</td>
<td>Install Bridge Drainage</td>
<td>15</td>
<td>14-Nov-17</td>
<td>07-Dec-17</td>
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<tr>
<td>A1430</td>
<td>Install Elevators</td>
<td>20</td>
<td>08-Dec-17</td>
<td>16-Jan-18</td>
<td>0</td>
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<tr>
<td>A1440</td>
<td>Form, Rebar &amp; Pour Stairways</td>
<td>20</td>
<td>17-Jan-18</td>
<td>13-Feb-18</td>
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<tr>
<td>A1480</td>
<td>Install Miscellaneous Metals</td>
<td>10</td>
<td>14-Feb-18</td>
<td>27-Feb-18</td>
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<tr>
<td>A1490</td>
<td>Install Power and Communication Conduits &amp; Equipment</td>
<td>20</td>
<td>28-Feb-18</td>
<td>27-Mar-18</td>
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<tr>
<td>A1500</td>
<td>Install Landscape and Hardscape @ South &amp; North Plazas</td>
<td>40</td>
<td>28-Mar-18</td>
<td>22-May-18</td>
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<tr>
<td>A1505</td>
<td>Set up MOT and Switch Traffic to Ph1 Configuration @ SW 109th Avenue</td>
<td>3</td>
<td>28-Mar-18</td>
<td>30-Mar-18</td>
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<tr>
<td>A1510</td>
<td>Construct Improvements to SW 109th Avenue @ Ph1 (South Bound)</td>
<td>15</td>
<td>02-Apr-18</td>
<td>20-Apr-18</td>
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<tr>
<td>A1515</td>
<td>Set up MOT and Switch Traffic to Ph2 Configuration @ SW 109th Avenue</td>
<td>3</td>
<td>23-May-18</td>
<td>25-May-18</td>
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<tr>
<td>A1520</td>
<td>Construct Improvements to SW 109th Avenue @ Ph2 (North Bound)</td>
<td>15</td>
<td>29-May-18</td>
<td>18-Jun-18</td>
<td>0</td>
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<tr>
<td>A1530</td>
<td>Construction of AIMS Area</td>
<td>20</td>
<td>28-Mar-18</td>
<td>24-Apr-18</td>
<td>38</td>
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<tr>
<td>A2300</td>
<td>Develop and Address Punch List Items</td>
<td>20</td>
<td>19-Jun-18</td>
<td>17-Jul-18</td>
<td>0</td>
</tr>
</tbody>
</table>

**Summary**

- **Original Duration**
- **Start**
- **Finish**
- **Total Float**
- **Remaining Work**
- **Baseline Milestone**

**Notes:**
- **Schedule:**
  - Critical Remaining Work
  - Remaining Level of Effort

**Data:**
- **Current Date:** 29-Sep-15
- **Data Date:** 30-Sep-15
4. INNOVATIVE ASPECTS

Our Commitment to Innovation includes the selection of cutting-edge design and construction methods and state-of-the-art design features. Durability and ease of maintenance are a major consideration when implementing innovative features to ensure the highest quality throughout the project service life. As a result, we have re-invented the definition of an I-beam, transforming it into a new contemporary shape that presents a functional sculpture that pedestrians can interact with like never before.

Our Commitment to Sustainable Design and Construction includes a focus on reducing operating costs, adding value by the most cost-effective and sustainable means, and protecting the health and environment of the University City stakeholders. As a result, we have provided many innovative, sustainable, and cost-effective options for exceeding the project requirements. Some key innovative aspects are included here in this two page summary.

INNOVATIVE BRIDGE SHAPE

A FUNCTIONAL BRIDGE SCULPTURE (RE-INVENTING THE I-BEAM)

The superstructure shape for the new signature pedestrian bridge is innovative and one-of-a-kind. We have re-invented the traditional I-beam in a magnificent scale with a special transformation of an open truss down the middle, improving both its functionality and form for a 30’ wide path.

Orientation of the shape results in a shallow structure depth that is much lower to the ground elevation, reducing the number of stairs and travel time of elevators at the plaza.

The Innovative Functionality of this shape includes the ability to utilize the top “flange” of the beam as a canopy, which will provide protection from the elements (sun, inclement weather) in addition to being the anchoring location for the stays.

The Innovative Form of this shape is seen in the reduction of superstructure material beneath the walking surface. The superstructure walking surface is a closed shape with continuous flat planes for elegance and slenderness. This improves the architectural appeal of the structure, creating a more sleek and contemporary structure, resulting in a truly iconic bridge. The orientation of the shape results in a shallow structure depth that is much lower to the ground elevation, reducing the number of stairs and travel time of elevators at the plaza. This decreases materials and increases accessibility to encourage greater use.

INNOVATIVE CONSTRUCTION

ACCELERATED BRIDGE CONSTRUCTION (ABC)

The main span portion of the bridge will be erected using innovative Accelerated Bridge Construction (ABC) techniques which is an international program FIU is known for.
This method of erection offers several advantages over convention construction techniques over traffic.

- Decreased construction schedule
- Minimized impact on vehicular and pedestrian traffic during construction.
- Enhanced safety to vehicular traffic
- Increased construction safety because most activities occur in the staging yard, and not over traffic.

The Accelerated Bridge Construction Center at FIU is an invaluable resource and advocate in the United States for ABC, providing design and construction support, identifying research and resource needs, and developing new technologies. Our team looks forward to working collaboratively with the ABC Center throughout the project and showcasing the latest ABC technologies in the construction of this project on FIU campus.

A Self-Propelled Modular Transporter (SPMT) will be used for the erection of the main span truss system. This technique offers the shortest-possible on-site construction time. In addition, this will allow for the entire main span superstructure to be constructed as a single unit prior to erection.

A full description of the ABC techniques that will be used for this project, along with details on the proposed construction technology, is provided in Section 6: Design Support Documents and in the Structural Plans.

INNOVATIVE TECHNOLOGY

SOLAR FANS

These innovative, cost effective, low maintenance, solar-powered fans can provide several great functional benefits for the project as an option on the bridge deck canopy to maximize air flow and circulation on the bridge.

- **Sustainable Energy** – These fans operate directly from solar power during daylight, without any supplemental energy source. A solar battery tied to the fan is used to store energy and operate the fans under cloudy weather or nighttime.
- **Innovative and Efficient** – Specially designed blades allow the fan to produce 40% more air flow without an increase in power consumption.
- **Low Maintenance** – Stainless steel ensures the fan will be resilient despite weather and age. These fans stand alone and do not require supplemental electricity.

INNOVATIVE SUSTAINABILITY

LEED NEIGHBORHOOD DEVELOPMENT

We will ensure the project achieves at least a Silver rating for LEED Neighborhood Development. The project will be uniquely designed to provide Smart Location and Linkage, complement the Neighborhood Pattern and Design (fulfill the Complete Streets vision), establish Green Infrastructure, and incorporate innovation and sustainability into the Design Process.

INVEST

Through the establishment, implementation, and management of context-sensitive sustainability initiatives throughout the planning, design, and construction phases, the project will achieve a Platinum rating for INVEST 1.2 Project Development. This will be achieved with the leadership of Sustainability Manager, Linda Figg.

A full description of sustainability initiatives for LEED and INVEST 1.2 is provided in Section 6: Design Support Documents.
The MCM+FIGG Design-Build Team will implement a comprehensive, ISO 9001 level Quality Management Systems-compliant Quality Management Plan (QMP) as added value that will be customized for this project and supported by the Design Quality Management Plan (DQMP) and the Construction Quality Control Plan (CQCP). These plans will be coordinated so that common quality management system requirements, such as document control, process auditing, and corrective and preventive action will be addressed with a single successful approach. This will ensure the work meets the requirements of the contract documents with documented evidence that will be maintained for the full duration of the project.

Our QMP will provide Quality Control (QC) procedures utilized to verify, independently check, and review all design drawings, specifications, and other documentation prepared as part of the contract. As part of the QMP, a detailed Quality Assurance (QA) program will ensure that all QC procedures are followed. All members of the MCM+FIGG Design-Build Team, including design team members and subcontractors at all tiers will strictly follow the QMP.

A major component of this QMP is our coordination plan. This coordination plan consists of both internal- and external facets. Our internal coordination plan focuses on efficient and seamless communication for implementing design approaches and decisions. Our basic protocol is shown below.

<table>
<thead>
<tr>
<th>Quality Management Plan Communication</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td>Action</td>
<td></td>
</tr>
<tr>
<td>Weekly Meeting Design Build Team</td>
<td>Key team members of all disciplines prioritize action items and updated 2 week and monthly look ahead schedules.</td>
<td></td>
</tr>
<tr>
<td>Weekly Meeting FIU, Project PIO, CEI Teams, Design-Build Team</td>
<td>Fully coordinated decisions, reviews, and schedule to keep everyone informed.</td>
<td></td>
</tr>
<tr>
<td>Quality Documentation</td>
<td>Each step of the QA/QC process as given in the flow chart and described in the DQMP and CQCP are documented for success.</td>
<td></td>
</tr>
</tbody>
</table>

Our quality program will be administered by a dedicated team of quality management professionals with a proven history of successfully implementing comprehensive quality programs.

Carlos Hernandez brings experience in this same exact role on the FL SR 953 (Le Jeune) Flyover project. He managed all aspects of the QMP with strict ISO 9001 requirements. He was also responsible for the preparation of all closeout files.

**Design Quality Management Plan (DQMP)**

The Design Quality Management Plan (DQMP) will detail key personnel and responsibilities and provide guidelines for the Design Quality Process including Technical, Oversight and Constructability Reviews. Key elements include, but are not limited to:

- **QMP Training** for the design team on the DQMP and detailed Quality Control processes
- **Quality Control** through design checking process to validate design document review and processing including plans, specifications, calculations
- **Constructability Review** by our constructability experts, who will work closely with design to develop the safest and most constructible designs for each operation.
- **Interdisciplinary Review** by all design disciplines prior to submittal to resolve conflicts and ensure integration.
- **Independent Review** performed prior to 90% and Final component submittal to FIU by a different design office that will compare calculations to original design to verify adequacy.
- **Quality Control Audit** of the QC procedures and forms required to track the processes described above, including a sign off on all design drawings and submittals prior to submittal to FIU. Provisions for QA audits by FIU will be integrated with the DQMP.
- **Over-the-Shoulder Reviews** providing opportunities for FIU to review the design prior to submittals.
- A major component of the DQMP will be the coordination of reviews and resolution of comments to ensure that all submittals will be implemented flawlessly in the field. This guarantee will be reinforced by the use of a Project FTP Site to centralize all design documentation, and to make it remotely available to FIU at all times.
CONSTRUCTION QUALITY CONTROL PLAN (CQCP)

The Construction Quality Control Plan (CQCP) will establish the guidelines for quality control, key personnel, and processes to be implemented. A project CQCP will be submitted within 15 days of NTP.

The CQCP will establish the guidelines for implementing the formal review process conducted by independent, highly qualified professionals to implement an effective document control process to ensure the project is constructed in compliance with all applicable FIU, Miami-Dade County, FDOT manuals and guidelines, FIU QA/QC requirements and state and federal laws and regulations.

Compliance with our CQCP will be documented through: daily reports, regulatory agency inspections, manufacturers’ reports, and the Design-Build Team’s field observations. Copies of all inspection reports are maintained electronically in MCM’s servers. As a task is completed, MCM conducts an internal inspection to ensure compliance with the Contract Documents and the approved submittals. As-built data is gathered and compiled in our field office, and is verified for completion weekly by our project manager.

This process is repeated on a task-by-task basis until a phase or the area nears completion, at which point MCM implements a pre-punchlist survey. A standardized form is prepared for each space nearing completion and as the various trades complete their scopes of work the superintendent will walk the area and ensure it is for inspection. Documentation is provided to subcontractors and remain electronically archived, while the posted copy is updated daily to reflect the dates on which items are fully completed.

The Construction Quality Control Manager will be the primary contact for FIU and the CEI for all quality related items. They will closely follow the project approved CQCP and monitor all processes.

The MCM+FIGG Design-Build Team understands the quality control process and is committed to excellence and the highest quality during the design and construction of the project.
Section 6: Design Support Documents

6.1 Design and Construction Criteria
6.2 Accelerated Bridge Construction
6.3 Natural Frequency Design
6.4 Achieving INVEST Platinum Rating for Project Development
6.5 Achieving LEED Silver Rating for Neighborhood Development
6.1 DESIGN AND CONSTRUCTION CRITERIA

A. GENERAL

The MCM+FIGG Design-Build Team commits to provide the following: detailed plan checking as outlined in the Plans Preparation Manual (PPM); as described in the RFP; and the Design and Construction criteria package. This includes a checklist of the items listed in the PPM for each completed phase submittal. We will work with the owner to determine the best submittal approach and organization. As an example, bridge submittals may be broken into architecture, foundation, substructure, superstructure, approach spans and main channel spans. Roadway submittals may be broken down into grading, drainage, walls, ITS, signing & pavement marking, architecture, landscaping, hardscape, signalization, lighting and final geometry components. The component design is in conformity with the Design and Construction Criteria requirements, approved preliminary layout and concept as provided in the Technical Proposal.

Signed and sealed design plans and calculations supporting the design of a component will be submitted to the owner for review before construction activities can begin for that specific component. Component submittals will be complete including all the supporting information necessary for review. We will construct the work in a logical manner and will show impacts on subsequent work on this Project. We understand that any modification to the component construction due to subsequent design changes as the result of design development is solely the MCM+FIGG Design-Build Team’s risk. Upon review by the owner, the plans will be stamped “Released for Construction” and initialed and dated by the reviewer. We understand that any construction initiated prior to receiving signed and sealed plans stamped “Released for Construction” shall be at the sole risk of the MCM+FIGG Design-Build Team.

Bridge plans will go through a peer review analysis by an independent engineering office not involved with the production of the design or plans, prior to submittal to the owner. The peer review will consist of an independent design check, a check of the plans, and a verification that the design is in accordance with AASHTO, FDOT, and other criteria as herein referenced. Our Team understands that the cost of the peer review shall be incurred by the firm. The independent peer review engineer’s comments and comment responses will be included in the 90% plans submittal. At the final plans submittal, the independent peer review engineer will sign and seal a cover letter certifying the final design and stating that all comments have been addressed and resolved.

All design and construction work completed under the Contract will be in accordance with the United States Standard Measures.

B. GEOTECHNICAL SERVICES

The MCM+FIGG Design-Build Team commits to perform a subsurface investigation, analysis and design for all aspects of the project in accordance with FDOT standards, policies and procedures. Existing subsurface information may be used. Supplemental subsurface investigation and testing will be used to ensure all aspects of the project are covered.

DRILLED SHAFT FOUNDATIONS FOR BRIDGES AND MISCELLANEOUS STRUCTURES

The MCM+FIGG Design-Build Team will utilize resistance factors that are based on FDOT Standards and not increased due to statnamic or static load testing.

The MCM+FIGG Design-Build Team commits to the following items:

1. Evaluate geotechnical conditions to determine the drilled shaft diameter and length and construction methods to be used.
2. Perform the subsurface investigation and drilling pilot holes prior to establishing the drilled shaft tip elevations and socket requirements. For redundant drilled shaft bridge foundations, at least one test boring will be performed in accordance with the Soils and Foundations Handbook at the pylon.
3. Perform pilot borings for test holes (also known as test shafts or method shafts) and provide the results to the owner at least one (1) working day before beginning construction of these shafts.
4. Prepare and submit a Drilled Shaft Installation Plan for the owner’s acceptance.
5. Construct the method shaft (test hole) successfully and conduct integrity tests on these shafts.
6. Determine the production shaft lengths.
7. Document and provide a report that includes analysis and recommendations to the owner.
8. Construct all drilled shafts to the required tip elevation and socket requirement in accordance with the specifications.
9. Inspect and document the construction of all drilled shafts in accordance with the specifications.
10. For redundant drilled shaft bridge foundations and drilled shafts for miscellaneous structures, perform CSL or Thermal Integrity testing on any shaft suspected of containing defects.
11. Repair all detected defects and conduct post repair integrity testing using 3D tomographic imaging and gamma-gamma density logging.
12. Submit Foundation Certification Packages in accordance with the specifications.

13. Provide safe access, and cooperate with the owner in verification of the drilled shafts, both during construction and after submittal of the certification package.

C. UTILITY COORDINATION

The MCM+FIGG Design-Build Team is responsible for all utility coordination and relocations and will utilize a single dedicated person responsible for managing all utility coordination. This person will be contractually referred to as the Utility Coordination Manager and will be identified in our Team’s proposal. We will notify the OWNER in writing of any change in the identity of the Utility Coordination Manager. The Utility Coordination Manager is required to have the following knowledge, skills, and abilities:

1. A minimum of 4 years of experience performing utility coordination in accordance with Department standards, policies, and procedures.

2. Knowledge of the Department plans production process and utility coordination practices.

3. Knowledge of Department agreements, standards, policies, and procedures.

The person chosen for this position is Lisette M. Guon from A&P Consulting Transportation Engineers. Mrs. Guon has more than 13 years of experience working as a Utility Coordinator and Transportation Engineer. As a Utility Coordinator, Mrs. Guon has worked on numerous projects including Utility Coordination for the following projects:

✔ Design Build Project of Section 5 SR-826/SR836 Interchange/Miami Dade County, Client: FDOT D6

✔ Design Build Project of Central Boulevard/Miami Dade County for MDX

✔ Military Trail/Palm Beach County, Client: FDOT D4

✔ Utility Coordination Districtwide, Client: FDOT D6

✔ NW 87th Avenue Interchange Improvements at SR-836, Client: MDX

The Scope of Services for this project requires an early identification of conflicts with existing utilities, and that is why A&P Consulting Transportation Engineers have already established coordination with the Utility Agency Owners (UAO’s) having facilities within the project limits. There are existing FPL-Transmission overhead lines that are in potential conflict with the proposed pedestrian bridge. FPL-Transmission anticipated the relocation of four (4) concrete pole structures. A&P understands that immediate coordination with this UAO is critical due to the complex nature of this type of relocation. Also, A&P will coordinate with FPL-Transmission for the de-energization of the overhead lines for the crane and signalization work at this intersection.

Coordination with FPL-Distribution will be necessary for the relocation of existing overhead electric line running parallel to SW 7th Terrace, due to the extension of the proposed bridge to the north of existing canal. Also, A&P will require coordination with FPL-Distribution for the point of connection for Service points to serve the traffic signal, the proposed lighting and control room for the bridge elevators. FPL-Distribution’s representative indicated during a conversation with A&P that temporarily during construction the Transformer located on the parking lot close to this area could serve any need for power. A&P is aware of FPL-Distribution concerns about not having any heavy bridge structure or piling on top of the existing buried electric in this area. A&P will coordinate with their design team that this BE line is not impacted during construction and will maintain a close coordination with FPL-Distribution’s representative Bob Flowers.

A&P will ensure that any potential utility conflicts be minimized by starting early and close coordination with all UAOs,
verifying existing utility locations with proposed improvements, scheduling utility meetings early on in the coordination process, resolving all utility conflicts in a short period of time, producing conflict matrices and performing constructability reviews.

Providing weekly project updates to the Project Manager, FIU team, the FDOT District Utility Office, and all affected utility companies, will keep all affected parties apprised of the coordination status.

A&P is fully aware of the eight UAOs with existing facilities within the project limits, and have already established communication with most of them to mitigate utility conflicts as possible. A&P will be responsible for completing utility coordination and relocation with all identified as well as potentially unidentified UAOs shown in the Concept Plans and RFP documents.

A&P understands that the design must ensure that access/maintenance activities can continue by each utility Agency Owner. Moreover, A&P will directly oversee any necessary utility relocation of existing utilities and will ensure that the proposed utilities provide service that is equivalent to what is currently offered. It is imperative to A&P that utility service is not interrupted to any customers during the construction of this project.

D. CIVIL ENGINEERING PLANS

GENERAL

The MCM+FIGG Design-Build Team will prepare the Civil Plans Package. This work effort includes the roadway design and drainage analysis needed to prepare a complete set of Roadway Plans, Pedestrian Facility Plans, Traffic Control Plans, Environmental Permits and other necessary documents.

DESIGN ANALYSIS

The MCM+FIGG Design-Build Team will develop and submit a signed and sealed Typical Section Package, Pavement Design Package and Drainage Analysis Report for review and concurrence by the owner.

We understand that any deviation from the owner’s design criteria will require a design variation and any deviation from AASHTO will require a design exception. All such design variations and exceptions must be approved.

These packages will include the following:

1. **Roadway Design**: PPM Volume 2, Chapter 2 will be used for elements and completion level required.

2. **Typical Section Package**:
   - Transmittal letter
   - Location map
   - Roadway Typical Sections: pavement description (includes milling depth); minimum lane, shoulder, median widths; slopes requirements; barriers; right of way.

   - Data sheet
   - Design speed

3. **Drainage Analysis**

The MCM+FIGG Design-Build Team will be responsible for designing the modifications to the existing drainage and storm-water management systems required to accommodate the site improvements. All design work will comply with the FDOT’s Drainage Manual; Florida Administrative Code, chapter 14-86; Federal Aid Policy Guide 23 CFR 650A; FIU Design Standards; and the requirements of the regulatory agencies. This work will include the engineering analysis necessary to design any or all of the following: cross drains, French drains, roadway ditches, outfall ditches, storm sewers, retention/detention facilities, interchange drainage and water management, other drainage systems and elements of systems as required for a complete analysis. Full coordination with all permitting agencies will be required from the outset. Full documentation of all meetings and decisions will be submitted to the owner.

The existing drainage along NW 109th Avenue consists of a positive drainage system with storm gutters and an exfiltration trench system that discharge into the C-4 canal via an overflow weir. The proposed drainage will be adjusted to accommodate the widening of the road. The ERP Permit 13-02009-P, application No. 021024-5 will need to be modified (minor modification) as well as Right-of-Way Permit No. 13449.

The exact number of drainage basins, outfalls and water management facilities (retention/detention areas, weirs, etc.) will be the responsibility of the MCM+FIGG Design-Build Team. We will perform design and generate construction plans documenting the permitted systems function to criteria.

We will verify that all existing cross drains and storm sewers that are to remain have adequate hydraulic capacity and design life. Flood flow requirements will be determined in accordance with the FDOT’s procedures. If any of these existing cross drains or storm sewers are found to be hydraulically inadequate or found to have insufficient design life, they will be replaced or supplemented in accordance with the drainage requirements of this RFP. If any existing cross drains or storm sewers require repairs but otherwise would have sufficient remaining design life, repairs will be made in accordance with the requirements of this RFP.

We will consider optional culvert materials in accordance with the FDOT’s Drainage Manual Criteria. We will provide the owner a signed and sealed Drainage Design Report. Records will be kept of all drainage computations, both hydrologic and hydraulic. The engineer will include all necessary support data.
E. GEOMETRIC

The MCM+FIGG Design-Build Team will prepare the geometric design for the Project using the Design Standards that are most appropriate with proper consideration given to the design traffic volumes, adjacent land use, design consistency, aesthetics, ADA requirements and RFP.

The design elements will include, but not be limited to, the horizontal and vertical alignments, lane widths, shoulder widths, median widths, cross slopes, borders, sight distance, side slopes, front slopes and ditches. The geometric design developed by our Team will not merely be an adherence to the minimum AASHTO and/or Department standards.

F. DESIGN DOCUMENTATION, CALCULATIONS, AND COMPUTATIONS

The MCM+FIGG Design-Build Team will submit to the owner design documentation, notes, calculations, and computations to document the design conclusions reached during the development of the construction plans.

The design documentation, notes, calculations and computations will include, but not be limited to the following data:

1. Design Standards used for the Project.
2. Geometric design calculations for horizontal alignments.
3. Vertical geometry calculations.
4. Documentation of decisions reached resulting from meetings, telephone conversations or site visits.

G. STRUCTURE PLANS

1. Bridge Design Analysis:
   a. The MCM+FIGG Design-Build Team will submit to the owner final signed and sealed design documentation prepared during the development of the plans.
   b. We will make sure that the final geotechnical and hydraulic recommendations and reports required for bridge design are submitted with the 90% bridge plans.
   c. Our Team will evaluate scour on all bridges over water and the canal retaining wall system using the procedures described in HEC 18.
   d. Any erection, demolition, and any proposed sheeting and/or shoring plans that may potentially impact the railroad must be submitted to and approved by the railroad. This applies to areas adjacent to, within and over railroad rights of ways. This is not applicable to this Project.
   e. The Engineer of Record for bridges will analyze the effects of the construction related loads on the permanent structure. These effects include but are not limited to: construction equipment loads, change in segment length, change in construction sequence, etc. The Engineer of Record will review all specialty engineer submittals (camber curves, falseworks systems, etc.) to ensure compliance with the contract plan requirements and intent.

2. Criteria:

The MCM+FIGG Design-Build Team will incorporate the following into the design of this facility:

   a. All plans and designs will be prepared in accordance with AASHTO LRFD Bridge Design Specifications, Department Standard Specifications, Structures Manual, Plans Preparation Manual, Department Standard Drawings, Supplemental Specifications, Special Provisions, and directions from the State Structures Design Engineer, Temporary Design Bulletins, Structures Design Office and/or District Structures Design Engineer.
   b. Bridge Widening is not required for this Project.
   c. Critical Temporary Retaining Walls: Whenever the construction of a structural component (such as a wall, footing, or other such component) requires excavation that may endanger the public or an existing structure that is in use, we will protect the existing facility and the public. If a critical temporary retaining wall is, therefore, required during the construction stage only, it may be removed and reused after completion of the work. Such systems as steel sheet pilings, soldier beams and lagging or other similar systems are commonly used. In such cases, we will be responsible for designing and detailing the wall in the set of contract plans. These plans will be signed and sealed by the Structural Engineer in responsible charge of the wall design.

For this Project, the design of temporary critical sheet piles will be closely coordinated with the maintenance of traffic discipline to ensure the safety of the traveling public adjacent to an excavation. We will confirm location of all existing utilities to avoid impacts that may delay operations and construction schedule. The sheet piles will be designed to satisfy deflection and strength requirements in accordance with FDOT Structures Design Guidelines and AASHTO LRFD criteria. It is anticipated that after construction of the pylon footing, all temporary sheeting will be removed.

H. SPECIFICATIONS

The MCM+FIGG Design-Build Team understands that the FDOT Specifications may not be modified or revised. We will include all Technical Special Provisions which apply to the work in the Proposal. We understand that Technical Special Provisions shall be written only for items not addressed by Department Specifications and shall not be used as a means of changing Department Specifications.

Our Team will prepare and submit a signed and sealed Construction Specifications Package for the Project before construction activities begin. The Specifications Package will contain all applicable Division II and III Special Provisions and Supplemental Specifications from the Specifications Workbook in effect at the time the Bid Price Proposals were submitted.
Specifications Package will be prepared, signed, and sealed by the MCM+FIGG Design-Build Team’s Engineer of Record.

The signed and sealed Specifications Package will also include individually signed and sealed Technical Special Provisions for any and all work not addressed by Department Specifications. We understand that any Technical Special Provisions included in the signed and sealed Construction Specifications Package which were not included in the proposal phase will require a contract cost modification as a condition of approval. Upon review by the Owner, the Construction Specifications Package will be stamped “Released for Construction” and initialed and dated by the reviewer.

Any subsequent modifications to the Construction Specifications Package will be prepared, signed, and sealed as a Supplemental Specifications Package subject to the same process for submittal, review, and release for construction as described above for the original Construction Specifications Package. Construction work affected by Supplemental Specifications Packages will not begin until the stamped “Released for Construction” Supplemental Specification Package is obtained.

The MCM+FIGG Design-Build Team understands that all work performed in advance of the Owner’s release of Specifications will be at our Team’s risk. We understand that to begin work prior to the Owner’s Project Manager providing stamped “Release for Construction” specifications, our Team must submit signed and sealed specifications and notify the Owner five (5) days prior to starting work at risk.

### I. SHOP DRAWINGS

The MCM+FIGG Design-Build Team will be responsible for the preparation and approval of all Shop Drawings. Shop Drawings will be prepared in conformance with the FDOT Plans Preparation Manual and will be stamped and signed by the MCM+FIGG Design-Build Team’s Engineer of Record (EOR) and Specialty Engineer, as appropriate. The Owner, or Owner’s CEI Consultant, will review the Shop Drawing(s) to evaluate compliance with Project requirements and provide any findings to our Team. The Owner’s procedural review of shop drawings is to assure that the MCM+FIGG Design-Build Team’s EOR has approved and signed the drawing, the drawing has been independently reviewed, and the drawing is in general conformance with the plans. We understand that the Owner’s review is not meant to be a complete and detailed review. Upon review of the shop drawing, the Owner, or Owner’s CEI Consultant, will stamp “Released for Construction” or “Released for Construction as noted” and initial and date the drawing. We will provide sufficient information for adjoining components or areas of work to allow for proper evaluation of the Shop Drawing(s) submitted for review.

### J. SEQUENCE OF CONSTRUCTION

The MCM+FIGG Design-Build Team will construct the work in a logical manner with the following objectives as guides:

1. Maintain or improve, to the maximum extent possible, the quality of existing traffic operations, both in terms of flow rate and safety, throughout the duration of the Project.
2. Minimize the number of different Traffic Control Plan (TCP) phases, i.e., number of different diversions and detours for a given traffic movement.
3. Take advantage of newly constructed portions of the permanent facility as soon as possible when it is in the best interest of traffic operations and construction activity.
4. Maintain reasonable direct access to adjacent properties at all times, with the exception in areas of limited access right-of-way where direct access is not permitted.
5. Proper coordination with adjacent construction Projects and maintaining agencies.

### K. STORMWATER POLLUTION PREVENTION PLANS (SWPPP)

The MCM+FIGG Design-Build Team will prepare Erosion Control Plans to comply with Storm Water Pollution Prevention Plan (SWPPP) as required by the National Pollution Discharge Elimination System (NPDES). The SWPPP will be prepared in accordance with the Plans Preparation Manual (PPM). The Erosion Control Plan will be prepared in accordance with the Florida Department of Environmental Protection (FDEP) Rule 62-25 requirements. Existing and proposed drainage structures will be protected via rock bags or synthetic bales and floating turbidity barriers will be installed in the canal. The Erosion Control Plan will be submitted along with our Team’s Certification at least 15 working days prior to beginning construction activities.

### L. TEMPORARY TRAFFIC CONTROL PLAN

1. **Traffic Control Analysis:**

   Temporary Traffic Control Plans will be prepared to move vehicular and pedestrian traffic during all phases of construction. Construction phasing has been prepared to ensure advancements in schedule and a successful project completion. Positive drainage will be maintained at all times.

   The Temporary Traffic Control Plans will be prepared by a certified designer who has completed the FDOT’s training course, and in accordance with FDOT Design Standards and the Roadway Preparation Manual.

2. **Temporary Traffic Control Plans:**

   We will utilize Index Series 600 of the Department’s Design Standards where applicable. Should these standards be inadequate, a detailed Temporary Traffic Control Plan will be developed. We will prepare plan sheets, notes, and details to include the following: typical section sheet(s), general notes and construction sequence sheet(s), typical detail sheet(s), traffic control plan sheet(s). We will prepare additional plan sheets such as cross sections, profiles, drainage structures, retaining wall details, and sheet piling as necessary for proper construction
and implementation of the Temporary Traffic Control Plan.

It has been anticipated that temporary Type K barrier walls will be used in areas requiring temporary barrier walls (where drop offs exist within the clear zone) due to their enhanced capacity (larger slot areas). Temporary shoulders will be designed with spread requirements in mind. Detour Plans will be prepared for the overhead work at SW 8TH Street. We will ensure proper notification and coordination with all stakeholders through our proactive Public Involvement.

3. Traffic Control Restrictions:

The MCM+FIGG Design-Build Team does not anticipate using Pacing Operations with this work due to the relative proximity of intersections and the time needed to complete the overhead work. We are aware of the allowable lane closures only during non-peak hours on non-event nights, namely from 9:00 PM to 5:30 AM Sunday through Thursday and from 11:00 PM to 7:00 AM on Friday and Saturday Nights. All lane closures, including ramp closures, will be reported to the local emergency agencies, the media and the owner. Also, We understand that the Project should be able to provide for all lanes of traffic to be open in the event of an emergency.

M. ENVIRONMENTAL SERVICES/PERMITS/MITIGATION:

The MCM+FIGG Design-Build Team will be responsible for preparing designs and proposing construction methods that are allowable. All permits required for a particular construction activity must be acquired prior to commencing the particular construction activity. Our Team commits to prepare and submit to the applicable agencies all permit applications, as needed. We will be responsible for any required permit fees. Delays due to incomplete or erroneous permit application packages, agency rejection, agency denials, agency processing time, or any permit violations, except as provided herein, will be the responsibility of our Team, and will not be considered sufficient reason for time extension or additional compensation. As the permittee, the owner is responsible for reviewing, approving, and signing the permit application package including all permit modifications, or subsequent permit applications.

We will be in coordination with regulatory agencies which shall occur to obtain permits for the project from the South Florida Water Management District (SFWMD), Florida Department of Transportation (FDOT), US Army Corps of Engineers (USACE), Florida Department of Environmental Protection (FDEP), and Miami-Dade County Regulatory and Economic Resources (RER) for construction within the canal and roadway right-of-ways and water quality impacts.

If, as a result of design changes proposed by our Team, compensatory environmental mitigation is required, it shall be the responsibility of our Team to pay for the mitigation.

The following Project specific Environmental Services/Permits have been identified as specific requirements for this project in which the MCM+FIGG Design-Build Team is responsible:

1. NEPA Requirements

In accordance with the National Environment Policy Act (NEPA), several environmental agency coordination meetings and concurrence reviews have been ongoing for the Project. The owner will continue to coordinate with these agencies and provide additional information or surveys as requested throughout the design and construction phases. Staging areas and/or off-site pond areas will require review for all NEPA related issues during final design.

The products of a NEPA study are the reports of findings and recommendations, appropriate environmental documents and preliminary engineering concepts. This Project was processed as a Minor Type 2 Categorical Exclusion (CE). 23 CFR Part 771.129(c) states that “after approval of the EIS, FONSI, or CE designation, the applicant shall consult with the Administration prior to requesting any major approvals or grants to establish whether or not the approved environmental document or CE designation remains valid for the requested Administration action”. This consultation effort is accomplished through the reevaluation process. Reevaluations serve to ensure project compliance with all applicable federal and state laws prior to the advancement of the project to the next major production phase (preliminary engineering, right-of-way acquisition, or construction advertisement).

The reevaluation process also provides the mechanisms whereby commitments made by the owner during the project development process are identified, updated, and their status given. Any new commitments or laws which may have come into effect since the approval of the original CE designation are addressed in the reevaluation.

The reevaluation is the only instrument available to fully document compliance with federal laws and any changes that may have occurred on a project since the approval of the original final environmental document or CE designation. The extent and complexity of the reevaluation is, therefore, contingent upon the project’s status at the time the reevaluation is prepared; changes to the affected environment since the approval of the original environmental document or CE designation, and the purpose of the reevaluation (e.g., design change).

2. Cultural Resources

The location of culturally significant sites located along the project corridor is provided in the Cultural Resource Assessment Survey (CRAS), of the NEPA documentation. A total of seven historic resources within the historic resources Area of Potential Effect (APE) have been identified within the project vicinity as follows: the Tamiami Canal (8DA6453), Tamiami Trail (8DA6510), Sweetwater Bridge (8DA3294), and four buildings (8DA13869–8DA13872). Utilization of historic and / or archaeological sites for staging or stockpiling activities will not be permitted.

As identified within the NEPA documentation, the NRHP-Eligible Sweetwater Bridge (8DA3294) is within the vicinity of the Project. During construction the following methods will be
used to avoid impacts:

☑ Implement low-vibratory construction methods to avoid damaging the Sweetwater Bridge.

☑ Implement staging in a way that will avoid impacting the Sweetwater Bridge.

The MCM+Figg Design-Build Team will comply with the requirements with respect to the discovery of human remains during construction. In the event that human remains are found during construction activities, the provisions of Chapter 872.05, F.S. will apply. Florida Statute Chapter 872.05 states that, when human remains are encountered, all activity that might disturb the remains shall cease and may not resume until authorized by the State Medical Examiner or the State Archaeologist.

3. Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966 provides protection for publicly owned parks, recreation areas, historic sites, wildlife, and waterfowl from conversion to a transportation use. FHWA guidance requires that any impacts from the use of a Section 4(f) property for highway purposes be evaluated. The James M. Beasley Linear Park travels along the north side of the C-4 Canal. The Owner completed an assessment of the Project’s potential impacts on the identified resources and it was determined that the Project was exempt from Section 4(f) since the proposed improvements will enhance and not impair the activities, features, or attributes of this 4(f) property.

We understand that the following areas shall not be entered without prior consent of the City of Sweetwater and/or FDOT/ FHWA as coordinated through the Owner: any public park, archaeological sites identified in the CRAS documents prepared for the Project, or any other Section 4(f) Resource.

4. Wetlands, Mitigation, Wildlife and Habitat

The MCM+Figg Design-Build Team will review the Endangered Species Biological Assessment (ESBA) prepared for the Project. The Project is not anticipated to have impacts to existing wetlands; however, surface waters may be impacted by the installation of the canal bulkhead. Compensatory mitigation is not anticipated for these surface water impacts. Current NPDES criteria and Best Management Practices will be implemented to avoid impacts to water quality and existing wetlands and surface waters located within and outside the project limits. We understand that if, as a result of the proposed design, compensatory environmental mitigation is required, it shall be the responsibility of the MCM+Figg Design-Build Team to pay for the mitigation.

The ESBA determined that the American Alligator, Eastern Indigo Snake, Wood Stork, Florida Bonneted Bat, and West Indian Manatee have potential to occur in the Project corridor. We will comply with the following commitments the Owner made regarding the Federally-listed species with potential to occur in the corridor:

☑ We will follow the USFWS Standard Protection Measures for the Eastern Indigo Snake during implementation of the Project.

☑ We will follow the Florida Fish and Wildlife Conservation Commission (FWC) Standard Manatee Conditions for In-Water Work during implementation of the Project.

We will comply with conditions specified in the permits and NEPA documents regarding the protection and precautionary guidelines for any endangered species.

5. Contamination

In accordance with FDOT policy and FHWA requirements, a Contamination Screening Evaluation Report (CSER) was prepared for the project corridor during the NEPA Study phase to determine the potential for contamination involvement associated with project construction. The CSER is included in the NEPA documentation. We will review the referenced document which discusses known or suspected contamination on the project corridor. We will then schedule an Environmental Coordination meeting with the owner to discuss the contamination-based issues on the project. After this meeting additional contamination assessment may be conducted by the owner if warranted.

The MCM+Figg Design-Build Team will be responsible to provide plans to the owner for review and approval upon further development of the Project design within the areas deemed potentially contaminated. This is of particular importance in areas including – but not limited to – new alignment, stormwater management facilities (i.e. stormwater pond), mast arm locations, elevated roadways or deep foundations. We will make every effort to avoid placing a stormwater management facility on a contaminated site.

UNIDENTIFIED AREAS OF CONTAMINATION

When encountering or exposing any abnormal condition indicating the presence of a hazardous or toxic waste, or contaminants, the MCM+Figg Design-Build Team will cease operations immediately in the vicinity and notify the owner or designee Engineer. The presence of tanks or barrels; discolored earth, metal, wood, ground water, etc.; visible fumes; abnormal odors; excessively hot earth; smoke; or other conditions that appear abnormal may indicate hazardous or toxic wastes or contaminants and will be treated with extreme caution.

We will make every effort to minimize the spread of contamination into uncontaminated areas, immediately provide for the health and safety of all workers at the job site, and make provisions necessary for the health and safety of the public that may be exposed to any potentially hazardous conditions. Provisions will meet all applicable local, State, and Federal laws, rules, regulations or codes covering hazardous conditions and will be in a manner commensurate with the severity of the conditions.

The owner will coordinate and mobilize a qualified Contamination Assessment/Remediation (CAR) Contractor. Qualifications of such CAR Contractor will include, but not be limited to: experience and personnel to prepare contamination
assessment plans, conduct contamination assessments, prepare site assessment reports, remediation plans, implement remedial action plans, risk based corrective actions, storage tanks system removal, highway spill response as well as experience with infrastructure/construction activities within (potentially) contamination areas specific to transportation systems.

All the work performed by the CAR Contractor will be performed in compliance with all applicable local, state and federal regulations governing worker safety and environmental regulations. This is to include occupational exposure to contaminated soils, groundwater, wastes and atmosphere during the construction of all features included in the construction plans. In addition, the CAR Contractor will be staffed with Florida licensed technical professionals (geologists and engineers) who will be involved with the project and knowledgeable of the work activities conducted within the identified contaminated areas and who would sign and seal project reports as required for submittal to the appropriate environmental regulatory agencies.

The owner or designee Engineer will immediately notify the FDOT District VI Contamination Impact Coordinator (DCIC) at (305) 470-5228 after encountering the unidentified areas of contamination. Preliminary investigation by the CAR Contractor will determine the course of action necessary for site security and the steps necessary under applicable laws, rules, and regulations for additional assessment and/or remediation work to resolve the contamination issue.

Following completion of the project, the CAR Contractor will be required to provide copies of all reports submitted to regulatory agencies, waste material profiles, manifests and/or disposal receipts for the handling of all contaminated media including but not limited to ground water, waste water, soils, solid wastes, sludge, hazardous wastes, air monitoring records and sample results for all materials tested and analyzed to the owner and the FDOT DCIC.

We will be responsible for responding to all traffic incidents during the construction and management of the Project, including – but not limited to – contamination and hazardous materials release associated with traffic incidents, unauthorized dumping and/or similar incidents.

For groundwater monitoring wells found within the Project Right of Way, the MCM+FIGG Design-Build Team commits to adhere to Subarticle 110-10.1 of Section 110 (Clearing and Grubbing) in the FDOT Standard Specifications for Road and Bridge Construction – “Water Wells Required to be Plugged” and FDEP’s “Monitoring Well Design and Construction Guidance Manual”, 2008.

We will contact the owner before applying for a dewatering permit from any environmental regulatory agency to avoid potential contamination plume exacerbation and determine proper groundwater management associated with such sites.

We understand that the owner will be indemnified against any and all claims arising from improper handling storage, transportation or disposal of contaminated materials. We will also be solely and totally responsible at its own cost for completely cleaning up any contamination caused by its own activities. This includes, but is not limited to spillage/leakage of contaminants from equipment and/or portable tanks used in constructing the project.

N. SIGNING AND PAVEMENT MARKING PLANS

The MCM+FIGG Design-Build Team will prepare signing and pavement marking plans in accordance with FDOT standards and with the OWNER’s criteria. These plans will be included in the roadway plans set.

O. LIGHTING PLANS

The MCM+FIGG Design-Build Team will provide lighting plans in accordance with the owner’s criteria.

P. LANDSCAPE PLANS

All Landscape plans and design calculations will be prepared in accordance with the Governing Regulations, Policies and Procedures, and the submittal requirements and will be signed and sealed by a Florida-registered Landscape Architect. Landscape plans to be provided will include: an Existing Tree Inventory Plan, a Tree Relocation Plan, and a Landscape Plan.

Our Team commits to submit a Landscape Plan for review and approval in writing to the owner prior to any 90% design submittal. Our Team will allow 21 calendar days for review by the owner.

The Landscape Plan will provide sufficient detail to also be used at Public Workshops for the project. We will identify, document and provide solutions for all potential impacts to the existing landscaping due the proposed MCM+FIGG Design-Build Team’s design concept, including but not limited to landscape material and modifications to the layout of the existing Shared Use Paths in order to minimize the number of tree impacts proposed.

An Existing Tree Inventory Plan will accurately identify the location, species, size and condition of all existing trees within the project. The Existing Tree Inventory Plan will state the disposition of existing landscape material (i.e. Relocation, Removal, Remain or Replace) and provide justification. We will coordinate with the owner, as applicable, for all determinations (final decisions regarding disposition/treatment/actions for impacted landscape components).

A Tree Relocation Plan will provide a landscape layout for all relocated material identified in the Existing Tree Inventory Plan. All trees designated for relocation will be relocated within the project limits, as approved by the owner. Any landscape materials that are relocated will be done in accordance with FIU design and building standards and consistent with Landscape design guidelines.

Relocated trees will conform to warranties for Landscape material as detailed in the Standard Specifications. Any impacted trees that cannot be relocated will be replaced in kind. In kind is defined to provide new plant material of the same species which the diameter of the new trees adds to the diameter.
of the existing tree to be replaced. (5 new 4” trees = 1 old 20” tree).

The Landscape Plan will follow the design intent of the Landscape Concept Plan provided and present the layout of new and remaining, existing landscape material. Any new trees and existing trees designated to remain that will be potentially impacted due to construction activity will be protected according to the current Design Standards. New trees will conform to warranties for Landscape material as detailed in the Standard Specifications. A unit-cost breakdown will accompany the Landscape Plan.

We will closely coordinate Landscape Plan with the owner and other relevant agencies. The final Landscape Plan will be submitted to the owner and other relevant agencies affected for review and approval prior to installation. We understand that any requirements imposed by the owner and other relevant agencies shall be binding on the firm.

**Q. SIGNALIZATION**

1. **General:**

The MCM+FIGG Design-Build Team is responsible for the preparation of Signalization Plans in which signal equipment specified will conform to FDOT Standards, FDOT QPL/APL and Miami Dade County QPL. Close coordination will be maintained with the maintenance Agency, Miami Dade County Public Works and Waste Management Department, Traffic Signal & Sign Division, to always provide the compatible equipment and required upgrades.

We will be responsible for the preparation of design plans and providing necessary documentation for the procurement, relocation, and installation of the Signalization devices as well as overall system construction and integration. The construction plan sheets will be in accordance with owner requirements and will include, but are not limited to:

- ✔ Project Layout/Overview sheets outlying the locations of field elements
- ✔ Detail sheets on:
  - a. Wiring and connection details
  - b. Conduit, pull box, and vault installation

The MCM+FIGG Design-Build Team commits to ensure project compliance with the Regional ITS Architecture and Rule 940 as applicable. This includes, but is not limited to, the development or update of a concept of operations, the development or update of a system engineering master plane (SEMP), and requirement traceability verification (RTVM) as well as coordination of document review.

Our Team will be responsible for providing details on existing Signalization and Intelligent Transportation System equipment and reporting which devices will be removed, replaced, or impacted by project work. Additional tasks to be completed include:

- ✔ At the intersection of SW 8th Street and SW 109th Avenue, we will perform a detailed evaluation of existing equipment and conditions in order to provide the best possible upgrade to the existing Traffic Signal. The improvement to these intersections will include:
  - a. Optimization of existing signal timings
  - b. Level of service
  - c. Safety enhancements
- ✔ As part of the improvements to the existing traffic signal, pedestrian poles, including push buttons and LED countdown pedestrian signals will be provided to improve the safety of pedestrian at this location. New Loops will be installed.
- ✔ During the design phase for this project, we will maintain the traffic signal at this intersection operational at all times, and will coordinate closely with the maintenance agency to provide any contingency or temporary signal plan if necessary.
- ✔ Our Team is also aware of the future Adaptive Signal Control System to be implemented by FDOT along the SW 8th Street corridor, including the intersection of SW 8th Street and SW 109th Avenue, and will keep in close coordination with FDOT’s team to ensure that any improvements we proposed to this intersection will be according to the new system requirements.

2. **Design and Engineering Services:**

The MCM+FIGG Design-Build Team will be responsible for all new Signalization Design and engineering services relating to the Project. The design of the new system will integrate with the existing devices. The design will include the necessary infrastructure and components to ensure proper connection of the new sub-systems. This will include but not be limited to all proposed sub-systems of this project as well as existing sub-systems that remain or are redeployed as the final project.

3. **Construction and Integration Services:**

The MCM+FIGG Design-Build Team will be responsible for all Signalization construction and integration services relating to the project.

4. **Testing and Acceptance:**

The MCM+FIGG Design-Build Team commits to furnish equipment that shall be subject to monitoring and testing to determine conformance with all applicable requirements. We will be responsible for the coordination and performance of material inspection and testing, field acceptance tests, and system acceptance tests. The times and dates of tests must be accepted in writing by the Owner’s Project Manager. We will conduct all tests in the presence of the Owner’s Project Manager or designated representative.
6.2 ACCELERATED BRIDGE CONSTRUCTION

FIU is at the international center of the latest breakthrough innovations and technologies in Accelerated Bridge Construction (ABC).

Following the tradition of excellence set by FIU, this new signature pedestrian bridge will showcase the latest advances in Accelerated Bridge Construction (ABC) as a model for education. FIU can highlight this bridge at the ABC Conference hosted at FIU.

This method of erection for your new bridge offers many benefits over conventional construction techniques over traffic.

- Quick construction schedule
- Increased safety for construction team and vehicular traffic because most activities will occur in the staging yard, not over live traffic.
- Bridge is lifted in place in one night in one piece.

STAGING AREA TO BUILD SUPERSTRUCTURE FOR ABC

The design-build team is proposing to use the SW corner of SW 8th Street (Tamiami Trail) and SW 109 Ave. (University Drive).

We will remove temporary foundation after project completion and this area will become the Southern Plaza entrance to the bridge.

SECTION A-A

MAINSPAN

Cast main span superstructure including deck and canopy. Stress bottom slab transverse post-tensioning and longitudinal post-tensioning with straight tendons. Create outstanding durability.

1. Superstructure Pre-Casting

Superstructure Pre-Casting

Build all footings and base of pylon.

Build column frame for both landings.

2. Superstructure Pre-Casting

3. Position Main Span

Position Main span

Rotate main span from the casting position (1) to the final position (3).

Install bearing pads at pier 1 and remove temporary support.

Secure truss at pylon support.

4. Casting Of Back Span

Casting Of Back Span

Erect temporary falsework on banks of canal.

Install bearing pads at pier 3.

Cast deck, truss and canopy. Construction of pylon and stays follows with superstructure fully secured as a construction platform.

5. CASTING OF BACK SPAN

Cast deck, truss and canopy. Construction of pylon and stays follows with superstructure fully secured as a construction platform.
BRIDGE STAGING AREA (BSA)

The proposed Bridge Staging Area (BSA) will provide a safe construction area to prefabricate the main span truss system as a single unit for an entire span in a controlled environment staging area. The FIU community and traveling public will benefit from construction off site and quick overnight assembly of the bridge over the highway.

The conditions of the BSA will be carefully considered in the design to ensure the success of the temporary support system. A geotechnical analysis will be used in the design of the temporary footing and the travel path for the movement of the main span superstructure truss system.

TEMPORARY SUPPORT STRUCTURE

The temporary support structure that will be used to cast the main span superstructure truss system will meet all the requirements of the AASHTO Design Guide for Bridge Temporary Works. We will monitor the temporary structure deflections to ensure that the permanent structure remains in proper condition during construction of the deck system, truss diagonal members, and canopy. The permanent structure will be monitored for vertical deflections, twist and lateral horizontal deflections during the lifting and moving of the superstructure system. The superstructure will be supported under the diaphragms and the nodal sections. The support system will be designed to ensure that local stresses are controlled in the various members of the superstructure truss system.

BRIDGE MOVEMENT SYSTEM

We will use a Self-Propelled Modular Transporter (SPMT) as the primary construction equipment for the erection of the main span superstructure truss system. The proposed system has been used in bridge projects across the country with great success.

Using SPMTs to install the superstructure truss system offers the following benefits:

- Shortest possible on-site construction time, improving work zone safety for vehicular traffic and construction workers.
- Allows for the building of the entire truss as a prefabricated system instead of a system comprised of many prefabricated parts.
- The elimination of issues related to overhead height restrictions associated with crane lifting near the power lines on the south side of the project.
- Improves safety for traffic by keeping normal traffic patterns, since it allows shorter lane closures at night.

We will submit a bridge movement plan that shows all the details related to the sequence, schedule and traffic control for the erection of the main span. This monitoring plan will include details on how the structure will be monitored during movement. The required coordination with the pertinent agencies that are affected, directly or indirectly, by the movement of the main span will be contacted by the Design-Build Team. All affected utilities in the travel path of the erection equipment will have a mitigation plan.

In summary, ABC will be used in a remarkable way for this new signature bridge on FIU’s campus. FIU’s technology in ABC is an inspiration for this vision.
6.3 NATURAL FREQUENCY DESIGN

One of the most important design aspects of this signature pedestrian bridge is the natural frequency design. The MCM+FIGG Design-Build Team understands the importance of meeting the natural frequency design criteria for this type of structure to ensure serviceability and a positive user experience. The interactions between pedestrian movements, bridge response, and perceived movement by users were considered in the determination of structure type and dimensional characteristics. This all concrete solution with a central truss and stays creates the rigidity and stiffness for an enjoyable walk and the best overall structural solution.

SYNCHRONIZATION

Pedestrian bridges are very sensitive to dynamic bridge loading caused by moving pedestrians. A pedestrian bridge is susceptible to excessive vibration if its natural frequency is close to or coincides with the fundamental harmonics of the pedestrian walking frequencies. This phenomenon of “synchronization” can create excessive movements of the bridge causing a sensation of instability to the users. This design was customized to provide an excellent, comfortable user experience in all loading conditions.
PROJECT DESIGN CRITERIA

HORIZONTAL FREQUENCY
In the lateral direction, the fundamental frequency of the pedestrian bridge shall be greater than 1.3 hertz.

VERTICAL FREQUENCY
The fundamental frequency in a vertical mode shall be greater than 3.0 hertz to avoid the first harmonic.

CONTEXT-SENSITIVE SOLUTION
The proposed concrete superstructure with the rigid truss system provides the necessary vertical and lateral stiffness through specific design considerations related to the cross section of the reinvented I-beam shaped superstructure, the stay, the pylon, and the truss.

The proposed system has been designed to maximize the vertical stiffness of the structure while at the same time minimizing the effect of self-weight, creating a very efficient system. The inherent damping characteristics of the all concrete structure achieve comfort, serviceability and strength.
This enhancement was specifically designed to satisfy the vertical frequency requirements.

This enhancement was specifically designed to satisfy the horizontal frequency requirements.

This enhancement provides additional aesthetic value and assists in the design of a signature bridge with a sleek and contemporary form.

The width of the canopy was enlarged to increase stiffness and provide additional protection from sun and inclement weather for pedestrians, enhancing the user experience. The canopy serves a dual function both as a structural element and as a roof.

The size of the stay pipes and spacing were designed to provide additional stiffness. The structure meets strength design criteria without the stays; they are an additional structural feature provided to meet the natural frequency requirements.

The central concrete truss was uniquely designed for the web of the I-beam to reduce the mass of the structure. This creates openness and stiffness.

The pylon stiffness was designed to provide significant benefit to the overall stiffness of the structure.

The width of the bridge deck provides more user space and increases stiffness. The full 30’ width is provided as desired by FIU.

The pylon stiffness was designed to provide significant benefit to the overall stiffness of the structure.
ACHIEVING INVEST PLATINUM RATING FOR PROJECT DEVELOPMENT

The MCM+FIGG Design-Build Team is committed to excellence in sustainability on this project, including a commitment to achieving a Platinum rating for the INVEST Project Development module.

FHWA’s INVEST (Infrastructure Voluntary Evaluation Sustainability Tool) is an online tool created to self-evaluate the sustainability of a project and aids in making the spectrum of sustainability possibilities apparent to participants of design, owners etc. at the beginning stages of project planning. This is a voluntary web-based program that provides assessment tools that can be applied to early project planning through construction phases of a project utilizing four modules that cover the entire transportation lifecycle: System Planning for States (SPS), System Planning for Regions (SPR), Project Development (PD), and Operations and Maintenance (OM).

The MCM+FIGG Design-Build Team will implement the Project Development (PD) module for this project. This module will produce sustainability evaluations for project-specific planning, design, and construction and will provide the bridge owner control to meet all of the criteria.

INVEST uses scorecards to provide the sustainability evaluation of the project. For the PD module, there are 33 criteria points which are organized into six fixed and one custom scorecard. FHWA recognizes that all projects are different and not all criteria will simply not apply to every single project- this is why there are various scorecards. Different scorecards contain different combinations of the criteria points and the custom scorecard is provided for projects that don’t fit into the six, previously defined scorecards.

The feedback from the scorecard is given as a numerical score. The score provides insight on the level of sustainability a project has based on the absolute scale of how many points are earned by the project. There are different benchmark values, or “achievement levels” defined by FHWA that agencies can use to assess their goals or their projects sustainability outcomes. Platinum is the highest attainable level.

FIGG will reach the level of “Platinum” for this project, meaning that at least 60% of all possible sustainability points will be earned.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
<th>Points to be Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD-01</td>
<td>Economic Analyses</td>
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<tr>
<td>PD-02</td>
<td>Lifecycle Cost Analyses</td>
<td>✔️</td>
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<tr>
<td>PD-03</td>
<td>Context Sensitive Project Development</td>
<td>✔️</td>
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<tr>
<td>PD-04</td>
<td>Highway and Traffic Safety</td>
<td>✔️</td>
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<td>PD-05</td>
<td>Educational Outreach</td>
<td>✔️</td>
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<td>PD-06</td>
<td>Tracking Environmental Commitments</td>
<td>✔️</td>
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<td>PD-07</td>
<td>Habitat Restoration</td>
<td>✔️</td>
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<td>PD-08</td>
<td>Stormwater Quality and Flow Control</td>
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<td>PD-09</td>
<td>Ecological Connectivity</td>
<td>✔️</td>
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<td>PD-10</td>
<td>Pedestrian Facilities</td>
<td>✔️</td>
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<tr>
<td>PD-11</td>
<td>Bicycle Facilities</td>
<td>✔️</td>
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<tr>
<td>PD-12</td>
<td>Transit and HOV Facilities</td>
<td>✔️</td>
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<td>PD-13</td>
<td>Freight Mobility</td>
<td>✔️</td>
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<td>PD-14</td>
<td>ITS for System Operations</td>
<td>✔️</td>
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<tr>
<td>PD-15</td>
<td>Historic, Archaeological, and Cultural Preservation</td>
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<tr>
<td>PD-16</td>
<td>Scenic, Natural, or Recreational Qualities</td>
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<tr>
<td>PD-17</td>
<td>Energy Efficient</td>
<td>✔️</td>
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<td>PD-18</td>
<td>Site Vegetation, Maintenance and Irrigation</td>
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<tr>
<td>PD-19</td>
<td>Reduce, Reuse and Repurpose Materials</td>
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<tr>
<td>PD-20</td>
<td>Recycle Materials</td>
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<tr>
<td>PD-21</td>
<td>Earthwork Balance</td>
<td>✔️</td>
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<td>PD-22</td>
<td>Long-life Pavement</td>
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<td>PD-23</td>
<td>Reduced Energy and Emissions in Pavement Materials</td>
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<td>PD-24</td>
<td>Permeable Pavement</td>
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<tr>
<td>PD-25</td>
<td>Construction Environmental Training</td>
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<td>PD-26</td>
<td>Construction Equipment Emission Reduction</td>
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<td>PD-27</td>
<td>Construction Noise Mitigation</td>
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<td>PD-28</td>
<td>Construction Quality Control Plan</td>
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<td>PD-29</td>
<td>Construction Waste Management</td>
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<td>PD-30</td>
<td>Low Impact Development</td>
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<td>PD-31</td>
<td>Infrastructure Resiliency Planning and Design</td>
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<tr>
<td>PD-32</td>
<td>Light Pollution</td>
<td>✔️</td>
</tr>
<tr>
<td>PD-33</td>
<td>Noise Abatement</td>
<td>✔️</td>
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</tbody>
</table>
The MCM+FIGG Design-Build Team is committed to excellence in sustainability on this project, including a commitment to achieving a Silver rating for the LEED Neighborhood Development module.

LEED (Leadership in Energy and Environmental Design) is a third-party certification system that recognizes exemplary strategies and practices in green building. There are five project type categories which include: Building Design + Construction, Interior Design + Construction, Building Operations + Maintenance, Neighborhood Development, and Homes. The “triple bottom line” with all project categories in LEED building, is “benefiting people, planet and profit”, which allows for healthier cities, more interactive and connected communities, and increased building and structure value.

The MCM+FIGG Design-Build Team will implement “Neighborhood Development Plan” for the FIU Pedestrian Bridge. The project checklist scorecard contains such criteria as “Smart Location & Linkage”, “Neighborhood Pattern & Design”, “Green Infrastructure & Buildings”, “Innovation & Design Process”, and “Regional Priority Credits”. Coordinated with the outlined criteria, the focus will be on the Complete Streets rather than only the bridge structure itself. This will allow for the FIU Pedestrian Bridge to be a space that promotes connectivity of the campus and surrounding city, while inspiring bridge users with technology on a high-performing structure that is environmentally sustainable and economically smart.

FIGG will reach the level of “Silver” for this project, providing an excellent level of sustainability.

<table>
<thead>
<tr>
<th>Description</th>
<th>Points to be Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart Location &amp; Linkage</td>
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</tr>
<tr>
<td>Neighborhood Pattern &amp; Design</td>
<td>✓</td>
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<tr>
<td>Green Infrastructure &amp; Buildings</td>
<td>✓</td>
</tr>
<tr>
<td>Innovation &amp; Design Process</td>
<td>✓</td>
</tr>
<tr>
<td>Regional Priority Credits</td>
<td></td>
</tr>
</tbody>
</table>
The Vision
Every bridge has a story. It begins with a vision. A vision that reflects the beauty of the community’s sense of place. A bridge tells the story of the technology of its time and respects the natural and built environment in a holistic design. The features of FIU’s New Pedestrian Bridge are a tribute to these principles. The vision for the new bridge has been described with words like: Signature, Innovative, Contemporary, Iconic, Outstanding, Landmark, Event Venue, Linear Park, and a Place to Linger and Gather.

The Design Approach
From this vision a theme came to life as a unifying connection between the new bridge, the FIU campus, and the Miami community – A Bridge Worth Walking. This design approach is inspired by the vision of FIU and this theme. Archetypal design principles of blending shapes, creating shadows, selecting textures, choosing pleasing colors, opening new vistas, using native materials, creating feature lighting and incorporating landscaping were combined to create a bridge that celebrates and is inspired by FIU, including its grand collection of palms, innovative research and technology, and educational excellence. The FIU values of intent, clarity, quality, innovation, safety, constructability, sustainable design and construction, universal design, and active design all work together to blend into the final one-of-a-kind, functional, and aesthetic language captured by the bridge.

Contents
1] Function
Dimensions
Pylon & Superstructure
Concrete Superstructure

2] Form
Aesthetic Features
Aesthetic Lighting
Pedestrian Experience
Landscaping Design

3] Details
Elevators
Grand Staircase

4] Future
Optional Bridge Enhancements
Optional Artistic Seating

Inspiration drawn from FIU
Natural Environment
Left to Right: Florida Panther, Grand Collection of Palms, Muhly Grass

Technology and Innovations
Left to Right: FIU Wall of Wind, FIU Origami Inspired Antennas, FIU Engineering Center

Educational Excellence
Left to Right: Paul L. Cejas School of Architecture Building, Wertheim Conservatory, Roary the Panther
AN INNOVATIVE SIGNATURE PEDESTRIAN BRIDGE FOR FIU

DESIGN FEATURES

STAYS AND PYLON
The tapering pylon reaches a height of approximately 109' with 81' above the bridge deck creating spectacular views for the users of the bridge and those driving beneath. The pylon height is in scale with the built environment with multi-story buildings and parking structures on each side of the bridge.

The stays and pylon provide the required structural design to meet the pedestrian loads for harmonic conditions of natural frequencies and create dramatic signature aesthetics that tie directly to the rhythm of the strut pattern.

GRAND STAIRCASE
The grand staircase at the Bridge Plaza at the bridge’s south end is a feature element of the design that allows for a large and efficient movement of people as well as additional gathering space.

BRIDGE SHAPE
The unique shape of the bridge allows for a slender deck of 2’ at the center, saving approximately 8’ over a typical structure depth. This brings the bridge closer to the land areas while meeting vertical clearance requirements, and creates shorter staircases and elevators. This results in a cost savings benefit for our design.

MISSILE PROTECTION
An artistic 8-ft missile protection fence was designed for the bridge to protect pedestrians and vehicular traffic below. The mesh characteristics will reduce some of the traffic noise from below and the large panel sizes reduce the number of vertical posts used for the railing system. The geometric pattern of the diagonal bracing members complements the truss structure for added aesthetic character.

ELEVATORS & VESTIBULES
The custom-design elevators provide an elegant solution for alternative and ADA-compliant access to the bridge. The cabs have one transparent wall each, facing the FIU campus, which provide an additional feature and allow for views of FIU never seen before. A ride up in these elevators will set the tone of excellence for arrival onto this signature bridge.

CONCRETE CANOPY
A sleek concrete canopy is an integral structural element of the design, providing stiffness and strength, while also providing beneficil shade and coverage for 53% of the walkway along the length of the bridge.

BRIDGE OVERLOOKS
Bridge overlooks are provided on the North side (430 SF) and South side (717 SF), for enhanced staircase connections and greater gathering space. The South overlook at FIU (opposite side of this image) has a cantilevered canopy, and allows for a direct future connection to Parking Garage 4 and escalators.

BRIDGE WALKWAY
A full 30’ wide walkway is provided, 50% larger than the required minimum, allowing for more functional space on the structure.

BRIDGE PLAZA & GRAND STAIRCASE (SOUTH)

BRIDGE PLAZA & GRAND STAIRCASE (NORTH)
Rendering of Innovative Signature Pedestrian Bridge from the Canal Looking South to the Entrance of FIU Campus
PYLON & SUPERSTRUCTURE

As an iconic statement for FIU and the community, the tapering pylon reaches a height of approximately 109’ with 81’ above the bridge deck creating spectacular views for the users of the bridge and those driving beneath. The pylon height is in scale with the built environment of multi-story buildings and parking structures on each side of the bridge.

The superstructure shape for the bridge is innovative and one-of-a-kind – specifically designed for your project. We have re-invented the traditional I-beam concept, improving both its functionality and form at a magnificent scale and with repurposing its elements. The bottom concrete flange becomes the pedestrian walkway, the top concrete flange becomes the canopy, and the web becomes a series of struts connecting to stays and a single dramatic pylon.

The canopy provides protection from the elements (sun, inclement weather) in addition to being the anchoring location for the stays.
CONCRETE SUPERSTRUCTURE

A BRIDGE WORTH WALKING

16' – 0"

1' – 9"

INSIDE RAILING

CENTRAL DECK DRAINAGE

30' – 0"

14' – 11"

9.5"

2' – 1"
AESTHETIC FEATURES

The bridge uniform concrete color will appear white with direct sunlight. Consistent use of common sourced materials creates singular color for the entire bridge.

The bridge canopy could be stained a sky blue to blend with the landscape of the sky in looking upward from the bridge walkway. This also provides a naturally clean space that bugs, insects, and birds avoid because the view the blue as being exposed to predators in the sky and will not nest in the canopy.

The large scale stainless steel “Banker wire” railing follows the FIU specification requirements of materials, height and mesh sizes. The enhancement to this is the use of the largest rectangular panels available. This results in fewer vertical support frame members and creates a contemporary open look. To support the mesh of larger frames a dual wire support is used in a rib of angles reflecting the geometric angles of the central concrete truss. This wiring is positioned on the thin side for a softer view of the angle pattern, seeming more like a hint of angled movement along the edges of the walkway.

The bridge walking surface could continue the garden feel of the plaza area using an exposed aggregate surface with pathway banding of the custom designed “FIU” flower pattern along the boundaries of the bridge walkway in front of the 8 foot mesh protective railing. This is optional for discussion of preferences with FIU.

The canopy ceiling could incorporate solar ceiling fans. The solar energy source would be on top of the canopy for direct sunlight. Then the stainless steel fan blades, specifically designed to move 40% more air through an area, are below the canopy ceiling. A pathway full of cool breezes offers an enjoyable and inviting space to pause and gather.
Rendering of Innovative Signature Pedestrian Bridge Facing East Along SW 8th Street. FIU Campus is South.
A BRIDGE WORTH WALKING
AESTHETIC LIGHTING

PYLON TOWER LIGHTING
Create an easily recognizable beacon for Florida International University and the City of Sweetwater through the use of dynamic lighting effects created by flood lighting the tower with RGBW (or A) LED fixtures at the top of the solar protection canopy. This lighting effect, in coordination with the cable stay lighting, will provide an energetic play of light for pedestrians enjoying the bridge and will be an identifier for motorists on approaching streets and nearby highways.

PIER FLOODLIGHT AT THE PYLON
In addition to upward directed light above the bridge deck, it is also recommended to illuminate the faces of the pier below. This light will provide some visual interest as well as anchoring the overall tower element to grade. The affect could be white light or RGBW (or A) to match the pylon tower above the road deck.

UNDER CANOPY LIGHTING
The lighting of the bridge deck for the comfort and safety of pedestrians uses white light LED fixtures continuously mounted in a concealed pocket within the shade canopy. This offers the opportunity for consistent comfortable light levels for transitory user as well as those who may wish to linger in a communal environment. Additionally, the fixtures will bring to light the sculptural structure adding a contrasting visual identity for those viewing the bridge from afar.

BUS SHELTER LIGHTING
In order to alleviate the concerns of travelers awaiting their ride, the lighting in the bus shelter will seek to provide a uniform level of brightness that provides comfort, good visibility and aids in the riders sense of safety and security. Continuous runs of white LED lighting will provide comfortable illumination with characteristic features that emulate the pedestrian lighting on the bridge.

PEDESTRIAN LIGHTING
In order to provide some complimentary, human scaled lighting for pedestrians, decorative LED post top mounted fixtures will be applied to identify paths and walkways for those on foot or bike. The fixtures would match those signature elements identified for both the University and the City of Sweetwater, and meet all of the illuminance requirements as set forth by both entities. Additionally, selective landscape on the University property will be accented from ground mounted LED uplights, adding to the visual appeal to those ambling by.

NORTH AND SOUTH PLAZA LIGHTING
White light LED fixtures will seek to visually anchor the bridge at the north and south ends by accenting the structure associated with the vertical transportation needs of the bridge. Lighting will be integrated into the stairs to provide a means to safely traverse the path and offer a lively pattern of light reminiscent of an airport runway approach, evocative of the University’s beginnings. Palms and flowering trees will be uplighted and the University’s signature pedestrian post top light will provide visual interest and add to the foot-travelers perceptions of safety and security.
Grand walkway space for the signature pedestrian bridge. Large enough to accommodate special events and gatherings.
ADVANCED INTERMODAL STATION (AIMS) PLATFORM

The canopy of the new AIMS platform will complement the canopy of the bridge and includes a complementary linear lighting design. This will integrate the bus station as a part of the full campus improvement project that includes the signature bridge and streetscaping.

The new AIMS platform will enhance accessibility to the bridge location via the Miami-Dade Transit express bus system and will provide a new covered area that will encourage student usage at the location of PG-6.
Elegant, custom-designed elevators with front and rear entrances and large and spacious commercial elevator cabs will provide adequate space for bicycles and the movement of large cargo to the bridge for events.

The cabs have one transparent wall each, facing the FIU campus, which provide an additional safety feature and allow for views of FIU never seen before.

The elevator structure has several transparent walls around the elevator shaft and attached vestibule areas. A ride up in these elevators will set the tone of excellence for arrival onto this signature bridge.

A banding option that we have designed called the FIU flower could be used in parts of the elevator tower. This can be decided by FIU.
The grand staircase is an iconic feature of the bridge that is breathtaking, inviting, and provides a wide amount of space to accommodate large amounts of people moving through going to and from the bridge.

Claw-shaped planters and integrated benches were inspired by the Florida Panther. These resting places provide sculptural locations for the community to linger, gather, and a place to pause (paws).

The custom bike-tire channel integrated into the stairs encourages use of the bridge by cyclists. The elevator is also custom-design to accommodate bicycles.

The spacious plaza provides a retreat to hang out, meet up with others, or enjoy one of the many events that will take place there.
The expansive grand staircase begins at a width of 15 feet at the top and flares to a width of 30 feet at the bottom. Bicycle tracks line each side of the staircase for ease in transporting a bicycle to and from the bridge.

The same open rail stainless steel mesh follows the lines of the stairs to the plaza level.
The art piece ultimately becomes the plaza itself. The concept would be that the new key stone walls at the stairwell reflect the historic image of the university. The claw marks talk about the evolution from historical aspects of the university to the future and the oval shaped pedestal or planter would be a recipient site for a sculpture of a globe. This would signify the impact of university on the international community. The grand staircase is not only a functional architectural element in the plaza, but also takes a sculptural shape through the use of two wall components, distinct in shape, color and material. These wall components are visible from the campus as well as from passing motorists on the street. The presence of a crape myrtle bosque provides sun/shade and is a key element to the experience of the plaza. Therefore the plaza itself becomes the sculpture itself.

The north plaza has a unique north edge that reflects the gull wing patterns from the brothers to the rescue plaza.
LANDSCAPE DESIGN INSPIRED BY SOUTH FLORIDA’S BEAUTY

**TREES**
- Bald Cypress
- Simpsons Stopper
- Crape Myrtle ‘Nachez’
- Gumbo Limbo
- Live Oak
- Pigeon Plum

**PALMS**
- Royal Palm
- Thatch Palm
- Cabbage Palm
- Solitaire Palm

**SHRUBS**
- Gamma Grass
- Green Island Ficus
- Stokes Dwarf Holly
- Dwarf Firebush

Modern Accents in the Landscape

- Catena Chairs
- Paver Plaza with Concrete Banding
- Bike Racks
- Seatwalls with Pavers & Concrete Banding
- Tables
- Trash Receptacles
- Benches
- Pavers with Concrete Banding
Rendering of Innovative Signature Pedestrian Bridge Looking Northeast

A BRIDGE WORTH WALKING
The new bridge and plazas offer numerous future opportunities to enhance the space as a place to gather and linger. The following ideas could be included as future options.

**Coffee and Vendor Carts** could be set up in either the plazas or on the bridge deck as an amenity and convenience for students gathered at the bridge or those using the bridge as they travel to and from class.

Optional solar-powered fans mounted to canopy to increase air circulation.

Mounts could be installed into the struts at the deck level, where students could hook-up their own hammocks and enjoy the bridge and the fresh Miami air near the canal.

Optional table and benches mounted at strut location.
Unique panther-inspired sculptural benches could be incorporated at the bridge level. These benches could be created with input from art students at FIU.
UNIVERSITYCITY PROSPERITY PROJECT

LP-04 LANDSCAPE PLAN

FOR CONTINUATION REFER TO SHEET LP-04

S.W. 8TH STREET
(GOLDEN PANTHER TRAIL)

S.W. 109TH AVE

Pedestrian Bridge

S.W. 109TH AVE
### LANDSCAPE PLAN

**Sheet Title:**

**Project Name:** UNIVERSITYCITY PROSPERITY PROJECT

**DIMENSIONS**

**CONT. SIZE**

**BOTANICAL/COMMON NAME**

**QTY**

**CODE**

**REMARKS**

**WATER USE**

**NATIVE**

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<th>NATIVE</th>
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**GROUND COVERS / MISCELLANEOUS**

**SHRUB AREAS**

**TREES**

### FOR CONTINUATION REFER TO SHEET LP-05
NOTE:
- For FIU Hardscape
Legend refer to HP-01.
NOTE:
- For FIU Hardscape Legend refer to HP-01.

FOR CONTINUATION REFER TO SHEET LH-03
FOR CONTINUATION REFER TO SHEET LH-05

HARDSCAPE PLAN
HP-03
**NOTE:**
1) For concrete pavement structure and specifications and design criteria, refer to Eng. drawing;
2) All concrete scoring shall be tooled scoring. Sawcut will not be acceptable.
INDEX OF DRAWINGS

B-1 INDEX OF DRAWINGS
B-2 GENERAL NOTES
B-3 GENERAL PLAN I AND ELEVATION
B-4 TYPICAL CROSS-SECTION
B-5 FOUNDATION LAYOUT
B-6 PYLON FOOTING DETAILS
B-7 PYLON DIMENSIONS
B-8 PYLON/TRUSS SYSTEM CONNECTION DETAILS
B-9 TRUSS SYSTEM MAINSPAN LAYOUT
B-10 TRUSS SYSTEM BACKSPAN LAYOUT
B-11 END DIAPHRAGM DIMENSIONS I
B-12 END DIAPHRAGM DIMENSIONS II
B-13 DECK TRANSVERSE POST-TENSIONING LAYOUT
B-14 LONGITUDINAL POST-TENSIONING DETAILS I
B-15 LONGITUDINAL POST-TENSIONING DETAILS II
B-16 STAY DETAILS
B-17 P.T. BAR DETAILS
B-18 NORTH LANDING DETAILS I
B-19 NORTH LANDING DETAILS II
B-20 SOUTH LANDING DETAILS I
B-21 SOUTH LANDING DETAILS II
B-22 EXPANSION JOINT DETAILS
B-23 DRAINAGE DETAILS
B-24 MISSILE GUARD FENCE DETAILS
B-25 ELEVATOR STRUCTURE DETAILS
B-26 ABC & BRIDGE STAGING AREA
B-27 ERECTION SEQUENCE I
B-28 ERECTION SEQUENCE II
GENERAL NOTES

CONSTRUCTION SPECIFICATIONS:
1. FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2013.
2. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, SECOND EDITION, 2004 with INTERMIS through 2006.

DESIGN SPECIFICATIONS:
1. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LRFD BRIDGE DESIGN SPECIFICATIONS SEVENTH EDITION WITH 2015 INTERMIS.
2. FDOT STRUCTURES DESIGN MANUAL, JANUARY 2015.
3. AASHTO LRFD GUIDE SPECIFICATIONS FOR DESIGN OF PEDESTRIAN BRIDGES, SECOND EDITION (2009).
5. TIME DEPENDENT BEHAVIOR OF CONCRETE, CREEP AND SHRINKAGE.

DESIGN LOADS:
1. LOAD AND RESISTANCE FACTOR DESIGN METHOD (LRFD).

LOADING:
1. DEAD LOAD
UNIT WEIGHT OF REINFORCED/PRESTRESSED CONCRETE 150 PCY
UNIT WEIGHT OF STRUCTURAL STEEL 400 PSC
PEDESTRIAN FENCE ALLOWANCE 200 PSC
OVERRIDE ALLOWANCE 6.25 PSC
2. LIVE LOAD
SPECIAL PEDESTRIAN LOADING 90 PSF

FUTURE WETING SURFACE:
ALLOWANCE FOR FUTURE WETING SURFACE IS NOT PROVIDED.

STAY IN PLACE FORMS:
THE USE OF STAY IN PLACE FORMS IS PERMITTED. THE STRUCTURAL CAPACITY DUE TO STAY IN PLACE FORMS SHALL BE DISCARDED.

WIND LOADS:
WIND LOAD FOR STRUCTURAL MEMBERS WAS COMPUTED IN ACCORDANCE WITH FDOT STRUCTURES DESIGN GUIDELINES.

THERMAL LOADS:
NORMAL MEAN TEMPERATURE: 70°F
NORMAL TEMPERATURE RANGE: ±10 °F (CONCRETE)
TEMPERATURE RANGE FOR DESIGN OF STRUCTURES: ±35 °F (CONCRETE)
FALL: 35 °F (CONCRETE)
RISE: 35 °F (CONCRETE)

EARTHQUAKE EFFECTS:
THE STRUCTURE SATISFIES THE HORIZONTAL AND VERTICAL VIBRATION CRITERIA SPECIFIED IN CHAPTER 6 OF THE AASHTO LRFD PEDESTRIAN BRIDGE SPECIFICATIONS.

PRESTRESSING STRANDS:
STRANDS – ASTM A416, GRADE 270, 108 RELAXATION
STRAIN DIAMETER 0.6 INCH
MODULES OF ELASTICITY 28,500 KSI
MAXIMUMANCHORINGSTRESS 218.7 KSI
MAXIMUM ANCHORING STRESS AWAY FROM ANCHORAGES 199.8 KSI
AFTER ANCHOR SET AT ANCHOR 189.6 KSI
ANCHORSET 0.375 INCH
FRICITIONCOEFFICIENT 0.23 (PLASTIC DUCT)
MOBILE COEFFICIENT 0.00002 PER FT. INTERNAL

POST-TENSIONING DUCTS:
THE TYPE AND MATERIAL OF DUCT SHALL COMPLY WITH SECTION 462 OF THE AASHTO LRFD SPECIFICATIONS.

STRUCTURAL STEEL:
1. MATERIAL PROPERTIES FOR STRUCTURAL STEEL SHALL BE DETERMINED IN ACCORDANCE WITH THE SPECIFICATIONS SECTION 462.
2. ALL STEEL ELEMENTS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH SPECIFICATIONS SECTION 462.
3. FOR ALL MISCELLANEOUS STEEL ITEMS PERMANENTLY CAST IN THE DECK, USE GALVANIZED STEEL, STAINLESS STEEL, OR Approved COATING SYSTEM.
NOTES:

1. DIMENSIONS ARE SYMMETRICAL ABOUT TRUSS. UNLESS OTHERWISE NOTED.
2. APPROXIMATE LIFTING WEIGHT OF TRUSS SYSTEM = 915 TONS.
3. FOR LONGITUDINAL POST-TENSIONING SIZES AND LOCATIONS, SEE LONGITUDINAL POST-TENSIONING I SHEET.
NOTES:
1. DIMENSIONS ARE SYMMETRICAL ABOUT TRUSS, UNLESS OTHERWISE NOTED.
2. APPROXIMATE LIFTING WEIGHT OF TRUSS SYSTEM = 565 TONS (IF PRECAST)
3. FOR LONGITUDINAL POST-TENSIONING SIZES AND LOCATIONS, SEE LONGITUDINAL POST-TENSIONING II SHEET.
NOTES:
1. USE 4-0.6" DIA. STRAND TENDONS FOR TRANSVERSE POST-TENSIONING.
2. THE STRESSING SEQUENCE FOR THE 4 STRAND TRANSVERSE TENDONS SHALL BE
   4 1 2 3
3. STRESSING FORCE SHALL BE 46 KIPS PER STRAND.
CARP 04-76" 8'-0"
8'-0" 169x390
CARP 04-76" 8'-0"
8'-0" 169x390
CARP 04-76" 8'-0"
8'-0" 169x390
CARP 04-76" 8'-0"
8'-0" 169x390
CARP 04-76" 8'-0"
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CARP 04-76" 8'-0"
**TENDON SIZES**

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<td>C1-C2</td>
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**NOTES:**
1. DIMENSIONS ARE SYMMETRICAL ABOUT TRUSS, UNLESS OTHERWISE NOTED.
### Stay Geometry

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<td>50</td>
<td>145'-9&quot;</td>
<td>64.67°</td>
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### Stay Details

- **Steel Section Detail**
- **10" Round Pipe**
- **Pylon**
- **Steel Plate**
- **1-3/4" Dia Bolts**
- **10" Dia Round Pipe**

---

**Notes:**

- **ENGINEER OF RECORD:**
- **FLORIDA CERTIFICATE OF AUTHORIZATION NO. 5618**

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**UNIVERSITYCITY PROSPERITY PROJECT**
### SECTION A-A
- **Type A Member**
- **Type B Member**
- **Type C Member**

### P.T. BAR REQUIREMENTS

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<td>24</td>
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### NOTES:
1. All P.T. bars are \( \frac{3}{4} \)" dia. bars with an 8"x12" anchor plate.
2. Blister dimension varies with location.
NOTE:
1. THE EXPANSION JOINT SHALL MEET THE ADA REQUIREMENTS.
2. THE TOTAL DESIGN MOVEMENTS ARE:
   a) SOUTH LANDING = 1.4 IN.
   b) NORTH LANDING = 0.75 IN.
1. Drainage pipe placement is positioned both for efficiency and best aesthetics while fulfilling the required project criteria.

Details:
- Neenah Heavy Duty Bridge Scupper K-8006 or approved equal
- Flexible pipe
- Drainage cover flush with strut to look like strut, drainage will not be visible.
- Below deck - aesthetic details to be worked out in final design
- SLOPE: 1%
NOTES:
1. THE MESH AND FRAME MATERIAL SHALL BE TYPE 316 STAINLESS STEEL.
ELEVATOR GENERAL NOTES:
TYPE: MACHINE-ROOM-LESS (MRL) TRACTION PASSENGER ELEVATOR
SPEED: 150 FPM
CAPACITY: 5000 LBS
ENTRANCE TYPE: FRONT AND REAR
CAR DOORS: SINGLE SPEED CENTER OPENING, SS#4
CAB SIDE WALL A (SOUTH): SS#4 FRAMES
CAB SIDE WALL A (NORTH): 1/2" THICK CLEAR SAFETY LAMINATED GLASS WITH SS#4 FRAMES
CEILING: SS#4 FINISH WITH 6 LED DOWNLIGHTS
HANDRAIL: 1 1/2" DIAMETER, SS#4 FINISH AT SIDE WALLS

NOTES:
THE APPROXIMATED HEIGHT OF THE SOUTH LANDING AND THE NORTH LANDING ARE 22'-0" AND 25'-4" RESPECTIVELY.
STAGING AREA

NOTES:
1. THE DESIGN-BUILD TEAM IS PROPOSING TO USE THE SOUTHWEST CORNER OF SW 8TH STREET AND UNIVERSITY PARKWAY.
2. THE DESIGN-BUILD TEAM WILL REMOVE TEMPORARY FOUNDATION AFTER PROJECT COMPLETION.
3. ABOVE DIMENSIONS ARE APPROXIMATED.

SCHEMATIC SUPPORT SYSTEM

NOTES:
1. TEMPORARY SUPPORT STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH AASHTO DESIGN GUIDE FOR BRIDGE TEMPORARY WORK.
2. THE PERMANENT STRUCTURE DEFLECTIONS SHALL BE MONITORED DURING THE MOVE FROM CASTING POSITION TO FINAL POSITION.
3. CONDITIONAL POST-TENSIONING TENDONS ARE REQUIRED TO BE STRESSED PRIOR TO LIFTING THE SPAN WITH THE SPMT.
4. TRANSVERSE TENDONS SHALL BE STRESSED AFTER THE CONCRETE STRENGTH HAS REACHED 4500 PSI.
5. FOR GENERAL ERECTION SEQUENCE, SEE ERECTION SEQUENCE 1 & 2 DRAWINGS.
STAGE 1 - SUPERSTRUCTURE PRE-CASTING
1. MAIN SPAN
   a) CAST MAIN SPAN SUPERSTRUCTURE INCLUDING DECK AND CANOPY.
   b) STRESS BOTTOM SLAB TRANSVERSE POST-TENSIONING AND LONGITUDINAL P.T.

STAGE 2 - SUBSTRUCTURE CASTING
1. BUILD ALL FOOTINGS AND BASE OF PYLON.
2. BUILD COLUMN FRAME FOR BOTH LANDINGS.

STAGE 3 - CASTING OF BACK SPAN
1. EMERGENCY WORK
2. INSTALL BEARING PAD AT PIER 3.
3. SECURE TRUSS AT PYLON.
4. INSTALL BEARING PAD AT PIER 3.
5. CAST DECK, TRUSS AND CANOPY.

STAGE 4 - CASTING OF BACK SPAN
1. ROTATE MAIN SPAN FROM THE CASTING POSITION (1) TO THE FINAL POSITION (3).
2. INSTALL BEARING PADS AT PIER 1 AND REMOVE TEMPORARY SUPPORT.
3. SECURE TRUSS AT PYLON.
STAGE 5 - CAST PYLON
1. CAST PYLON SECTION AT DECK LEVEL, CONNECTING THE SUPERSTRUCTURE SECTION.
2. CAST TOP SECTION OF PYLON.

STAGE 6 - INSTALL STAYS
1. CONNECT STEEL PIPES TO THE SUPERSTRUCTURE AND PYLON.

STAGE 7 - INSTALLATION OF BRIDGE ELEMENTS
1. INSTALL MISSILE FENCE.
2. INSTALL EXPANSION JOINTS @ PIERS 1 AND 3.
3. INSTALL BRIDGE LIGHTING.
4. INSTALL DRAINAGE SYSTEM.

STAGE 8 - INSTALLATION OF LANDINGS
1. INSTALL ELEVATORS AT BOTH ENDS.
2. CONSTRUCT STAIRWAYS.
INDEX OF DRAWINGS

R-01  INDEX OF DRAWINGS
R-02  KEY SHEET - DEMOLITION
R-03-R-05  EXISTING CONDITIONS & DEMOLITION FOR ALTERNATIVE 1
R-06-R-07  EXISTING CONDITIONS & DEMOLITION
R-08  KEY SHEET
R-09-R-10  UNIVERSITY CITY IMPROVEMENTS ALTERNATIVE 1
R-11  UNIVERSITY CITY IMPROVEMENTS
R-12  UNIVERSITY CITY IMPROVEMENTS ADVANCED INTERMODAL STATION (AIMS) PLATFORM
R-13  COMPLETE STREET, US-41 INTERSECTION (FIU- SWEETWATER)
R-14  COMPLETE STREET SWEETWATER SECTION
R-15-R-17  TYPICAL SECTION
R-18  SWEETWATER RIGHT OF WAY
R-19  COMPLETE STREET DETAILS
M-01-M-04  MAINTENANCE OF TRAFFIC PLANS
LEGEND
- LANDSCAPE AREAS, REFER LANDSCAPE SHEETS
- PROP CONCRETE DRIVEWAY
- PROP 4" CONCRETE SIDEWALK
- LIMITS OF M&R

SHEET TITLE: PROJECT NAME:

REVISIONS

DRAWN:
CHECKED:
PREPARED:
MODIFIED:

COMPLETE STREET, US-41 INTERSECTION (FIU - SWEETWATER)
UNIVERSITY CITY PROSPERITY PROJECT
MIA-DADE BT-904
NOTE:

FIU TRANSIT GREENWAY TO BE CONSTRUCTED WITHIN UNIVERSITY R/W

TYPICAL SECTION FOR COMPLETE STREET THROUGH FIU GREEN SPACES

SW 109TH AVE FROM 7TH TERR TO 6TH ST
TYPICAL SECTION FOR COMPLETE STREET WITHIN CITY OF SWEETWATER

SW 109TH AVE FROM 7TH TERR TO 6TH ST
TYPICAL SECTION FOR COMPLETE STREET WITHIN CITY OF SWEETWATER

PROPOSED PLANTERS SEE LANDSCAPE PLANS
EXISTING CURB & GUTTER TO BE REMOVED

PROPOSED CURB & GUTTER (TYP.)

PROPOSED CURB (TYP.)

PROPOSED PAVEMENT SECTION, PAVERS OR ASPHALT (REFER TO PLANS AND DETAILS)

TRAVEL LANES TO BE SHARED WITH RUBBER-TIRE TRANSIT CIRCULATORS

PROPOSED PAVEMENT LIGHTING, LIGHTS TO BE PLACED ON INTERSTATE GARDENS

DECORATIVE LIGHTING (TYP.)

RAISED TERRACE OPTION AT SELECT LOCATIONS (REFER TO PLANS)

KNOW WHAT'S BELOW
ALWAYS CALL 811 BEFORE YOU DIG

811 www.call811.com
NOT FOR CONSTRUCTION PLANS

SHEET TITLE: UNIVERSITY CITY PROSPERITY PROJECT
PROJECT NAME: UNIVERSITY CITY PROSPERITY PROJECT

REVISIONS

TYPICAL SECTION
UNIVERSITY CITY PROSPERITY PROJECT
GIANT-T-2004

NOTES:
1. ALL SPAN AND BRIDGE LENGTHS ARE HORIZONTAL PROJECTIONS ALONG THE P.G.L.
NOTE:
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NOTE:
ALL FIXTURES THIS PAGE TO BE BID AS AN ADD ALTERNATE

SITE LIGHTING PLAN

NOTE:
ALL FIXTURES THIS PAGE TO BE BID AS AN ADD ALTERNATE

UNIVERSITY STANDARD PEDESTRIAN LUMINAIRE
SWEETWATER STANDARD PEDESTRIAN LUMINAIRE - TYPE B (SEE L-08)
MID-POWER LED DIRECT BURIAL ACCENT LIGHT
HIGH-POWER LED DIRECT BURIAL ACCENT LIGHT
LOW-POWER LED DIRECT BURIAL ACCENT LIGHT
LED STEPLIGHT RECESSED INTO STAIR RISER

SITE LIGHTING PLAN

UNIVERSITYCITY PROSPERITY PROJECT

NOTE:
ALL FIXTURES THIS PAGE TO BE BID AS AN ADD ALTERNATE
NOTE:
ALL FIXTURES THIS PAGE TO BE BID AS AN
ADD ALTERNATE

UNIVERSITY STANDARD PEDESTRIAN LUMINAIRE

SWEETWATER STANDARD PEDESTRIAN LUMINAIRE - TYPE B (SEE L-08)

MID-POWER LED DIRECT BURIAL ACCENT LIGHT

HIGH-POWER LED DIRECT BURIAL ACCENT LIGHT

LOW-POWER LED DIRECT BURIAL ACCENT LIGHT

LED STEPLIGHT RECESSED INTO STAIR RISER
**SITE LIGHTING FIXTURES**

**TYPE SK**

**LO1**

- **Application:** Transforms thrown scattered into a focused light for highlighting walls, columns, and directional features in existing footprints. Applicable for reading, foyers, walkways, or recessed or surface mounted luminaires to replace.
- **Electrical:** 120VAC or 277VAC 50/60Hz
- **L01 Type:** Medium 120VAC 120-165V 277VAC 300VAC 480VAC 120VAC 240VAC 300VAC 480VAC
- **Light Output:** 2700-4200 Lumen
- **Power Consumption:** 10W (30W)
- **Power Source:** 120VAC (30W), 277VAC (21W), 240VAC (21W), 277VAC (21W), 120VAC (21W), 277VAC (21W), 240VAC (21W)
- **Color Temp:** 3000K, 4000K, 5000K, 5500K
- **Dimmable:** Yes
- **Approvals:** UL, cUL, ETL, Dlc, Simplus, and IES standards with ETL Canada

**Specifications:**

- **Weight:** 16 lbs (7.25 kg) (boxed)
- **Material:** Solid cast aluminum on anodized aluminum (0.050 in) with 1/4" thick black glass polycarbonate, suitable for both wet and dry location applications.
- **Ratings:** NEMA 4X, NEMA 12
- **Wiring:** Sold with one wire, adjustable length and back gauge. Can be installed on any surface or cost off and side wall without disturbing the fixture
- **Approval:** Not for dry locations. Applicable CE and Canadian standards for CUL

**Technical Data:**

- **Type:** LED
- **Wattage:** 12W (30W)
- **Lumen:** 2700-4200 Lumen
- **Color Temp.:** 3000K, 4000K, 5000K, 5500K
- **Dimmable:** Yes
- **Approvals:** UL, cUL, ETL, Dlc, Simplus, and IES standards with ETL Canada

**Installation:**

- **Mounting:** Surface or recessed installation
- **Wiring:** Pull cable through the back of the fixture

**Accessories:**

- **Backbox:** Available
- **Wiring:** Internal wire harness

**Notes:**

- All technical information is subject to change. Copyright © MP Lighting

**Contact:**

- MP Lighting
- 123 Main Street
- Phone: 555-123-4567
- Email: info@mplighting.com

**Website:**

- www.mp-lighting.com
- www.lightsandfixtures.com

**Specify Model:**

- L01

**Configuration:**

- **Material:** Solid cast aluminum on anodized aluminum (0.050 in) with 1/4" thick black glass polycarbonate
- **Approvals:** UL, cUL, ETL, Dlc, Simplus, and IES standards with ETL Canada

**Options:**

- **Color Temp.:** 3000K, 4000K, 5000K, 5500K
- **Dimmable:** Yes
- **Approvals:** UL, cUL, ETL, Dlc, Simplus, and IES standards with ETL Canada

**Installation:**

- **Mounting:** Surface or recessed installation
- **Wiring:** Pull cable through the back of the fixture

**Accessories:**

- **Backbox:** Available
- **Wiring:** Internal wire harness

**Notes:**

- All technical information is subject to change. Copyright © MP Lighting

**Contact:**

- MP Lighting
- 123 Main Street
- Phone: 555-123-4567
- Email: info@mplighting.com

**Website:**

- www.mp-lighting.com
- www.lightsandfixtures.com

**Specify Model:**

- L01
ELECTRICAL SPECIFICATION NOTES

A. FLOREDA POWER AND LIGHT COMPANY SHALL PROVIDE 120/240 V, 1PH, 3W SERVICE VOLTAGE FOR STREET LIGHTING.

B. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND AVOIDING ALL UNDERGROUND UTILITIES AND STRUCTURAL CONFLICTS IN COOPERATION WITH THE UTILITY COMPANY(S).

C. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ANY EXISTING UTILITIES FOR WHICH IT FAILS TO LOCATE AS WELL AS DAMAGE TO ANY EXISTING UTILITIES WHICH ARE PROPERLY LOCATED. REQUIRED SHALL BE PERFORMED TO THE SATISFACTION OF THE CITY OF SOUTH MANI CT, NO ADDITIONAL PAYMENTS WILL BE AUTHORIZED.

D. STIRRUPING MAY BE ADJUSTED TO AVOID UTILITIES OR STRUCTURAL CONFLICTS NOT INDICATED IN THE PLANS.

E. SEWAGE SLUDGE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN FULL AND COLORED WHERE NEEDED TO MATCH THE EXISTING SEWAGE.

F. CONTRACTOR MUST MAINTAIN THE EXISTING LIGHTING SYSTEM OR SUPPLY A TEMPORARY ONE UNTIL THE NEW LIGHTING SYSTEM CAN BE ACTIVATED.

G. ALL MATERIALS (EXCEPT OTHERWIVELY SPECIFIED) SHALL BE UNDERWRITERS LABORATORY APPROVED.

H. THE LUMINARIES MANUFACTURER SHALL PLACE A PERMA-NID TAG ON THE LUMINARIES HOLDING ON WHICH IS BURIED THE FOLLOWING INFORMATION: RATING, BALLAST TYPE, LAMP SIZED ON DESIGN PLANS. LAMP SIZING (POSITION IN LUMINARIES), LENS, LIGHT DISTRIBUTION WITH LAMP IN POSITION SPECIFIED, INPUT VOLTAGE AND POWER FACTOR, LUMINARIES PHOTOMETRIC SUBMITTALS REQUIRED.

I. GROUND ROADS SHALL HAVE A RESISTANCE TO GROUND NOT TO EXCEED 25 OHMS WHERE THE RESISTANCE IS NOT ALLOWED AS LOW AS 25 OHMS, TWO OR MORE GROUND ROADS CONNECTED IN PARALLEL SHALL BE USED.

J. WIRES AT FULL BOXES SHALL BE LOOSED UP WITH SUITABLE LENGTH TO COMPLETELY REMOVE CONNECTORS, TO THE OUTSIDE TO MAKE THEM ACCESSIBLE FOR CHANGING FUSES AND TROUBLE SHOOTING SYSTEM.

K. ALL SPLICED WIRES OR CONNECTORS REQUIRED TO COMPLETE THE WORK SHALL BE SUPPLIED AND INSTALLED BY CONTRACTOR.

L. UNDERGROUND CONDUIT SHALL BE MARKED BY PLACING A YELLOW PLASTIC TAPE THE ENTIRE LENGTH OF THE RUN 12 IN. DIRECTLY ABOVE CONDUIT.

M. ENDS OF CONDUIT SHALL BE SEALED WITH POLYURETHANE FOAM AFTER WIRING IS COMPLETE.

STREET LIGHT DETAIL CODE NOTES

1. POLE AND LUMINARIES SHALL CONFORM TO CITY OF SIGHTED DATEI DAYS STANDARD DETAILS AS SHOWN ON AN APPROVED EQUAL MEETING THE EQUIVALENT SPECIFICATIONS.

2. CONTRACTOR TO PROVIDE ALL ACCESSORIES BY BOTH PIPING AND LUMINARIES MANUFACTURER TO GUARANTEE PERFECT FIT AND A COMPLETE INSTALLATION. POLE BASE AND POLE TOP TO SUSTAIN PICO AND LOU PIVERS. MANUFACTURER TO SUBMIT FLORIDA STRUCTURAL ENGINEERING SIGNED AND DATED CALCULATION COMPLYING WITH THE REQUIREMENTS.

3. COMPLETE RATE, INTEGRAL PART OF THE POLES. DEPTH AS REQUIRED TO PROVIDE NECESSARY STRENGTH.

4. PULL BOX DESCRIPTIVE (NOT SHEET)

5. INCOMING SIGNAL CIRCUIT RUNS TO OTHER LUMINARIES 24" MSW-RAFT SCHEDULE 40 PVC.

6. PROVIDE TMR HOE-HIDE HOLE HOLES WITH HOE SIZE AS PER CONTRACTOR'S RECOMMENDATIONS.

7. HOE TO NEW LUMINARIES CONDUIT.

8. PVC 40 WITH CONDUIT, SEAL ALL CONDUIT OPENINGS.

9. EQUIPMENT GROUND CONDUCTOR 40 BONED TO INCOMING POUR AND NEW GROUND ROD TO CONNECT GROUND.

10. 1/4" TO COPPER PIPE EXCEPT ROD WITH APPROVED LAMPS.

11. (AD) HOE TO BOND POLE "B" LINES TO PROJECT/0020280137, SOUTH MANI 6TH STREET/DOCKS

LIGHTING DESIGN CRITERIA

- AVERAGE SATURATED ILLUMINATION = 120% X 1000 = 1000 LUMENS/DEGREE
- SHARE EFFECTED = 0.15
- LOW LABEL FACTOR = 0.80
- 12% MINIMUM (LESS THAN 12%) = 7.04
- DESIGNED PSI SPACING (BASED ON PHOTOMETRIC CURVE OF LIGHT SHOWN)
- LIGHT SOURCE = 120V 2000W
SITE LIGHTING - TYPICAL DETAILS

WALKWAY LIGHTING DETAIL

- Conduit to pull box
- Concrete base
- Bond equipment and ground rod conductor to ground lug

ROADWAY LIGHTING DETAIL

- Pole manufacturer
- Bond equipment
- Bond equipment and ground rod conductor to ground lug

NOTE

1. Conduit shall be provided for prior approval of engineer and/or FM
2. Pole to match color of the fixture and tendon
3. Pole manufacturer is required to provide signed and sealed drawings stating that all new poles meet the required wind loads (100 MPH)

PULL BOX DETAIL

- Bond equipment
- Ground clamp
- Copper clad ground rod

NOTE:

- Provide 5/8" listed molded non-metallic or metal junction box by carbon or equal
ADD ALTERNATE: TYPE SZ: RECESSED, SOLAR POWERED MARKER LIGHTS IN PEDESTRIAN BRIDGE DECK

TYPE SL: LINEAR LED AREA LIGHT INSTALLED END-TO-END WITHIN RECESSED SLOT IN CANOPY

PEDESTRIAN BRIDGE LIGHTING PLANS

PEDESTRIAN BRIDGE LIGHTING PLANS

TYPE SG: HIGH-POWERED, RGBW LED FLOODLIGHT FOR ILLUMINATION OF CABLE STAY (QTY OF 2 PER STAY)
CONTINUOUS LIGHT SLOT
HOUSING 48" LINEAR LED AREA
LIGHT INSTALLED END-TO-END
PER PLANE, MINIMUM CLEAR
REQUIRED IS 8" W x 5.5" TALL

1. PEDESTRIAN PATHWAY ILLUMINATION
   SCALE: 1/8" = 1'-0"

2. PATHWAY FIXTURE COVE DETAIL
   SCALE: 1/8" = 1'-0"
PEDESTRIAN BRIDGE SCHEMATIC LIGHTING CONTROLS RISER

SCALE: N/A
TYPE SM - CONTINUOUS CEILING RECESSED LED LIGHT SLOTS

40'-0" NOMINAL RUNS CENTERED IN PLAN VIEW BETWEEN COLUMNS

BUS TRANSIT SHELTER LIGHTING

TYPE SM

accoLED 5

<table>
<thead>
<tr>
<th>project</th>
<th>type</th>
<th>location</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>interior</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>exterior</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

- **Ceiling**:
  - SM - CONTINUOUS
  - Ceiling recessed LED light

- **SLOT**:
  - 40'-0" NOMINAL RUNS CENTERED IN PLAN VIEW BETWEEN COLUMNS

- **Brand**:
  - accoLED 5

- **Model**:
  - L-18

- **Ceiling Location**:
  - LED light fixtures are installed in a continuous manner along the ceiling, centered between columns.

- **Technical Specifications**:
  - Type: SM - CONTINUOUS
  - Ceiling recessed LED light
  - 40'-0" NOMINAL RUNS CENTERED IN PLAN VIEW BETWEEN COLUMNS

- **Design Considerations**:
  - Integrated LED lighting system for consistent illumination
  - Recessed installation for aesthetic and functional purposes
  - Prioritizes energy efficiency and long-term sustainability
<table>
<thead>
<tr>
<th>TYPE</th>
<th>LUMINAIRE SPECIFICATION</th>
<th>LUMINAIRE DESCRIPTION</th>
<th>LAMP CODE</th>
<th>LAMPS / UNIT</th>
<th>MAX WATT / UNIT</th>
<th>VOLT</th>
<th>NOTES</th>
<th>REV.</th>
<th>MANUFACTURER CONTACTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>Louis Paulson AB-L-MAX-P71102X6 LED-300K110-2713600G13Y-1Y- DRA-5-3 DRA-5-3-12</td>
<td>University standard. LED pedestrian luminaire. 12'-0&quot; pole height plus luminaire.</td>
<td>Integral LED</td>
<td>N/A</td>
<td>120</td>
<td>120-277</td>
<td></td>
<td>Tony Randazzo/Lighting Associates</td>
<td>314-531-3500</td>
</tr>
<tr>
<td>SB</td>
<td>Spring City Washington Post Top - LED ASY BLU atop Vermont Pole 1500-4000K3KL-Blue</td>
<td>City of Sweetwater standard LED pedestrian luminaire atop 15'-0&quot; straight round aluminum pole.</td>
<td>Integral LED</td>
<td>N/A</td>
<td>120</td>
<td>As req'd</td>
<td></td>
<td>Steve Ward/Ward and Burton</td>
<td>314-821-7600</td>
</tr>
<tr>
<td>SD</td>
<td>Kim Lighting LTHBIF-SP-36L-4K-UV</td>
<td>Direct burial. LED adjustable accent light for illumination of palm trees.</td>
<td>Integral LED</td>
<td>N/A</td>
<td>50</td>
<td>120-277</td>
<td></td>
<td>Tyler Kiroli, E.C. &amp; Company</td>
<td>314-296-7500</td>
</tr>
<tr>
<td>SF</td>
<td>Kim Lighting LTHBIF-SP-36L-4K-UV</td>
<td>Direct burial. LED adjustable accent light for illumination of trees.</td>
<td>Integral LED</td>
<td>N/A</td>
<td>20</td>
<td>120-277</td>
<td></td>
<td>Tyler Kiroli, E.C. &amp; Company</td>
<td>314-296-7500</td>
</tr>
<tr>
<td>SG</td>
<td>Lumenpulse LBG-xxx/RGBW-VN-BK DMR/RDM-CRCLBG-SNI-BRK</td>
<td>RGBW LED adjustable accent luminaire with glare shield for cable-stay illumination.</td>
<td>Integral LED</td>
<td>N/A</td>
<td>120</td>
<td>120-277</td>
<td></td>
<td>Tony Randazzo/Lighting Associates</td>
<td>314-531-3500</td>
</tr>
<tr>
<td>SH</td>
<td>Lumenpulse LBG-xxx/RGBW-VN-BK DMR/RDM-CRCLBG-SNI-BRK</td>
<td>RGBW LED adjustable accent luminaire with glare shield for pylons upright.</td>
<td>Integral LED</td>
<td>N/A</td>
<td>120</td>
<td>120-277</td>
<td></td>
<td>Tony Randazzo/Lighting Associates</td>
<td>314-531-3500</td>
</tr>
<tr>
<td>SJ</td>
<td>Lumenpulse LBG-xxx/RGBW-VN-BK DMR/RDM-CRCLBG-SNI-BRK</td>
<td>RGBW LED adjustable accent luminaire with glare shield for pylons base illumination.</td>
<td>Integral LED</td>
<td>N/A</td>
<td>60</td>
<td>120-277</td>
<td></td>
<td>Tony Randazzo/Lighting Associates</td>
<td>314-531-3500</td>
</tr>
<tr>
<td>SK</td>
<td>MP Lighting L11-1-WDS-VW-UM-4A-9.5</td>
<td>Star riser recessed LED spotlight with remote driver/power supply.</td>
<td>Integral LED</td>
<td>N/A</td>
<td>5 Prim. As req’d/sec. as req’d</td>
<td></td>
<td>Steve Ward/Ward and Burton</td>
<td>314-821-7600</td>
<td><a href="mailto:steve.ward@wardandburton.com">steve.ward@wardandburton.com</a></td>
</tr>
<tr>
<td>SL</td>
<td>Lumenpulse LOG ASBRAE-xxVY-49-3K60x60UMMS-BK- DMR/RDM-CRCL</td>
<td>Low power, white light LED linear fixture for illuminating bridge deck for pedestrian passage.</td>
<td>Integral LED</td>
<td>N/A</td>
<td>5W/FOOT (20 watts per ft fixture)</td>
<td></td>
<td>Tony Randazzo/Lighting Associates</td>
<td>314-531-3500</td>
<td><a href="mailto:trandazzo@kewlweb.net">trandazzo@kewlweb.net</a></td>
</tr>
<tr>
<td>SM</td>
<td>A-20 LG7/RG-LS-30-HU-O-EQ</td>
<td>Low power, white light LED linear fixture for illuminate of transit pavilion.</td>
<td>Integral LED</td>
<td>N/A</td>
<td>7W/FOOT</td>
<td>120-277</td>
<td></td>
<td>Charlie Untermeier/St. Louis Lighting Group</td>
<td>314-963-3311</td>
</tr>
<tr>
<td>SZ</td>
<td>Meteor SN0203-B-B-H</td>
<td>Solar powered direct burial light.</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td>Charlie Untermeier/St. Louis Lighting Group</td>
<td>314-963-3311</td>
<td><a href="mailto:charlie@elouislightinggroup.com">charlie@elouislightinggroup.com</a></td>
</tr>
<tr>
<td></td>
<td>Lighting Controls for Bridge Aesthetic Lighting</td>
<td>DMR/RDM protocol based, timeline control system and distribution equipment needed for operation of color-changing accent lights on bridge structure</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>