DOWNTOWN TAMPA INTERCHANGE

FPID 445057-1-52-01, 445057-1-52-02, 445056-1-52-01, 445056-2-52-01 | Contract E7R70 | May 6, 2022

TECHNICAL PROPOSAL

PRINCE

gai consultants

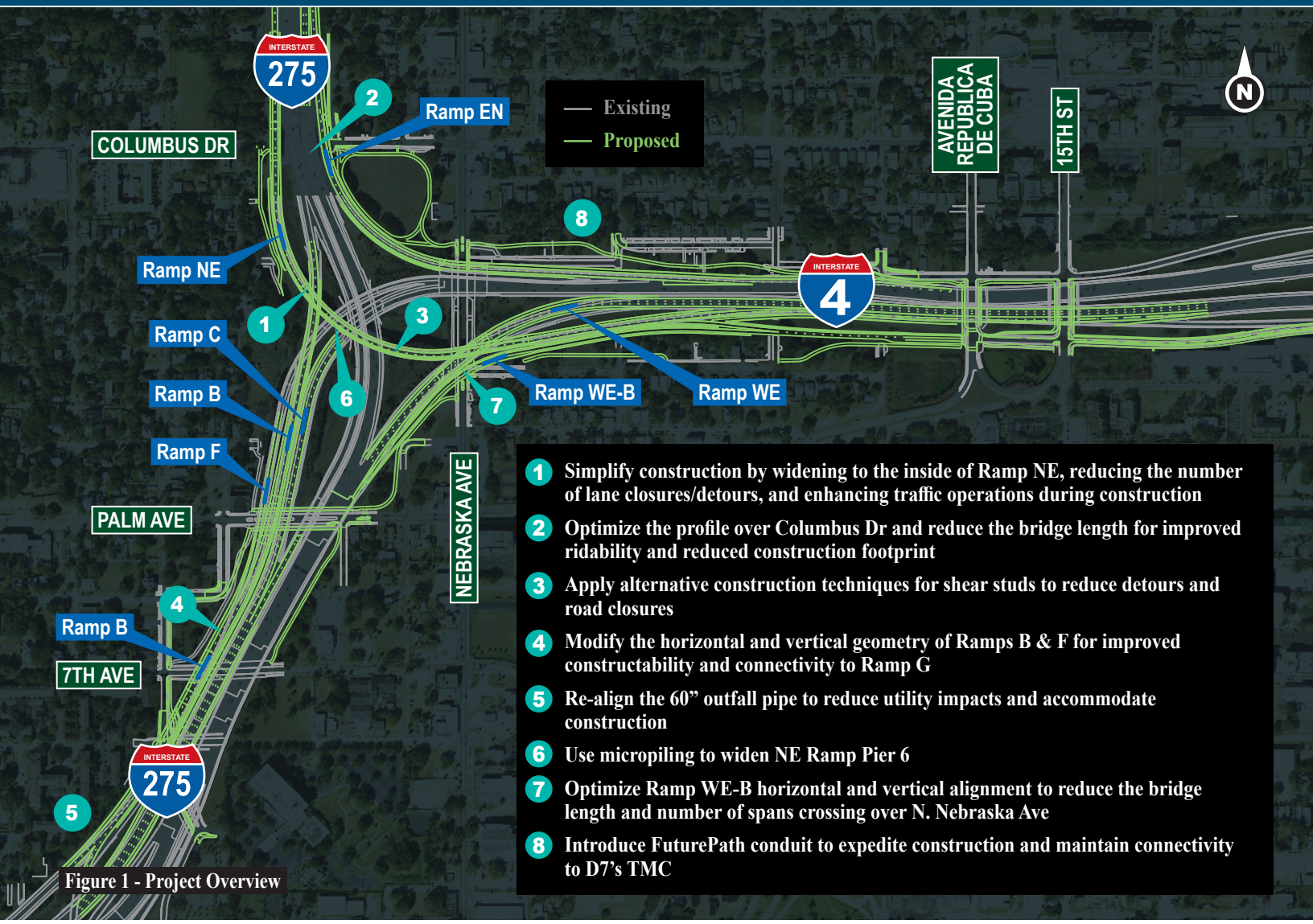


Figure 1 - Project Overview

INTRODUCTION

The Prince/GAI Team (The Prince Team) understands the need and importance of the improvements to the I-275 at I-4 Downtown Interchange. We look forward to partnering with FDOT District 7 (D7) staff on this critical infrastructure project. The Prince Team has been working to refine the RFP Concept Plans, developing an alternative that:

- Improves safety for all users of the corridor and for our team members building the project. Prince was recently recertified in ISO 14001 & 45001, confirming our dedication to excellence in safety and environmental compliance.
- Simplifies construction of the widening of I-275 SB to I-4 EB enhancing safety and minimizing impacts to the public.
- Improves the travel experience throughout the project for motorists, pedestrians, and bicyclists.
- Expedites construction via the application of ATCs and innovative construction strategies.
- Limits the impacts to motorists, pedestrians and bicyclists through a Temporary Traffic Control Plan that maintains driver expectancy and clearly designates alternative pathways through work zones.
- Reduces impacts to the neighboring property and business owners by incorporating construction techniques to limit noise and dust.
- Meets all D7 commitments to the local community.
- Limits impacts to the dozens of utilities by implementation of a comprehensive coordination plan that keeps UAOs accountable so time-consuming relocations are kept off the critical path.

INCORPORATED ATCS

★ **ATC 1B: Alternative Alignment for I-275 SB to I-4 EB Flyover Ramp (Ramp NE).** This conditionally approved ATC shifts all widening to the inside of the existing ramp bridge. This ATC provides numerous benefits enhancing project execution and long-term performance including:

- Greatly simplifies construction, promoting work zone and public safety
- ★ Widening to the inside allows other concurrent work activities and moves Ramp NE off of the schedule critical path
- Reduces ramp closures and secondary roadway detours by as much as 75% in comparison with the RFP concept
- Reduces complex structural construction and long-term maintenance challenges by eliminating:
  - Temporary construction load balancing
  - 6 complex integral post-tensioned concrete diaphragms
  - 12 temporary towers
  - 12 structural steel field splices

ATC 4B Flyover Crane Placement – Concurrent Detours. This conditionally approved ATC provides for more flexibility to efficiently and safely construct the Ramp NE bridge. The additional combinations of sensible, safe, concurrent detours, lane closures, and pacing operations will allow standard erection techniques from ground mounted cranes with

longer girder sections. The resulting operation will speed up girder erection, reduce impacts to the public and maximize construction efficiency and safety.

★**ATC 5: Ramp NE Profile at Columbus Ave.** This ATC also lowers the proposed profile, eliminating the "roller coaster" effect for the driver, and reduces associated noise impacts to the neighborhood. The lower profile further reduces temporary and permanent construction costs.

★**ATC 7: Ramps B & F Modifications.** This ATC improves the alignment and profiles of Ramps B and F to minimize impacts to the adjacent community, lower maintenance and enhance the constructability of this portion of roadway by:

- Improving operations by increasing gore spacing between Ramp B and F
- Preserving the existing Ramp F bridge over Palm Ave and complex relocation of MSE walls north of the bridge
- Reducing impacts to adjacent sensitive structures
- Lowering the roadway profile and reducing noise impacts
- Eliminating a time consuming construction phase

ATC 12C: Ramp NE Flyover Shear Connector Retrofits. This approved ATC allows the use of forthcoming revisions to the shear connector design requirements approved by AASHTO T-14 in 2021 and a shear connector retrofit concept developed by the University of Texas to optimize the required number of shear connector retrofits for the Ramp NE Flyover. **This results in a significant reduction in nighttime ramp closures and detours.**

★**ATC 15: Shorten Bridge No. 100864 over Columbus Dr.** This approved ATC shortens Bridge No. 100864 to optimize structure length and foundation locations. The refined span arrangement has no impact to the proposed phased construction, reduces structure construction and long-term maintenance costs, and maintains the full width of the existing brick sidewalks.

ATC 17A: Retain and Reuse FRP Facia. This approved ATC allows our team to retain and reuse the existing FRP fascia attached to the south side of the I-4 EB bridges over 14th St and 15th St.

ATC 21: 60" Drainage Pipe Alternative Alignment. This ATC submittal allows for alternative alignments for the 60" pipe to reduce potential utility conflicts and improve constructability. By realigning the pipe, there are also less impacts to local agency facilities.

ATC 23A: Lightweight Fill - I-275 SB North of Columbus Dr. This conditionally approved ATC allows the use of lightweight flowable fill. This location will utilize a tiered wall with lightweight fill to reduce the load on the existing cast-in-place retaining wall located along North Elmore Dr.

ATC 24A: Ramp NE Flyover Pier 6 Micropile Foundation. This conditionally approved ATC allows the use of micropile foundations at Bridge No. 100654 (Ramp NE Flyover) Pier 6 to avoid direct conflicts with existing MSE wall straps. The micropile casing can be advanced through the existing backfill without impacting the MSE wall.

★**ATC 29: Ramp WE-B Alignment and Bridge Configuration.** This ATC modifies the alignment of Ramp WE-B (both horizontally and vertically) to improve the constructability of the bridge over N. Nebraska Ave. **The geometric changes allow the bridge to be constructed as a 190' single-span structure rather than a 338' three-span bridge** and maintains the vertical clearance over N. Nebraska Ave.

ATC 30: FuturePath as the ITS Fiber Trunkline Conduit. This ATC proposes the use of an innovative ITS Fiber Trunkline conduit (FuturePath Jumbo 3-Way conduit) to streamline construction.

1. DESIGN

ROADWAY DESIGN / SAFETY

GAI and Prince have prioritized safety as the primary principle that will govern work on this project. We strongly believe in and support the **Target Zero** initiative of the Department. Our Team has collaborated to develop a design that focuses on constructability that effectively shields traffic from work zones, protecting both roadway users and construction workers. **Prince's safety focus is exemplified by their ISO 14001 & 45001 certification, a leading indicator of the company's commitment to protecting health and welfare.**

The Prince Team is committed to implementing the goals of Florida's Strategic Highway Safety Plan and the **Vital Few** on the project, and have focused our ATCs on enhancing safety through more efficient and expedient construction. Some tactics to achieve this goal include moving work off-line to reduce necessary lane closures and traffic shifts, using more reliable/simpler construction techniques, and reducing construction exposure to the public.

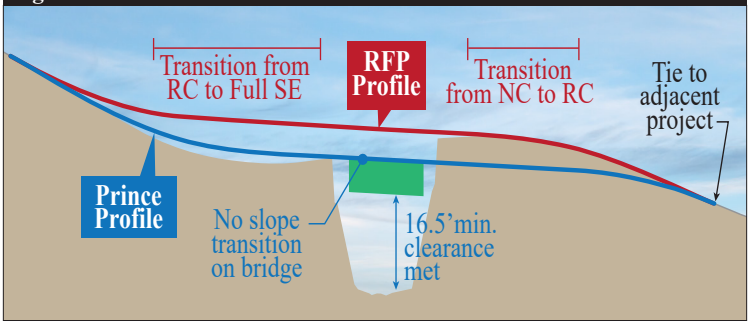
Ramp NE (Flyover from SB I-275 to EB I-4). Our Team proposes to modify the typical section for the Ramp NE Flyover to include only inside widening, eliminating the RFP concept of inside and outside widening (per approved **ATC 1B**). **This change will improve constructability and reduce the number of lane closures and detours by 75%** by allowing more work to be completed from the ground rather than on the bridge. This allows for a more conventional bridge construction approach, reducing risk and eliminating post-tensioned diaphragms/pier cap modifications in favor of adding a new parallel pier to support the widening. To accomplish this change, we have optimized the horizontal alignment of Ramp WE (NB I-275 to EB I-4):

- We will reverse the curvature to include the larger radius first, while maintaining the FDM compound curvature ratio of 1:2.
- The design will modify the superelevation from 8.1% to 9.09%, utilizing the existing superelevation transition on the bridge over Nebraska Ave.
- The superelevation transition will be shifted for the cross slope increase by moving the remainder of the transition off the existing bridge to avoid reconstruction of the bridge.

The detailed horizontal and vertical geometry of this improvement is included in the Roadway Roll Plots included with this Technical Proposal for review.

The Prince Team recognizes the Department's goal of eliminating the "roller coaster" profile of Ramp NE between the Columbus Ave bridge and the flyover. **Rather than raising the sag curve in the profile, the Prince Team has lowered the crest curve north of Columbus Ave.** This approach achieves the Department's goal and meets vertical clearance over Columbus Ave without increasing noise or visual clutter. This was approved by the Department as part of our **ATC 5** (**see Figure 2**).

Figure 2 - Profile Near Columbus

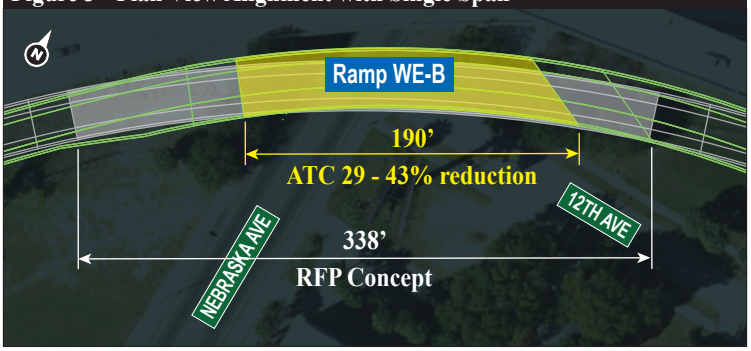


Ramp WE (NB I-275 to EB I-4). Reconstructing and re-building Ramp WE to account for the inside widening of Ramp NE requires a shift in

alignment, forcing reconstruction of the concrete pavement from the existing bridge over N. Nebraska Ave to the connection at I-4. **The reconstruction of this section will allow the Prince Team to align the travel lanes with concrete joints, an improvement above the RFP concept (see 11x17 plans for joint layout plan).** This will promote longevity of the roadway and encourage road users to stay within their lane in lieu of negotiating confusing concrete joint alignments.

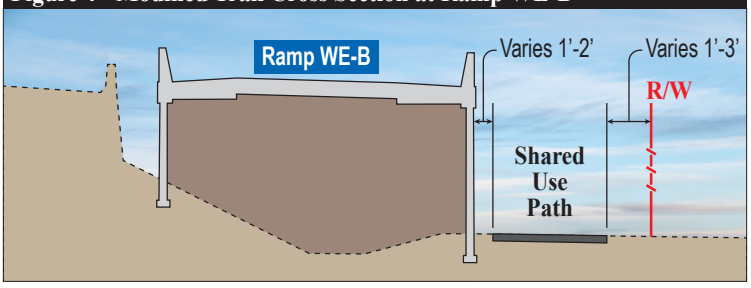
Ramp WE-B (NB I-275 to Local Roads). Our Team has modified the horizontal and vertical geometry for Ramp WE-B as demonstrated in our approved **ATC 29**. The Ramp WE-B re-alignment includes adjusting the radius to provide separation between Ramps WE and WE-B and allows for the Ramp WE-B bridge over N. Nebraska Ave to be modified from the three-span configuration to a single-span configuration. **This will improve constructability of the bridge and reduce the overall bridge length by 148' (see Figure 3).**

Figure 3 - Plan View Alignment with Single Span



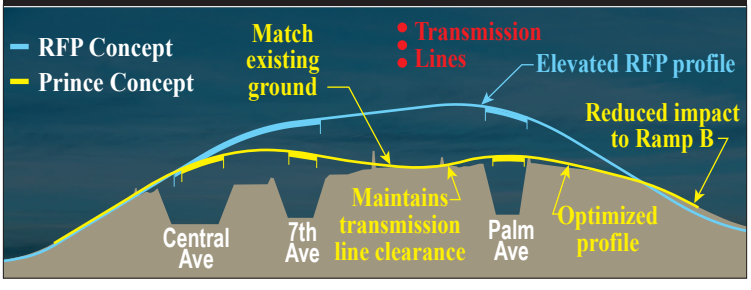
The re-alignment of Ramp WE-B does result in minor alignment modifications to the Shared Use Path (SUP) connections to N. Nebraska Ave. This work all falls within Department-owned R/W and will require no additional property acquisition (see **Figure 4**).

Figure 4 - Modified Trail Cross Section at Ramp WE-B



Ramp B (SB I-275 to Downtown Tampa) and Ramp F (WB I-4 to Downtown Tampa). As part of our approved **ATC 7**, the Prince Team will adjust the alignment and profiles of Ramp B and F so that the existing Ramp F bridge over Palm Ave can be kept in place in lieu of replacing it as described in the RFP concept (see **Figure 5**).

Figure 5 - Profile Optimization Along Ramp B



Benefits of this enhancement include:

- Eliminating foundation work adjacent to the Old Bridge Church (now the Tampa Heights Youth Development & Community Center) on Palm Ave
- Increasing the length of the Ramp F and Ramp G weave
- Reducing noise impacts by significantly lowering the profile
- Doubling the clearance below transmission lines between 7th Ave & Palm Ave
- **Reducing the MOT to three phases from the RFP's four phases**
- Improving the geometric alignment/connection to Ramp G

The RFP concept has a single structure that bridges from Central Ave to 7th St. **ATC 7's** realignment of Ramp B allows this long bridge to be converted to two bridges with embankment between them. This reduces maintenance, improves the aesthetics, and discourages use of the overpass as a refuge for vandals and the homeless.

Shared Use Path (SUP). Our team is aware the latest update to the FDM 224.12 which requires a 5' separation from the face of curb. Throughout the entire project limits, we have evaluated and moved the path where R/W allows in order to comply with the new criteria. Where not possible, we have followed the concept plan. All the paths will meet City of Tampa lighting standards and provide enhanced mobility around the interchange. The Prince Team will utilize Flexi-Pave (per City Code Table 182) to protect tree roots and allow the path to maintain alignments underneath the canopy.

Our plan includes modification of the SUP alignment along Ramp WE-B at the connections to N. Nebraska Ave from both the east and west sides. Both connections have been modified as part of the approved re-alignment of Ramp WE-B.

STRUCTURES DESIGN

The Prince Team has partnered with D7 throughout the ATC process to enhance constructability and safety while introducing cost effective alternatives to the RFP Concept. **Table 1** summarizes the approach for each structure associated with this project and documents applicable ATCs that will be applied to each.

Table 1: Structure Concept Enhancements

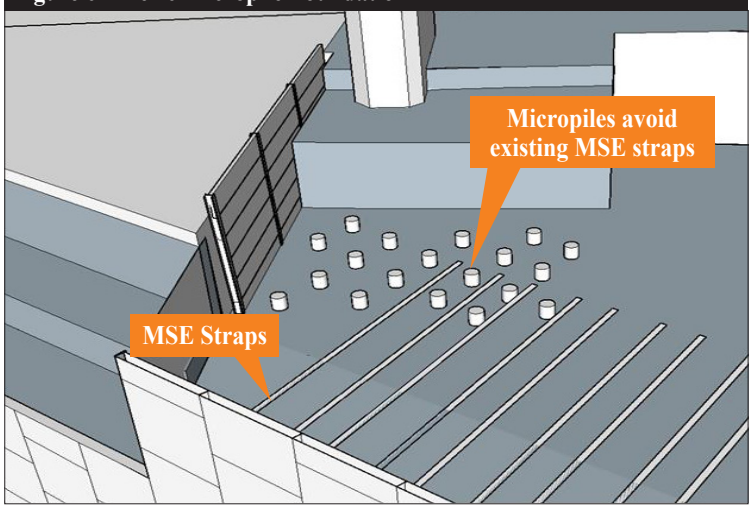
Bridge Number	RFP Concept	ATC Concept	Optimize Foundations	Cat 2	ATCs
FPID 445057-1					
100864 (B1)		▪	▪		5, 15
100654 (B2)		▪	▪	▪	1B, 4B, 12C, 24A
100656 (B3)		▪	▪	▪	17A
100657 (B4)		▪	▪		17A
100865 (B5)		▪	▪	▪	29
100146 (B6)		▪	▪		1B
FPID 445056-1					
100650 (B1)	▪		▪		17A
100652 (B2)	▪		▪		17A
FPID 445056-2					
100XXX (B1)		▪	▪	▪	7
100XXX (B2)		▪	▪		7
100XXX (B3)		▪	▪		7
100139 (B4)		▪	▪	▪	7
100141 (B5)		▪	▪	▪	7
100143 (B6)		▪	▪		7

Retrofit the existing traffic railings on Bridge Nos. 100143, 100145, 100650, 100652, 100655, 100656, and 100657 per RFP.

Remove and replace structural steel coatings on Bridge Nos. 100648, 100653, 100654, and 100655 per RFP.

Bridge Foundations. Steel H-pile or drilled shaft foundations will be utilized for the project to reduce vibrations and impacts to nearby residents and sensitive structures. Micropile foundations are proposed for the NE flyover bridge at Pier 6 due to the presence the MSE wall reinforced fill zone (see **Figure 6**).

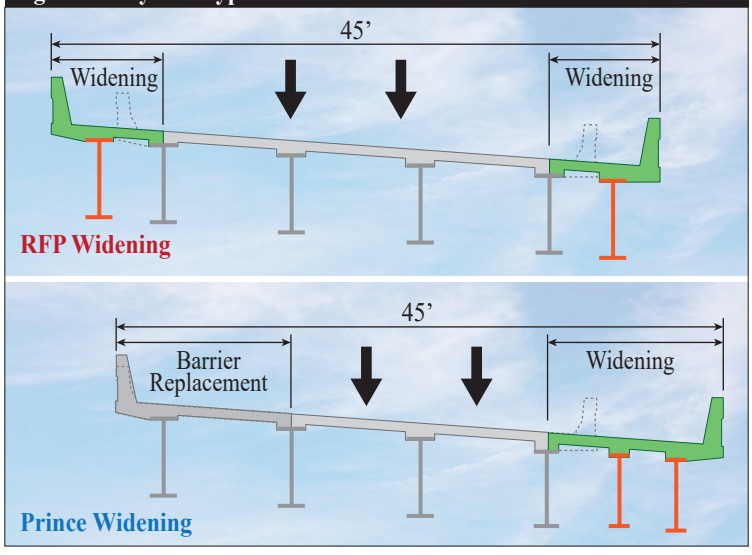
Figure 6 - Pier 6 Micropile Foundation



Ramp NE Flyover. The Ramp NE Flyover RFP construction concept is complex, requiring inefficient erection of short steel girder sections from on top of the ramp during numerous ramp shutdowns. **This complexity not only affects the technical aspects of the bridge, but adds risk to the project during design development, Category 2 approval, and construction.** The concept requires balancing the temporary load case such that the existing piers and foundations are not overloaded and calls for construction of six integral post-tensioned diaphragms/pier cap modifications. Concrete will need to be poured under ramp closures and sufficient strength gained prior to opening the bridge to traffic.

ATC 1B allows the Prince Team to widen Ramp NE only to the inside (see **Figure 7**), placing girders on newly constructed piers. **This allows the erection of longer girder field sections from ground-based cranes reducing construction duration, traffic impacts, and improving safety for the public.**

Figure 7 - Flyover Typical Section



The Prince Team approach has substantial benefits and structural concept enhancements described in **Table 2**:

Table 2: Structure Concept Enhancements

Number of Secondary Roadway Closures	
RFP: 10 detours required to erect girder sections over underlying roadways.	**ATC 1B and 4B:** Girder placement with ground-based cranes potentially reduce to 7 detours required to place girder sections over underlying roadways.
Number of Ramp NE Closures	
RFP: 18 ramp closures to position cranes and set short girder sections (two field sections erected per closure), 6 extended ramp closures to place and cure integral cap concrete until it reaches strength, 3 ramp closures to stress integral cap tendons and 3 ramp closures to wax tendons (2 caps per closure).	**ATC 1B:** Potentially reduce to 11 closures to fly-in larger girder sections.
Number of Temporary Towers	
RFP: 12 temporary towers will remain in place until all girders are erected and integral caps are constructed and stressed.	**ATC 1B:** Potentially reduce to 1 temporary tower at Pier 2 to support widening girders.
Design Issues	
RFP: Requires balancing the temporary construction loading such that the existing foundations are not overloaded.	**ATC 1B:** Greater stability during concrete deck pours with new girder lines supported by new piers. Reduces or eliminates load effect changes to the existing piers and foundations.
Overhead Impact Summary	
RFP: Requires 36 steel girder field sections, 23 of which are located over underlying roadways.	**ATC 1B:** Requires 11 field sections, 8 of which are located over underlying roadways.
Elimination of Post-Tensioned Elements and Difficult Construction	
RFP: Construction of 6 integral post-tensioned concrete diaphragms.	**ATC 1B:** Eliminates all integral post-tensioned concrete diaphragms.

Walls. Our design optimizes the quantity of walls for permanent and temporary conditions (critical and non-critical). Walls will be constructed early in each phase of the project to support the construction of the widened roadways. The complexity of this urban interchange requires a wide range of retaining wall solutions including MSE, bin, soldier pile, sheet pile, anchored, gravity, and soil nail. We will demonstrate that existing walls and wall features incorporated in the final configuration are geotechnically and structurally adequate.

DRAINAGE DESIGN & ENVIRONMENTAL PERMITTING

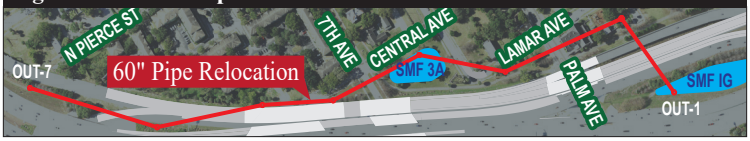
The project is located within the Hillsborough River (1443E) and Ybor City Basins (158A1), neither of which are designated as Outstanding Florida Waters or impaired water bodies. Southwest Florida Water Management District is the primary permitting agency and will require the Prince Team to modify the existing master conceptual permit to include the any improvements to be made to the interchange. There will be a total of 6 ponds (2 proposed, 4 existing) to treat and attenuate for the additional impervious area. The Hillsborough River is tidally influenced and will not require attenuation; however, the modified 60" piped outfall system must be checked for hydraulic grade line clearance. Important considerations for the proposed conveyance system will be wall zone criteria, utility avoidance, bridge deck drainage, and overall constructability within constrained locations. Improvements to the

local roads will include retrofitting the proposed system to the existing system and maintaining existing drainage patterns. Temporary drainage will satisfy spread adjacent to temporary barrier walls, maintain positive drainage, and reduce throw-away costs.

60" Outfall Pipe. Replacement of the existing 60" storm drain is among the most complicated aspects of the project, as it must be routed through constrained R/W and underneath local streets. While techniques such as micro-tunneling will be used to minimize utility impacts, deep excavations for tunneling "pits" and angular connections will complicate efforts and drive construction phasing. This work will also drive a good portion of the critical path, as completion of the new line is necessary prior to the installation of new embankments. The existing system will also need to remain fully operational until the new outfall pipe can be brought online to maintain flows.

The Prince Team has focused on optimization of this pipe alignment to promote constructability and take full advantage of available R/W to build the pipe in more favorable areas, reducing the extent of construction and potential for traffic and utility impacts. This new alignment, approved in **ATC 21** is illustrated in **Figure 8**.

Figure 8 - Outfall Pipe Relocation



ENVIRONMENTAL DESIGN

There are two bald eagle nests in the area of the project, the closest (designated HL072) is located 1.95 miles southeast of the interchange and was not active during the 2021 nesting season. The closest active nest (designated HL063) is located 3.8 miles northeast of the interchange. As proposed construction will occur outside of the 660' protection zone of the nest, no monitoring will be required during construction. The proposed improvements will not result in wetland impacts. Impacts to protected species are unlikely and permitting is not anticipated. There is a concern for the presence of gopher tortoise within the project area, as well as bats associated with the existing bridges. An environmental review of the interchange will be conducted early in the project schedule to document existing conditions and verify there are no natural environmental concerns. Should the presence of gopher tortoise burrows be confirmed, a management plan for gopher tortoise will be prepared in coordination with Department staff.

SAPM, SIGNALIZATION, LIGHTING, AND ITS

Signing & Pavement Markings. Modifications to the interchange will require clear and concise messaging to allow motorists to negotiate new movements and take full advantage of the operational improvements provided as part of this project. The Prince Team will religiously follow the Master Signing Plan provided within the RFP and utilize powder coated monotube supports for sign structures as required.

Signals. New mast arm signals will be installed at four intersections: 13th Ave/14th St, 13th Ave/15th St, 14th Ave/14th St, and 14th Ave/15th St. Bridge mounted signals will be utilized as applicable and obstruction of the decorative bridge panels avoided wherever possible. Several Rapid Rectangular Flashing Beacon assemblies will be added throughout the project area to enhance pedestrian safety as described in the RFP.

Lighting. The lighting effort for the project includes a proposed and temporary design to maintain lighting levels throughout the project per FDM Section 231. Permanent lighting will match the existing poles currently in the field, including the historic Ybor City five-globe lights. Existing poles not impacted by construction will receive new LED fixtures to ensure color uniformity and proper illuminance along the corridors. In addition to roadway lighting, pedestrian lighting for midblock crossings, signals, and the shared-use path will be incorporated into the design. The shared-use path fixtures will be solar powered as requested by the City of Tampa and follow the criteria provided.

Temporary light poles will be mounted to temporary barrier and relocated through the various phases of TTCP to illuminate travel lanes. Where feasible, new permanent light poles will be placed into service to minimize the amount of temporary poles.

ITS. Our team includes engineers that prepared the original ITS design for the interchange, and we are as such intimately familiar with the current conditions. Existing infrastructure will be reused where in it in good condition and allowable by the contract documents. Device sites will be consolidated to the extent possible to minimize maintenance. The Team will ensure project compliance with the Regional ITS Architecture and develop/update systems engineering documents as required.

Wrong Way Vehicle Detection Systems (WWVDS) will be designed for the I-275 SB off-ramp to Jefferson St and I-275 NB off-ramp to 13th Ave. The team is currently designing 80+ WWVDS locations for the District and will use that knowledge to maximize the design of these locations. The proposed locations for the WWVDSs electronic equipment will emphasize colocation with mainline ITS sites, which will reduce overall maintenance by D7.

The Department is in the process of upgrading their Ethernet switches and this will need to be accounted for in the network design for this project. A Maintenance of Communications (MOC) Plan will be developed and will be critical in the construction phasing of the project. The DTI hub is an important link in the existing system and will be protected throughout construction.

DESIGN COORDINATION PLAN MINIMIZING DESIGN CHANGES

Internal review process: Our design coordination process will accelerate design completion, ensure timely constructability input/reviews, facilitate permitting and third-party coordination, minimize field changes, and provide continuous quality control. We will hold weekly design review and coordination meetings to bring discipline leads together to share innovative concepts, update plans, and monitor schedule milestones.

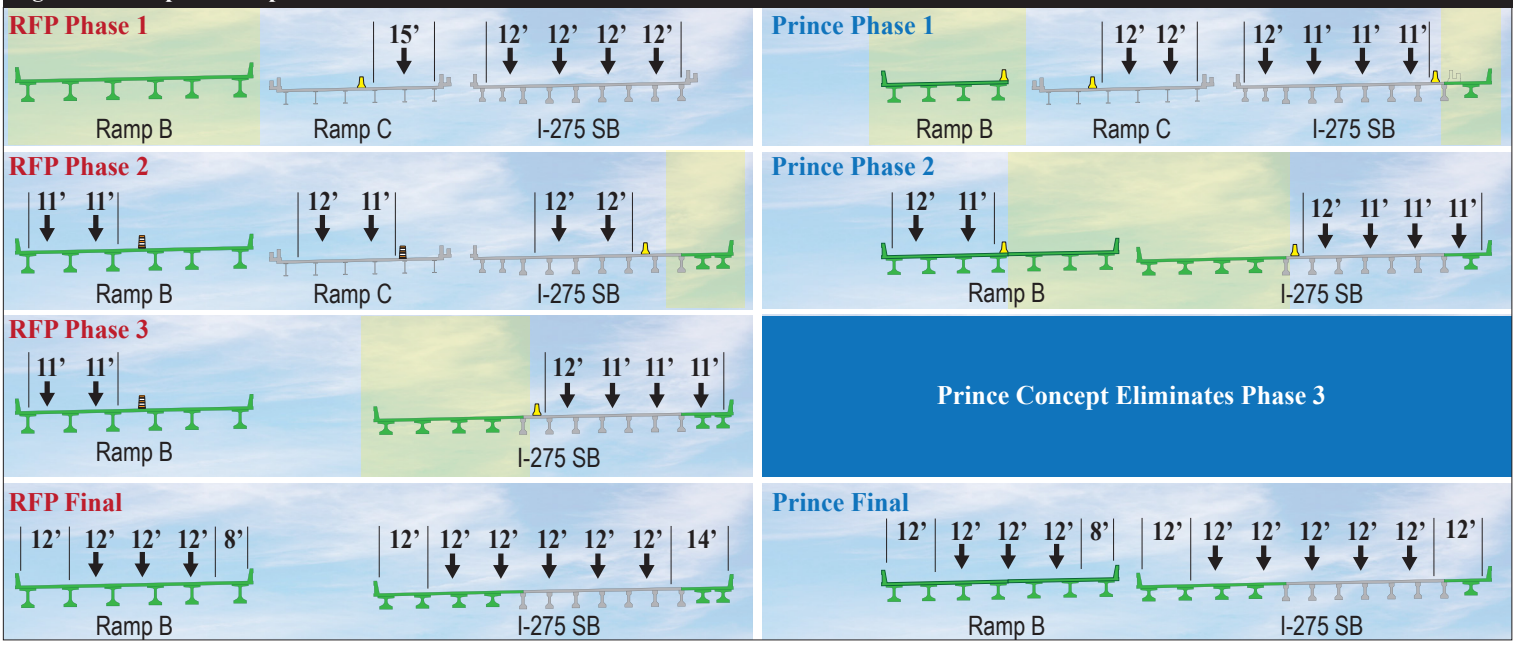
FDOT Comment Review: During design, regularly scheduled progress meetings with FDOT will confirm expectations and commitments. Design submittal meetings with FDOT will expedite the review process and ensure the design meets and is consistent with all project requirements.

Category 2 Independent Department Reviews: Our Team recognizes the importance of these reviews and will proactively complete structural submittals for the Category 2 structures (see Appendix A).

MINIMIZING IMPACTS THROUGH DESIGN

Our Team has been holding weekly team meetings thru the pursuit phase and will continue these until RFC plans on all components are achieved. We will work together to meet D7 and local stakeholder goals and commitments and strive to create "win-win" solutions. We are committed to participating in a partnering workshop with D7 to refine expectations and goals, establish clear lines of communication, encourage teamwork, and promote positive outcomes.

Figure 9 - Ramp B / Ramp F / I-275 SB TTCP



Environment. The Prince Team will develop and incorporate an erosion control plan that retains silt and debris inside of the project area. We will also identify and monitor existing landscaped areas to minimize impacts.

Traveling Public. Our entire design approach (specifically through **ATCs 1B & 7**) is centered on minimizing impacts to the traveling public. This approach will remain a central theme in all aspects our design development.

Adjacent Properties. Our team will also work with D7's PIO to actively engage adjacent property owners, businesses and stakeholders as part of our public outreach efforts to provide them notification of any construction activities in the area and potential access concerns. **We recognize the sensitivity of the area and the extent of commitments D7 has made to the public and will account for them in all aspects of the design.**

Structures. D7 has identified approximately 96 buildings within 200' of the R/W construction limits that may be impacted by construction noise and/or vibrations. The Team will follow all specification requirements and conduct property surveys to document existing conditions at the beginning of construction. We will optimize our design to allow for specialized means and methods to protect the buildings, such as use of low displacement H-piles and drilled shafts.

Local Agencies. Years of communication with local agencies have resulted in the ultimate solution proposed by this project. The Team commits to continuing the good work done by D7 and providing an interchange that meets the expectations of these local agencies.

TEMPORARY TRAFFIC CONTROL PLAN

The Prince Team will implement a traffic control plan that efficiently moves traffic through the work zone while providing a safe work area for construction personnel. The work zone will be a **Smart Work Zone** that conveys real time traffic data to drivers. Just as on the MLK Project, Prince will closely collaborate with traffic operations and other agencies to install traffic monitoring devices in the work zone so approaching drivers may be warned of reduced speeds, stopped traffic, or other unforeseen conditions.

The Prince Team has identified several key work areas within the project whose phasing will occur largely independent of each other. For each area, Prince's MOT approach emphasizes reducing the number of phases and minimizing traffic shifts.

Ramp NE Flyover. Prince's ATC to move all of the widening to the inside of the curve means the structure may be widened in a single phase rather than the multiple phases required by the RFP concept. To make the inside widening possible, Ramp WE must be shifted to accommodate a new column for Pier 2. For this shift, Prince will construct most of the new concrete pavement outside the footprint of the existing lanes. Temporary pavement will then be placed so that traffic may be shifted to the new alignment. Prince will then use night time lane closures and high-early strength concrete to systematically replace the temporary asphalt with the remaining concrete slabs. **Not only does this method adhere to all of the RFP lane closure requirements, it enables Prince to position longitudinal joints along lane lines.**

Ramp B (SB I-275 to Downtown Tampa). The widening of SB I-275 south of the interchange requires Ramp B to be reconstructed on a new alignment. The RFP concept presumes that 4 lanes of traffic cannot be maintained on the SB I-275 bridges over 7th St and Central Ave during the first phase of widening. For this reason, the RFP concept uses 4 traffic control phases. **The Prince Team has developed a widening strategy that maintains 4 lanes while these bridges are widened to the inside and eliminates a construction phase** (see **Figure 9**).

This allows the I-275 SB bridges to be widened to the inside during Phase 1 while most of Ramp B is built concurrently. In the following phase, traffic will be shifted and the remainder of Ramp B and SB I-275 is completed.

Ramps WE-B (NB I-275 to Ybor City) and NE-B (SB I-275 to Ybor City). These ramps will be constructed largely outside the footprint of the existing roadways. Once they are completed and opened to traffic, the existing EB I-4 ramp to 21st St will be removed. The section of Ramp NE between Columbus Ave and the flyover will be reconstructed on a new profile in two phases. Other major activities, such as widening Ramp EN (WB I-4 to NB I-275), will be constructed behind temporary barrier walls.

The proposed improvements include a significant amount of work on local streets. Prince's traffic control plan will address maintenance of pedestrians on these streets, particularly on Nebraska Ave and Columbus Ave.

GEOTECHNICAL INVESTIGATION PLAN

Our team will perform a comprehensive Geotechnical Investigation Plan including additional borings and detailed lab analysis. This will allow our team to take full responsibility for the geotechnical design and construction of this project. We acknowledge that prestressed concrete piles are not allowed. **Table 3** presents geotechnical challenges and solutions that we will further evaluate in the design phase and test pile program to ensure a safe, long-lasting project with minimized construction impacts to the traveling public and neighboring properties:

Table 3: Geotechnical and Foundation Challenges and Solutions

Challenge	Prince Team Solutions
Significant existing utilities	Provide foundation options that will minimize the foundation footprint
Steel H or Pipe Pile driving in hard rock	Preform pile holes to achieve minimum tip elevations
Deep foundation installation noise and vibrations	Utilize low displacement piles, drilled shafts, pre-drill piles, and pile driving noise-suppression devices such as sound shields
NE Flyover Pier 6 Widening - Deep foundations through existing MSE wall straps	Utilize micropiles per **ATC 24A**

Noise and Vibrations: Our team will implement noise and vibration suppression best practices to limit impacts to the adjacent historical sites and vibration sensitive buildings listed in the RFP. We have selected low-displacement steel H-piles and drilled shafts as foundation types to minimize installation noise and vibrations.

Our team will develop a Settlement and Vibration Monitoring Plan (SVMP) and monitor vibrations to limit construction-related settlement and vibration during construction operations. We will perform detailed pre- and post-construction surveys of adjacent structures, including before and after photographs and videos of these structures.

GEOTECHNICAL LOAD TEST PROGRAM

Our geotechnical team will conduct a testing program (PDA for steel H or pipe driven piles, thermal integrity for method/test shafts, and non-destructive integrity testing for production drilled shafts) at each bent and pier location in accordance with FDOT requirements. The Geotechnical Foundation Design Engineer of Record (GFDEOR) will supervise and certify installation of the piles and drilled shafts.

INCIDENT MANAGEMENT PLAN (IMP)

Preparing for and adequately responding to unexpected challenges that occur during the lifetime of the project, are the goals of the Prince Team plan. I-275 and I-4 are both key hurricane evacuation routes for the Tampa Bay area and any plan must focus on moving the volume of traffic expected in the event of a hurricane or major storm. In the event of a severe traffic incident which blocks multiple lanes of traffic, our IMP will include procedures to quickly implement detours from either I-275 or I-4 utilizing the RFP approved detour routes. **The TTCP developed by our team will ensure all lanes of traffic can be fully opened for operation within a 24-hour notification in the event of an emergency.**

DESIGN CONSIDERATIONS TO REDUCE INTENSITY AND DURATION OF NOISE AND VIBRATIONS

The Prince Team's ATCs have focused on shortening construction durations and preserving existing structures wherever feasible to limit these impacts. As described earlier, low-displacement piles and drilled shaft locations will be utilized to reduce the intensity of vibrations during foundation construction, with pre-drilling performed for all piles.

AESTHETICS/HARDSCAPE

The Prince Team will meet all commitments outlined in the RFP for aesthetics on the project. This goes far beyond traditional treatments such as coatings and pier shapes, as the project traverses the Ybor City historic district that is characterized by brick streets and significant hardscape enhancements. Where necessary, we will remove bricks and store them in designated, protected areas where they will not be affected by normal construction operations – allowing for their re-use once improvements are constructed. Decorative fiberglass bridge panels will be reused where feasible (per approved **ATC 17A**) and brick towers will be replaced to restore the aesthetic "feel" of the corridor once construction is completed (see **Figure 10**).

Figure 10 - Bridge Aesthetics

LANDSCAPING AND IRRIGATION

Promoting landscaping and irrigation will remain a priority of the project and clearing of existing trees avoided to the extent possible. Special attention will be paid along the SUP where landscape treatments are at their closest to the public. Irrigation systems will be maintained throughout construction and adjusted/replaced as necessary to facilitate the new improvements and provide water for in-situ planting.

UTILITY COORDINATION AND DESIGN

The project area has a tremendous amount of utilities including 10 underground telecommunication utilities, TECO, TECO/Peoples Gas, and the City of Tampa's Water & Sewer facilities. The City's work will be performed underneath a Utility Work by Highway Contractor Agreement (UWHCA), allowing the design and construction team full control over the schedule and means of the improvements. The remaining utilities, however, will be performing their own relocations, most of which will not be complete upon the commencement of construction. **The Prince Team recognizes the importance of continuous collaboration with these stakeholders to avoid critical path impacts to the project.** Wherever possible, construction phasing will be optimized to allow utility work to be completed in advance of roadway construction in any particular area, providing unfettered access to the utility to perform their activities in a timely manner.

2. CONSTRUCTION

SCHEDULE NARRATIVE

Prince and GAI have developed a preliminary schedule which segments the project into 4 phases and completes all work within 1,500 days. Within these phases, we considered critical project challenges which will be split into sub-phases. All of our schedule coordination and internal milestones will be shared with D7 and your public information office. We will ensure good communication and efficient construction practices are followed in the safest manner. Our Design and Permit schedules have been aligned to match our

phased approach to maximize the benefits of the DB procurement method. We also propose an "Early Works" package to get a jump start on clearing and grubbing and installation of new noise walls just prior to full design approval so we can begin work with actual construction progress while building momentum for an early completion.

Our Team also recognizes that the construction of the 60" outfall pipe will require protection and shoring support of existing utilities at the deflections and manhole structures which will require engineered shoring protection. If impacts to the utilities cannot be avoided, we will work to relocate them.

MINIMIZE IMPACTS DURING CONSTRUCTION TO THE FOLLOWING:

Environment. We will honor environmental commitments as well as control the effects of noise pollution, silica, sedimentation/pollution discharge, and fugitive dust emissions by using water truck sprayers and vacuum trucks as needed during construction. We place a great emphasis on being environmental stewards through our construction methods, phasing and meeting permitting requirements. Best Management Practices (BMPs) will be utilized during construction to minimize erosion and sediment issues.

Traveling Public. Prince recognizes the need to quickly respond to unexpected events such as traffic accidents and other disruptive events within the construction work zone. We also recognize the importance that D7 places on minimizing impacts to the traveling public during work zone incidents. Specific elements of our IMP are:

- Maintaining the existing Arterial DMS and DMS for motorist safety.
- Ensuring up-to-date contact lists are maintained for personnel and other key contacts.
- Coordinating major construction activities and work zone shifts with D7 construction staff, the D7 PIO, stakeholders and local authorities, emergency responders, and the appropriate Traffic Incident Management (TIM) Team for the area. In addition, we will assist in coordinating regularly scheduled TIM Team meetings throughout construction.
- Developing a Hurricane Preparedness Plan for pre- and post-event measures.
- Employing properly trained and equipped personnel to routinely monitor the work zone and assist motorist with emergency events.
- Implementing our proven measures which allow for the roadway to be quickly restored to full capacity in the event of an emergency. If we receive a notification of an emergency evacuation, we will cease construction activities until the evacuation order has been lifted. The safety of the traveling public is the highest priority, and we will take all preparations necessary to ensure the safe flow of traffic through the project site. We will coordinate efforts with D7 and appropriate emergency and law enforcement personnel to ensure timely and efficient emergency evacuation.

Adjacent Properties. We are aware the Department has identified approximately 60 Contributing Historic Buildings and approximately 39 Non-contributing Residential Buildings within 200' of the project's construction. Due to the proximity of these properties and the potential for noise and vibration impacts, Prince will perform pre- and post-construction surveys, as required by specifications, to document the conditions of the properties.

Pile driving for the new bridge will have the biggest impact to adjacent property owners and stakeholders. We will coordinate our work with the property owners in advance of any operations being started. We will hire an independent firm to perform all required vibration monitoring to document pile driving impacts. Additionally, we are mindful of tailgate slamming during nighttime hours. Prince understands being good partners and to do so requires good upfront planning and coordination.

Structures (Existing and Newly Built). The Prince Team understands that the process of the structures most critical stage will be in the new MSE wall widening locations and has a plan to efficiently build these walls with minimal interference to the traveling public. When it comes to constructing the bridge itself, our ATCs have allowed for simple, conventional bridge construction techniques. The biggest efforts on our part will be coordination with D7 and stakeholders during our pile driving and beam setting operations.

Local Agency Facilities. Prince and GAI's TTCP and Detour plans will take into account the best roads to use when detouring traffic. We will strive to avoid roadways that are already congested and or in poor condition.

Utilities. Our design and construction approach provide minimal interference with existing utilities, and those that need to be protected in place will be coordinated with the UAOs. Where possible, relocations will be scheduled to occur well in advance of our construction.

D7's ITS facility including Fiber Optic Communications Network. We will identify and protect all ITS facilities during construction to avoid interruptions and/or shutdowns of the ITS system and DMS signs. Prince's specialty ITS subcontractor will be able to mobilize to repair ITS facilities within 4 hours in the event of any failure.

Enhance Public and Worker Safety. Prince has a zero recordable accidents mindset, zero lost time, and zero incidents with pedestrians, traveling public and our workers. Our proposed design innovations are geared to enhance our safety plan as detailed below:

- **Preliminary Work Plans:** Our plan starts with preparing our Site-Specific Safety Plan, Pre-Activity Work Plans, and all required training is done well in advance of starting work activities. We will also include not only preliminary training, but continuous training during operations, and we will perform regular safety inspections. The work plans will include the safety hazards and established procedures for every aspect of the work and will be shared with our workers in every crew to enhance their ability to work safely prior to starting an operation.
- **Internal Traffic Control Plan (ITCP):** Our construction management developed ITCP's will be shared with D7, CEI staff, and subcontractors. The ITCP will detail safe ingress and egress, pedestrian walking zones, and potential hazards for our construction employees and inspection staff. Material trucks entering, exiting, and moving within the construction area is the most dangerous aspect of the project. To enhance our Truck Safety Program, we will enforce 10 MPH speed limits for construction vehicles within our work areas. Repeat offenders will be removed from the project.
- **Minimize Traffic Diversions, Traffic Pacing, Traffic Detours and Lane Closures:** Our innovative ATCs and Temporary Traffic Control Plans as shown within our Roll Plots clearly demonstrate our commitment to minimize these events, resulting in a reduction of detours by up to 75%.

Enhance Structures Construction. Prince will self-perform nearly all bridge construction activities. Our bridge crews have performed excellent and timely work in D7 most recently at our I-75/SR 60 project. We will bring that same level of excellence to this straightforward bridge construction.

- **Foundations:** The proposed bridge foundations consist of driven H-piles which will be installed using 100% PDA testing that will optimize the required lengths. Drilled shafts and micropiles will be used at targeted locations as described in this technical proposal.
- **Retaining Walls:** Our wall crews will stand ready to expedite construction. Prince will provide the properly equipped grading crews to bring in the fill materials as necessary to reach and maintain our daily production goals until completion.

- **Beam Erection:** No overhead work will be performed over live traffic. We have evaluated our nighttime erection plans and have strategically developed a plan that will minimize off-system detours
- **Noise Walls.** Prince will install the Noise Walls within the job as an early works package to get those affected by the noise some early relief. These barriers will be in place as early as possible without conflicting with other work that may have to happen should other work in the area need to be completed.
- **Miscellaneous Structures**. The Prince Team will construct miscellaneous structure foundations so that accurate as-built information is provided to the fabricators in hopes of avoiding supply chain delay issues.

Enhance Roadway Construction. Based upon Prince's wealth of roadway experience, we propose the following zone-wide roadway construction practices:

- Utilize clean pavement markings, temporary signing, and temporary concrete barrier wall to provide drop-off protection and safely channelize motorist through the work zones.
- Maintain safe ingress and egress for material and off- peak deliveries.
- Utilize temporary asphalt when it is required to temporary widening while completing our work activities.
- Identify critical overhead signing and ITS activities that will impact roadway construction opening.

During roadway construction, the 3D Automated Machine Guidance model will increase speed and production rates and improve the accuracy of grading and paving operations. The interface between the design and automated grading control will be seamless to deliver the best product possible for D7.

ENHANCE DRAINAGE CONSTRUCTION

Prince will complete the drainage improvements per the commitments as noted in the RFP. Any dewatering will be used as required with discharge from the pumps into adequately sized settlement basins within the R/W. All excavation for pipe and structures will comply with OSHA standards and we will use trench boxes and properly engineered temporary shoring protection whenever necessary.

Temporary Drainage: To ensure motorist safety and to minimize impacts to adjacent property owners the following strategies for temporary drainage will be followed during construction:

- All drainage patterns will be maintained to eliminate flooding of adjacent properties.
- The existing drainage system and flows will be maintained until all new systems are installed.
- Existing pipes and inlets will be cleaned as required to provide proper flow throughout construction.

ENHANCE CONSTRUCTION COORDINATION AND MINIMIZE CONSTRUCTION CHANGES

Our construction approach is to work closely with GAI on collecting and understanding survey, geotechnical, and utility coordination information. We will provide construction recommendations, which when checked against criteria, will yield a superior product with minimal changes.

Preconstruction/Constructability Reviews: Our Construction DB Coordinator Mike Reinke, PE will lead the Preconstruction Phase and facilitate design development between Construction and Design Teams, provide constructability reviews, and coordinate means and methods for construction during design development. Providing these reviews during design development will verify that construction personnel are taking ownership of design plans, thus minimizing last minute changes.

MAINTENANCE OF EXISTING IRRIGATION SYSTEM IMPACTED BY CONSTRUCTION ACTIVITIES

The Prince Team will keep irrigation active at all times and install necessary bypass piping to maintain continuous irrigation outside our construction limits.

IMPLEMENTATION OF THE ENVIRONMENTAL DESIGN AND EROSION/SEDIMENT CONTROL PLAN

Development of a project-specific Stormwater Pollution Prevention Plan, in accordance with National Pollutant Discharge Elimination System requirements, will be performed. We are keenly aware of the new laws concerning erosion, sedimentation/pollution discharge, silica flumes, and fugitive dust emissions of projects. Our Environmental Implementation Plan will include the necessary proactive controls and they include:

- Installing a bulletin board displaying endangered species and approved permits.
- Performing an endangered species survey and relocations if needed.
- Ensuring no additional impacts to wetlands or surface waters.
- Minimizing erosion potential at the wall locations by using non-erodible material at the slope point.
- Performing daily inspections and repairs of erosion control devices.
- Providing water tank trucks to spray down demolition operations and equipment and broom tractors to keep silica and dust to a minimum during construction.

APPROACH AND IMPLEMENTATION OF THE MAINTENANCE OF TRAFFIC PLAN THAT INCLUDES THE CONSTRUCTABILITY OF THE I-275 SB TO I-4 EB FLYOVER

The Prince Team will develop a straightforward work plan that minimizes impacts to the traveling public and improves worker safety throughout the project. We will maintain all illumination by installing temporary lighting where construction impacts current lighting. Existing ITS Devices will be maintained and used to safely alert motorist of current traffic conditions. All overhead work will be performed in coordination with D7.

Our MOT plan will engage the use of Smart Work Zone technology. Prince will apply expertise learned on our I-75/MLK project to guide successful implementation of these systems on the Downtown Tampa Interchange project.

As described throughout this proposal, the Prince Team's approach to simplifying construction of the Ramp NE flyover enhances constructability, reduces risks, and improves safety for road users and construction workers.

INCIDENT MANAGEMENT PLAN (IMP)

Prince recognizes the need to quickly respond to unexpected events such as traffic accidents and other disruptive events within the construction work zone. We also recognize the importance that D7 places on minimizing impacts to the traveling public during work zone incidents. Specific elements of our IMP are:

- Maintaining the existing Arterial DMS and DMS for motorist safety.
- Ensuring up-to-date contact lists are maintained for personnel and other key contacts.
- Coordinating major construction activities and work zone shifts with D7 construction staff, the area stakeholders, local authorities, emergency responders, and the appropriate Traffic Incident Management (TIM) Team for the area. In addition, we will assist in coordinating regularly scheduled TIM Team meetings throughout construction.

- Developing a Hurricane Preparedness Plan to address pre- and post-event measures.
- Employing properly trained and equipped personnel to routinely monitor the work zone and assist motorists with non-emergency events.
- Implementing our proven measures which allow for the roadway to be quickly restored to full capacity in the event of an emergency. If we receive a notification of an emergency evacuation order, we will cease construction activities until the evacuation order has been lifted. The safety of the traveling public is the highest priority, and we will take all preparations necessary to ensure the safe flow of traffic through the project site. We make sure to coordinate efforts with D7 and appropriate emergency and law enforcement personnel to ensure timely and efficient emergency evacuation.

UTILITY COORDINATION

Our utility coordination and construction approach will continue the proactive efforts we started during the proposal phase by:

- Holding weekly construction meetings with UAO's to discuss schedule, tasks, and progress. We will make UAO coordination the first agenda item to encourage participation by UAO representatives.
- Identify and seizing opportunities for earlier utility relocations and construction in available areas.

MINIMIZE DETOURS

Our TTCP will be designed and implemented to keep all lane closures to a minimum and only within the times as noted within the RFP. All traffic shifts will have advanced notifications with the D7 Director of Communications Officer and the use of message boards on the construction site. All pacing operations and detours will be used at an absolute minimum and as few will be needed for construction of this project. **The Prince Team's approach to the project has resulted in a reduction of planned detours by up to 75%, significantly reducing impacts to the public.**

3. INNOVATION

See **Table 4** for a summary of the Prince Team's innovations.

4. VALUE ADDED

BROADENING THE EXTENT OF VALUE ADDED FEATURES WHILE MAINTAINING EXISTING THRESHOLD REQUIREMENTS

See **Table 5** for Value-Added warranties and Additional Items Covered by Prince. We are confident in our quality and workmanship and stand behind it with our additional warranties as indicated.

EXCEEDING MINIMUM MATERIAL REQUIREMENTS TO ENHANCE DURABILITY OF PROJECT COMPONENTS

Our Team's commitment to quality incorporates many features to maximize durability and reduce maintenance of project components as illustrated throughout this Technical Proposal.

ADDITIONAL VALUE ADDED PROJECT FEATURES

See **Table 5**.

Table 4: Prince Team Innovations

Apply Prince's ISO certified skillsets to improve safety and quality of workmanship	C,Q,T
Modify Ramp NE design to significantly reduce ramp closures/ detours (75% reduction over RFP)	D,C,Q,T
Simplify bridge construction of Ramp NE flyover by widening to the inside	D,C,Q,T
Accommodate concurrent detours as a result of Ramp NE Construction strategy	D,C,Q,T
Implement a Ramp B & F concept that preserves an existing structure, increases weave distance, and eliminates a major traffic control phase	D,C,Q,T
Utilize developmental AASHTO provisions to reduce the number of shear studs on the Ramp NE flyover	D,C,Q,T
Shorten the bridge over Columbus Dr while accommodating bicycle and pedestrian use	D,C,Q,T
Develop an alternative 60" outfall pipe alignment that reduces utility impacts and improves constructability	D,C,Q,U,T
Revise the Ramp WE-B alignment to permit construction of a 190' single span bridge rather than the RFP's 338' three span structure	D,C,Q
Use FuturePath ITS Trunkline Conduit in lieu of a traditional fiber and conduit system	D,C,Q,T
Maximize compliance with FDM 224.12 for a 5' roadway separation from face of curb compared to the RFP concept	D,C,Q,U,T
Improve Traffic Control and construction phasing to reduce the number of detours and eliminate nearly all temporary shoring towers	D,C,T
Eliminate of all post-tensioned pier caps on Ramp NE	D,C,Q,T

D	Design optimization & minimize/eliminate variations & exceptions
C	Construction – maximize safety and minimize cost and time
Q	Maximize project quality and reduce future maintenance costs
U	Minimize utility impacts/relocations
T	Reduce traffic delays

Table 5: Value Added Warranty Table

Item	Duration (Yrs) Std.	Duration (Yrs) Prince	Spec. Warranty	Measurable Standards
Required Value Added by Prince				
Asphalt Pavement	3	4	338	Tables 338-1, 338-2, and 338-3
Bridge Foundations (Piling)	2	6	455	See below
Concrete Structures (Sub/ Superstructure)	2	6	400	See below
Concrete Pavement	5	6	355	Table 355-1
Bridge Bearings	5	6	475	475-3.3.3
Approach Slabs	2	3	400	See below
Concrete Defects	5	6	475	See below
Bridge Coatings	5	6	475	475-3.3.2
Bridge Deck Exp. (Joint Devices, Hardware, Armor, Seals)	5	6	475	475-3.3.1
Bridge Lighting/Electrical	5	5	475	475-3.3.4
Bridge Drainage	5	5	475	475-3.3.5
Additional Items Covered by Prince				
Roadway Drainage	0	3	425, 430	Material Defects/ Improper Install
Barrier Wall, Guardrail, Fence & Attenuators	0	3	Various	Material Defects/ Improper Install
Concrete Retaining Walls	2	6	400	Material Defects/ Improper Install
MSE Walls	2	3	500	Material Defects/ Improper Install

APPENDIX A

CATEGORY 2 STRUCTURE REPORT

The Prince Team's final design will have structural components classified as Category 2 Structures per FDM Section 121.3.2, see **Table A**. These structural components will require reviews from the Central Office Structures Design Office (SDO) and the Independent Department Review Firm (IDR). The Team's design and construction schedule will include the design review durations listed in RFP Section K, Project Schedule. A preliminary submittal schedule for plan submittals that include Category 2 structure elements will be submitted to the Department within fifteen (15) days following Notice to Proceed. This preliminary submittal schedule will be followed by an Independent Design Review Kickoff Meeting to discuss Category 2 structural elements, critical modeling and analysis assumptions and boundary conditions, and a general discussion of design and constructability issues with the goal of partnering to develop the project efficiently. The goal of this meeting will be to assist the design team to develop comprehensive submittals addressing Department concerns and expectations and to assure the SDO and IDR are provided the information they require to efficiently review and approve the submittals. The goal of this meeting will be to establish an effective partnership with clear lines of communication and a mutual commitment to fulfill the Departments goal of completing this complex project within the committed contract duration. The following Category 2 structural components are expected to be included in the advanced design solutions for this complex project.

Non-Redundant Foundations: Single drilled shaft foundations may be provided at all new and widening bridges. These non-redundant foundation elements are identified as Category 2 structural components per FDM 121.3.2(3). The planned sizes and arrangements are generally consistent with the RFP Concept Plans. Where possible, the Team will replace these foundation elements with redundant multi-pile foundations to eliminate Category 2 reviews, eliminate the use of specialty subcontractors, decrease foundation testing / acceptance criteria, and to allow Prince to self-perform the foundation installation. This foundation optimization effort will also allow the plans to be Released for Construction earlier, allowing Prince to commence work earlier to the benefit of the construction schedule.

Curved Steel Girders: Horizontally curved steel girders will be required at Bridges 100654 and 100865. This structure type is not identified as a Category 1 structure type per FDM 121.3.1, which makes it a Category 2 structure per FDM 121.3.2. Bridge 100654 is the widening of an existing multi-span continuous horizontally curved steel bridge and Bridge 100865 is a new single-span horizontally curved steel bridge. The horizontal curvature of the Ramp NE and Ramp WE-B alignments will require the use of horizontally curved steel girders. Category 2 reviews will be required for this non-standard and complex superstructure type.

Modified Florida I-Beams: Modified Florida I-Beams are required at Bridges 100139 and 100656 to comply with minimum vertical clearance requirements, as shown in the RFP Reference Documents. This structure type is not identified as a Category 1 structure type per FDM 121.3.1, which makes it a Category 2 structure per FDM 121.3.2. Category 2 reviews will be required for this non-standard beam type.

Micropile Foundations: Micropile foundations are required for Bridge 100654 Pier 6, per **ATC 24A**. These non-standard foundation elements are identified as Category 2 structural components per FDM 121.3.2(3). This foundation type has been selected due to the complex nature of the site, the adjacent Pier 6 foundations, the equipment access limitations, and due to the presence of a reinforced soil mass for a MSE wall supporting the embankment adjacent to SB I-275. GAI will address each of the stipulations included in the Department's **ATC 24A** conditional approval. This structural component will require a Category 2 review.

Table A: Category 2 Components

Bridge Number		Non-Redundant Foundations	Curved Steel Girders	Modified Florida I-Beams	Micropile Foundations
FPID 445057-1	100864 (B1)				
	100654 (B2)		▪		▪
	100656 (B3)			▪	
	100657 (B4)				
	100865 (B5)		▪		
	100146 (B6)				
FPID 445056-1	100650 (B1)				
	100652 (B2)				
FPID 445056-2	100XXX (B1)	▪			
	100XXX (B2)				
	100XXX (B3)				
	100139 (B4)	▪		▪	
	100141 (B5)	▪			
	100143 (B6)				

Lightweight Fill: Lightweight fill may be required to design retaining walls including the I-275 SB North of Columbus Drive tiered walls (**ATC 23A**). Any proposed lightweight material not covered by the standard specifications will require the design team to develop of a TSP, resulting in a Category 2 review per FDM 121.3.2(6).

Post-Tensioned Components, Straddle Piers, and Integral Diaphragms: The Prince Team has refined the RFP design of Bridge No. 100654 to eliminate complex integral post-tensioned concrete diaphragms which are listed as Category 2 structure components per FDM 121.3.2(1). This project optimization has simplified the design development process, SDO/IDR reviews, construction, and construction inspection.