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Volume 2: Technical Proposal

The I-20 at Savannah River Bridge Replacements and Roadway Widening Project

P.I. No. 210327-

Submitted to:



Submitted by:



PARSONS

C.1 Technical Proposal

The commitment of the Georgia and South Carolina Departments of Transportation (GDOT and SCDOT) to improving the I-20 corridor is vital to the mobility and economic growth of the region. The Flatiron | Parsons team appreciates this opportunity to partner with GDOT/SCDOT to design, construct, and improve this critical transportation link. We understand that GDOT values well-designed and durable facilities that serve citizens for decades to come. These facilities are constructed in harmony with the environment and community needs, and with minimal disruption to current users. Our team has focused on the items GDOT and SCDOT value most.

We have staffed the project with qualified and experienced individuals. Russ Lauria, Contractor Project Manager, and Saurabh Bhattacharya, Designer Project Manager, worked together daily to deliver the recently opened I-75/I-575 Northwest Corridor Express Lanes project. Ahmet Urgen, Roadway Design Manager, Greg Shafer, Engineer of Record, Susantha Chandraratna, Drainage and ESCP Design Manager, and most of the design team were dedicated to the Northwest Corridor through its successful completion.

DESIGN AND CONSTRUCTION COORDINATION

Task force-based collaboration between designers and builders during regular task force meetings adds value to every design-build project. The builders influence the design (constructability and efficiency for schedule), and the designers gain valuable insight into construction means and methods. Since June 2018, our team has met weekly with maintenance of traffic (MOT), roadway, structures, drainage, and environmental task forces to optimize our design by developing and implementing invaluable Alternative Technical Concepts (ATCs) shown in Figure 1.

Staging | MOT Task Force – We were driven to develop a two-stage construction plan because we believe a three-stage plan cannot be constructed cost-effectively within the required timeframe. An important benefit of fewer stages is a reduction in the number of traffic shifts. Before being moved to its final



Northwest Corridor ribbon-cutting ceremony on September 12, 2018. Russ Lauria, Saurabh Bhattacharya, and most of our design team were instrumental in the successful delivery of the project.

configuration, the westbound bridge traffic is shifted only once to the Stage 2 configuration and eastbound traffic can remain on the existing bridge in its original location. To keep traffic flowing, all of our proposed crossovers and lane shifts have design speeds equal to the current posted speed limits (GA: 55mph | SC: 65mph). We will use a temporary trestle to construct the bridge crossing the Savannah River, therefore most of the bridge construction is away from traffic and out of motorists' view (see Figure 2).

Figure 2: Savannah River Bridge Constructed from Trestle

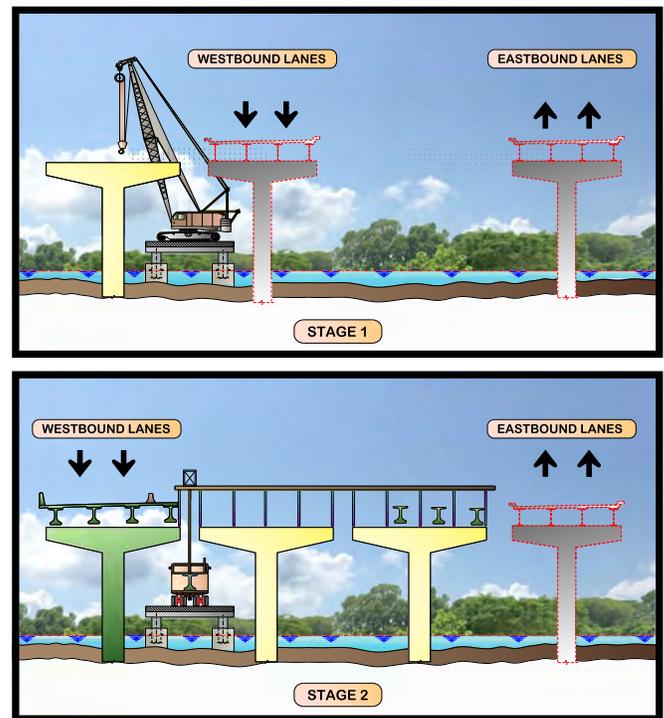


Figure 1: Alternative Technical Concepts (ATCs) Implemented into our Design

ATC NO.	NAME	DESCRIPTION	BENEFIT TO GDOT
ATC-001A	I-20 Alternate Alignment	Alignment shift to allow two-stage construction	Minimizes traffic shifts and reduces project duration by 59 days
ATC-003A	Use of Existing Concrete Pavement	Incorporate existing pavement into new base course	Eliminates more than 3,600 dump truck trips
ATC-004	Increased Beam Spacing	Allowable FIB spacing has been increased above the GDOT requirement up to a maximum of 10'-9"	The increased spacing also allows us to utilize a beam shifter to increase construction speed and enhance safety.

Structures Task Force – Our structures group's focus was on constructability, optimal span arrangements, off-line (from trestle) construction for reduced traffic impacts, and low maintenance. Our team developed the following innovative structural solutions:

- Approved ATC-004 Increased Beam Spacing – Reducing the number of girders in each span from the 16 shown in the RIDS to 12.
- We optimized the bridge span arrangements and reduced the number of interior bents for the Savannah River bridge from 13 to 8. We utilize only three columns per pier on mono-shafts to minimize impacts to the riverbed and to the Savannah River FEMA Floodway.

Roadway Task Force – We developed optimized geometry for I-20 to shift the alignment to the north (ATC-001A) and to allow all bridge construction to occur in two stages. We optimized the profile to allow most of the existing pavement to be incorporated into the new road base (ATC-003A), eliminating more than 3,600 dump truck trips to the project.

Environmental Task Force – Our environmental team was continuously engaged during the development of the revised alignment to verify that the changes have minimal impact on the environment. For continuity throughout the project duration, our environmental consultant will perform both permitting and compliance functions.

C.1.1 Construction Staging and Traffic Management

Flatiron | Parsons conducted a comprehensive schedule analysis when it became clear that a three-stage bridge construction scheme could not be completed cost-effectively in the required timeframe. We developed our ATC-001A to be able to complete the work in two stages. Stage 1 bridge construction is on the north side and is completely outside of the existing bridge footprint allowing bridge traffic to remain in its original location. In Stage 2, the westbound I-20 lanes are shifted to the new bridge while the remainder of the bridge work is completed. During both stages, eastbound bridge traffic remains in its original location without any lane or shoulder reductions. By reducing stages, we will keep motorists moving in their familiar traffic patterns for a longer duration. Our construction access plan, shown in Figure 3 on the following page, allows the new bridges over the river to be constructed from a single trestle and away from traffic, and it allows the Augusta Canal bridges to be constructed from a barge landing that is accessed via the river trestle. The access plan includes acceleration/deceleration lanes on I-20 and a system of access roads, allowing us to safely move materials and equipment into and out of the work area.

ATC-001A shifts I-20 to the north allowing bridge construction to be completed in 2 Stages. Only 2,760 hours of allowable lane closures are required to construct the project.

By optimizing the geometry and constructing the new bridges from a trestle and canal barge landing away from existing traffic, we will reduce the number of lane closures by approximately 20%. In addition, by reducing the number of interior bents for the river crossing from 13 to 8, and the number within the defined channel banks from 11 to 8, we will decrease construction time and reduce impacts to environmentally sensitive areas (ESAs).

A usable shoulder, at least 8-feet wide, will be provided on I-20 at-grade roadway sections.

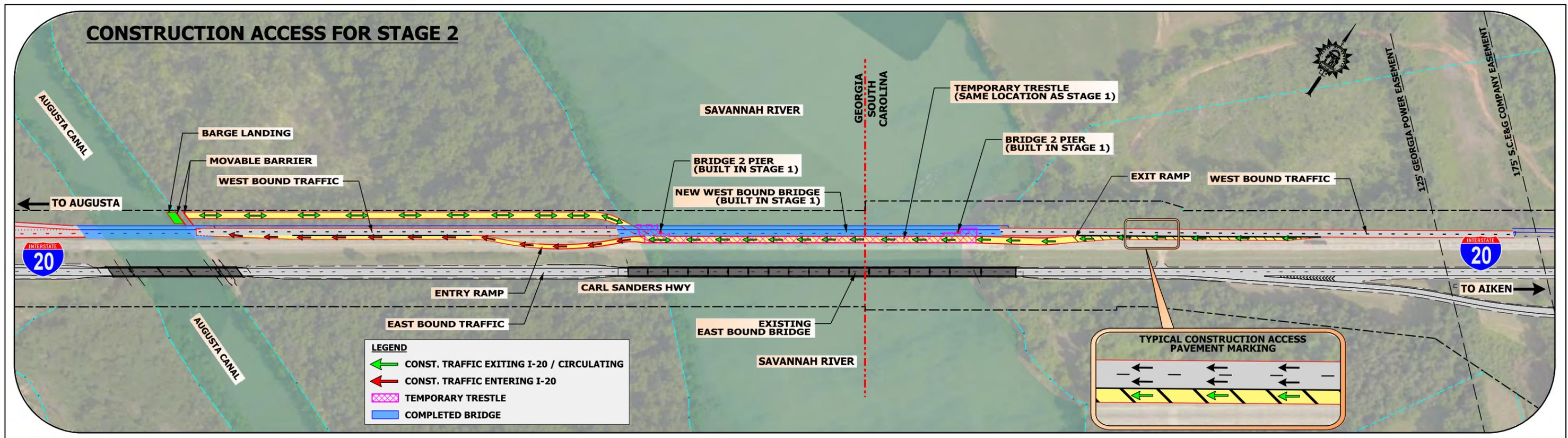
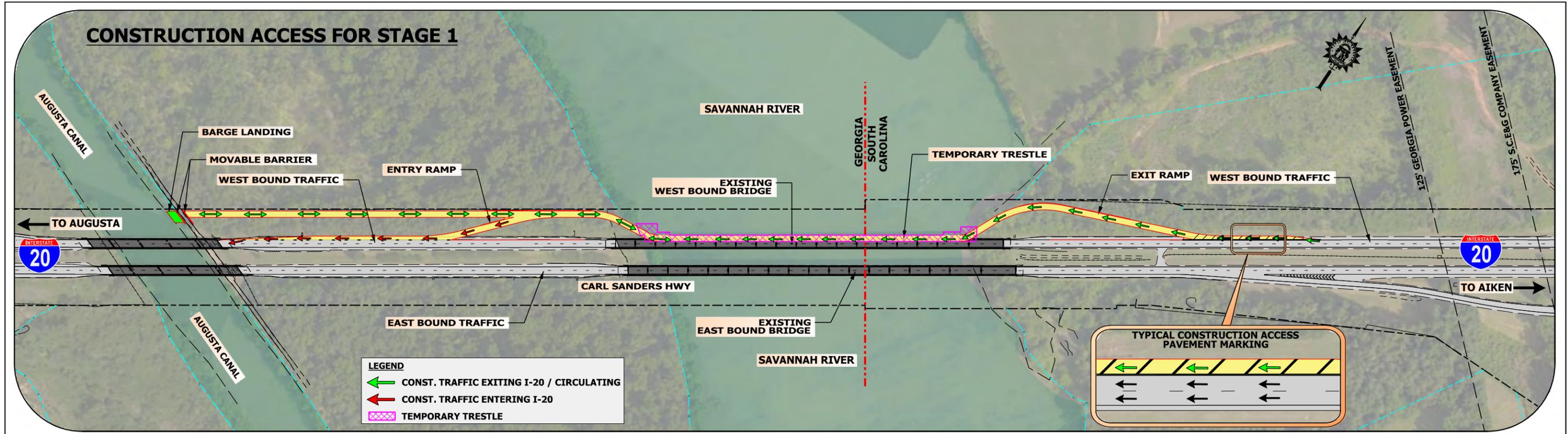
C.1.1.1 REQUIREMENTS FOR CONSTRUCTION STAGING AND TRAFFIC MANAGEMENT PLAN NARRATIVE

Flatiron | Parsons is committed to constructing this project with minimal impacts to traffic operations. By reducing the construction duration, providing safe construction access, and minimizing lane/shoulder width reductions, we will keep mobility at a level consistent with the current conditions. For example, with our ATC-001A, which shifts the alignment 40 feet to the north, we can construct the project in two main stages. To further reduce traffic impacts, our ATC-003A incorporates much of the existing pavement into the new base course, eliminating more than 3,600 dump truck trips on public roadways.

We are committed to the traveling public's mobility and safety. We will design all temporary roadways and traffic shifts for the existing posted speed limits and we will pay careful attention to temporary drainage. Emergency and public vehicle routing will be carefully coordinated well in advance of any detour implementations or traffic changes. Our ITS system and traffic management strategies, which include traffic monitoring and non-injury incident clearing assistance, will help keep the roadways clear. Our communication strategies will keep the communities and traveling public aware of incidents and of upcoming construction activities that may affect their commutes.

We will provide a temporary trailer-based signage, queue detection, and CCTV ITS systems that will facilitate a rapid response to incidents.

Figure 3: Construction Access Staging Plan



C.1.1.1.a. – Construction Phasing and Challenges

Our design concept is tailored to allow the new bridges to be constructed in two stages, minimizing traffic shifts. The northern portions of the new westbound I-20 bridges are constructed in Stage 1 without moving traffic on any of the existing bridges and thus without lane or shoulder width reductions. Sufficient new bridge width (38'-4") is initially constructed to accommodate westbound traffic in Stage 2 with a 4-foot outside shoulder. Eastbound traffic will continue to stay in its original location on the existing eastbound bridges during Stage 2 until the new bridges are completed.

Our team has put forth an intensive effort during the proposal phase to comprehensively plan a construction approach that allows rapid construction and minimal traffic impacts. This extensive design development allows Flatiron | Parsons to provide a greater level of accuracy to the project approach and schedule. We have identified the following main challenges to the construction phasing plan:

1. Mobility and Public Safety
2. Project Duration
3. Traffic/Incident Communication
4. Environmental Impacts and Permitting
5. River/Canal Preservation

CHALLENGE NO. 1 – MOBILITY AND PUBLIC SAFETY

Maintaining mobility during construction is essential to the project's success. Successful mobility requires minimizing traffic shifts, avoidance of speed reductions and ultimately keeping the public safe.

By minimizing traffic shifts and construction duration, we will minimize impacts to the motoring public. We will keep traffic flowing by designing traffic shifts with the preconstruction posted speed limits, implementing an effective construction access plan, building the bridges from a trestle/barge landing away from traffic, providing a minimum 8-foot usable shoulder on at-grade sections for stopped vehicles, and proactively monitoring traffic and clearing incidents. For construction access, we will build truck acceleration/deceleration lanes and a system of construction access roads as shown in **Figure 3** that will connect to a trestle and barge landing. The truck acceleration/deceleration lanes for construction will help prevent sudden movement into or out of the travel lanes. Our plan is to build the new Savannah River bridge from the single trestle that will run parallel to the existing westbound lanes, so our work zone access will be on the westbound side. Girders for the river crossing will be installed from the trestle using a beam shifter, as shown in **Figure 4**. Similarly, the new Augusta Canal bridge will be built from a single barge landing that is

also along the westbound side. We will maintain safety and driver expectation by providing consistent work zone ingress/egress throughout the project duration.

Figure 4: Girders Placed with a Beam Shifter



Our effective and proactive maintenance during construction accomplishes two objectives: avoiding speed reductions and helping keep the public safe. Our crews will prevent routine maintenance from becoming hazardous and requiring invasive responsive work. Inspection crews will survey the limits of construction each day to identify maintenance items requiring follow-up. This list will be categorized as routine or responsive work. This early proactive identification is the cornerstone to the success of the program. It will also allow routine work to be detailed and performed in coordination with GDOT, emergency services, utilities, stakeholders, municipalities, and other governmental authorities with the least possible impact to those involved.

Our project-maintenance supervisor will ensure maintenance issues are treated as a priority.

CHALLENGE NO. 2 – PROJECT DURATION

Flatiron | Parsons will complete the project in two major construction stages and will provide early substantial completion of the project 59 days early. Our construction stages for the new bridges are based on the ATC-001A alignment shift to the north and the use of a single trestle to construct the river crossing. We will construct the northern portion of the westbound lanes in Stage 1 without moving traffic on any of the existing bridges, which means there will be no lane or shoulder width reductions. We will construct sufficient bridge width (38'-4") in Stage 1 to accommodate westbound traffic in Stage 2, but eastbound traffic will stay on the existing bridges in their original location.

I-20 EB lanes on the bridges will remain in current configuration until the new bridge is completed.

CHALLENGE NO. 3 – TRAFFIC/INCIDENT COMMUNICATION

Flatiron | Parsons is proposing temporary trailer-based signage, queue detection, and video surveillance systems that will be solar powered and controlled or monitored via cellular communication packages. We will operate, maintain, and reposition the system as necessary to align the components throughout each stage of MOT during construction.

We will place signs as required to direct traffic and alert travelers before new or alternate routes. We will place closed-circuit televisions (CCTV) to provide complete coverage of the work zone and vehicle detection equipment will be placed at entrances, exits, and intermediate ramps within the work zone. The system is designed to provide additional safety to the construction and inspection personnel as well as to provide early detection of incidents and efficient MOT.

CHALLENGE NO. 4 – ENVIRONMENTAL IMPACTS AND PERMITTING

Our innovative ATC-001A geometry brings to the project a major benefit—construction in two main stages—but it results in some changes to the project’s environmental impacts. The early identification and clarification of changes that require National Environmental Policy Act (NEPA) re-evaluation and environmental permitting, are essential to the early completion of the project.

A key task is to accurately capture all permanent and temporary impacts. For example, we have thoroughly reviewed the Protected Species Survey Report and noticed 11 groups of relict trillium were identified containing more than 9,500 individuals. Our ATC-001A proposes an impact (0.023 ac) to a small ESA located in Group 11 that contains only one individual plant. An impact to this individual plant is not significant enough to trigger a Biological Opinion from the U.S. Fish and Wildlife Service (USFWS).

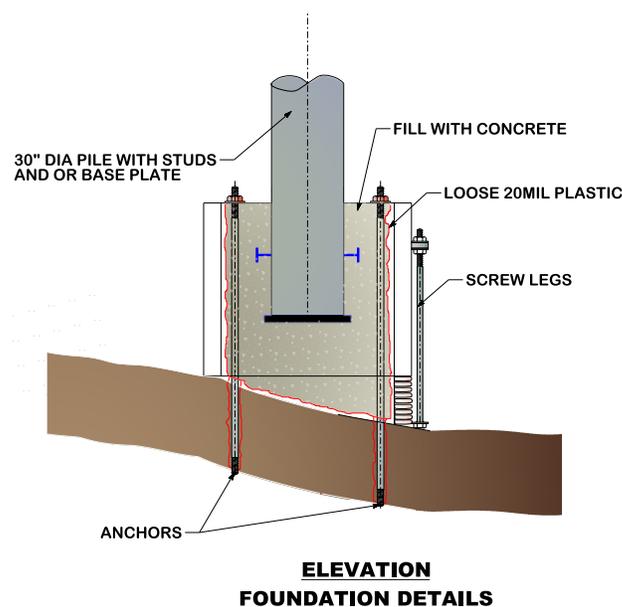
Another key task is the successful development of an accurate conceptual layout. To accelerate the schedule, as was successfully done on the Northwest Corridor project, our design team will begin work on this conceptual plan immediately following the bid opening. While these design plans are finalized, environmental specialists will work with project designers to identify all areas where the environmental impacts differ from the original assessments so that GDOT can efficiently review the re-evaluations prepared by Flatiron | Parsons.

CHALLENGE NO. 5 – RIVER/CANAL PRESERVATION

By using a single trestle for both stages of construction, the construction access, consisting of acceleration and deceleration lanes and temporary access roads, will be from I-20 westbound. The lanes and shoulders on the existing I-20 eastbound bridges will remain in the preconstruction condition until all traffic is shifted to the completed bridges. We will minimize impacts to the riverbed by constructing the trestle where it can be used for both construction stages. We will position the trestle adjacent to the Stage 1 construction, then we will add lateral extensions as required to construct Stage 2 foundations and substructure. We will use a beam shifter to lift beams from the trestle to the new river bridge, in lieu of staging beams from I-20, thus minimizing lane closures.

We will construct each bent of the trestle on two footings that will be anchored into the rock, but will otherwise be isolated from the riverbed. We will level a prefabricated form, loosely lined with plastic sheeting, with screw legs, and then fill it with concrete. Our trestle footing detail, used in the past on the Q-Bridge in New Haven, CT, is shown in Figure 5 below. When construction is completed, we will remove the foundations with minimal disturbance to the riverbed because the concrete is not bonded to the native rock.

Figure 5: Trestle Footing Detail



We have the experience to manage these challenges effectively, as shown in Figure 6 on the following page, and will complete the project early while minimizing impacts to mobility and the environment.

Figure 6: Project Challenge Mitigation and Benefits

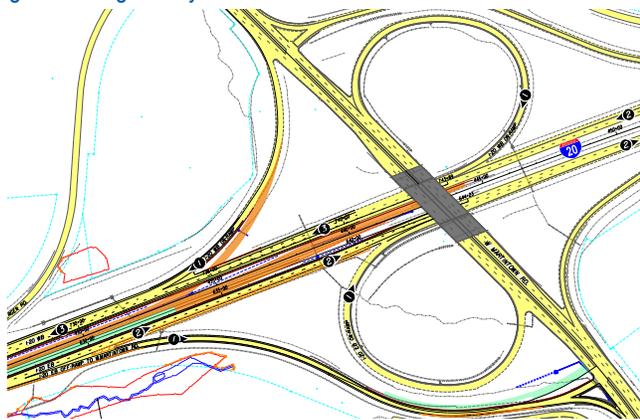
	CHALLENGE	MITIGATION	BENEFITS	PAST APPLICATION
1	Mobility and Public Safety	<ul style="list-style-type: none"> Two stage construction with only one major traffic shift during construction Lane closures only during nights and weekends Build truck acceleration/deceleration lanes connecting barge landing and trestle for construction access Consistent work zone ingress/egress Proactive maintenance with daily inspections ensuring issues are treated as priority and mitigated for safety of both the construction crew and traveling public Use of trestle and beam shifter to lift beams to new river bridge 	<ul style="list-style-type: none"> Maintains driver expectancy Promotes safety for the traveling public during construction Avoids speed reductions Minimizes traffic interruptions by construction vehicles Minimizes lane closures, as no beams for the bridge construction will be staged from the interstate. 	<ul style="list-style-type: none"> On Northwest Corridor, Russ and the Parsons team were able to construct 50% of the express lanes with no major traffic shifts On Northwest Corridor, complex staging to re-configure I-75/I-575 was accomplished in two major stages Parsons provided temporary ramp widening to ensure ramps stayed open during reconstruction for Selmon Expressway Widening in Tampa, FL
2	Project Duration	<ul style="list-style-type: none"> Reduce number of construction stages from three to two (ATC-001A) Repurpose existing concrete pavement to be incorporated into the new road base (ATC-003A) Use of single trestle to construct Savannah River Bridge Use of single barge landing to construct Augusta Canal Bridge Early Work Package for erosion control, MOT and temporary works 	<ul style="list-style-type: none"> Early Substantial Completion by 11/3/2021 Repurposing the base saves construction time and eliminates 3,600 dump truck trips Begin construction within 8 months after NTP1 	<ul style="list-style-type: none"> Parsons completed 866 Early Work Package Drawing Sheets on the Northwest Corridor Project to begin construction within 11 months from NTP1 Parsons provided multiple early work packages and phasing of deck replacement and widening to reduce schedule duration for Selmon Expressway Widening in Tampa, FL
3	Traffic/Incident Communication	<ul style="list-style-type: none"> Video surveillance systems (CCTV) to provide complete coverage of work zone Temporary trailer-based signage Vehicle queue detection equipment placed at entrances, exits and intermediate ramps within the work zone Use of GPS navigation software like WAZE 	<ul style="list-style-type: none"> Solar powered surveillance system can be monitored and controlled via cellular communication packages Alerts travelers prior to new or alternate routes Provides additionally safety to the construction and inspection personnel Provides early detection of incidents and efficient maintenance of traffic Real-time communication with commuters to alert about traffic incidents and construction activities 	<ul style="list-style-type: none"> Russ and Parsons maintained functionality of existing I-75/I-285/I-575 ITS systems throughout construction Parsons maintained direct communication with owner's maintenance chief to notify of incidents and supported repairs on Selmon Expressway Widening in Tampa, FL
4	Environmental Impacts and Permitting	<ul style="list-style-type: none"> Involving our NEPA specialist, David Smith - Ecological Solutions, from the beginning in all design decisions, ATC developments and scheduling Early identification and clarification of changes that require NEPA re-evaluation Design optimization to reduce magnitude of impacts – two stage construction, retaining walls, drilled shafts with smaller foundation footprint, repurposing existing pavement, single trestle for both stages for river bridge, top-down demolition, use of small landing area for canal construction. Early and thorough review of the Protected Species Survey Report Advance environmental documents prior to NTP1 by completing an accurate Conceptual Layout Design Submittal within 30 days of Letting Early coordination meeting with OES to determine extent of re-evaluation that would result from any changes to streams, wetlands, or protected species (relict trillium) 	<ul style="list-style-type: none"> Innovative construction techniques to minimize impacts to environmentally sensitive areas and protect the environment during construction. Early identification of a 0.023-acre impact to ESA relict trillium Group 11 as part of ATC-001A Biological Opinion from USFWS will not be triggered due to impact of an individual plant. Recommendation of a "May Affect, Not Likely to Adversely Affect" determination for this species. Environmental-compliance specialists will work with project designers towards early identification of changes in environmental impacts Use of innovative techniques, early and constant coordination throughout the design cycle, and environmental impact minimization will reduce the schedule risks of obtaining environmental permits and clearance prior to issuance of NTP3. 	<ul style="list-style-type: none"> Parsons team conducted early coordination with GDOT OES for Bridge Replacement project PI 0013601 in Muscogee County for impact to Relict Trillium plant species and performed expedited USFWS Biological Opinion within 4 months to meet the Environmental certification for right-of-way Russ and Parsons successfully utilized a "Line and Grade" geometry submittal on Northwest Corridor similar to what is now the standard "Conceptual Layout Design"
5	River/Canal Preservation	<ul style="list-style-type: none"> Staged construction using a single trestle to minimize impacts Trestle bents will be constructed on two footings anchored into the rock, but otherwise isolated from the riverbed During canal construction and demolition, use of protection platform providing minimum of 10-foot clearance from the towpath. 	<ul style="list-style-type: none"> Construction access to the trestle including acceleration/deceleration lanes and temporary access roads will be from a single location from I-20 westbound Upon completion, trestle foundations will be removed with minimal disturbance to the riverbed since concrete is not bonded to the native rock Protection platform will allow access to both trail users and utility companies that use the towpath to move maintenance equipment from one side of I-20 to the other 	<ul style="list-style-type: none"> Russ on the Q-Bridge in New Haven CT successfully worked off a trestle over a sensitive waterway to install large drilled shafts and major bridge construction over water with no issues.

C.1.1.1.b – Overall Traffic Control and Sequencing Approach

Many of the benefits of our ATC-001A and our two-stage construction approach have been discussed. Our bridge staging concept is shown in detail on **Figure 7** (on the following page) and our overall staging concept is shown on the 1 inch=200 feet drawings included in Section C.1.1.1.c.

Our careful planning of the construction stages, including the locations of temporary pavement, barriers, temporary drainage pipes and temporary retaining walls are shown on the drawings. The staging sections provided depict the progression of construction and the location of the travel lanes in every stage along the project alignment. See **Figure 8** for our Stage 1 layout at Martintown Road.

Figure 8: Stage 1 Layout at Martintown Road



I-20 travel lane widths are shown on the conceptual staging drawings included in Section C.1.1.1.c and are either 11 feet or 12 feet wide. All I-20 at-grade roadway sections provide at least one 8-foot usable shoulder as required by the RFP. Our construction access plan provides acceleration/deceleration lanes on I-20 and a system of access roads to connect the temporary trestle. We will use a beam shifter arrangement as shown in **Figure 4** to place girders from the trestle away from traffic. The phasing concept is straightforward but takes into consideration the grade differences between the existing eastbound and westbound I-20 roadways as well as all ramp modifications. **Figure 9** summarizes our staging concept.

Figure 9: Summary of Staging Concept

CONSTRUCTION STAGE	ROADWAY (GEORGIA)	BRIDGES (AUGUSTA CANAL AND SAVANNAH RIVER)	ROADWAY (S. CAROLINA)
Stage 1A	Construct the northern portion of WB pavement, including temporary	Construct the northern 38'-4" of the WB Bridges	Construct pavement in the median, including temporary
Stage 1B	Construct the southern portion of EB pavement, including temporary	Same as Stage 1A	Construct the northern portion of WB pavement; construct temporary for ramps and crossover
Stage 2A	Construct pavement in the median	Construct the remainder of the new bridges (EB and WB)	Construct the southern portion of EB pavement
Stage 2B	Same as Stage 2A	Same as Stage 2A	Complete pavement in the median

Note that the construction of the traffic signals and ramp turning lanes at the eastbound I-20 off-ramp intersection with West Martintown Road will be progressed to achieve the Interim Completion deadline of 821 days after NTP 1. Our team will look for opportunities to further reduce the interim completion durations by early and actively coordinating with utility companies to avoid utility conflicts near the I-20 off-ramp intersection.

C.1.1.1.c. – Conceptual Construction Staging Drawings

Our conceptual construction staging drawings are included at the end of this proposal.

C.1.1.2 – MINIMUM LANE CLOSURE DURATIONS

Only 2,760 hours of allowable lane closures are required to construct the project. Form M is included at the end of this proposal.

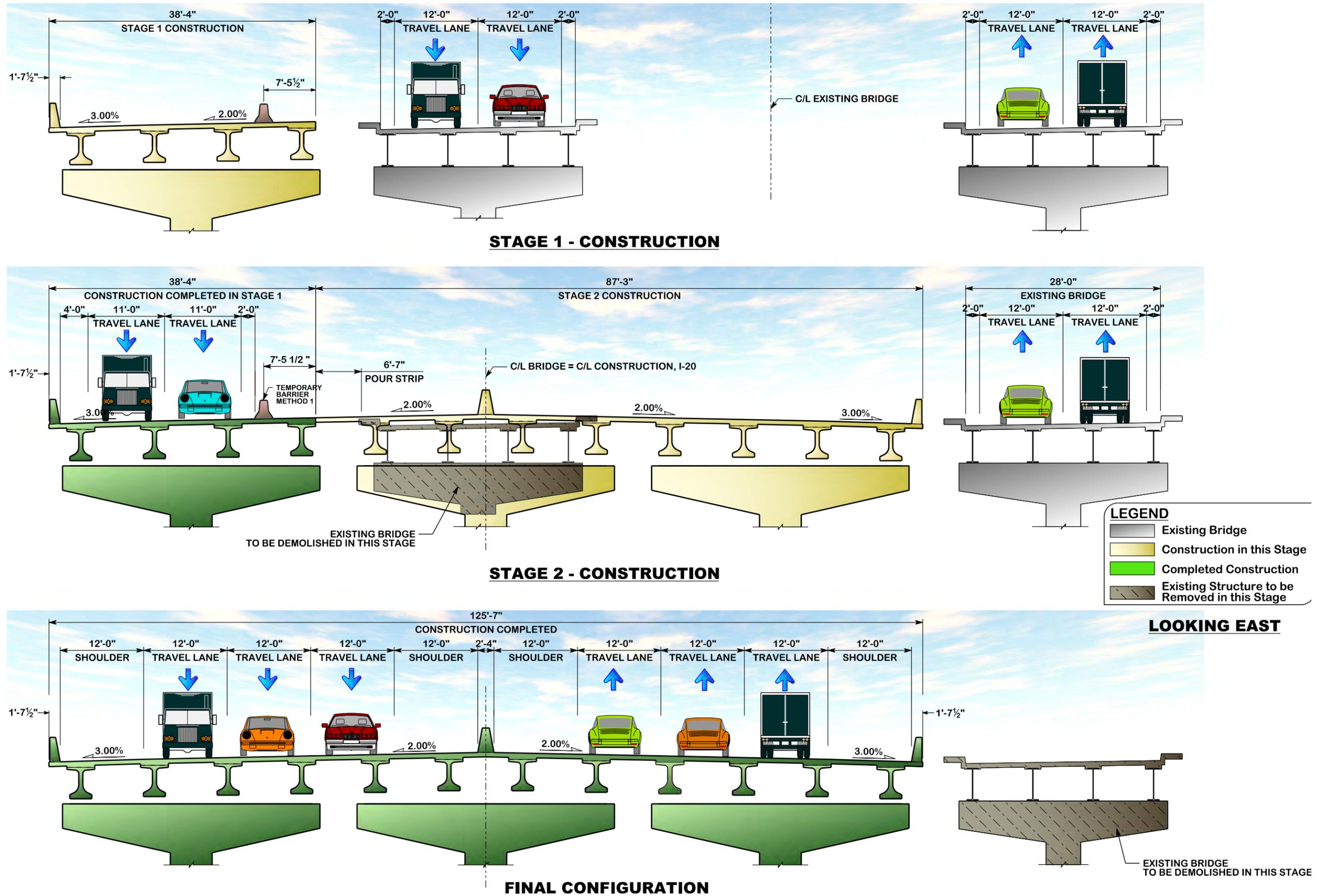
C.1.1.3 – WORK AREAS, YARD LOCATIONS, AND SEQUENCING

The large western infield on the north side of I-20 at the Martintown Road interchange will be used for staging/laydown, as shown in **Figure 10**. This infield is approximately 3 acres and will have no effect on the GA or SC Welcome Centers. Access to the staging/laydown area will incorporate acceleration/deceleration lanes and access from the WB entrance ramp and not the I-20 general purpose lanes. We will keep equipment or materials that would be above-ground hazards out of the adjacent roadways' clear zones or we will shield them with traffic barriers. We will sprinkle for dust control as needed.

Figure 10: Staging/Laydown Areas



Figure 7: Overall Staging Concept



In addition to the laydown area shown on page 7, we will use adjacent portions of the I-20 right-of-way for laydown. We will separate these areas from traffic with concrete barriers and access points will use acceleration/deceleration lanes and signing.

C.1.1.4 – FOR MAINTENANCE OF TRAFFIC, GDOT VALUES:

C.1.1.4.a – Maintaining or Increasing Traffic Flow

We are committed to the traveling public's mobility and safety. By designing all shifts and temporary transitions for the current posted speed limit, traffic will not have to slow down through the work area. By implementing temporary intelligent transportation system (ITS), we can provide rapid notification of incidents. And by providing usable shoulders, disabled vehicles can be rapidly moved out of the travel lanes.

We will carefully coordinate emergency and public vehicle routing with appropriate agencies well in advance of any detour implementations or traffic changes. Our communication strategies, similar to those used Northwest Corridor project, will keep the communities and traveling public aware of upcoming activities that may affect their commutes. With GDOT input, Flatiron will provide changeable message signs for use as needed and will maintain messages 24/7.

C.1.1.4.b – Establishing Temporary Visual Barriers

We will perform most bridge foundation and substructure work, as well as beam erection, from the trestle, which is located well below the I-20 traffic lanes and is not visible to passing motorists. We will use the one trestle shown for both stages of construction, and we will deliver all girders via this trestle. To provide enhanced visual screening along concrete barriers, we will install reflective panels on the concrete barriers at one-half the standard spacing required by GDOT Standard 4960 and SCDOT Standard drawings 605-115-01 and 605-115-02.

Panels mounted on the top of linear traffic barriers will reduce driver “rubber-necking” and resulting traffic slow-downs.

C.1.1.4.c – Minimizing Impacts During Peak-Time Congestion

We will maintain a level of traffic operations (pavement condition, drainage, signage, signals, lighting, ITS) similar to the current condition. During peak travel hours, we will stay out of the roadways and off the shoulders. Our enhanced roadway monitoring, through a combination of on-site observation, use of our temporary ITS system, and internet applications like WAZE, will allow us to clear incidents as rapidly as possible. When traffic

changes (major shifts) are required, through GDOT, we will use media outreach, message boards and other public information dissemination methods to alert the public in advance. For added awareness and safety, we will use supplemental devices prior to major shifts and for the first week after shifts.

Our enhanced roadway monitoring, through a combination of on-site observation, use of our temporary ITS system, and applications like WAZE, will allow us to clear incidents rapidly.

C.1.1.4.d – Optimizing Driving Conditions During Construction

The Flatiron | Parsons construction approach is tailored to minimize the number of lane closures and to keep traffic flowing during times when lane closures are not in place. We will keep traffic flowing by designing traffic shifts with the preconstruction posted speed limits, implementing an effective construction access plan, building the bridges from a trestle/ barge landing away from traffic, providing a minimum 8-foot usable shoulder on at-grade sections for stopped vehicles, and proactively monitoring traffic and clearing incidents. This approach to MOT will ensure to the extent possible, that during both peak and off-peak hours, a speed band will be maintained where 75% of vehicles in the work zone are within 5mph of the preconstruction posted speed limits.

We will provide smooth transitions at all interfaces between permanent and temporary pavement. If incidents or other unexpected events necessitate maintenance, our crews will be available at all times to promptly correct deficiencies and our ITS capabilities will ensure rapid responses. We will coordinate with local emergency responders to ensure public safety and restore mobility as quickly as possible. **We will implement a temporary ITS system that will facilitate a rapid response to incidents.** Our traffic management strategies, which include traffic monitoring and non-injury incident clearing assistance, will help keep the roadways clear.

Our local public involvement specialist's long-standing working relationships with local stakeholders, GDOT, and SCDOT makes us uniquely qualified to effectively coordinate with them on a continuous basis. We will communicate to GDOT and SCDOT the regular coordination of traffic management and the construction schedule for public consumption, which will provide them with accurate and timely information. Our team understands how construction activities impact traffic mobility, and we will provide GDOT and SCDOT with a four-week look-ahead construction schedule to better plan and deploy adjustments that will enhance safety and mobility.

C.1.2 Proposal (Project) Schedule

The schedule shown at the end of this proposal demonstrates that Flatiron | Parsons will meet all of the contract requirements, including all of the environmental and contract submittal review times and the environmental prohibited work periods contained within the RFP, while **substantially completing the project 59 days before the GDOT-allowed contract time**. Flatiron | Parsons has also developed a plan that **reduces the number of required lane closures during construction to 2,760 hours**. This was achieved by reducing the installation of the new bridges to only two stages instead of the three stages shown in the costing plans and by using the beam shifter instead of cranes to set all of the precast beams from the temporary trestle instead of from the existing bridge lanes.

During the design and the construction phases, we will monitor the CPM schedule and update it weekly to enable the team to monitor the progress and make adjustments to ensure

that the project remains on or ahead of schedule. During the construction phase, we will provide a four-week look ahead schedule to all team members and GDOT. This will allow sufficient time for GDOT to keep all stakeholders apprised of the upcoming events and milestones and will enable the project team to evaluate the progress and determine if any changes or modifications to the schedule are required. The project critical path contains the following:

1. Preliminary Roadway Plans
2. Approval of the 404 GP
3. Savannah River Bridge Phase 1 Construction
4. Shift WB traffic to newly constructed bridge and demolition of the existing Savannah River WB I-20 Bridge
5. Construction of the remaining new Savannah River Phase 2 Bridge
6. Demolition of the existing Savannah River EB I-20 Bridge and final traffic shifts.

C.1.3 Environmental Impacts/Public Outreach

We have assembled an environmental compliance and permitting team with the regulatory knowledge and local experience to ensure environmental compliance during design and construction is in accordance with the approved environmental documents. This team of scientists and planners will be under the leadership of David Smith, who has extensive experience with applicable federal, state, and local permits.

C.1.3.A DURATION OF CANAL CLOSURE

Flatiron | Parsons will need only **42 days of canal closure**. Our innovative solution involves only two phases of construction, a single staging/landing area, and closing the canal for demolition only, and not during construction.

C.1.3.B DURATION OF TOWPATH CLOSURES

Flatiron | Parsons will close the towpath for **only 14 days each for the two existing bridges**. We will construct a protection platform that will allow the towpath to be open during construction and demolition of the two bridges. We will maintain a minimum clearance of 10-feet during construction. This clearance will allow access to trail users and utility companies that use the towpath to move maintenance equipment from one side of I-20 to the other.

C.1.3.C CEPP ENHANCEMENTS

The CEPP will be the overarching system by which Flatiron | Parsons will track environmental commitments made during the

environmental approval and permitting processes, as well as track other environmental requirements to be carried forward and reflected in the design and construction of the project. The goal of the CEPP is to achieve zero violations. Specific objectives to obtain this goal are to:

- Establish environmental policies consistent with those of GDOT and SCDOT, Government Entities, Governmental Approvals, all applicable Federal and State Laws, and local rules and regulations, to avoid and minimize environmental impacts during the performance of the project.
- Publish clear and concise plans and procedures for complying with environmental regulations and commitments and for addressing compliance issues.
- Implement programs for monitoring, documenting, reporting, auditing, and continually improving environmental compliance.
- Develop the skills and generate awareness with all personnel to foster environmental compliance and environmental protection through worker training.

CEPP objectives will be achieved by implementing the procedures and management structure established in the following:

- **Environmental Compliance and Mitigation Plan (ECMP):** This plan identifies relevant environmental regulations and commitments resulting from the NEPA process and documents the completion of these commitments during the design and construction processes. David Smith, who serves as the NEPA lead for the preconstruction

phase on this project including Environmental Permitting will also serve as our team's Environmental Compliance Manager (ECM). One of the key component of this plan will include preconstruction environmental briefing/ coordination meetings between environmental compliance personnel and the construction personnel to ensure that all staff understand the environmental issues and that the construction activities will not cause unplanned adverse environmental effects.

With David serving as the ECM, our team provides GDOT and SCDOT benefits of both continuity and commitment of ensuring environmental compliance during both design and construction. David will be responsible for reviewing ongoing compliance monitoring activities to ensure overall environmental compliance.

- **Environmental Protection Training Plan (EPTP):** This plan includes worker training which provides basic hazardous material and compliance information, and the plan sets forth procedures for general and specific training. More detailed hazardous material training is provided within the safety training, which is conducted concurrently with the environmental training. Regular training sessions will be held to address issue specific concerns such as working in ESAs or after incidences of non-compliance.
- **Hazardous Materials Management Plan (HMMP):** The plan will ensure proper management of hazardous materials brought onto the project by Flatiron or third parties, as well as proper management of site environmental impacts encountered during design and construction.
- **Communication Plan (CP):** The plan will facilitate management oversight and ensure rapid and coordinated responses to emergencies and will include applicable GDOT, SCDOT, and resource agency personnel.
- **Construction Monitoring Plan (CMP):** This plan establishes procedures for monitoring, reporting and records retention. The plan will ensure regulatory compliance and fulfillment of all environmental commitments during construction.
- **Recycling Plan (RP):** This plan will promote the collection, recycling and re-use and proper disposal of waste materials ensuring protection of the ESAs.

Implementation of the plans above, in conjunction with the project specific enhancements itemized below, will provide the best opportunity to achieve the goal of zero environmental violations during the project's design and construction phases of work.

Project-Specific CEPP Enhancements

CEPP ENHANCEMENTS	
1	Use of a single trestle for both stages of construction along with a unique trestle design using prefabricated form for the footing lined with plastic sheeting to avoid bonding of the concrete with the native rock, thereby ensuring minimal disturbance to the riverbed and environmental sensitive areas.
2	Use of drilled shafts for bridge foundations, which minimizes the footprint of disturbance to riverbed and surrounding ESAs.
3	Use of retaining walls north of the existing alignment to avoid potential impacts to ESAs following the northern alignment shift of ATC-001A, which reduces the three-stage construction to two stages.
4	Use of small landing area on the Augusta Canal for bridge construction instead of a trestle, which will reduce canal closure duration as well minimize the impacts to the surrounding ESAs.
5	Use of a batch plant area for staging, material storage, equipment, and temporary disposal, separated from the ESAs, thereby ensuring protection and compliance.
6	Demolition of existing bridges from the top of deck to minimize impact to the river and canal.
7	Reuse of existing pavement as road base to reduce hauling and disposal impacts, thereby reducing the chance of oil spills and other hazardous pollutants from dump trucks.

C.1.3.D ENVIRONMENTAL PROTECTION COMMITMENTS

The seven itemized project-specific enhancements above are the primary ways the project team will use innovative construction techniques to minimize impacts to ESAs and to protect the environment during construction. Another method is through schedule enhancements and sequencing. During construction, the project team will implement a two-stage construction sequence. **This will minimize the length of time that active construction occurs near an ESA.** The goal of the two-stage construction is to maximize construction access while shortening the duration of active construction activities near the resource and shortening the time required for in-water work. We also propose the use of retaining walls along the project corridor to minimize impacts to resources.

The project is anticipated to qualify for Nationwide Permits (NWP) 23 and 15. It is anticipated that prior to the award of the design-build contract, the U.S. Army Corps of Engineers (USACE) will approve the Regional Permit (RP) 34. This permit, and five others that pertain to government funded transportation projects within the state of Georgia, have recently been proposed by the USACE. The RPs are anticipated to be

authorized for use by Fall 2018. RP 34 is for the widening and other improvements to existing roads, culverts, bridges, and associated structures. The impacts proposed to the Augusta Canal and Savannah River will qualify for the use of this permit. The benefit of using the NWP or this new RP for this project will be time savings during the permit review and approval process. The RPs have a streamlined review process that typically can be completed with 60 days rather than the four to six months required for an individual permit.

Informal Section 7 consultation for Relict Trillium (*Trillium Reliquum*) has been completed for the project. With the approval of ATC-001A, Flatiron | Parsons anticipates impacts to an ESA that contains just one individual Relict Trillium specimen. This ATC will require Informal Section 7 consultation be reopened for this species. We have included this in our project schedule and factored the impacts to this species into the decision to propose the ATC.

This project has a Special Provision (SP) 107.23H for the protection of federal- and state-protected species. This SP has several seasonal restrictions and in-water work limitations for the protection of terrestrial and aquatic species. We completely understand the challenges that these present and have planned our project schedule around these restrictions. The two-stage construction sequence also benefits the seasonal restrictions by allowing access to areas where work needs to be completed during a specific range of dates.

Clearing restrictions for the portion of the work in South Carolina will require that our clearing contractor is diligent in completing this work outside of the restricted timeframe. Likewise, demolition activities have seasonal restrictions and will require the coordination of many disciplines to accomplish the work within the allowable timeframe. In-water work is seasonally restricted unless the work is done within cofferdams, and the two-staged construction sequence allows for installation of the cofferdams before the restricted season.

Having the ECM involved in project team meetings and as an active member of the project leadership team with the designer and contractor is an important aspect in ensuring that all environmental commitments are properly addressed.

C.1.3.E ENHANCED PUBLIC OUTREACH

For the success of this project and to ensure the satisfaction of the project stakeholders during and after construction, our team's public outreach plan will include the following:

- Partnering with GDOT and SCDOT to provide timely information, support, and assistance with community participation and interaction throughout the project.

- The flexibility to address changing needs and conditions, including the increase in traffic during summer months and due to major events like the Masters Golf tournament.
- Validating and maintaining the existing database of individuals and groups impacted by the project as a resource for communicating with stakeholders.
- Ensuring transparent, two-way communication through stakeholder meetings, webpage and email updates, media and print notifications, and a project hotline.
- Utilizing web surveys to gauge public perception of the project, adjusting the public outreach plan to address challenges, and promptly resolving concerns
- Tailoring communication strategies to stakeholder groups and providing proactive notification of anticipated impacts.

Our Augusta-based public involvement specialist Abie Ladson, of ISM, will serve as the primary public relations point of contact. Abie served as the Director of Engineering for the City of Augusta from 2005 to 2017 and his familiarity with all primary and secondary stakeholders will be pivotal in stakeholder engagement. He will work closely with Flatiron's superintendents and the traffic control manager to understand construction schedule and traffic shifts and will provide updates regarding traffic phasing, graphics, and other beneficial materials.

Public Involvement

Our team will present our proposed design, explain the construction sequencing, and discuss the project schedule early in the project development through public information open house meetings. These meetings will provide an opportunity for the stakeholders to ask questions and to raise concerns related to project.

Communication

Our team will also work closely with GDOT and SCDOT in the development of press releases to provide advance notice of upcoming construction activities (four- to six-week look ahead). Corresponding traffic information will be disseminated through various outreach methods listed previously. Newsletters will be provided at both Georgia and South Carolina Welcome Centers along with additional coordination with broader affected stakeholders, including the U.S. Army Cyber Center of Excellence and Fort Gordon, Augusta University, Augusta National, Area Hospitals and Medical Centers to name a few. We will also implement the new changeable message signs (CMS) as early as possible and use them to disseminate important travel information to motorists and to reiterate communication disseminated by media outlets during construction. Along with highway CMS signs, additional signs will be provided for the towpath traffic to ensure information about upcoming towpath closures is circulated in advance.

Coordination

Our team will regularly and consistently provide summaries to GDOT and SCDOT of all the project stakeholder engagements at weekly, biweekly and/or monthly meetings, which also includes local municipalities. All CMS notifications will be discussed at these meetings. Further communication and coordination will take place at the quarterly GDOT District

2 breakfast held for both Augusta and Columbia Counties. GDOT staff and officials (GDOT Board members), State Representatives, local commissioners, utility companies, construction contractors, and engineering consultants attend these meetings and they provide an update to these stakeholders on current and upcoming DOT and local projects while addressing any project(s) concerns.

C.1.4 Project Management Approach

The Flatiron | Parsons Team provides experience integrating the best design management procedures with the best construction management procedures into one design-build project management process. An executive management team consisting of senior executives of Flatiron and Parsons will oversee communication and monitor compliance with both GDOT and SCDOT specifications. This executive team has provided our Project Manager, Russ Lauria, with the financial resources, equipment and personnel to develop this technical proposal, estimate and price this project, and execute this GDOT contract while keeping safety, quality control (QC), and environmental compliance as the top priorities.

C.1.4.1 ORGANIZATION, MANAGEMENT, AND KEY PERSONNEL

No matter how large a project team is, it is only as good as the public's perception of the project and the staff who will manage and execute it. Russ Lauria, Lead Contractor Project Manager, and Saurabh Bhattacharya, Lead Design Consultant Project Manager, and our respective engineers of record (EORs), Greg Shafer (GA) and Scott Armstrong (SC), have extensive experience with GDOT and SCDOT projects. Each has served in similar roles: Saurabh and Russ served together on GDOT's I-75/I-575 Northwest Corridor Design-Build project. Russ worked in the role of Project Director on SCDOT's I-85/I-385 interchange in Greenville, SC. Russ and Saurabh will implement all phases of this I-20 project using best practices and lessons learned, all with a focus on safety, QC, and environmental compliance. An overview of our key members and their roles and responsibilities is noted in Figure 11.

Collaborative task force meetings incorporate constructability into the final design and are the foundation of solid team communication. Task force meetings were implemented during the development of the Technical Proposal and will continue through design, preconstruction, and into construction so that all project goals are met.

C.1.4.1.a – Project Management Organization

As shown in the organizational chart in Figure 12, Russ Lauria will work closely with the design manager and the discipline managers for efficiency of operations. Key elements of our organization include the following:

- A Project Manager as the single point-of-contact to DOT officials;
- A Project Manager empowered to commit personnel, equipment and financial resources necessary to implement and complete the project on schedule, all while maintaining a focus on safety, QC, and environmental compliance;
- Construction Discipline Manager(s) assigned to implement construction operations matching their expertise;
- A Quality Manager and Safety Manager reporting directly to the Executive Committee with complete independence from the design management and construction operations
- A Construction Quality Control Manager (CQCM) with the authority to stop any noncompliant construction operation
- A Design Quality Manager (DQM) to ensure compliance with GDOT and SCDOT specifications, design criteria, ready for construction (RFC) plans, and to coordinate with the Utility Acceptance Team (UAT)
- A Value Added position, Design-Build Coordinator, acting as a liaison between the design disciplines and construction operations, to ensure that RFC drawings are delivered in a timely manner to match the schedule of field operations
- Two EORs with extensive design experience in Georgia and South Carolina, reporting to our Design Manager
- A community involvement and public relations firm that will act under the direction of the Project Manager and in concurrence with GDOT and SCDOT officials
- An on-site Maintenance During Construction Manager to manage all existing GDOT and SCDOT assets during construction

Figure 11: Key Personnel and Task Managers

DISCIPLINE	NAME	FIRM/YEARS OF EXP	% ON PROJECT	RESPONSIBILITY
Lead Contractor Project Manager	Russ Lauria	Flatiron/35	100	<ul style="list-style-type: none"> • Single point of contact to GDOT and SCDOT • Overall responsible for design, construction and project controls
Lead Design Consultant Project Manager	Saurabh Bhattacharya, PE	Parsons/14	75	<ul style="list-style-type: none"> • Responsible for all design management • Has EOR and Subconsultants as direct supports • Reports to Project Manager
EOR Georgia	Greg Shafer, PE, SE	Parsons/32	75	<ul style="list-style-type: none"> • Reports to Design Manager • Manages all design criteria in Georgia
EOR South Carolina	Scott Armstrong, PE	Parsons/31	75	<ul style="list-style-type: none"> • Reports to Design Manager • Manages all design criteria for South Carolina • Design Review submittal schedule • Responsible for all ProjectWise uploads
Superintendent/ Construction Manager	Craig Chute, PE	Flatiron/30	100	<ul style="list-style-type: none"> • Responsible for all field construction operations, safety, quality, and scheduling
Design-Build Coordinator	David Bernard	Flatiron/10	100	<ul style="list-style-type: none"> • Coordination with the EORs for compliance of all GDOT and SCDOT mandatory design criteria • Constructability and compliance of all design to meet GDOT and SCDOT specifications • Coordination of design RFC with milestones and field construction operations
Design Quality Manager	Tariq Masud	Parsons/24	100	<ul style="list-style-type: none"> • Reports directly to Construction Quality Control Manager • Approves all RFC Drawings
Safety Manager	Larry Parks	Flatiron/31	100	<ul style="list-style-type: none"> • Reports to Executive Committee independently of Field Operations • Authority to immediately shut down an unsafe or potential unsafe operation
Public Involvement	Abie Ladson	ISM/25	35	<ul style="list-style-type: none"> • Coordinate with GDOT and SCDOT for all public outreach and community involvement • Reports directly to Project Manager • Active in Augusta, GA market with extensive background in public works for in region
Maintenance Manager	TBD	Flatiron	100	<ul style="list-style-type: none"> • Responsible for maintaining all GDOT and SCDOT assets during construction operations within the project limits
Construction Quality Control Manager	Dennis Yeager	Flatiron/28	100	<ul style="list-style-type: none"> • Reports to the Executive Committee, independently of all design and construction operations • Authority to shut down any noncompliance operation
Environmental Compliance Manager	David Smith	Ecological Solutions/19	100	<ul style="list-style-type: none"> • Environmental mitigation compliance • Work restrictions in a marine environment • Environmental protection training
Project Engineer	TBD	Flatiron	100	<ul style="list-style-type: none"> • Project controls, surveying, cost control, contract administration
Traffic Control Supervisor	Brian Ballard	Flatiron/21	100	<ul style="list-style-type: none"> • Coordination and enforcement of MUTCD, GDOT and SCDOT specifications during design and construction

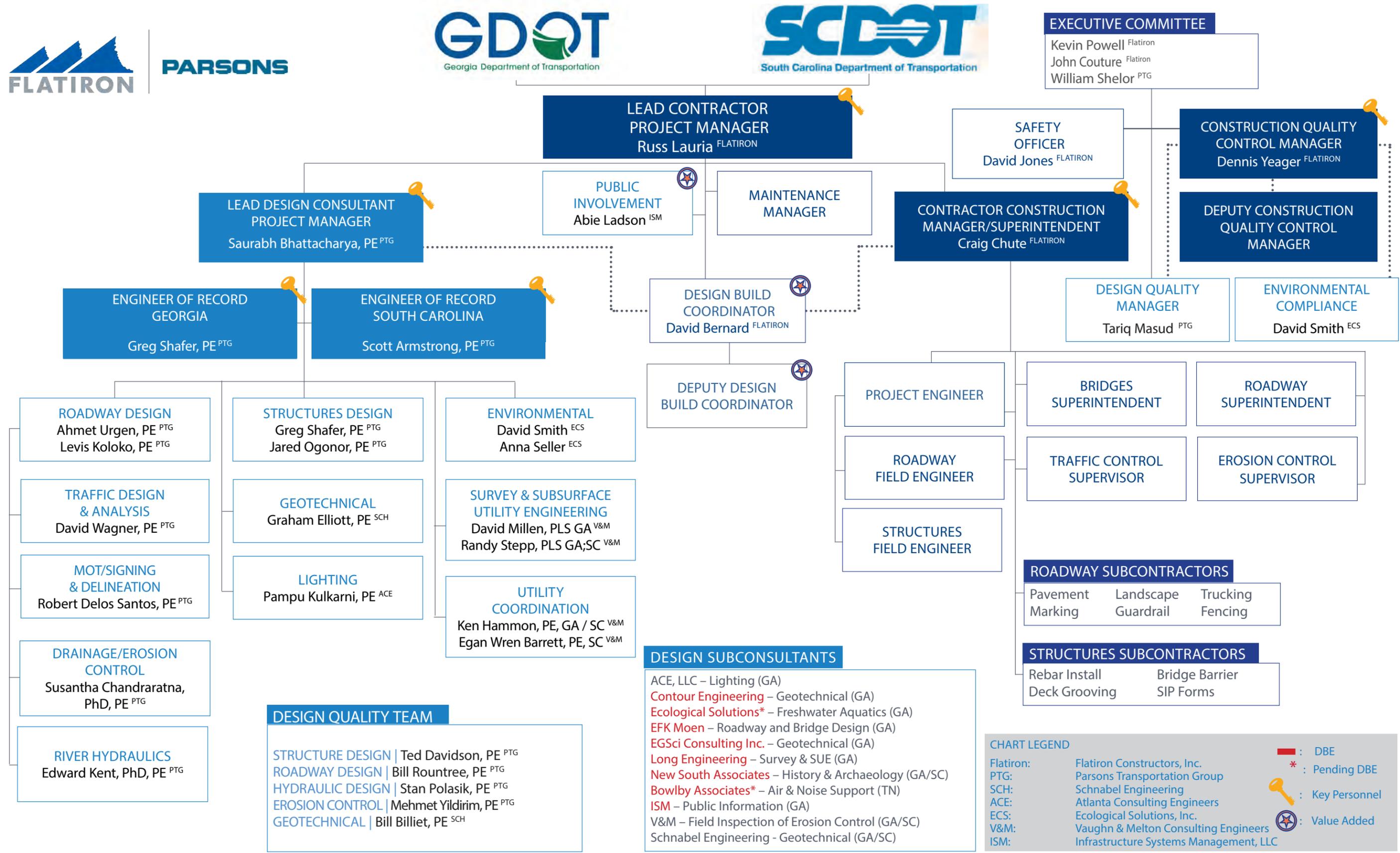
C.1.4.1.b – Bi-State Project Management

Task Order Implementation: To coordinate the mandatory design criteria and construction operations in Georgia and South Carolina and to provide a quality product, our Design-Build Coordinator (a Valued Added Position), and a deputy Design-Build Coordinator, as noted on the organization chart (Figure 12), will implement task forces. Our Design-Build Coordinator will work with our overall design manager, EORs, design discipline leads, construction operations, safety, and

quality management organization (design and construction) to consistently verify that each State's design criteria is properly applied. Our Design-Build Coordinator will also work with the Project Superintendent to verify that specifications for each State's specifications are followed.

Task forces consist of design and construction professionals working toward a common goal of a cost-efficient design (for each State) and construction means and methods.

Figure 12: Flatiron | Parsons Team Organizational Chart



Our major task forces include:

- MOT/Staging
- Structures
- Roadway and Drainage
- Geotechnical
- Environmental

C.1.4.1.c – Conducting Work in Two States

As noted previously, the team has organized task forces to address the specific design and construction disciplines required to develop this technical proposal. Each task force examined supplied data from GDOT and SCDOT and have integrated this data with the relevant experience and lessons learned by each EOR. Our Georgia EOR Greg Shafer took lessons learned from his experience on GDOT's I-75 Northwest Corridor Project, and our South Carolina EOR Scott Armstrong will take advantage of his 18 years of history in working on SCDOT projects, such as the Charleston Arthur Ravenel, Jr. (Cooper River) Bridge. Upon NTP, Scott and Greg will transition to Parsons' Atlanta office to support our Design Manager in the implementation of the mandatory designs for each State. Supporting this effort in Parsons' Atlanta office will be our Design-Build Coordinator David Bernard. David will allow our team to hit the ground running due to his extensive involvement in the design, estimating and scheduling of this project. He will also transition to the project site to assist in the startup of construction operations.

C.1.4.1.d – Quality Processes

Flatiron | Parsons is committed to providing a Quality Management System (QMS) based on years of experience and lessons learned. The QMS is project specific, designed to facilitate continuous improvement, focused to better satisfy the requirements and expectations of GDOT/SCDOT, and developed to improve the overall quality of the project.

Parsons has implemented successful QMS programs based on best industry practices and lessons learned. Parsons is certified compliant with 9001:2015 Quality Management System Standards.

Our project-specific QMS will be led by our CQC Manager with complete independence from our design and construction operations. He will assure GDOT that we comply with all QC and construction specifications for each state.

C.1.4.1.e – Key Personnel

Figure 11 highlights the responsibilities and qualifications of our key personnel and task managers.

C.1.4.1.f – Task Manager Qualifications

As the Prime Contractor, Flatiron is responsible for all project management and construction. Parsons leads the engineering design services as consultants to Flatiron. Our team members were carefully selected to address the technical needs of the I-20 Bridges at Savannah River Project. All team members have a clear understanding of GDOT's DB process, as well as the scope of work, tasks, special considerations, and project objectives. Figure 11 highlights the responsibilities and qualifications of our key personnel and task managers.

C.1.4.1.g – Workload and Backlog

Our team provides GDOT and SCDOT with a strong combination of a robust regional workforce, extensive project experience in the southeast, and a deep understanding of the region's transportation needs. Flatiron and its affiliates have more than 300 personnel based out of our Greenville, SC office. Supported by an organization with more than 2,600 employees, one of the largest private marine and infrastructure equipment fleets in the Southeastern U.S., and revenues of over \$1 billion, Flatiron has the resources to support this GDOT project as shown on the project schedule included in this proposal.

Parsons is in the final stages as the prime designer on GDOT's largest design-build project —the \$599 million Northwest Corridor (Ribbon-Cutting Ceremony held September 12) — and has recently completed similar projects to I-20, including their PM on the \$100 million Jimmy DeLoach Connector for the Georgia Ports Authority, the \$176 million I-75 South Metro Express, and I-75 Interchange Improvements at SR 215 and Brighton Road for GDOT. This experience provides Parsons with an understanding of GDOT's design submittal requirements, staffing required for a GDOT design project, and an understanding of the strengths and weaknesses of the subconsultant and DBE community. With an Atlanta office of more than 100 engineering professionals, combined with a global work force of more than 13,000 employees, Parsons has the resources to meet all quality and schedule requirements on this I-20 project.

C.1.4.1.h – Participating Member Relationships

Flatiron and Parsons have no active relationships outside of this proposal.

C.1.4.2 ORGANIZATIONAL COMMUNICATION

Flatiron | Parsons has compiled a well-organized, highly competent, and effectively managed DB team. Below is a description of how our team will work together to deliver a successful project.

C.1.4.2.a – Unified Team

As noted above, our Design-Build Coordinator and his deputy will coordinate design and construction operations with the Design Manager, EORs and Construction Manager to ensure an unified approach. The DB Manager will do the following:

- Facilitate the distribution of each State's Design Criteria to each respective discipline manager(s).
- Provide constructability reviews of each design.
- Work with GDOT and SCDOT officials to consider the long-term maintenance of each design component.
- Work with the EORs to ensure compliance with the mandatory design criteria.
- Provide consistency of design and construction operations to achieve faster production and consistent Quality Control Measures with Quality Management Team.
- Ensure all RFC documents have received proper approvals and match the schedule of field operations.
- In concurrence with the Quality Control Manager(s), verify that RFC documents are complete and that any unforeseen field conditions and as-built are properly documented.

Additional key personnel will support the DB Manager by providing the following:

- The Design Consultant Project Manager, supported by each EOR, will be responsible for the coordination and communication with each subconsultant.
- The Construction Manager, supported by the Project Engineers, will be responsible for the oversight and coordination of all internal team members, subcontractors, vendors and material suppliers.
- The Quality Control Manager on as needed basis will enlist the support of independent Quality Testing and Inspection firms to provide off-site inspection and certifications of third party manufacturing.
- Lead the coordination of preconstruction video, photographs and inspection logs of all existing conditions to maintain the existing bridges and pavement to GDOT and SCDOT Standards during construction.

C.1.4.2.b – Dispute Resolution

Disputes are most effectively resolved when a project has well established personal and professional relationships. This is very critical factor on why Flatiron and Parsons teamed on this I-20 project. Many of our senior leaders proposed for this project (including PM Russ Lauria; Design PM Saurabh Bhattacharya; EOR-GA Greg Shafer; and Roadway DM Ahmet Urgen) all worked together on the design-build of the GDOT I-75 Northwest Corridor Project, which is GDOT's largest DB project to date. Over the four-year period, there were some disputes; however, when disagreements arose, Russ would

conduct a round table discussion to identify the root cause of the dispute. Through this process, personal relationships were developed and each team member gained an understanding of motivations, decision making, and the desire to minimize cost, schedule and maintain quality. Russ, Saurabh and other senior leaders will implement a similar dispute resolution approach for this I-20 project.



Many of our senior leaders proposed for this project—including Russ Lauria, Saurabh Bhattacharya, Greg Shafer, and Ahmet Urgen—all worked together to successfully deliver the recently opened GDOT I-75 Northwest Corridor Project.

In some cases, a dispute on this GDOT I-20 project may be due to an underperformance or lack of quality by a subcontractor or subconsultant. Russ and Saurabh have more than 35 years of combined experience in working on heavy civil infrastructure projects in Georgia and for GDOT. Both have a thorough understanding of the strengths and weaknesses of the subcontractor, subconsultant, and DBE community. Any major disputes with a subcontractor team member will be dealt with swiftly and fairly. We will use trending charts on subcontractor or subconsultant performance and material workmanship. These will help identify schedule slippages well in advance, thereby minimizing the potential for a dispute. We will not allow the safety, cost, schedule, or quality of the project to be affected by a subcontractor.

C.1.4.2.c – Communication

Upon award, we will establish our communication process with GDOT and formulate a common approach to execute all project aspects. Our PM Russ Lauria, supported by our Public Involvement Officer, will be available 24/7 for all communications with GDOT and SCDOT representatives, first responders, State Departments of Public Safety, and local law enforcement agencies. Russ will also conduct presentations for GDOT and SCDOT representatives, including a four-week ahead schedule, to effectively communicate our construction operations, as well as any potential hazards or safety concerns regarding construction employees or the traveling public.

C.1.4.2.d – Management Approach for Design and Construction

Early and frequent communication between our design and construction teams and with GDOT and SCDOT will be integral

to the project's success. Led by our DB Manager, the PM and Design Manager will do the following:

- Facilitate communication between design and construction
- Maintain a consistent constructability review process
- Hold weekly meetings through final design, which will address all design elements including MOT, utility, right-of-way (ROW), and environmental permitting.
- Encourage GDOT and SCDOT representatives to partner and provide timely over-the-shoulder reviews to resolve time-sensitive RFIs and mitigate any delays or quality issues.

C.1.4.2.e – All Stakeholders

Our team, with GDOT, will host a minimum of 10 public meetings, or as many as required to ensure that all stakeholders have a clear understanding to the project. We will also hold stakeholder working group meetings and public outreach presentations to inform stakeholders and the public of construction plans and detours.

In addition to outreach efforts as defined in the RFP, our PM and his key staff will propose to hold bi-weekly meetings with GDOT and SCDOT representatives, third party utilities, and respective law enforcement agencies to present for comments on and review of revolving four-week look ahead of all planned construction operations, marine activity, and traffic shifts.

C.1.4.3 SAFETY PLAN

Safety is ingrained at all levels, beginning in design. This is extremely important when working in a marine environment with extensive MOT on interstate traffic and when managing the traffic of the local community. In our safety plan, we will address project-specific issues, including the following:

- Specific Haul Routes in and out of the project limits
- Flaggers to control access to and out of the work zone
- U.S. Coast Guard approved life jackets for working over water
- Ring buoys with at least 90 feet of line for emergency rescue operations
- MUTCD procedures for Work Zones on I-20 and the local roads; and Georgia and South Carolina adaptations of such.

C.1.4.4 DBE UTILIZATION

Flatiron | Parsons commits to meet or exceed the DBE participation goal of 11 percent.

C.1.4.4.a – DBE Performance Plan

Flatiron and Parsons commit to GDOT's DBE participation goal of 11 percent. Our DBE plan and DBEs identified to date on Form I-DBE Certification (Price Proposal Package), will assure

GDOT that we will meet or exceed the DBE goal. We have already established good faith efforts to include DBEs in the preconstruction and construction phases. We assure GDOT that our DBE goals are in accordance with the RFP including the following:

- DBE goals are real and substantial
- Viable DBE firms performing work
- In accordance with the spirit of Federal and GDOT laws and regulations
- DBEs serving a commercially useful function
- Reporting to GDOT our goals attained on a monthly basis (DBE Participation Report) and demonstrating compliance on a quarterly basis
- Identifying for each DBE if the participant is race neutral or race conscious

C.1.4.4.b DBE Integration

Our commitment to the DBE Program began in the proposal phase, during which we engaged many DBE subconsultants, including Contour Engineering, EGSci Consulting, Ecological Solutions, New South Associates, Bowlby & Associates, Long Engineering, EFK Moen and ISM. To achieve the DBE goal, our non-DBE subcontractors, vendors, suppliers, and subconsultants will also be required to utilize DBE firms to increase DBE participation.

C.1.4.4.c Maximize Opportunities for DBE Firms

Flatiron has already circulated our bid documents to more than 100 DBE subcontractors to share information about potential work opportunities on this project. We will conduct outreach meetings during preconstruction to provide an opportunity to meet our project team and discuss the project details. Our good faith efforts will include the following:

- Flatiron and Parsons will use GDOT's MMIP Readiness Program to take advantage of the innovative online engagement process for certified DBEs. Even though this is I-20 project is not part of the MMIP, the program will be an excellent tool to reach out to additional DBEs that are in GDOT's DBE Directory.
- We will use GDOT's DBE Supportive Services Program for training, resources and database.
- We will leverage Project Manager Russ Lauria, who has more than 20 years of work history in Georgia and for GDOT, and his relationships with the DBE subcontractor community. Russ has a thorough understanding of the strengths and weaknesses of the DBE Subcontractor Community and can help each DBE grow and expand its exposure on this I-20 project, leading to other opportunities with GDOT.

- We will include provisions and goals for DBE participation in every subcontract and require the inclusion of the provisions in every second-tier subcontract entered into by any of our subcontractors so that such provisions are binding.

**C.1.4.4.d Growing the Capacity of DBE Firms
Mentor-Protégé Program and Partnerships**

Our team will review with GDOT’s DBE Support Center the merits of a Mentor-Protégé Program. We will interview candidate firms that have preferably have a local presence near the project to provide a protégé with business advice, assistance and training with the expectation of increasing the capability of the protégé and to grow their business.



Flatiron Constructors had the opportunity to meet with Augusta Mayor Hardie Davie, Jr. during our DBE Outreach event on September 10, 2018.

Projected DBE Goal Percentage Breakdown

We will spread DBE participation across all phases of design and construction. We will exceed the 11% DBE goal during design through participations in the following design areas by DBE team members. Parsons has executed teaming agreements in place with the below DBE team members:

- **EFK Moen LLC** (approximately 4.0% of design) – roadway, drainage, erosion control and structures design support
- **Contour Engineering** (approximately 0.5% of design) – geotechnical material testing and support
- **EGSci Consulting** (approximately 0.6% of design) – geotechnical material testing and support
- **Ecological Solutions** (approximately 5.1% of design) – environmental studies, documentation, permitting and compliance
- **Long Engineering** (approximately 3.1% of design) – subsurface utility engineering (SUE), roadway, drainage and erosion control support
- **New South Associates** (approximately 0.1% of design) – environmental studies and documentation

- **Bowlby & Associates** (approximately 0.3% of design) – environmental studies and documentation
- **ISM, LLC** (approximately 0.1% of design) – public involvement

Engaging DBE Firms – Project Life Cycle and Under-Utilized Area

Achieving the DBE participation goal will require engaging the DBE firms at every step of project development and construction. DBE firms were afforded the opportunity to bid our work in the proposal phase through the certified DBE firm database. During project execution, by involving DBE firms into our scheduling and project planning meetings, we will place them in the best position for success.

Our selected design DBE firms participated throughout the development of this proposal. We will continue our efforts by leveraging their knowledge and resources throughout the project's design stage. The diversification of DBE firms across multiple work area classes has provided our team with a variety of innovative solutions to mitigate the issues that have arisen during the proposal design phase. For example, DBE firm Long Engineering provided valuable input to avoid costly relocations for a fiber optic line under the Augusta Canal Bridge.

Utilizing DBEs in Design and Construction

During the development of this technical proposal and subsequent price proposal, our Project Manager, Russ Lauria, and DBE team have worked with our in-house estimating task force teams to develop a list of viable and commercial useful disciplines to subcontract. Design work to be performed by each DBE firm is listed in Figure 13 with applicable GDOT area work classes. We have also identified approximately 27 work codes to date for DBE subcontracting opportunities, shown in Figure 14.

Figure 13: DBE Design Subconsultants and their Area Work Classes

DBE DESIGN SUBCONSULTANT	GDOT AREA WORK CLASSES
Contour Engineering	6.01a, 6.01b, 6.02, 6.03, 6.05
EGSci Consulting	6.01a, 6.01b, 6.02, 6.03, 6.05
Ecological Solutions	1.06a, 1.06e, 1.06g
New South Associates	1.06b, 1.06f
Bowlby & Associates	1.06c, 1.06d
Long Engineering	3.01, 3.02, 3.03, 3.04, 3.12, 5.01, 5.02, 5.03, 5.08, 9.01
EFK Moen LLC	3.01, 3.02, 3.03, 3.04, 3.12, 4.01, 9.01
ISM LLC	1.07

Figure 14: Projected Construction Work Code Chart for DBE Utilization

CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
109	Hauling Fuel	400b	Hauling Liquid AC	626	MSE Walls
150	Traffic Control	432a	Hauling Millings	636	Highway Signs
163	Misc. Erosion Control Items	441	Misc. Concrete Flatwork	641	Guard Rail
201	Clearing and Grubbing	461	Sealing Joints and Cracks	643	Fence
205a	Hauling Soil within Project	500	Concrete Structures	668	Misc. Drainage Structures
206a	Hauling Soil to Project	511	Reinforcement Steel	680	Lighting
310	Hauling GAB	535	Painting Structures	700	Grassing
400	Hot Mix Asphaltic Concrete	550	Storm Drain Pipe	800a	Hauling Aggregate
400a	Hauling Asphaltic Concrete	603a	Hauling Rip Rap	935	Fiber Optic System ITS

Promoting DBEs and Increasing Exposure

Our extensive vetting process allows us to identify DBE firms that are well-suited to offer value to our team. Often, we select firms that have previously performed work for us. Previous partnering eliminates learning-curves that are inherent with new contractors. With DBE involvement already committed in

the aforementioned area work classes, we intend to provide maximum visibility, exposure and participation for DBE firms in all phases of the project. In addition, as evidence of our DBE commitment, we place a contractual requirement on any non-DBE subconsultants to engage lower-tier DBE subconsultants to further increase DBE involvement on the project.

C.2 Project Differences from RIDs

To construct the new bridges in two stages, we shifted the I-20 alignment a maximum of 40 feet to the north and added retaining walls where necessary along the north right-of-way line (per approved ATC-001A). By constructing the bridges in two stages, the number of interim traffic shifts are reduced: WB bridge traffic is shifted once to the Stage 2 configuration and EB traffic can remain on the existing bridge in its original location until bridge construction is completed.

We optimized the I-20 vertical geometry to be able to efficiently incorporate the existing pavement into the new road base (per approved ATC-003A). Except in transitional areas, the existing concrete pavement will be cracked, reseated and overlaid with asphalt, forming a stable yet flexible base for the new rigid pavement. By re-purposing the existing pavement in situ, we eliminated more than 3,600 dump truck trips that will not impede the flow of traffic.

The bridges were revised due to changes in their overall lengths, span arrangements and girder spacing. For the Augusta Canal crossing, the overall bridge length was increased from 390 feet to 396 feet, and the maximum span length was increased from 105 feet to 119 feet in order to avoid the placement of intermediate piers inside the 35 ft (of the canal centerline) threshold. For the Savannah River crossing, the overall bridge length was decreased from 1,316 feet to 1,197 feet and span lengths were increased from 94 feet to 133 feet. We reduced impacts to the Savannah River by reducing the number of intermediate bents from 13 to 8, and by reducing the number within the river's defined banks from 11 to 8.

We increased the FIB girder spacing for all bridges to a maximum of 10'-9" (per approved ATC-004), allowing us to reduce the number of girders required on each span from 16 to 12, a 25% reduction. Another benefit of the increased girder separation is that it enables us to use a beam shifter on the river bridge to deliver and install all girders, minimizing impacts to traffic flow on I-20.

By making a minor change in the profile grade, it was possible to replace the high maintenance steel beams shown in the RIDs in span 4 of the canal bridge with a 36" prestressed concrete girder and still maintain the 11' 0" vertical clearance over the towpath. This reduces maintenance and provides a consistent structure type for both bridges on the project.

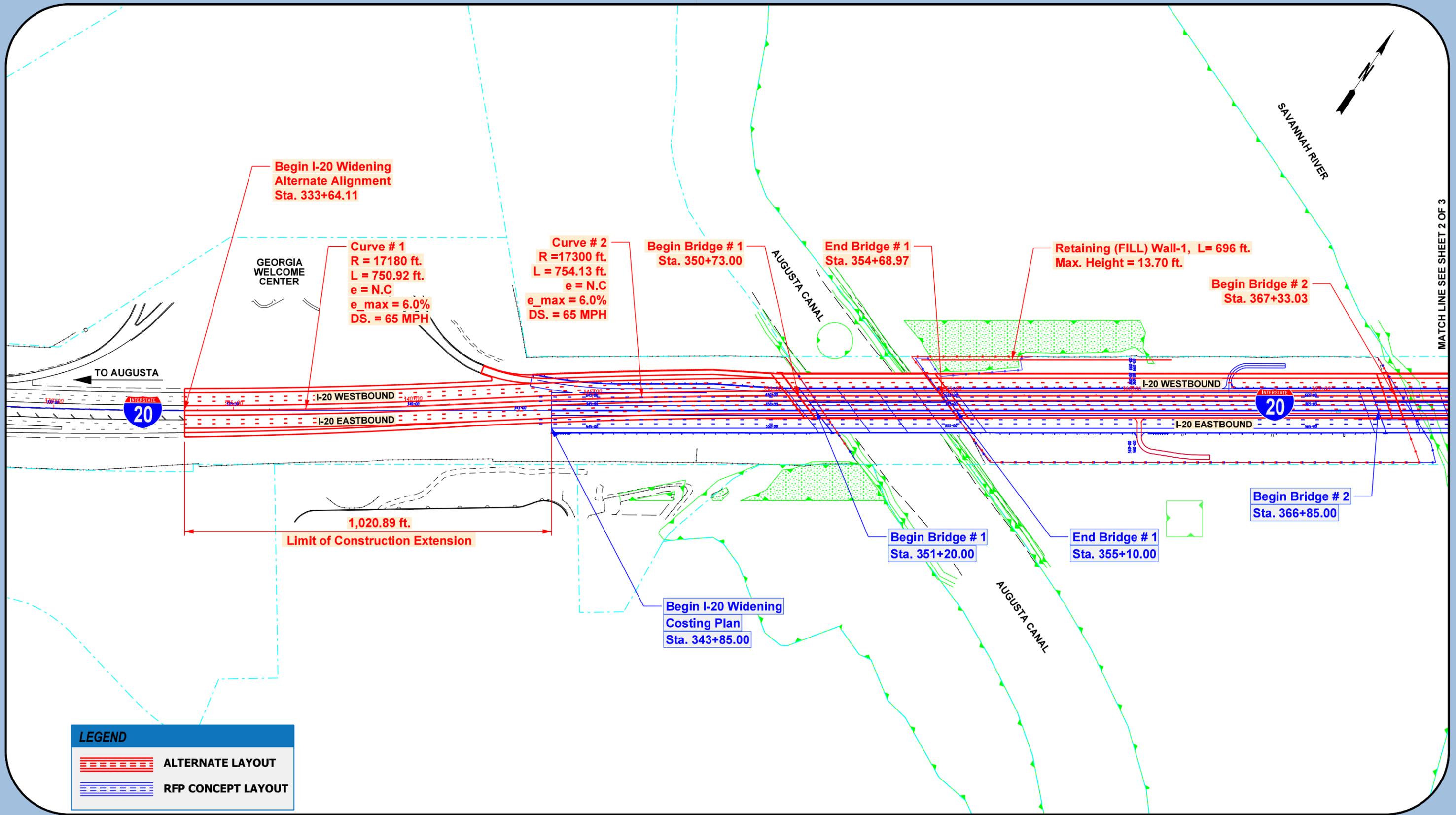
For efficient bridge drainage and control of runoff "spread" on the shoulders, we increased the bridge shoulder cross slope from 2% to 3%. This shoulder cross slope allows us to eliminate the need for scuppers on the canal bridge and to minimize the number of scuppers on the river bridge to a total of six (three on each side - EB and WB).

During Stage 2 of the construction period, when westbound traffic is shifted onto the new bridge, we increased the minimum bridge temporary outside shoulder width from the 2-feet 8-inches shown in the RIDs to a minimum of 4 feet to better control drainage "spread" and to keep the scuppers entirely out of the temporary travel lane. We will use a combination of the permanent scuppers and temporary drainage holes in the barriers to ensure that the design rainfall intensity does not result in ponding in the travel lanes.



C.2 Project Differences from RIDS – Drawings





LEGEND	
	ALTERNATE LAYOUT
	RFP CONCEPT LAYOUT

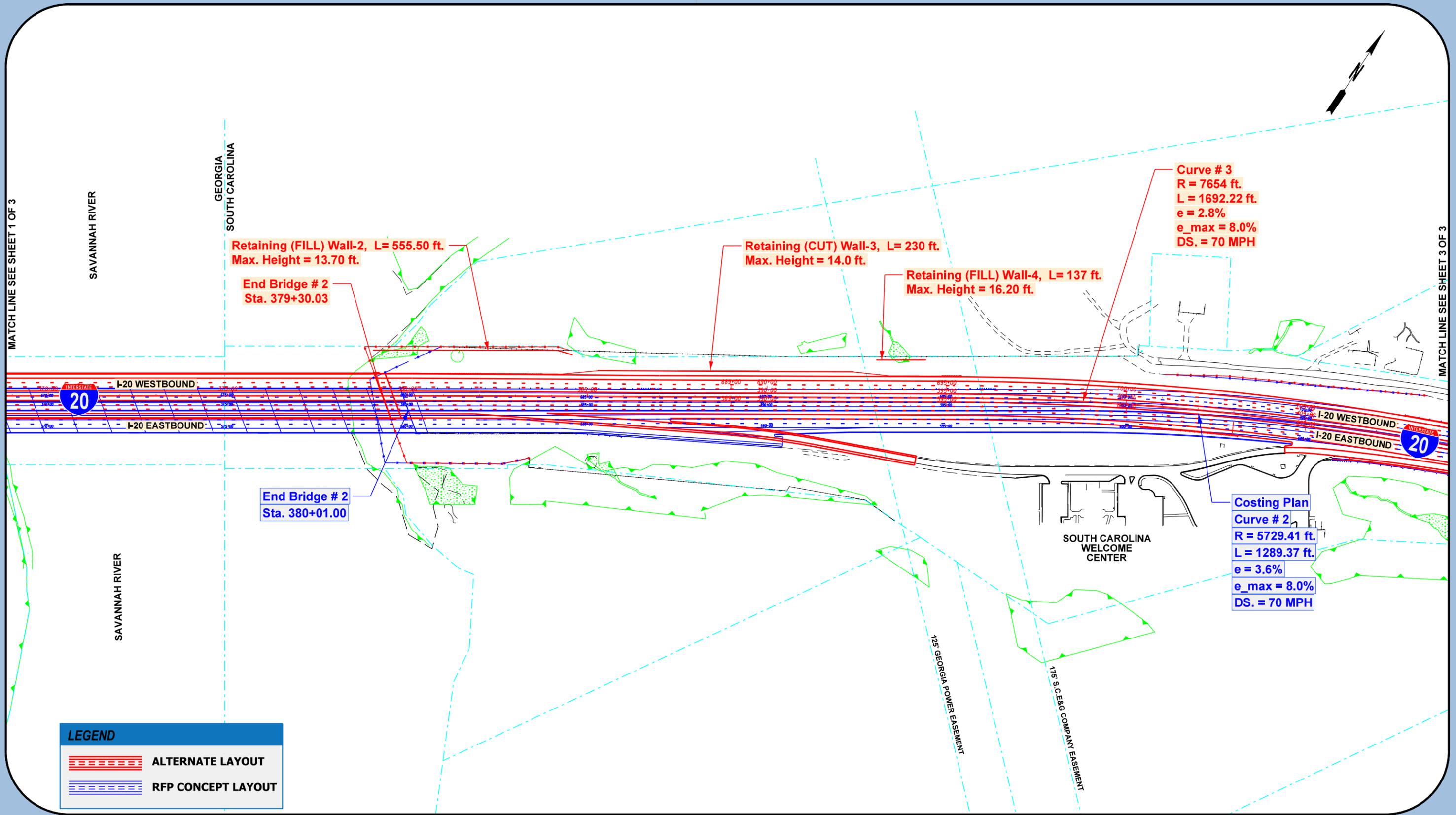


**I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS
 AND ROADWAY WIDENING PROJECT**
 PROJECT NUMBER. PI NO. 210327
 RFP CONCEPT LAYOUT & ALTERNATIVE LAYOUT COMPARISON
 SHEET 1 OF 3

DRAWING SCALE	SCALE IN FEET 0 250 500
DATE	26 SEP 2018
DRAWING No.	

MATCH LINE SEE SHEET 1 OF 3

MATCH LINE SEE SHEET 3 OF 3



Retaining (FILL) Wall-2, L= 555.50 ft.
Max. Height = 13.70 ft.

End Bridge # 2
Sta. 379+30.03

Retaining (CUT) Wall-3, L= 230 ft.
Max. Height = 14.0 ft.

Retaining (FILL) Wall-4, L= 137 ft.
Max. Height = 16.20 ft.

Curve # 3
R = 7654 ft.
L = 1692.22 ft.
e = 2.8%
e_max = 8.0%
DS. = 70 MPH

End Bridge # 2
Sta. 380+01.00

Costing Plan
Curve # 2
R = 5729.41 ft.
L = 1289.37 ft.
e = 3.6%
e_max = 8.0%
DS. = 70 MPH

LEGEND

-  ALTERNATE LAYOUT
-  RFP CONCEPT LAYOUT

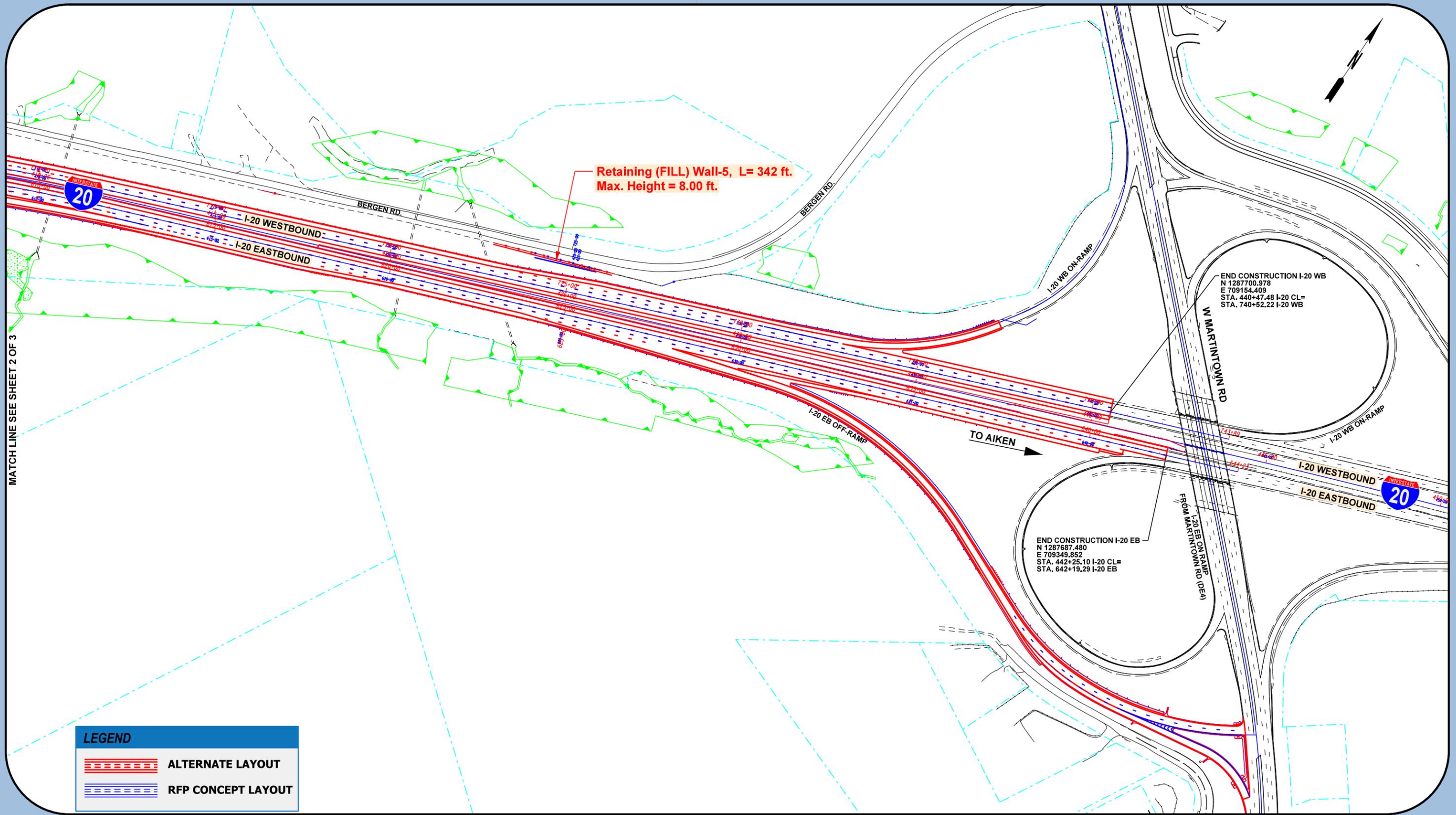


**I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS
AND ROADWAY WIDENING PROJECT**
PROJECT NUMBER. PI NO. 210327
RFP CONCEPT LAYOUT & ALTERNATIVE LAYOUT COMPARISON
SHEET 2 OF 3

DRAWING SCALE
SCALE IN FEET
0 250 500

DATE
26 SEP 2018

DRAWING No.



MATCH LINE SEE SHEET 2 OF 3

LEGEND

 ALTERNATE LAYOUT

 RFP CONCEPT LAYOUT



**I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS
AND ROADWAY WIDENING PROJECT**
PROJECT NUMBER. PI NO. 210327
RFP CONCEPT LAYOUT & ALTERNATIVE LAYOUT COMPARISON
SHEET 3 OF 3

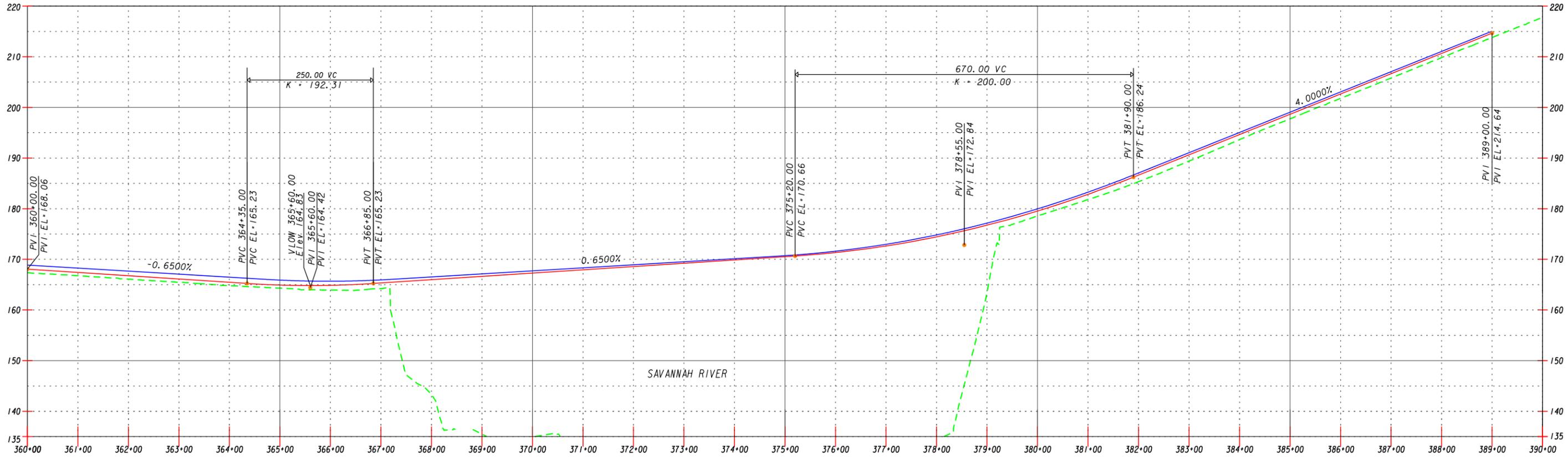
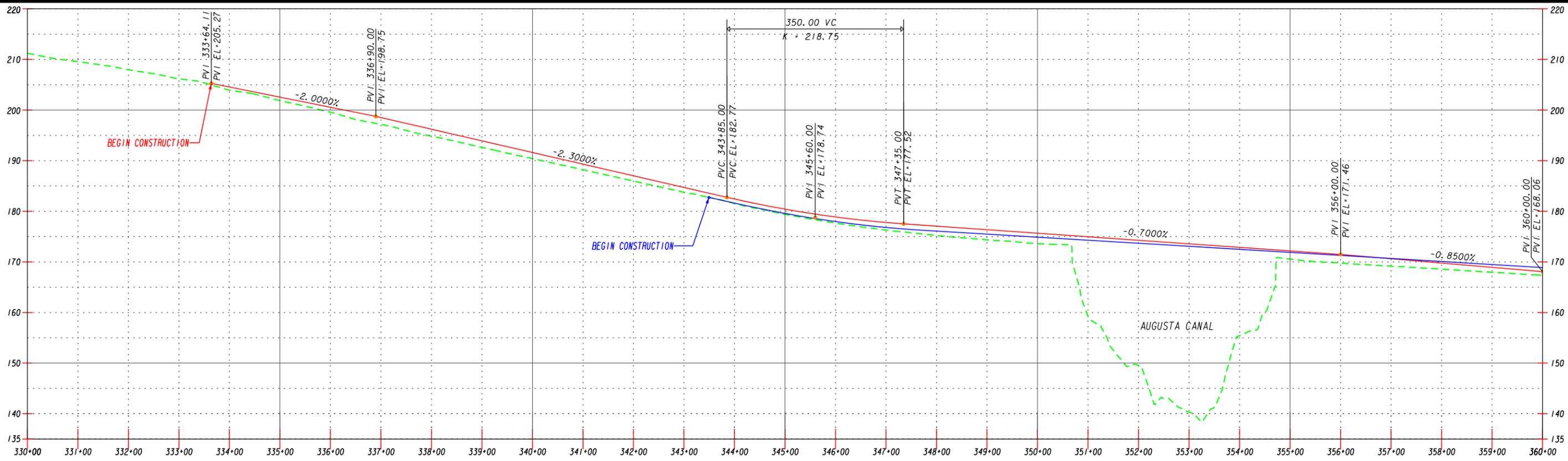
DRAWING SCALE

SCALE IN FEET

0 250 500

DATE **26 SEP 2018**

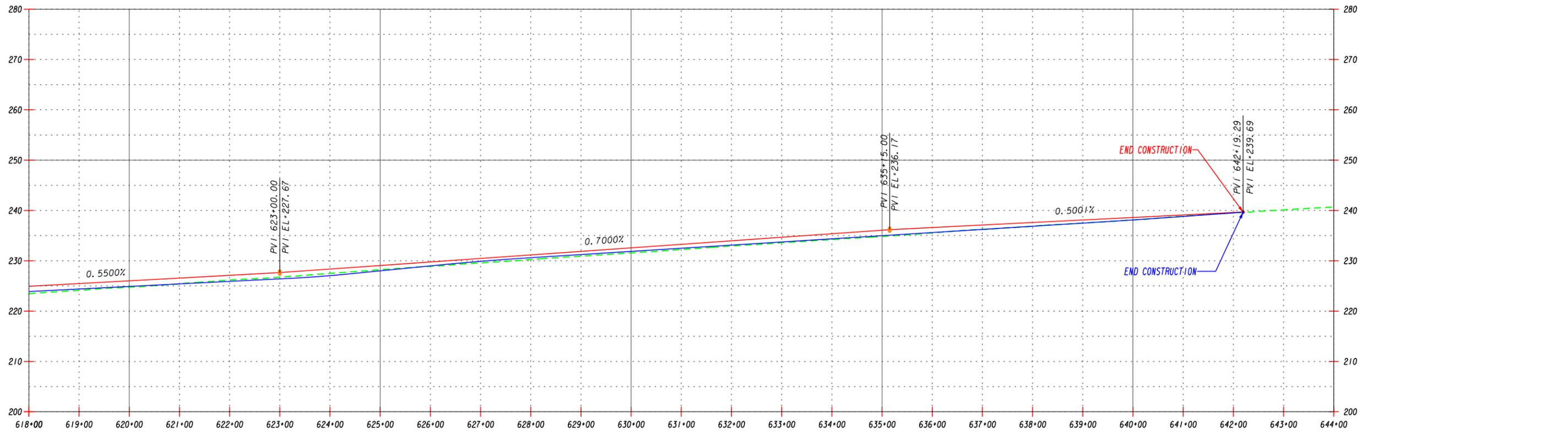
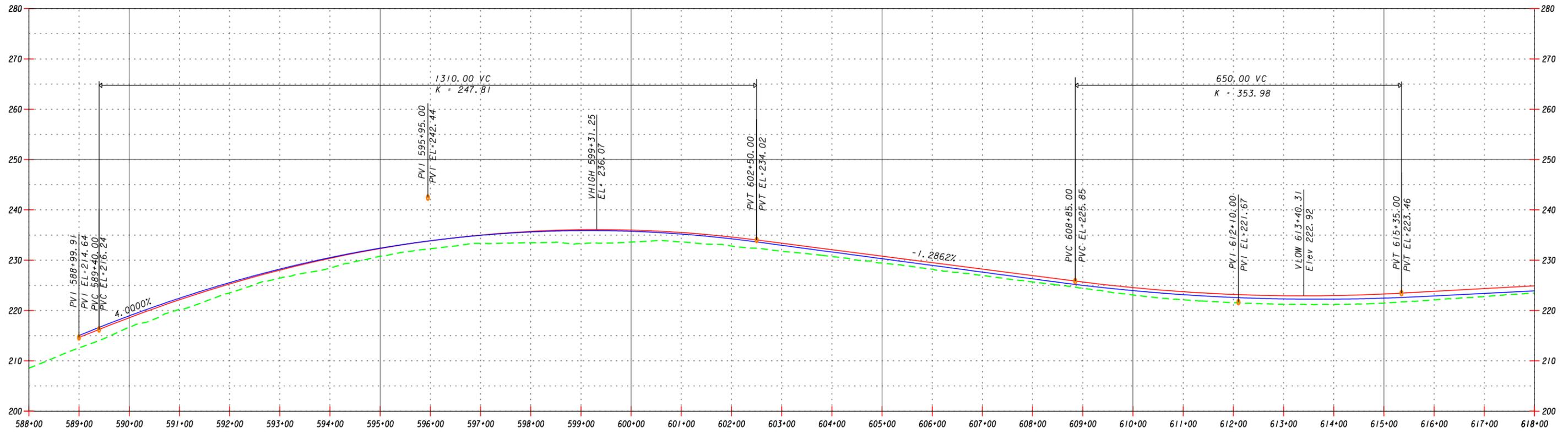
DRAWING No.



LEGEND	
—	PROJECTED RFP CONCEPT PROFILE
—	OPTIMIZED PROFILE
- - -	EXISTING GROUND

I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT
PROJECT NUMBER. PI NO. 210327
 ROADWAY PROFILE COMPARISON
 PROFILE ALIGNMENT I-20 C/L

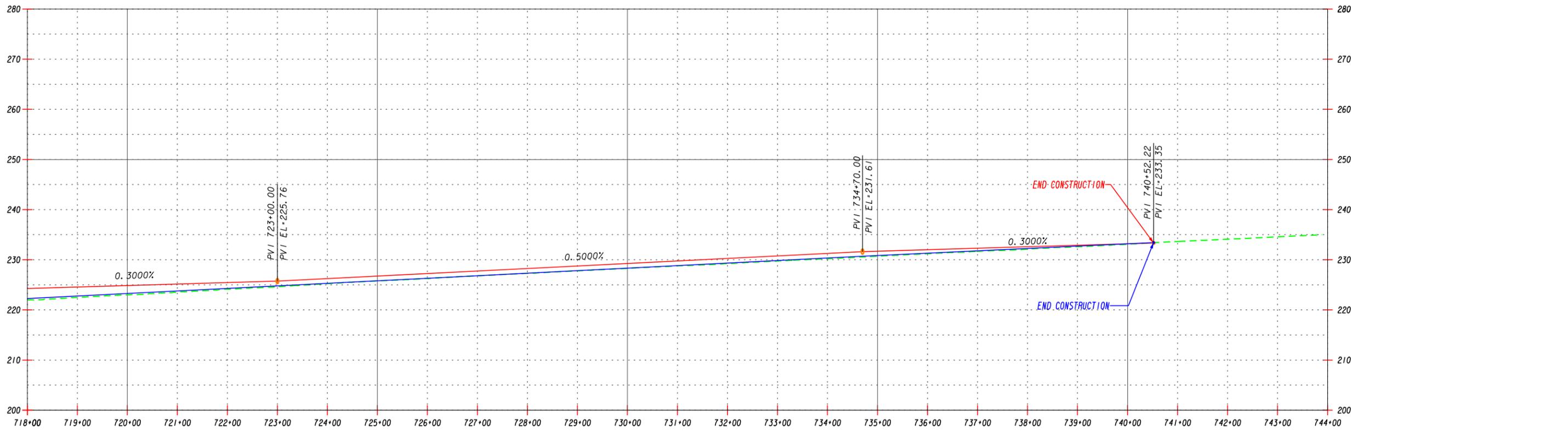
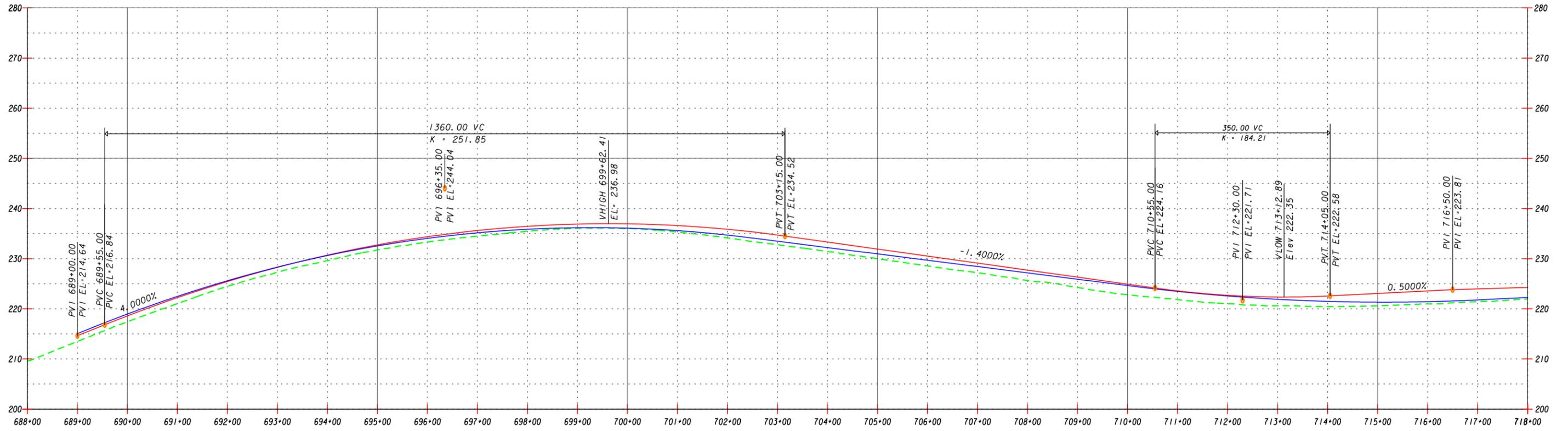
DRAWING SCALE	
HORZ: 1" = 200', VERT: 1" = 20'	
DATE	26 SEP 2018
DRAWING No.	SHEET 1 OF 4



LEGEND	
	PROJECTED RFP CONCEPT PROFILE
	OPTIMIZED PROFILE
	EXISTING GROUND

I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT
PROJECT NUMBER. PI NO. 210327
 ROADWAY PROFILE COMPARISON
 PROFILE ALIGNMENT I-20 EASTBOUND PGL

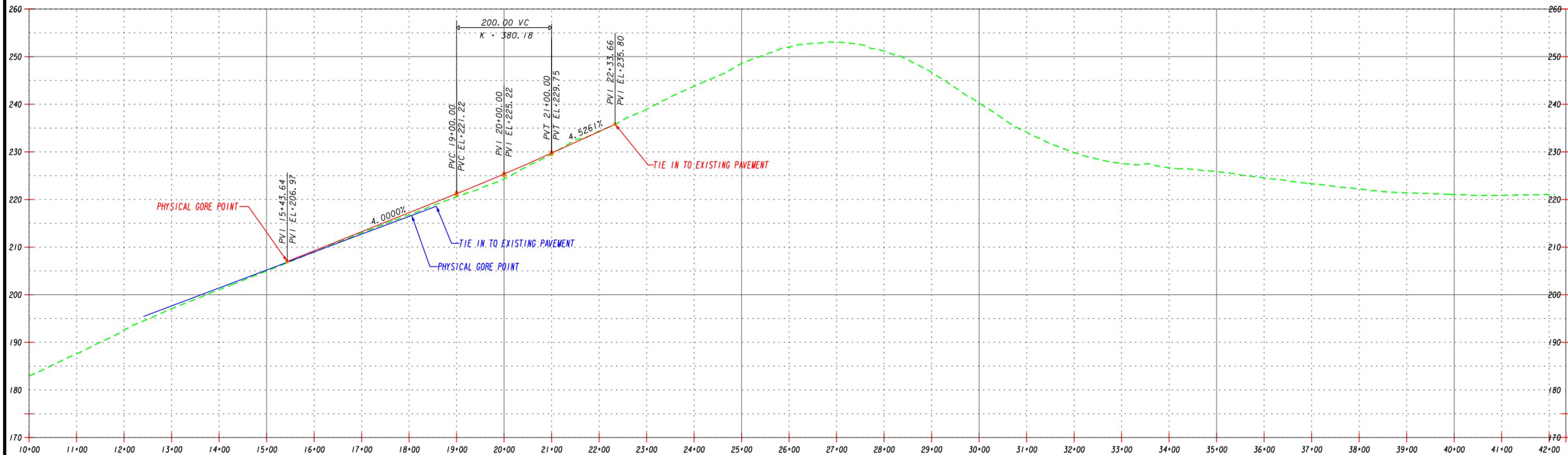
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HORZ: 1" = 200', VERT: 1" = 20'	
DATE	26 SEP 2018
DRAWING No.	SHEET 2 OF 4



LEGEND	
—	PROJECTED RFP CONCEPT PROFILE
—	OPTIMIZED PROFILE
- - -	EXISTING GROUND

I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT
 PROJECT NUMBER. PI NO. 210327
 ROADWAY PROFILE COMPARISON
 PROFILE ALIGNMENT I-20 WESTBOUND PGL

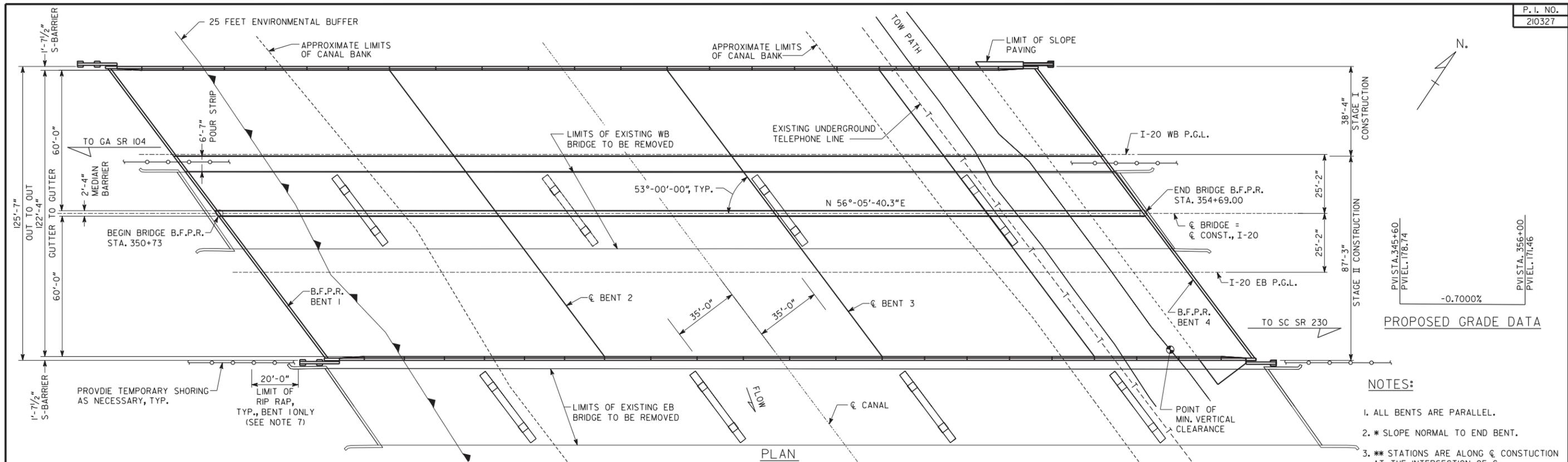
DRAWING SCALE	
HORZ: 1" = 200', VERT: 1" = 20'	
DATE	26 SEP 2018
DRAWING No.	SHEET 3 OF 4



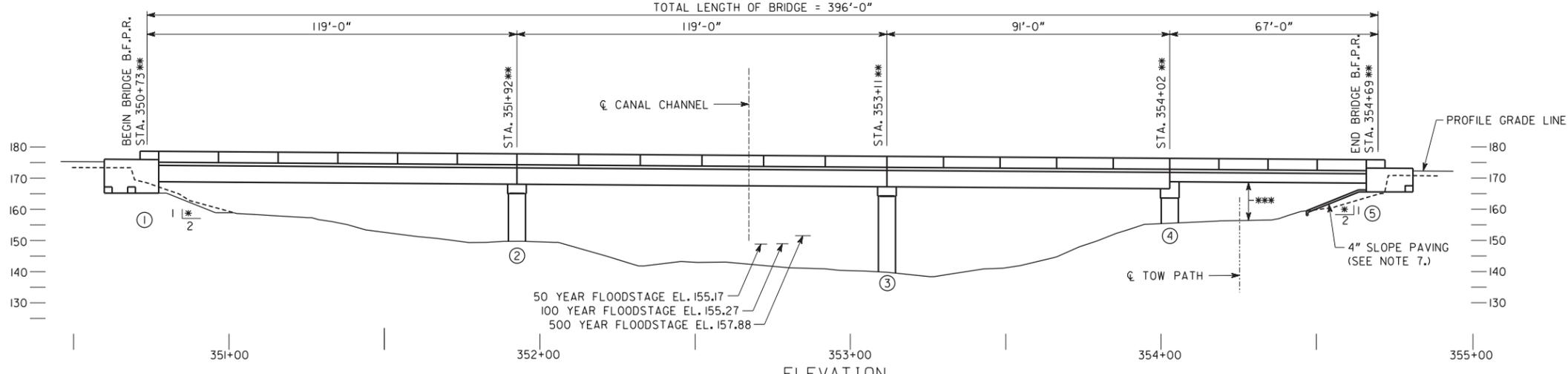
LEGEND	
	PROJECTED RFP CONCEPT PROFILE
	OPTIMIZED PROFILE
	EXISTING GROUND

I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT
PROJECT NUMBER, PI NO. 210327
 ROADWAY PROFILE COMPARISON
 PROFILE ALIGNMENT SC WELCOME CENTER RAMP

DRAWING SCALE	
HORZ: 1" - 200', VERT: 1" - 20'	
DATE	26 SEP 2018
DRAWING No.	SHEET 4 OF 4



- NOTES:**
- ALL BENTS ARE PARALLEL.
 - * SLOPE NORMAL TO END BENT.
 - ** STATIONS ARE ALONG ϕ CONSTRUCTION AT THE INTERSECTION OF ϕ CONSTRUCTION AND B.F.P.R. OR ϕ BENTS.
 - PROPOSED BRIDGE DRAINAGE IS TO BE CAPTURED OFF BRIDGE.
 - REMOVE EXISTING BRIDGE AND EXISTING SUBSTRUCTURE AS PER GDOT SPECIFICATIONS.
 - MINIMUM BOTTOM ELEVATION FOR PROPOSED BRIDGE SHALL BE NO LOWER THAN ELEVATION 157.17.
 - SEE SHEET 2 FOR SLOPE PAVING AND RIP RAP DETAILS.
 - *** 11'-0" MINIMUM VERTICAL CLEARANCE



EXISTING RIGHT BRIDGE I.D. NO. 245-00402D-201.07E
 EXISTING RIGHT BRIDGE SERIAL NO. 245-0051-0
 EXISTING LEFT BRIDGE I.D. NO. 245-00402D-201.08E
 EXISTING LEFT BRIDGE SERIAL NO. 245-0052-0
 P.I. NO. 210327

- PROPOSED BRIDGE CONSISTS OF**
- 2 - 119'-0" FIB, 63 IN, PSC BEAM SPANS ----- SPECIAL DESIGN
 - 1 - 91'-0" FIB, 63 IN, PSC BEAM SPAN ----- SPECIAL DESIGN
 - 1 - 67'-0" FIB, 36 IN, PSC BEAM SPAN ----- SPECIAL DESIGN
 - 2 - PILE END BENTS ----- SPECIAL DESIGN
 - 3 - CONCRETE INTERMEDIATE BENTS ----- SPECIAL DESIGN
 - 24 IN, TYPE I RIP RAP

PROPOSED UTILITIES
 NO UTILITIES ON BRIDGE

EXISTING UTILITIES
 BURIED TELEPHONE LINE APPROXIMATELY 13 FEET WEST OF TOW PATH

DESIGN DATA

- SPECIFICATIONS ----- AASHTO LRFD 7TH EDITION, 2014
- DESIGN VEHICLE LIVE LOAD ----- HL-93
- FUTURE PAVING ALLOWANCE ----- 30 LBS PER SQ FT

TRAFFIC DATA

- TRAFFIC ----- ADT = 73,500 (2022)
 ADT = 93,300 (2042)
- DESIGN SPEED ----- 65 MPH
- TRUCKS ----- 10.5 %
- 24 HR TRUCKS ----- 14.5 %
- DIRECTIONAL ----- 50 %

DRAINAGE DATA

DRAINAGE AREA ----- 17 SQ MILES

FLOOD FREQUENCY	TOTAL DISCHARGE	MEAN VELOCITY	AREA OF OPENING UNDER FLOODSTAGE	BACKWATER
50 YEAR	3,970 CFS	2.08 FPS	1,906 SQ FT	0.19 FT
100 YEAR	4,040 CFS	2.10 FPS	1,928 SQ FT	0.20 FT
500 YEAR	6,000 CFS	2.34 FPS	2,563 SQ FT	0.23 FT

BENT	WESTBOUND P.G.L.		EASTBOUND P.G.L.	
	STATION	ELEVATION	STATION	ELEVATION
1	350+54.04	175.28	350+91.96	175.02
2	351+73.04	174.45	352+10.96	174.18
3	352+92.04	173.62	353+29.96	173.35
4	353+83.04	172.98	354+20.96	172.71
5	354+50.04	172.51	354+87.96	172.24

STATIONS AND ELEVATIONS SHOWN ABOVE ARE ALONG PROFILE GRADE LINE AT INTERSECTION OF PROFILE GRADE LINE AND B.F.P.R. OR ϕ BENTS.

PLAN AND ELEVATION
 I-20 OVER AUGUSTA CANAL
 RICHMOND COUNTY IM000-0020-02(117)

DRAWING NO. 35-0001	SCALE: 1" = 20'-0" (UNLESS OTHERWISE NOTED)	SEPTEMBER 2018
BRIDGE SHEET 1 OF 2	DESIGNED: RFA DRAWN: BMG	CHECKED: JCD DESIGN GROUP: REVIEWED: APPROVED:

1 INCH WHEN PRINTED FULL SIZE

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 9/21/2018

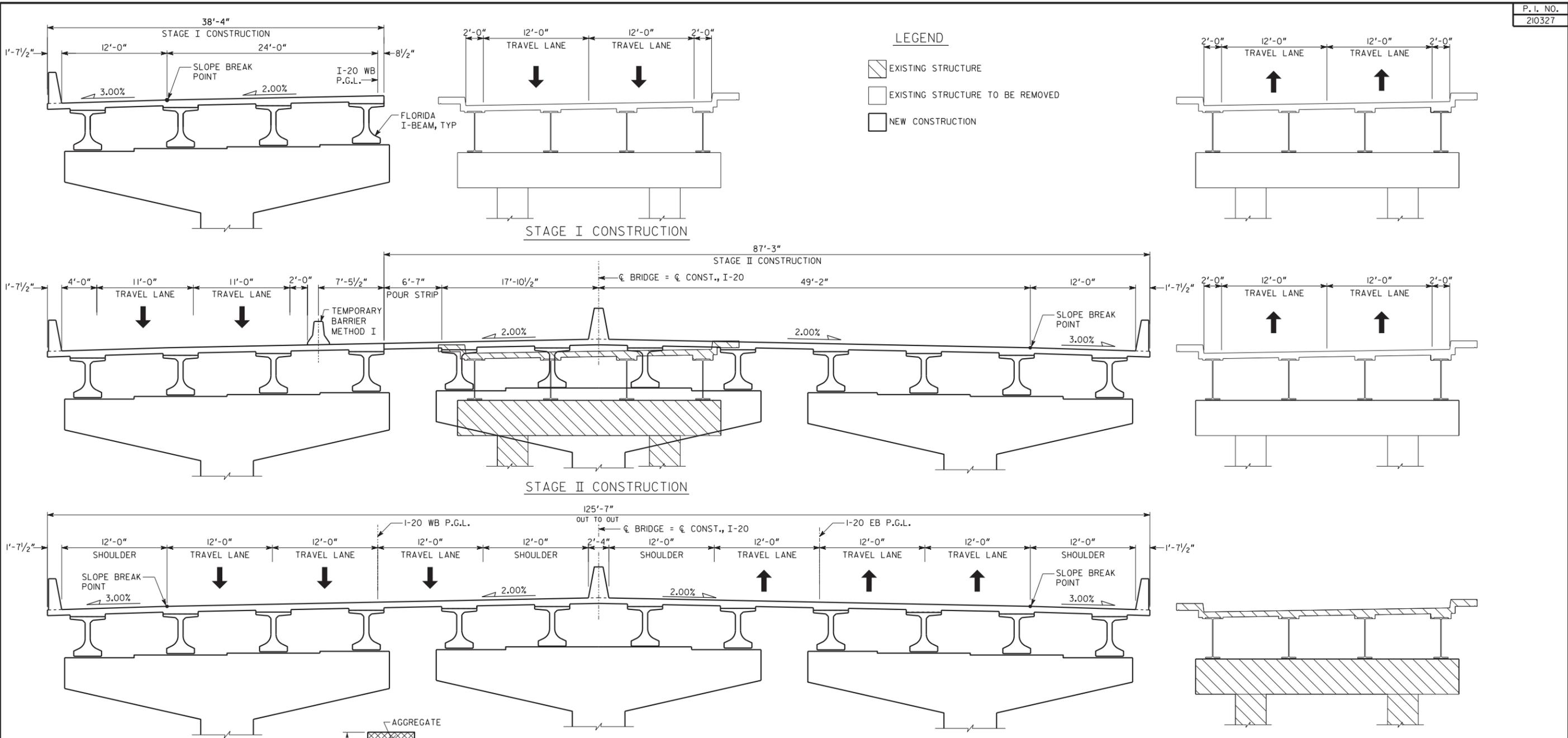
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9/21/2018

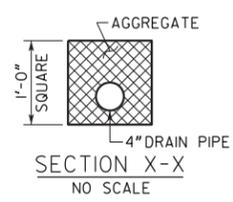


LEGEND

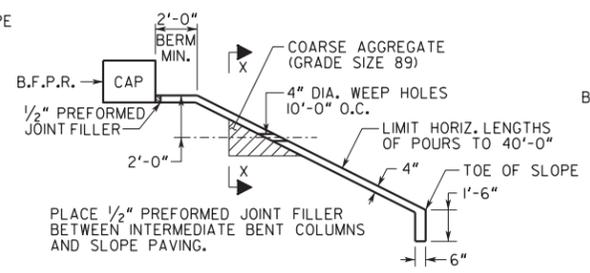
- EXISTING STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- NEW CONSTRUCTION

SEQUENCE OF CONSTRUCTION

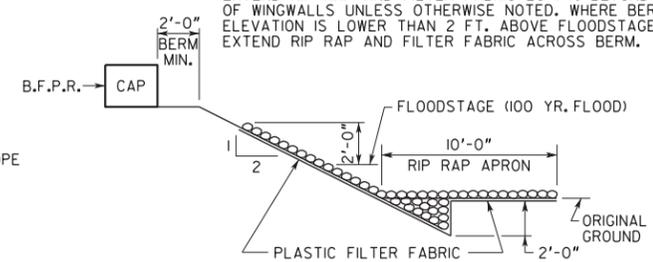
- STAGE I**
1. PLACE TEMPORARY SHORING AS REQUIRED MAINTAINING TRAFFIC ON EXISTING BRIDGES.
 2. CONSTRUCT STAGE I SUBSTRUCTION AND SUPERSTRUCTURE AS SHOWN.
- STAGE II**
1. PLACE TEMPORARY BARRIERS, METHOD I, ON THE COMPLETED STAGE I BRIDGE MAINTAINING TWO 11'-0" TRAFFIC LANES.
 2. ROUTE WESTBOUND TRAFFIC TO THE COMPLETED STAGE I BRIDGE.
 3. REMOVE EXISTING WESTBOUND BRIDGE.
 4. COMPLETE CONSTRUCTION OF PROPOSED BRIDGE.
 5. REMOVE TEMPORARY BARRIERS AND OPEN NEW BRIDGE TO ALL TRAFFIC.
 6. REMOVE EXISTING EASTBOUND BRIDGE.



COMPLETED BRIDGE



PLACE RIP RAP AND FILTER FABRIC FROM 2 FT. BELOW ORIGINAL GROUND TO 2 FT. ABOVE FLOODSTAGE. EXTEND RIP RAP AND FILTER FABRIC 20 FT. BEYOND END OF WINGWALLS UNLESS OTHERWISE NOTED. WHERE BERM ELEVATION IS LOWER THAN 2 FT. ABOVE FLOODSTAGE, EXTEND RIP RAP AND FILTER FABRIC ACROSS BERM.



BRIDGE NO. 1

Georgia Department of Transportation

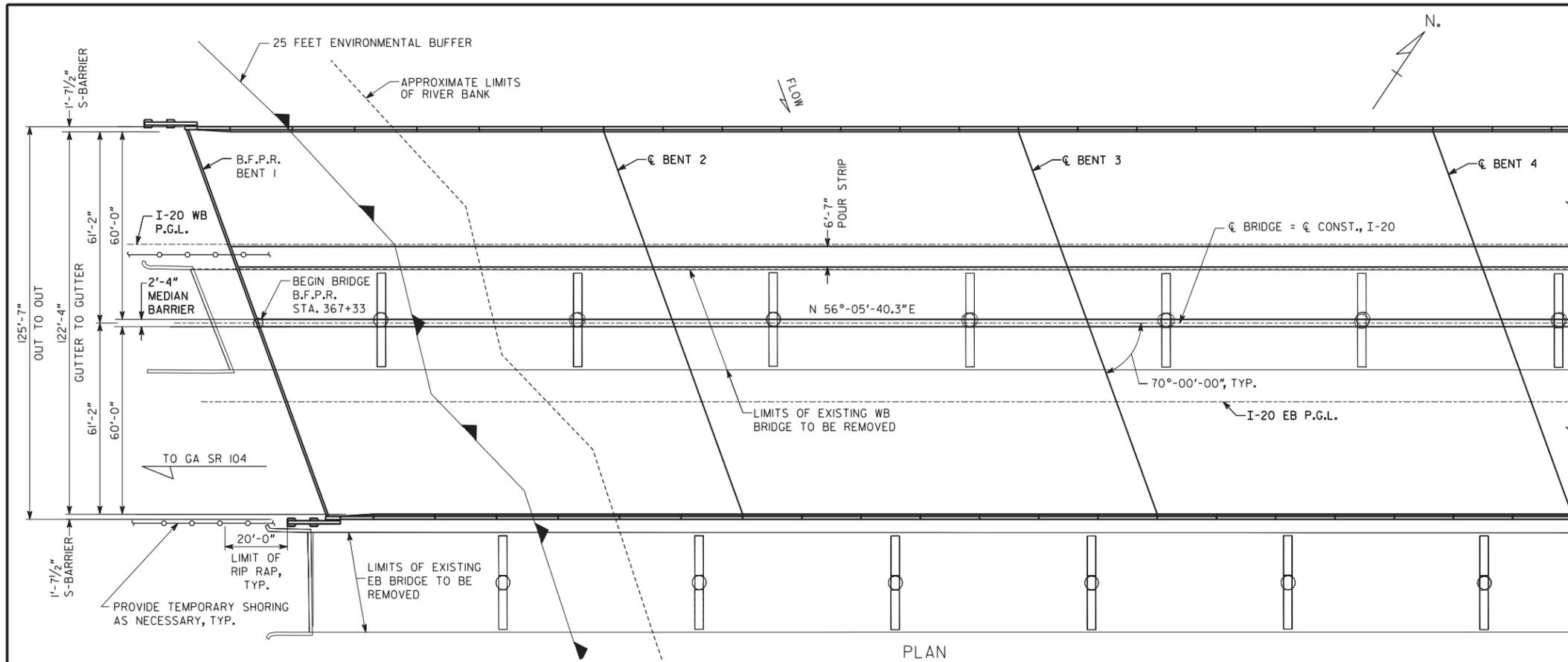
South Carolina Department of Transportation

FLATIRON

PARSONS

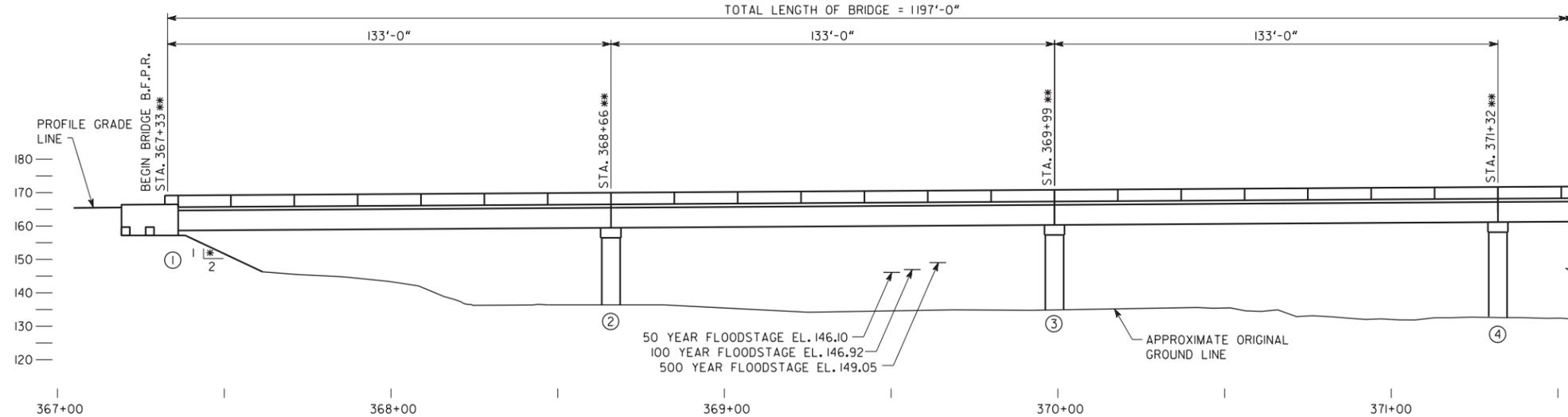
CONSTRUCTION SEQUENCE
I-20 OVER AUGUSTA CANAL
RICHMOND COUNTY IM000-0020-02(117)

DRAWING NO. 35-0002	SCALE: 3/16" = 1'-0", UNLESS OTHERWISE NOTED	SEPTEMBER 2018
BRIDGE SHEET 2 OF 2	DESIGNED: BMG DRAWN: BMG	CHECKED: JCO DESIGN GROUP: _____ REVIEWED: _____ APPROVED: _____

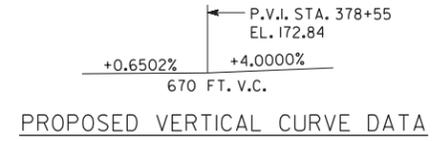


PLAN

TOTAL LENGTH OF BRIDGE = 1197'-0"



ELEVATION

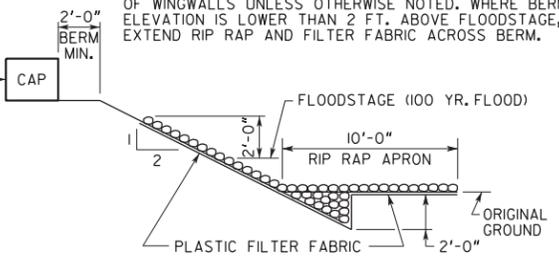


PROPOSED UTILITIES
NO UTILITIES ON BRIDGE

BENT	WESTBOUND P.G.L.		EASTBOUND P.G.L.	
	STATION	ELEVATION	STATION	ELEVATION
1	367+23.84	165.49	367+42.16	165.60
2	368+56.84	166.35	368+75.16	166.47
3	369+89.84	167.21	370+08.16	167.33
4	371+22.84	168.08	371+41.16	168.20

STATIONS AND ELEVATIONS SHOWN ABOVE ARE ALONG PROFILE GRADE LINE AT INTERSECTION OF PROFILE GRADE LINE AND B.F.P.R. OR BENTS

PLACE RIP RAP AND FILTER FABRIC FROM 2 FT. BELOW ORIGINAL GROUND TO 2 FT. ABOVE FLOODSTAGE. EXTEND RIP RAP AND FILTER FABRIC 20 FT. BEYOND END OF WINGWALLS UNLESS OTHERWISE NOTED. WHERE BERM ELEVATION IS LOWER THAN 2 FT. ABOVE FLOODSTAGE, EXTEND RIP RAP AND FILTER FABRIC ACROSS BERM.



RIP RAP DETAIL
NO SCALE

EXISTING LEFT BRIDGE I.D. NO. 245-00402D-201.39E
EXISTING LEFT BRIDGE SERIAL NO. 245-0054-0
EXISTING RIGHT BRIDGE I.D. NO. 245-00402D-201.38E
EXISTING RIGHT BRIDGE SERIAL NO. 245-0053-0
PROJECT P.I. NO. 210327

BRIDGE NO. 2

PROPOSED BRIDGE CONSISTS OF

- 9 - 133'-0" FIB, 72 IN, PSC BEAM SPAN ----- SPECIAL DESIGN
- 2 - PILE END BENTS ----- SPECIAL DESIGN
- 8 - CONCRETE INTERMEDIATE BENTS ----- SPECIAL DESIGN

TRAFFIC DATA

TRAFFIC -----	ADT = 73,500 (2022)
	ADT = 93,300 (2042)
DESIGN SPEED -----	65 MPH
TRUCKS -----	10.5 %
24 HR TRUCKS -----	14.5 %
DIRECTIONAL -----	50 %

DESIGN DATA

SPECIFICATIONS ----- AASHTO LRFD 7TH EDITION, 2014
DESIGN VEICLHE LIVE LOAD ----- HL-93
FUTURE PAVING ALLOWANCE ----- 30 LBS PER SQ FT

DRAINAGE DATA

DRAINAGE AREA -----	7,140 SQ MILES			
FLOOD FREQUENCY	TOTAL DISCHARGE	MEAN VELOCITY	AREA OF OPENING UNDER FLOODSTAGE	BACKWATER
50 YEAR	146,000 CFS	12.09 FPS	12,079 SQ FT	0.88 FT
100 YEAR	163,000 CFS	12.72 FPS	12,816 SQ FT	0.99 FT
500 YEAR	205,000 CFS	13.86 FPS	14,787 SQ FT	1.29 FT

NOTES:

- ALL BENTS ARE PARALLEL.
- * SLOPE NORMAL TO END BENT
- ** STATIONS ARE ALONG CL CONSTRUCTION, I-20.
- MINIMUM BOTTOM OF BEAM ELEVATION FOR PROPOSED BRIDGE SHALL BE NO LOWER THAN ELEVATION 148.10.
- PROPOSED BRIDGE HAS CLOSED DECK DRAINAGE SYSTEM.
- REMOVE EXISTING BRIDGE AND EXISTING SUBSTRUCTURE AS PER GDOT SPECIFICATIONS.



PLAN AND ELEVATION
I-20 OVER SAVANNAH RIVER
RICHMOND COUNTY IM000-0020-02(117)

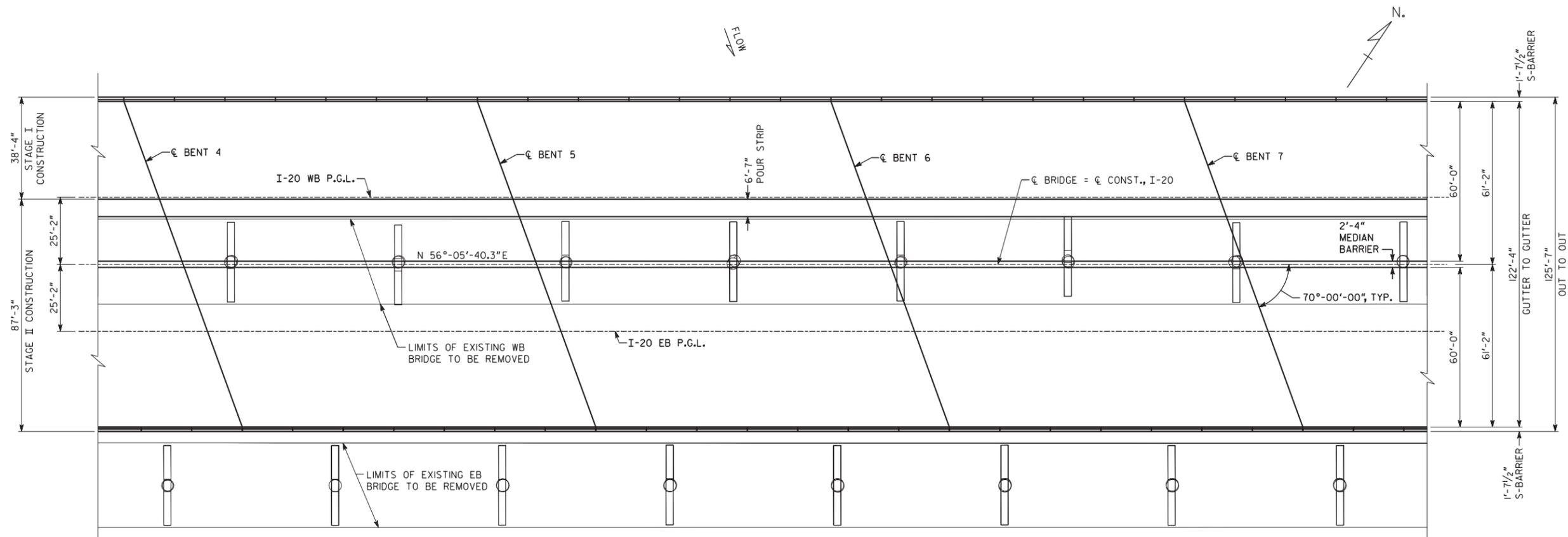
DRAWING NO. 35-0001	SCALE: 1" = 20', UNLESS OTHERWISE NOTED	SEPTEMBER 2018
BRIDGE SHEET 1 OF 4	DESIGNED: RFA DRAWN: RFA	CHECKED: JCO DESIGN GROUP: REVIEWED: APPROVED:

1 INCH WHEN PRINTED FULL SIZE

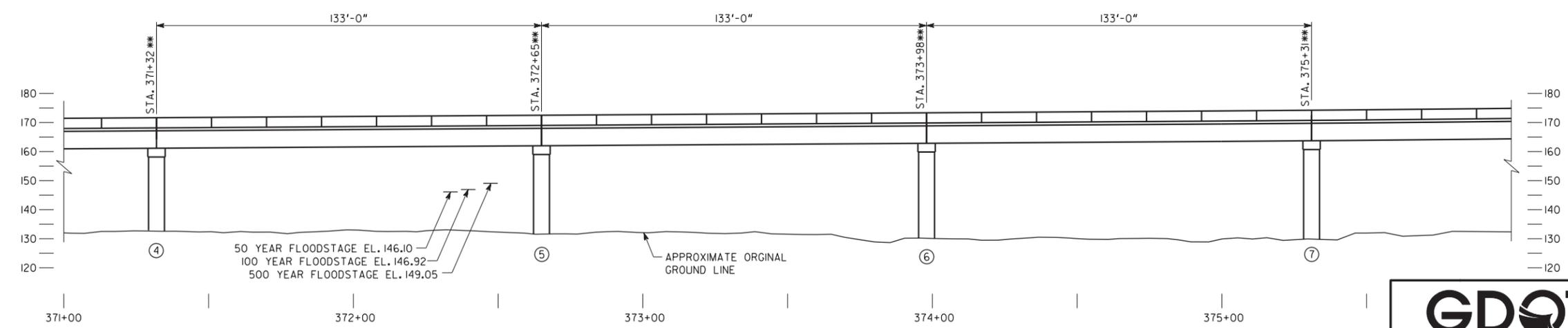
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9/21/2018



TOTAL LENGTH OF BRIDGE = 1197'-0"



BENT	WESTBOUND P.G.L.		EASTBOUND P.G.L.	
	STATION	ELEVATION	STATION	ELEVATION
4	371+22.84	168.08	371+41.16	168.20
5	372+55.84	168.94	372+74.16	169.06
6	373+88.84	169.81	374+07.16	169.93
7	375+21.84	170.67	375+40.16	170.80

STATIONS AND ELEVATIONS SHOWN ABOVE ARE ALONG PROFILE GRADE LINE AT INTERSECTION OF PROFILE GRADE LINE AND B.F.P.R. OR CL BENTS.

BRIDGE NO. 2

GDOT
Georgia Department of Transportation

FLATIRON

SCDOT
South Carolina Department of Transportation

PARSONS

PLAN AND ELEVATION
I-20 OVER SAVANNAH RIVER
RICHMOND COUNTY IM000-0020-02(117)

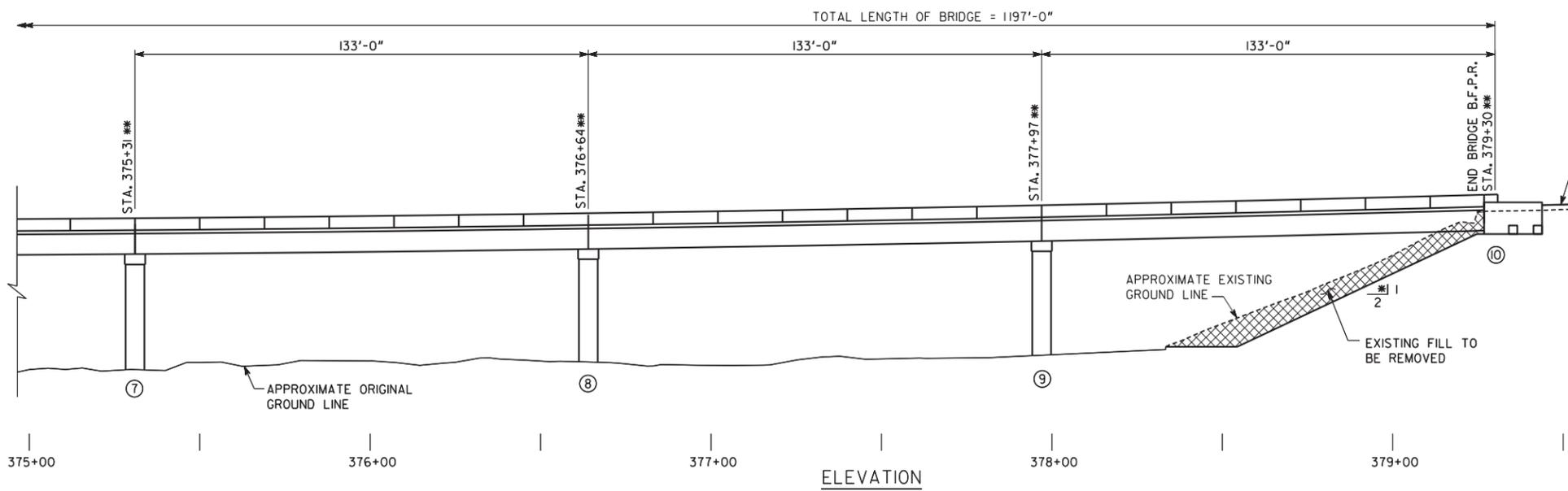
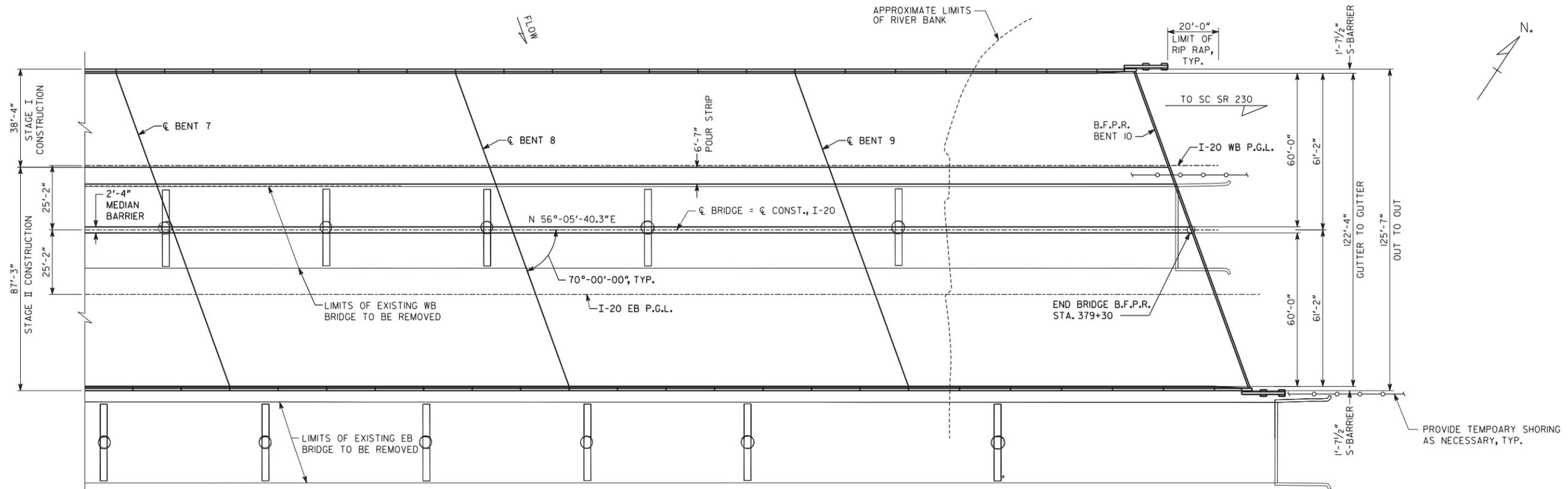
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BRIDGE SHEET 2 OF 4	DESIGNED: RFA DRAWN: RFA	CHECKED: JCO DESIGN GROUP: REVIEWED: APPROVED:

1 INCH WHEN PRINTED FULL SIZE

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9/21/2018



BENT	WESTBOUND P.G.L.		EASTBOUND P.G.L.	
	STATION	ELEVATION	STATION	ELEVATION
7	375+21.84	170.67	375+40.16	170.80
8	376+54.84	171.99	376+73.16	172.24
9	377+87.84	174.20	378+06.16	174.57
10	379+20.84	177.28	379+39.16	177.78

STATIONS AND ELEVATIONS SHOWN ABOVE ARE ALONG PROFILE GRADE LINE AT INTERSECTION OF PROFILE GRADE LINE AND B.F.P.R. OR € BENTS.

BRIDGE NO. 2

GDOT
Georgia Department of Transportation

FLATIRON

SCDOT
South Carolina Department of Transportation

PARSONS

PLAN AND ELEVATION
I-20 OVER SAVANNAH RIVER
RICHMOND COUNTY IM000-0020-02(117)

DRAWING NO. 35-0003
BRIDGE SHEET 3 OF 4

SCALE: 1" = 20'

SEPTEMBER 2018

DESIGNED: RFA
DRAWN: RFA

CHECKED: JCO
DESIGN GROUP:

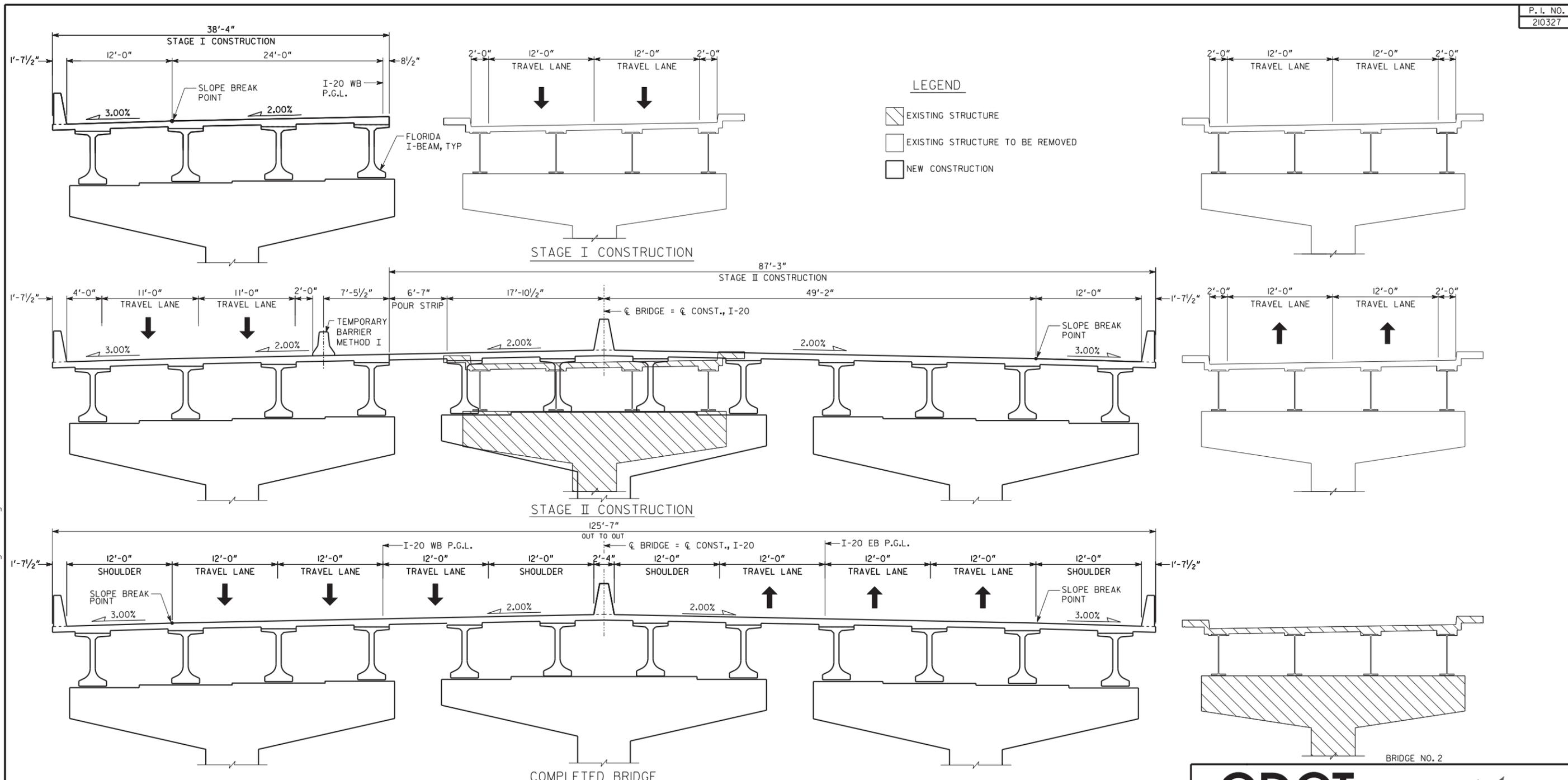
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APPROVED:

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11:09:12 AM

9/21/2018

11:00:57 AM
11:00:57 AM
Bridge 2_CS.dgn
11:00:57 AM
9/21/2018



SEQUENCE OF CONSTRUCTION

STAGE I

1. PLACE TEMPORARY SHORING AS REQUIRED MAINTAINING TRAFFIC ON EXISTING BRIDGES.
2. CONSTRUCT STAGE I SUBSTRUCTION AND SUPERSTRUCTURE AS SHOWN.

STAGE II

1. PLACE TEMPORARY BARRIERS, METHOD I, ON THE COMPLETED STAGE I BRIDGE MAINTAINING TWO 11'-0" TRAFFIC LANES.
2. ROUTE WESTBOUND TRAFFIC TO THE COMPLETED STAGE I BRIDGE.
3. REMOVE EXISTING WESTBOUND BRIDGE.
4. COMPLETE CONSTRUCTION OF PROPOSED BRIDGE.
5. REMOVE TEMPORARY BARRIERS AND OPEN NEW BRIDGE TO ALL TRAFFIC.
6. REMOVE EXISTING EASTBOUND BRIDGE.

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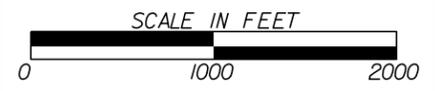
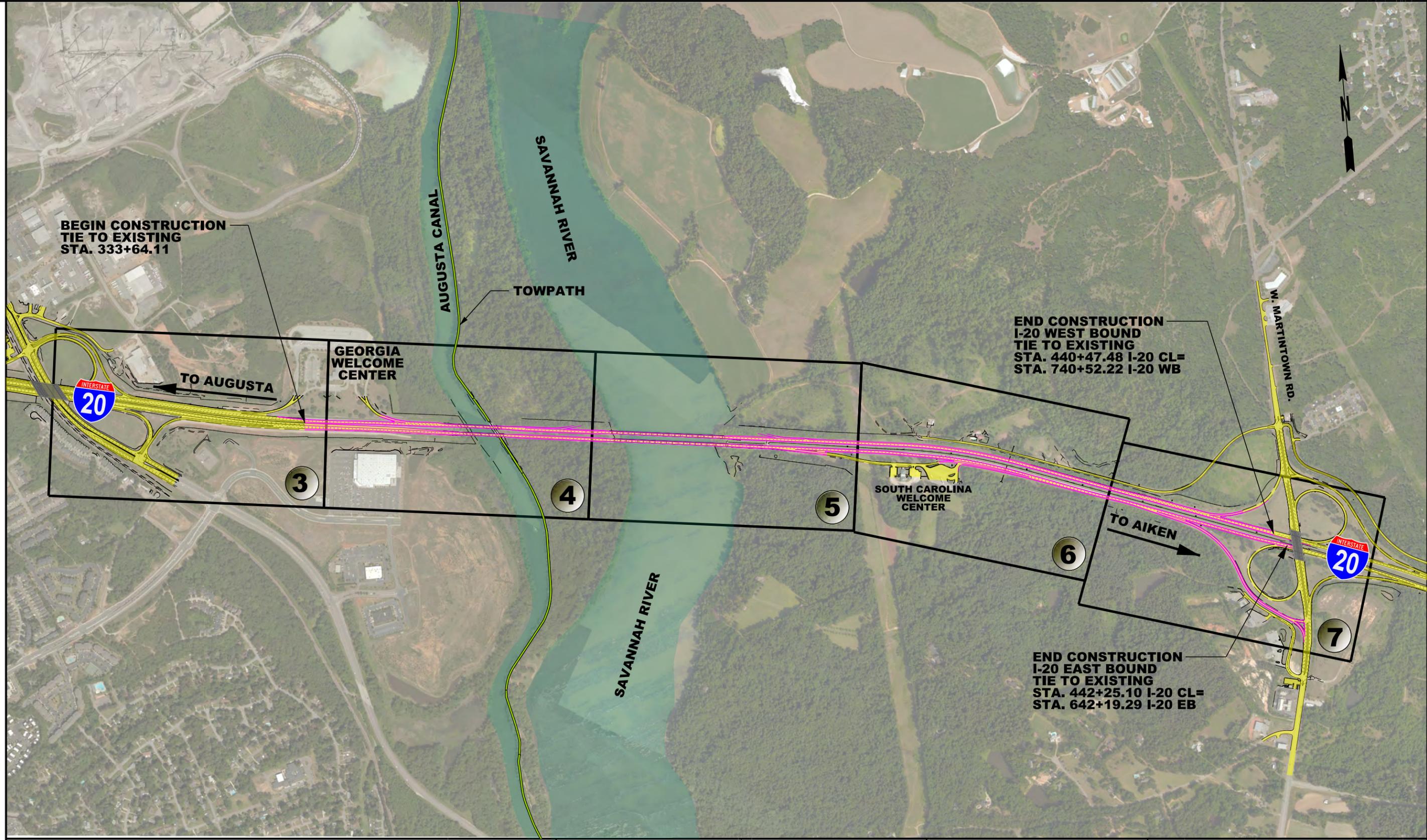
PARSONS

CONSTRUCTION SEQUENCE
I-20 OVER SAVANNAH RIVER
RICHMOND COUNTY IM000-0020-02(117)

DRAWING NO. 35-0004	SCALE: 3/16" = 1'-0"	SEPTEMBER 2018
BRIDGE SHEET 4 OF 4	DESIGNED: RFA DRAWN: RFA	CHECKED: JCO DESIGN GROUP: _____ REVIEWED: _____ APPROVED: _____

1 INCH WHEN PRINTED FULL SIZE

C.1.1.1.c. – Conceptual Construction Staging Drawings



CONSTRUCTION STAGING PLAN STAGE 1A - KEY PLAN		
I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0001
CORRECTED:	DATE:	
VERIFIED:	DATE:	

Pre- Stage-1A :

- Construct temporary pavement along I-20 EB and I-20 off-Ramp to Martintown Rd. during off peak hours.
- Stripe acceleration and deceleration lanes for construction access on I-20 WB approaching and trailing bridge over Augusta Canal.

Stage-1A :

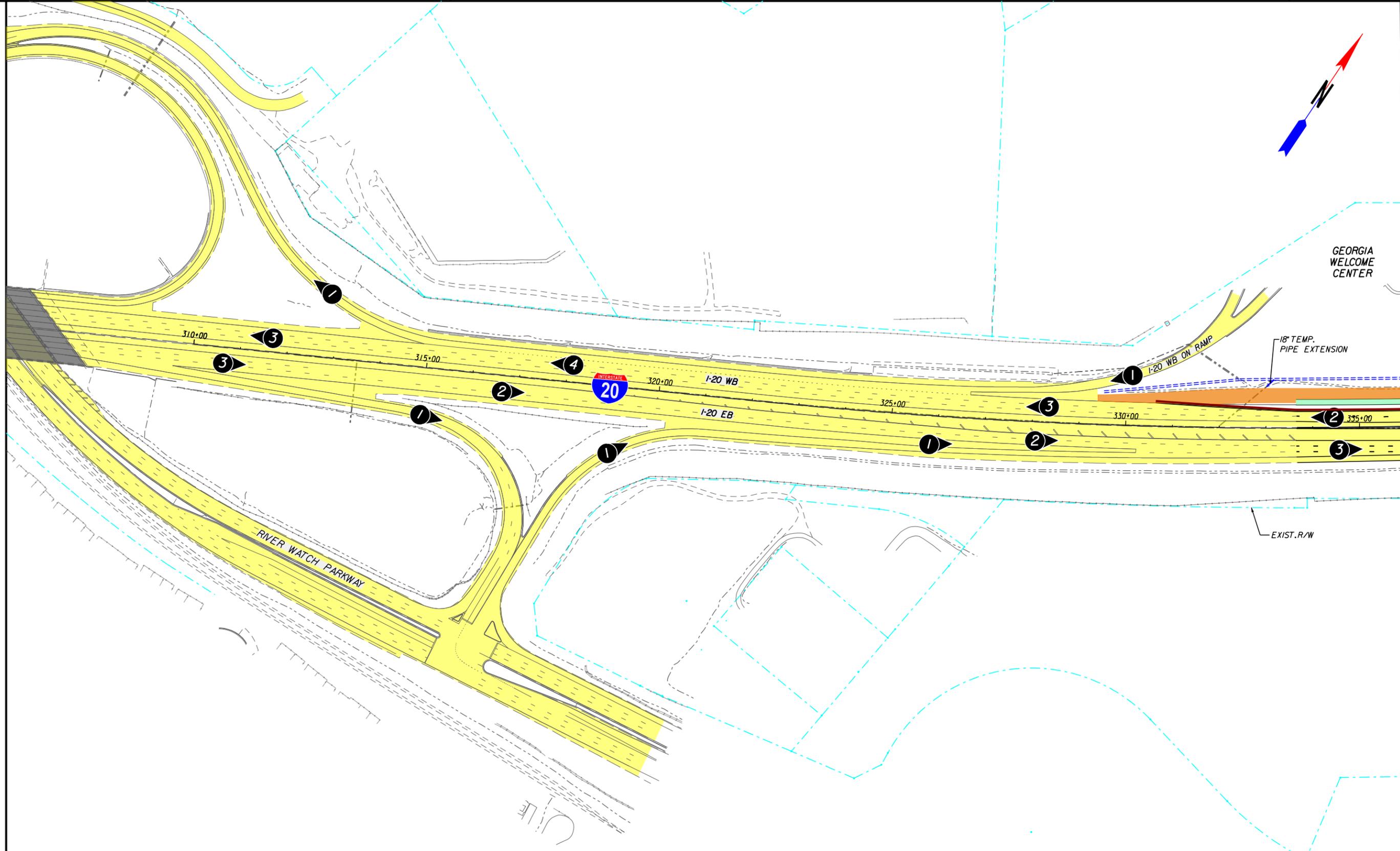
- Shift I-20 EB traffic and I-20 off-Ramp to temporary pavement.
- Maintain EB traffic on existing EB bridges over Augusta Canal and Savannah River.
- Open construction access to construction vehicles/heavy equipment to enter/exit I-20 WB from outside shoulder.
- Install temporary drainage, wall and pavement as shown on plans.
- Construct permanent drainage and pavement on I-20 and I-20 off-Ramp to Martintown Rd.
- Construct proposed I-20 EB lanes, except for permanent barrier.
- Construct WB bridges over Augusta Canal and Savannah River.
- Construct retaining walls along I-20 WB.



**CONSTRUCTION STAGING PLAN
STAGE 1A - GENERAL NOTES**

I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS
AND ROADWAY WIDENING PROJECT

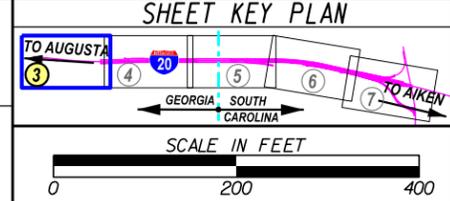
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VERIFIED:	DATE:	



MATCH LINE STA. 336+00 DRAWING No. 19-0004

LEGEND

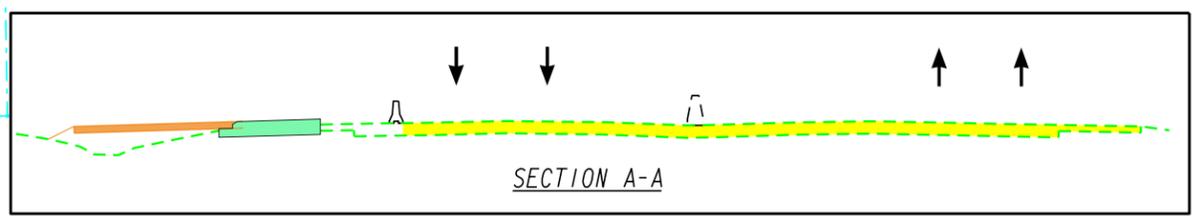
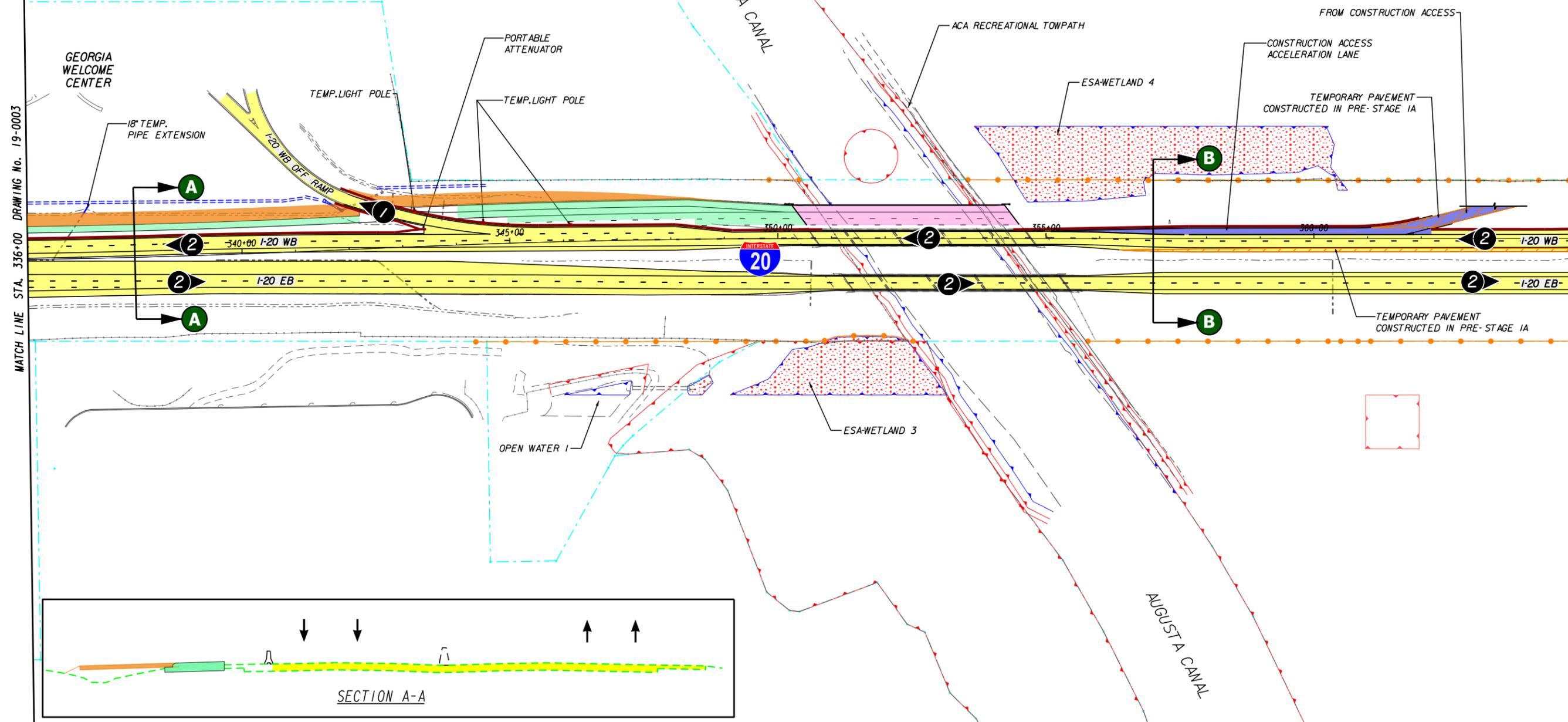
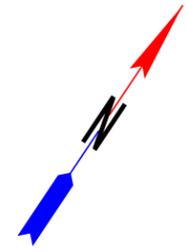
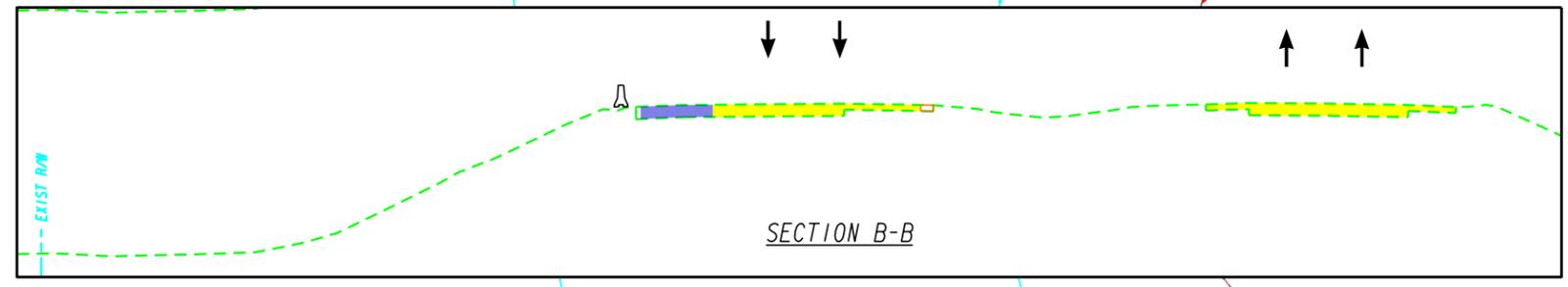
Roadway Construction (Current Stage)	Temp. Pvmt. (Current Stage)	Temporary Barrier
Roadway Construction (Previous Stage)	Temp. Pvmt. (Previous Stage)	Proposed MSE Wall
Bridge Construction (Current Stage)	Construction Access	Orange Barrier Fence
Bridge Construction (Previous Stage)	Traffic Lane Number	ESA - Env. Sensitive Area (see environmental document)
Traffic Lanes (Current Stage)		Drainage Network



**CONSTRUCTION STAGING PLAN
STAGE 1A**

I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS
AND ROADWAY WIDENING PROJECT

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BACKCHECKED:	DATE:	19-0003
CORRECTED:	DATE:	
VERIFIED:	DATE:	

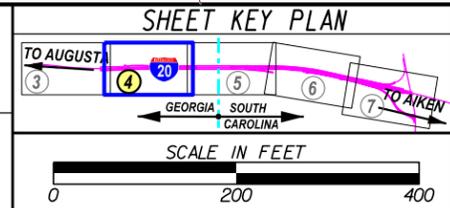


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MATCH LINE STA. 365+00 DRAWING No. 19-0005

LEGEND

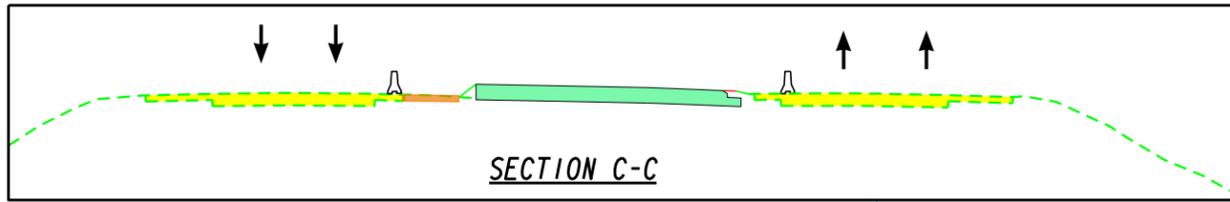
Roadway Construction (Current Stage)	Temp. Pvmt. (Current Stage)	Temporary Barrier
Roadway Construction (Previous Stage)	Temp. Pvmt. (Previous Stage)	Proposed MSE Wall
Bridge Construction (Current Stage)	Construction Access	Orange Barrier Fence
Bridge Construction (Previous Stage)	Traffic Lane Number	ESA - Env. Sensitive Area (see environmental document)
Traffic Lanes (Current Stage)		Drainage Network



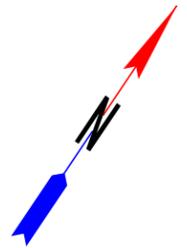
**CONSTRUCTION STAGING PLAN
STAGE 1A**

1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS
AND ROADWAY WIDENING PROJECT

CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0004
CORRECTED:	DATE:	
VERIFIED:	DATE:	

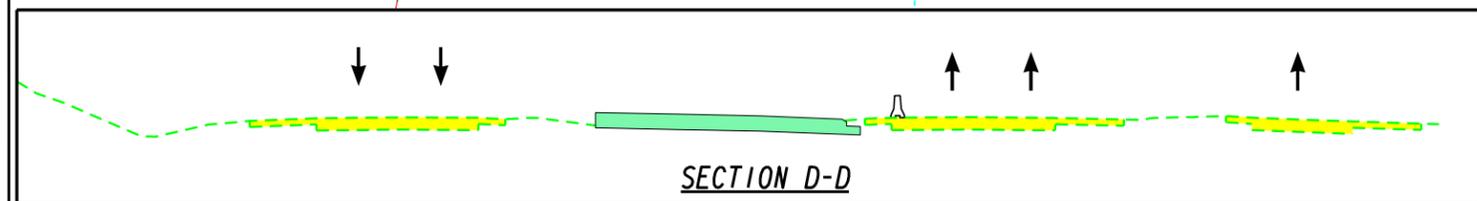
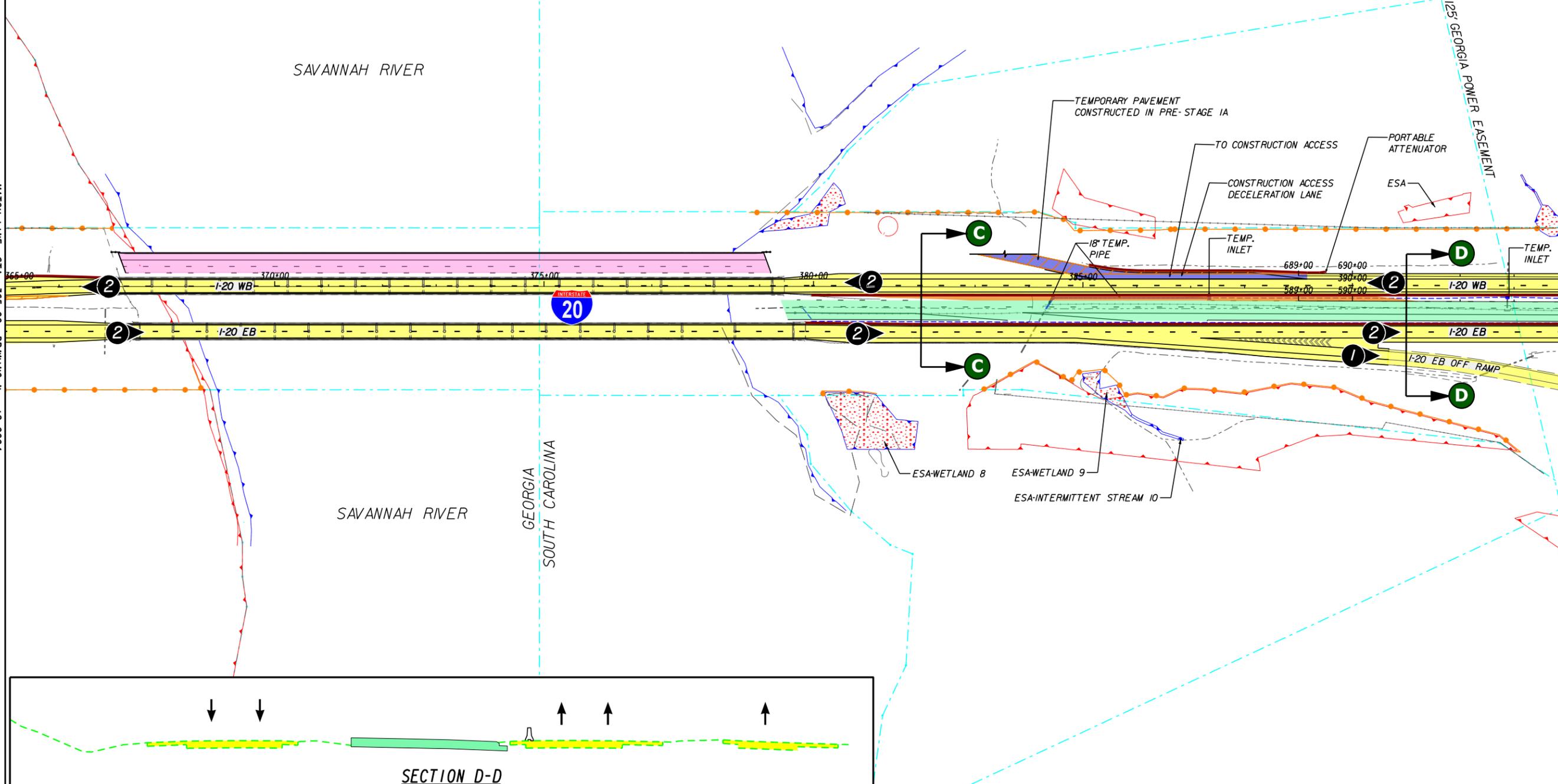


SECTION C-C



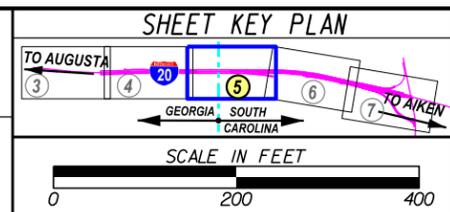
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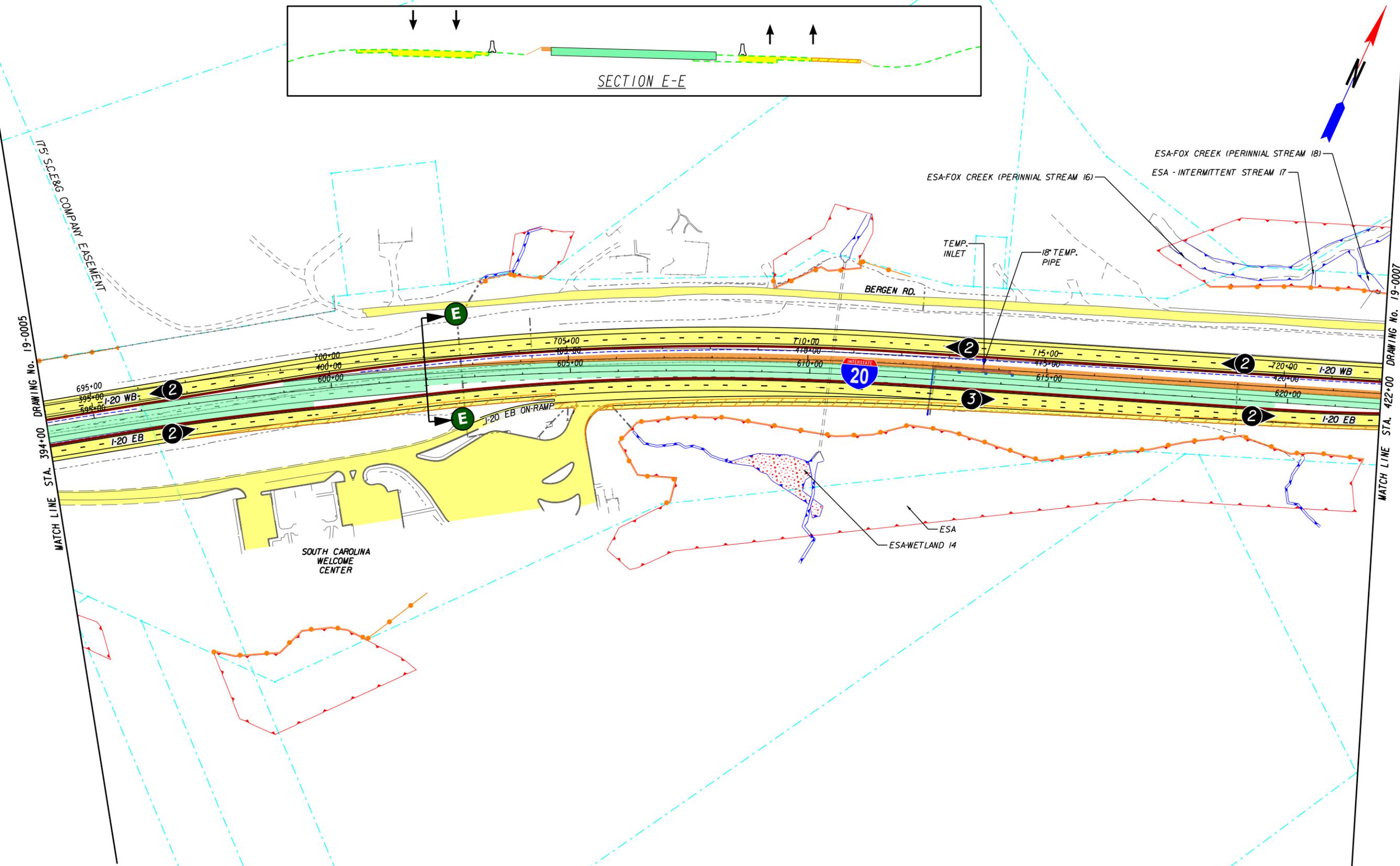
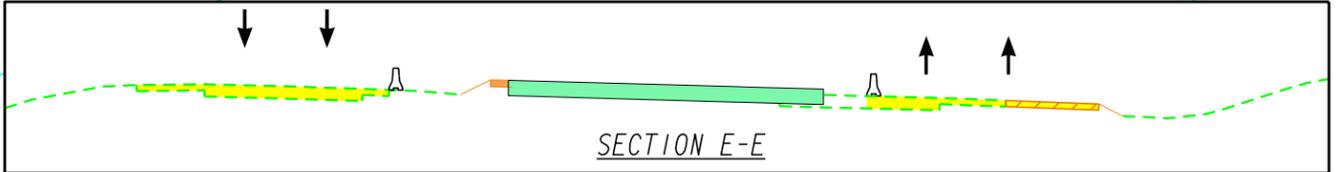


SECTION D-D

LEGEND			
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	Roadway Construction (Previous Stage)		Temp. Pvmt. (Previous Stage)
	Bridge Construction (Current Stage)		Construction Access
	Bridge Construction (Previous Stage)		Traffic Lane Number
	Traffic Lanes (Current Stage)		Temporary Barrier
			Proposed MSE Wall
			Orange Barrier Fence
			ESA - Env. Sensitive Area (see environmental document)
			Drainage Network



CONSTRUCTION STAGING PLAN STAGE IA		
I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0005
CORRECTED:	DATE:	
VERIFIED:	DATE:	



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MATCH LINE STA. 422+00 DRAWING No. 19-0007

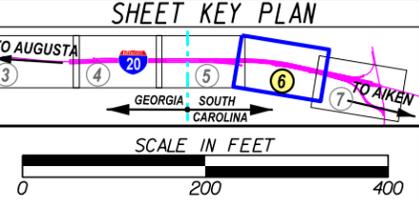
LEGEND	
	Roadway Construction (Current Stage)
	Roadway Construction (Previous Stage)
	Bridge Construction (Current Stage)
	Bridge Construction (Previous Stage)
	Traffic Lanes (Current Stage)
	Temp. Pvmt. (Current Stage)
	Temp. Pvmt. (Previous Stage)
	Construction Access
	Traffic Lane Number
	Temporary Barrier
	Proposed MSE Wall
	Orange Barrier Fence
	ESA - Env. Sensitive Area (see environmental document)
	Drainage Network

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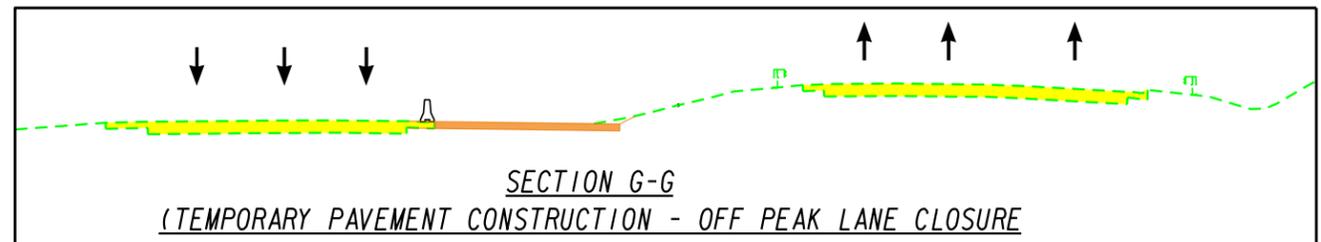
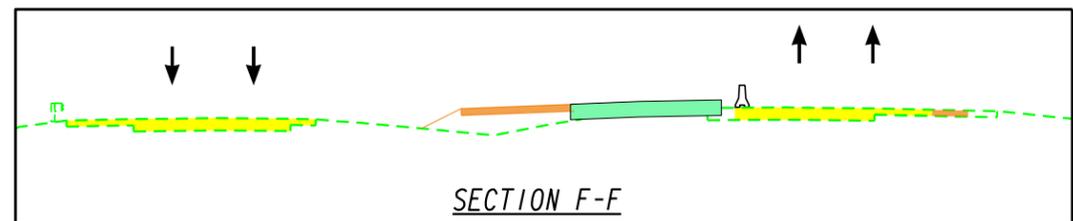
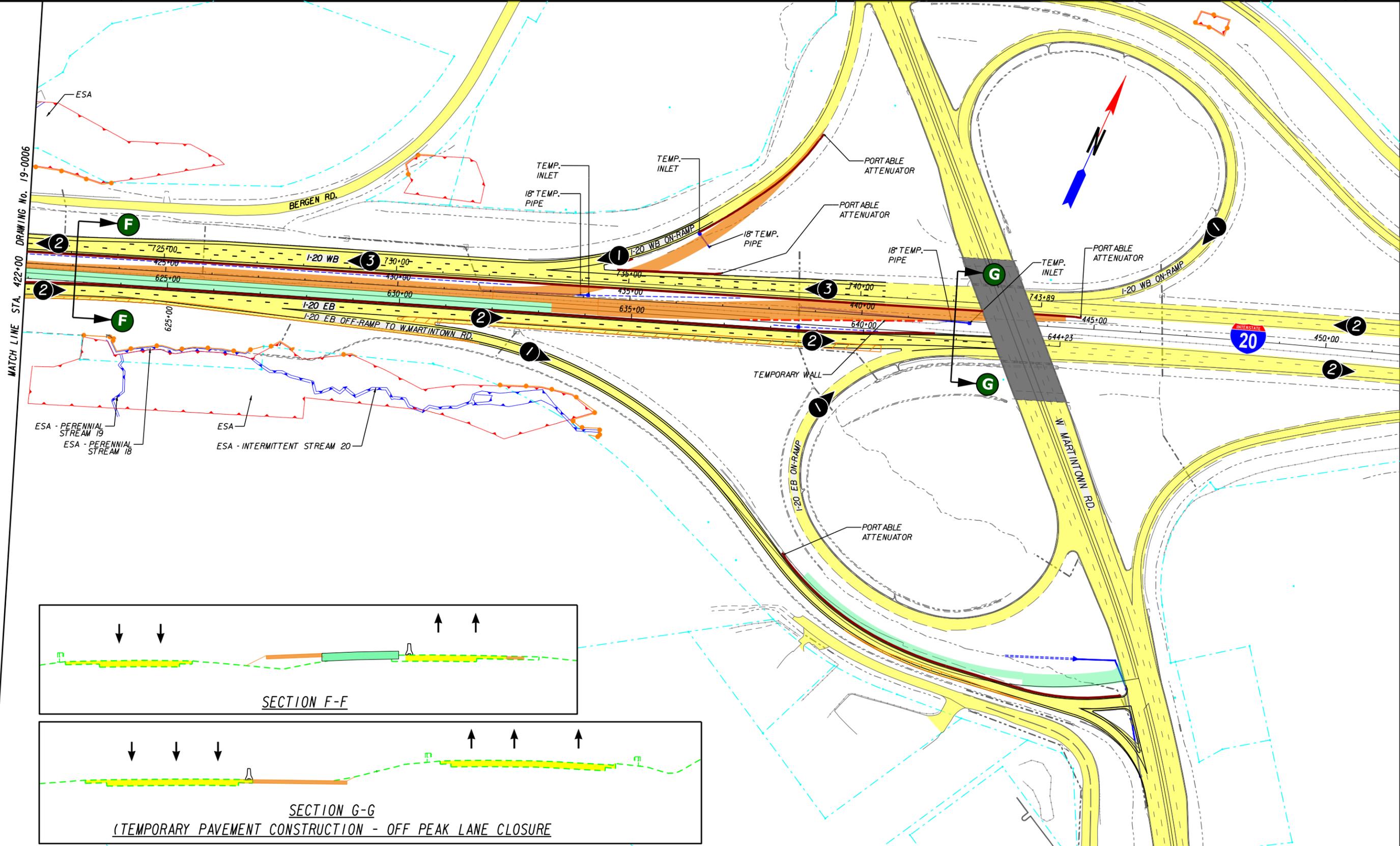
PARSONS



**CONSTRUCTION STAGING PLAN
STAGE 1A**

1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS
AND ROADWAY WIDENING PROJECT

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BACKCHECKED:	DATE:	19-0006
CORRECTED:	DATE:	
VERIFIED:	DATE:	



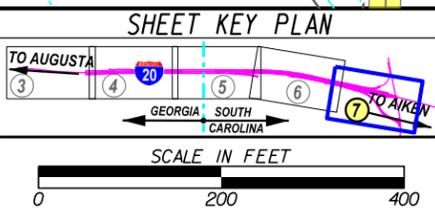
LEGEND			
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	Roadway Construction (Previous Stage)		Temp. Pvmt. (Previous Stage)
	Bridge Construction (Current Stage)		Construction Access
	Bridge Construction (Previous Stage)		Traffic Lane Number
	Traffic Lanes (Current Stage)		Temporary Barrier
			Proposed MSE Wall
			Orange Barrier Fence
			ESA - Env. Sensitive Area (see environmental document)
			Drainage Network

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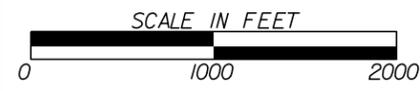
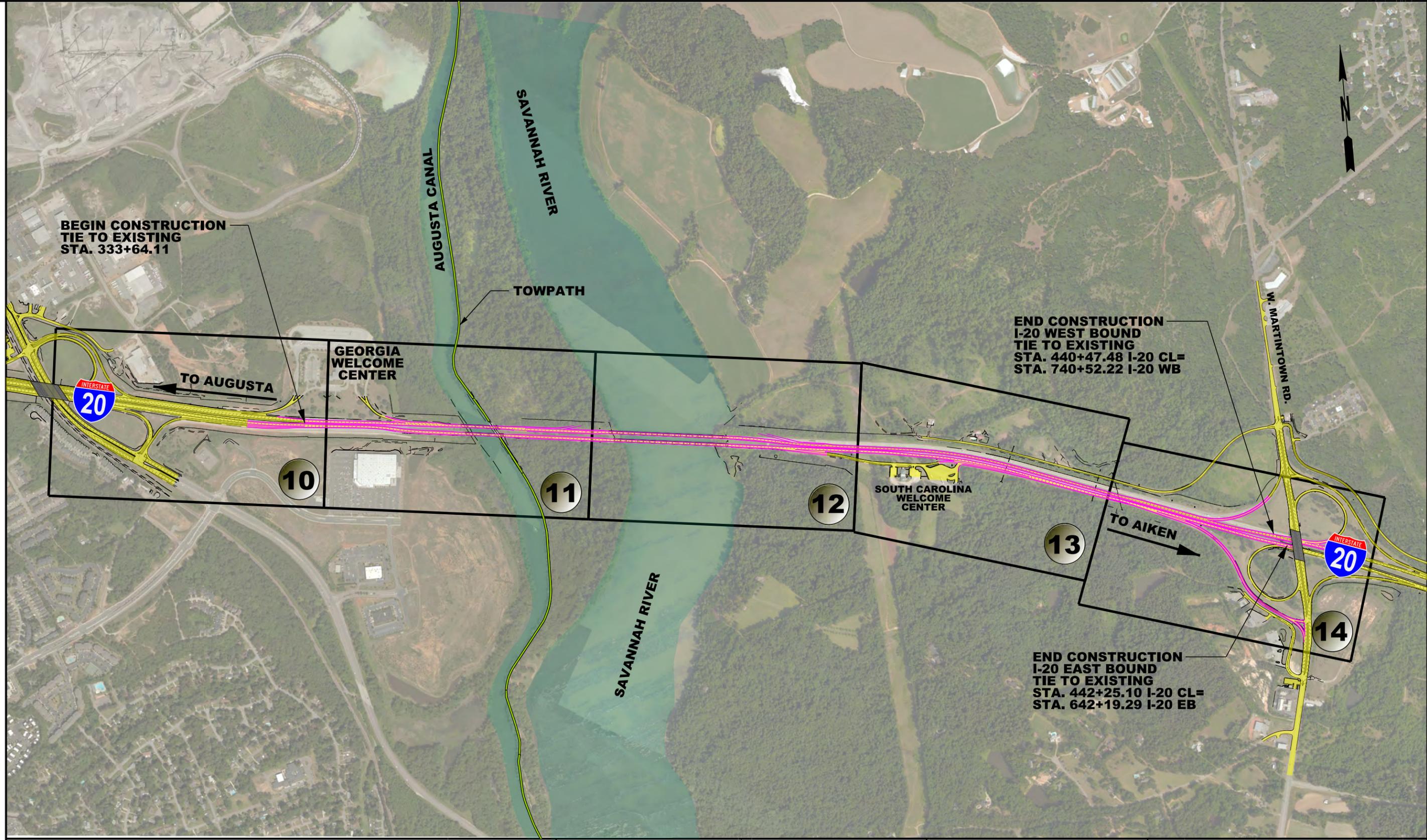
PARSONS



CONSTRUCTION STAGING PLAN
STAGE 1A

1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT

CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0007
CORRECTED:	DATE:	
VERIFIED:	DATE:	



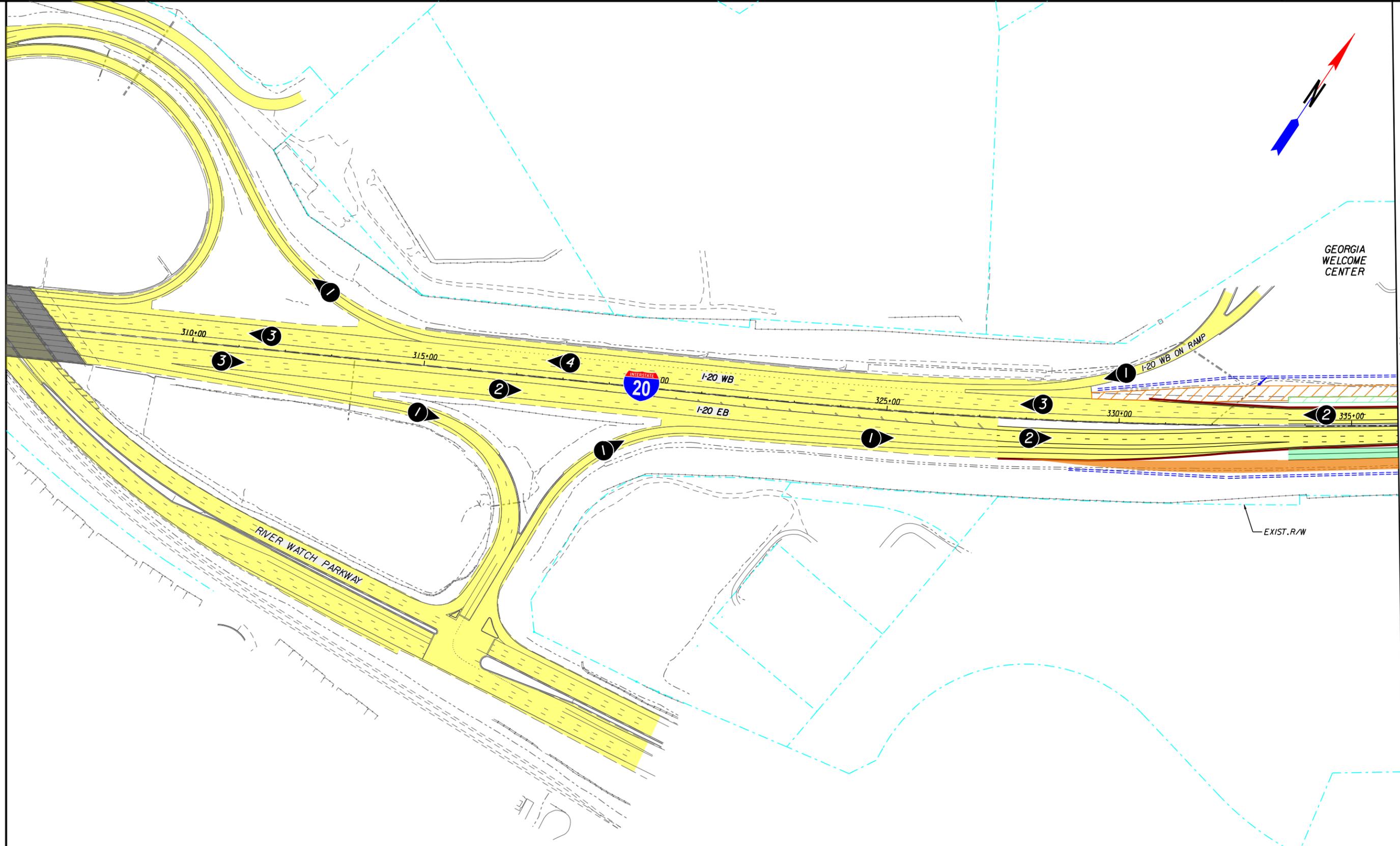
CONSTRUCTION STAGING PLAN STAGE 1B - KEY PLAN		
I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0008
CORRECTED:	DATE:	
VERIFIED:	DATE:	

Stage-1B :

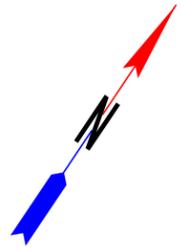
- Shift I-20 WB traffic to the newly constructed I-20 EB roadway and temporary pavement.
- Shift I-20 EB, I-20 on-Ramps from Martintown Rd as shown on plans.
- Maintain EB traffic on existing EB bridges over Augusta Canal and Savannah River.
- Install temporary drainage, wall and pavement as shown on plans.
- Construct permanent drainage and pavement on I-20 and I-20 on-Ramp from Martintown Rd.
- Complete construction of WB bridges over Augusta Canal and Savannah River.
- Complete construction of retaining walls along I-20 WB.
- Stripe acceleration and deceleration lanes for construction access on I-20 WB approaching and trailing bridge over Augusta Canal.



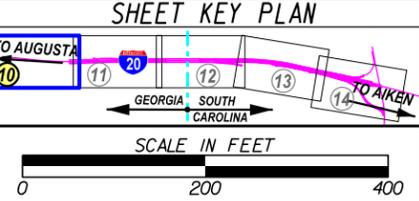
CONSTRUCTION STAGING PLAN			
STAGE 1B - GENERAL NOTES			
I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT			
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BACKCHECKED:	DATE:	19-0009	
CORRECTED:	DATE:		
VERIFIED:	DATE:		



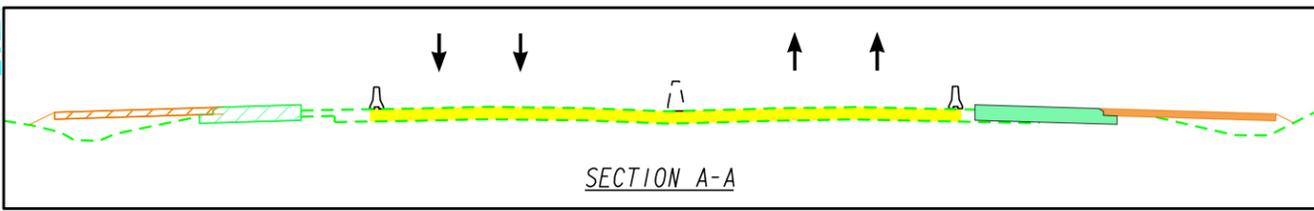
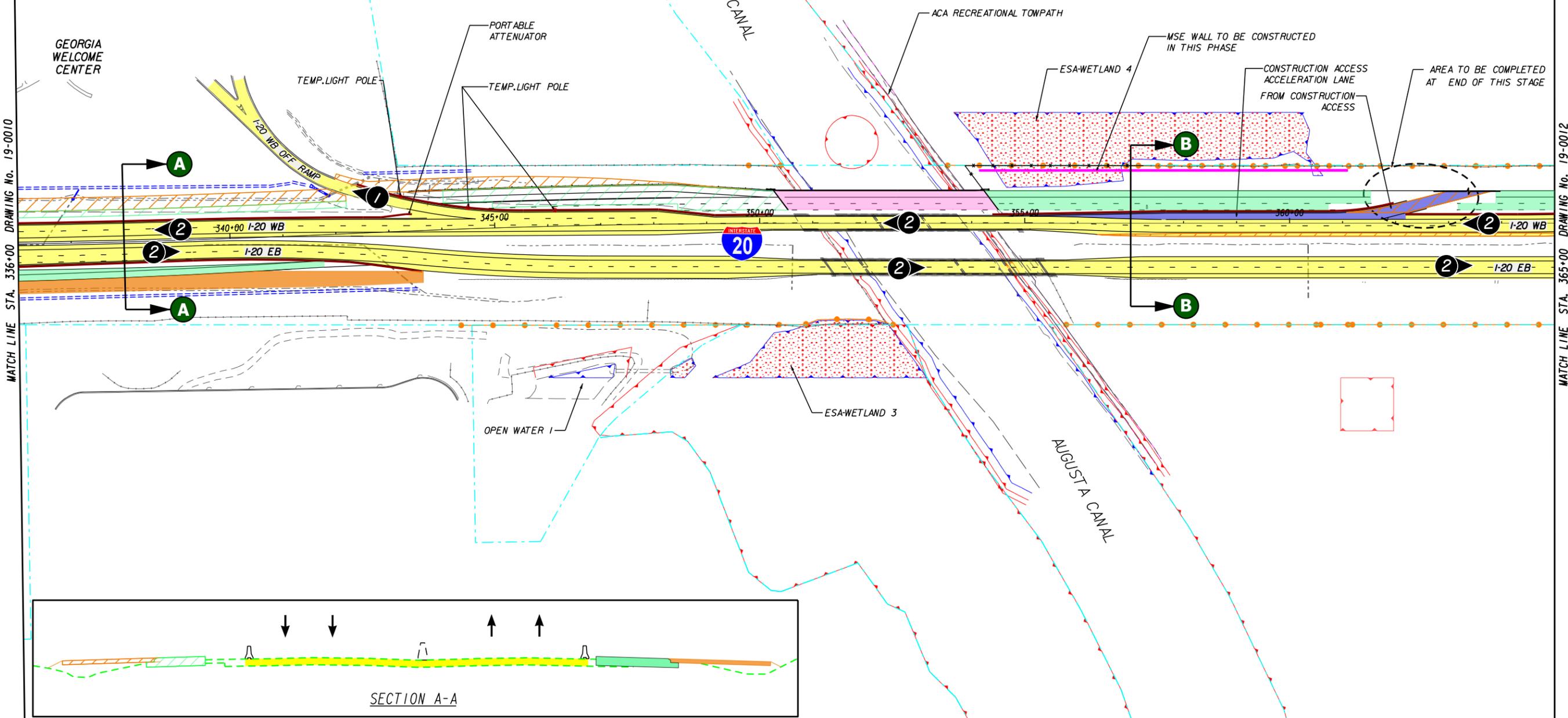
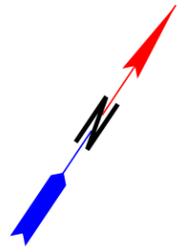
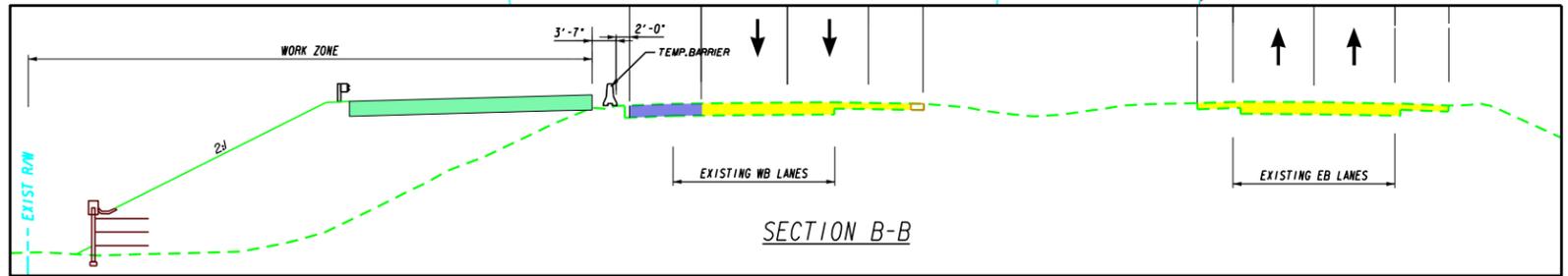
MATCH LINE STA. 336+00 DRAWING No. 19-0011



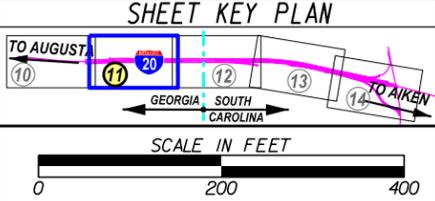
LEGEND			
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	Roadway Construction (Previous Stage)		Temp. Pvmt. (Previous Stage)
	Bridge Construction (Current Stage)		Construction Access
	Bridge Construction (Previous Stage)		Traffic Lane Number
	Traffic Lanes (Current Stage)		Temporary Barrier
			Proposed MSE Wall
			Orange Barrier Fence
			ESA - Env. Sensitive Area (see environmental document)
			Drainage Network



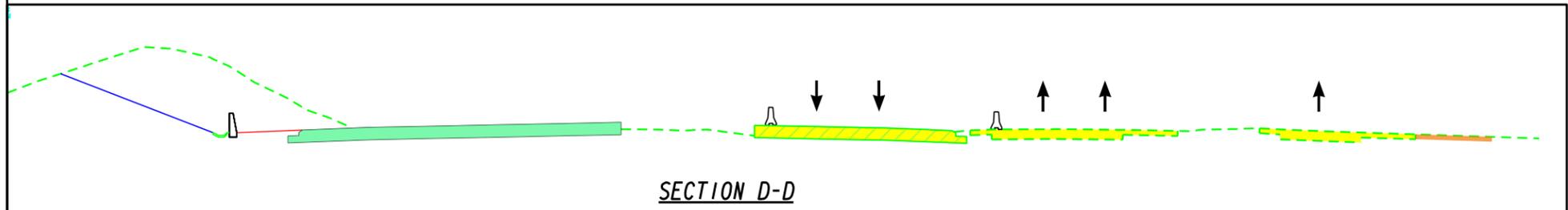
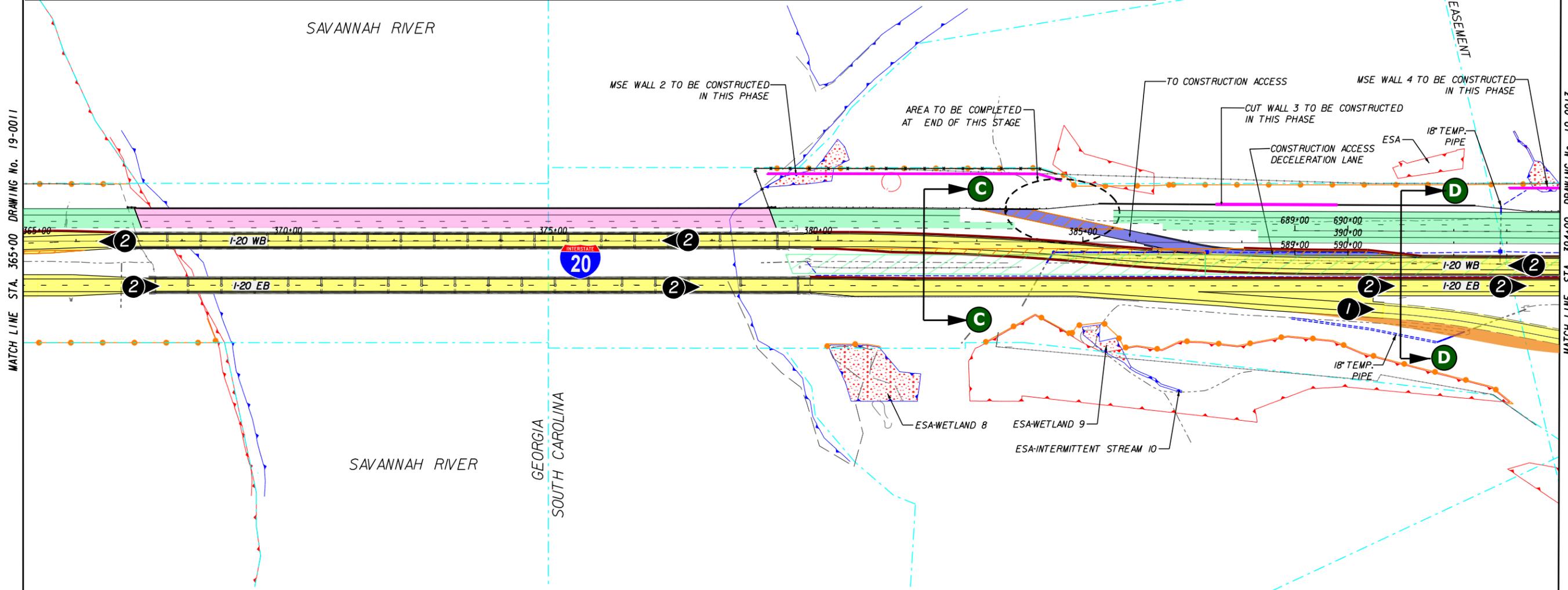
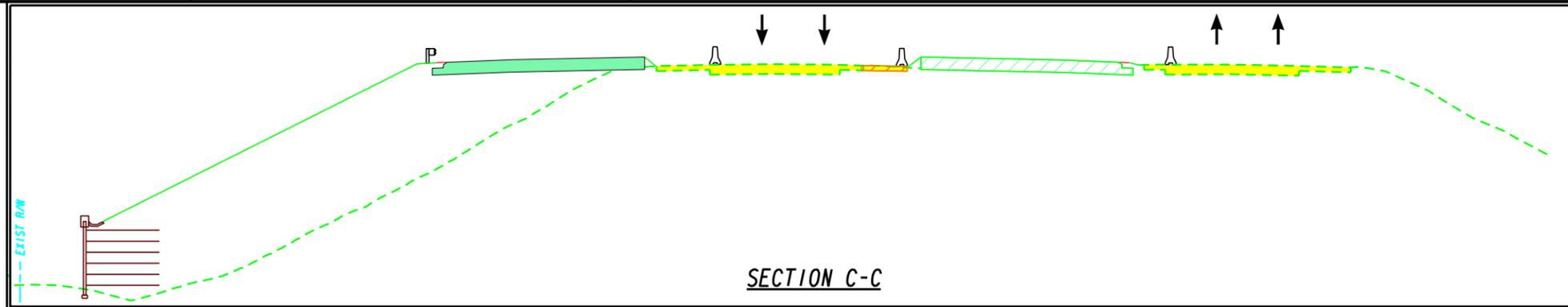
CONSTRUCTION STAGING PLAN STAGE 1B		
I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0010
CORRECTED:	DATE:	
VERIFIED:	DATE:	



LEGEND			
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	Roadway Construction (Previous Stage)		Temp. Pvmt. (Previous Stage)
	Bridge Construction (Current Stage)		Construction Access
	Bridge Construction (Previous Stage)		Traffic Lane Number
	Traffic Lanes (Current Stage)		Temporary Barrier
			Proposed MSE Wall
			Orange Barrier Fence
			ESA - Env. Sensitive Area (see environmental document)
			Drainage Network



CONSTRUCTION STAGING PLAN STAGE 1B		
I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
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BACKCHECKED:	DATE:	19-0011
CORRECTED:	DATE:	
VERIFIED:	DATE:	

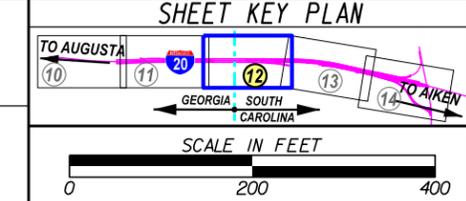


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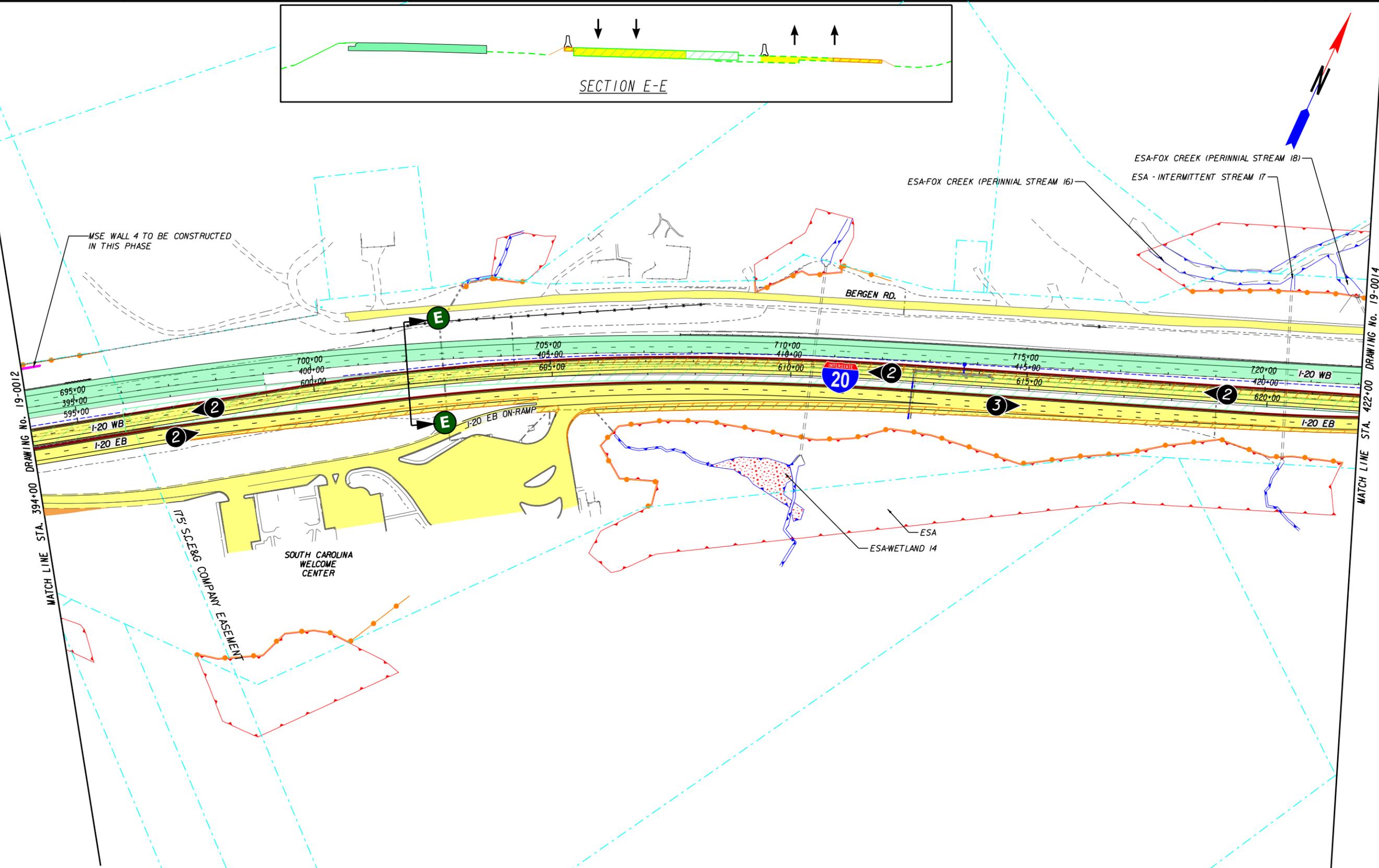
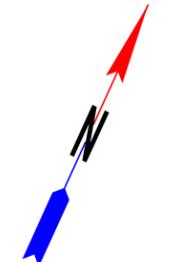
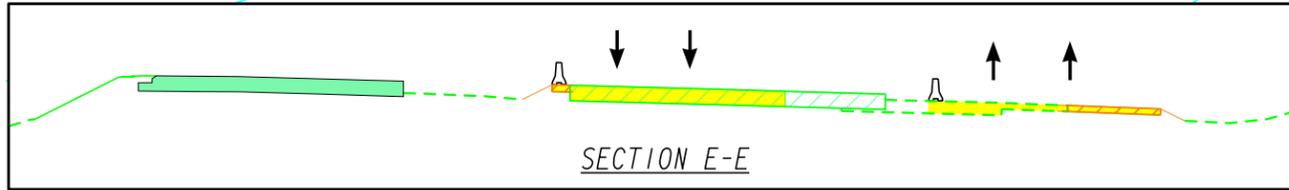
MATCH LINE STA. 394+00 DRAWING No. 19-0013

LEGEND

Roadway Construction (Current Stage)	Temp. Pvmt. (Current Stage)	Temporary Barrier
Roadway Construction (Previous Stage)	Temp. Pvmt. (Previous Stage)	Proposed MSE Wall
Bridge Construction (Current Stage)	Construction Access	Orange Barrier Fence
Bridge Construction (Previous Stage)	Traffic Lane Number	ESA - Env. Sensitive Area (see environmental document)
Traffic Lanes (Current Stage)		Drainage Network



CONSTRUCTION STAGING PLAN STAGE 1B		
1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0012
CORRECTED:	DATE:	
VERIFIED:	DATE:	

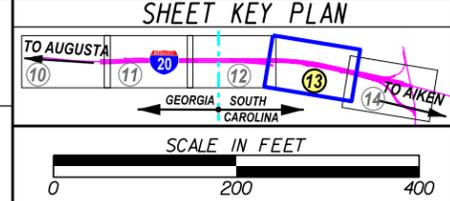


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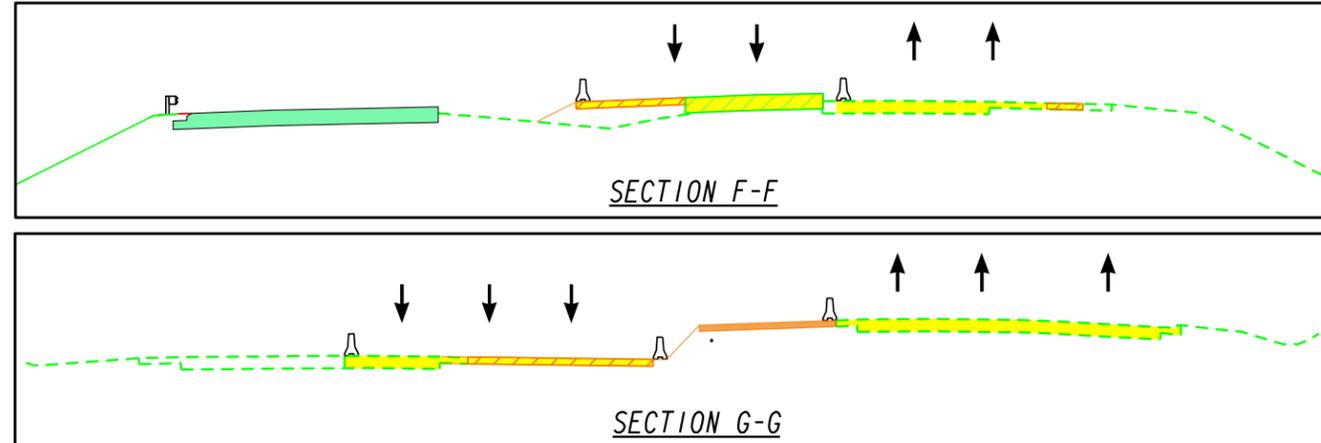
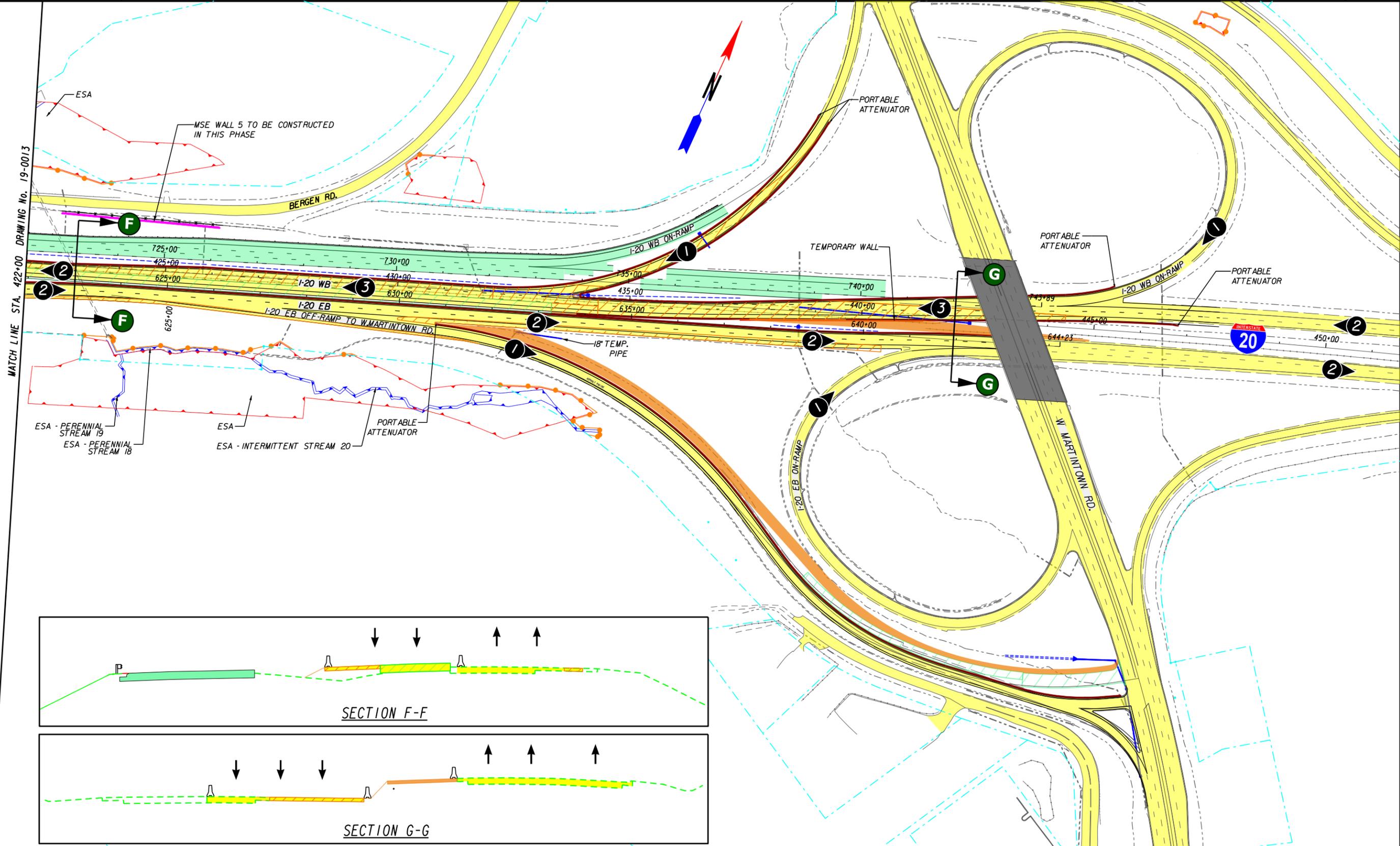
MATCH LINE STA. 422+00 DRAWING No. 19-0014

LEGEND

Roadway Construction (Current Stage)	Temp. Pvmt. (Current Stage)	Temporary Barrier
Roadway Construction (Previous Stage)	Temp. Pvmt. (Previous Stage)	Proposed MSE Wall
Bridge Construction (Current Stage)	Construction Access	Orange Barrier Fence
Bridge Construction (Previous Stage)	Traffic Lane Number	ESA - Env. Sensitive Area (see environmental document)
Traffic Lanes (Current Stage)		Drainage Network



CONSTRUCTION STAGING PLAN STAGE 1B		
I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0013
CORRECTED:	DATE:	
VERIFIED:	DATE:	



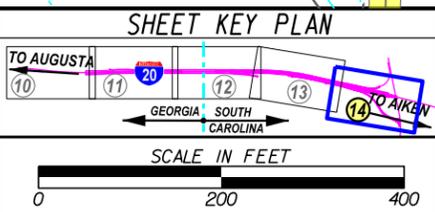
LEGEND			
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	Roadway Construction (Previous Stage)		Temp. Pvm. (Previous Stage)
	Bridge Construction (Current Stage)		Construction Access
	Bridge Construction (Previous Stage)		Traffic Lane Number
	Traffic Lanes (Current Stage)		Temporary Barrier
			Proposed MSE Wall
			Orange Barrier Fence
			ESA - Env. Sensitive Area (see environmental document)
			Drainage Network

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Georgia Department of Transportation

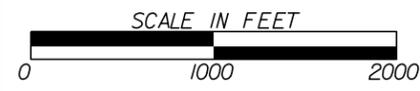
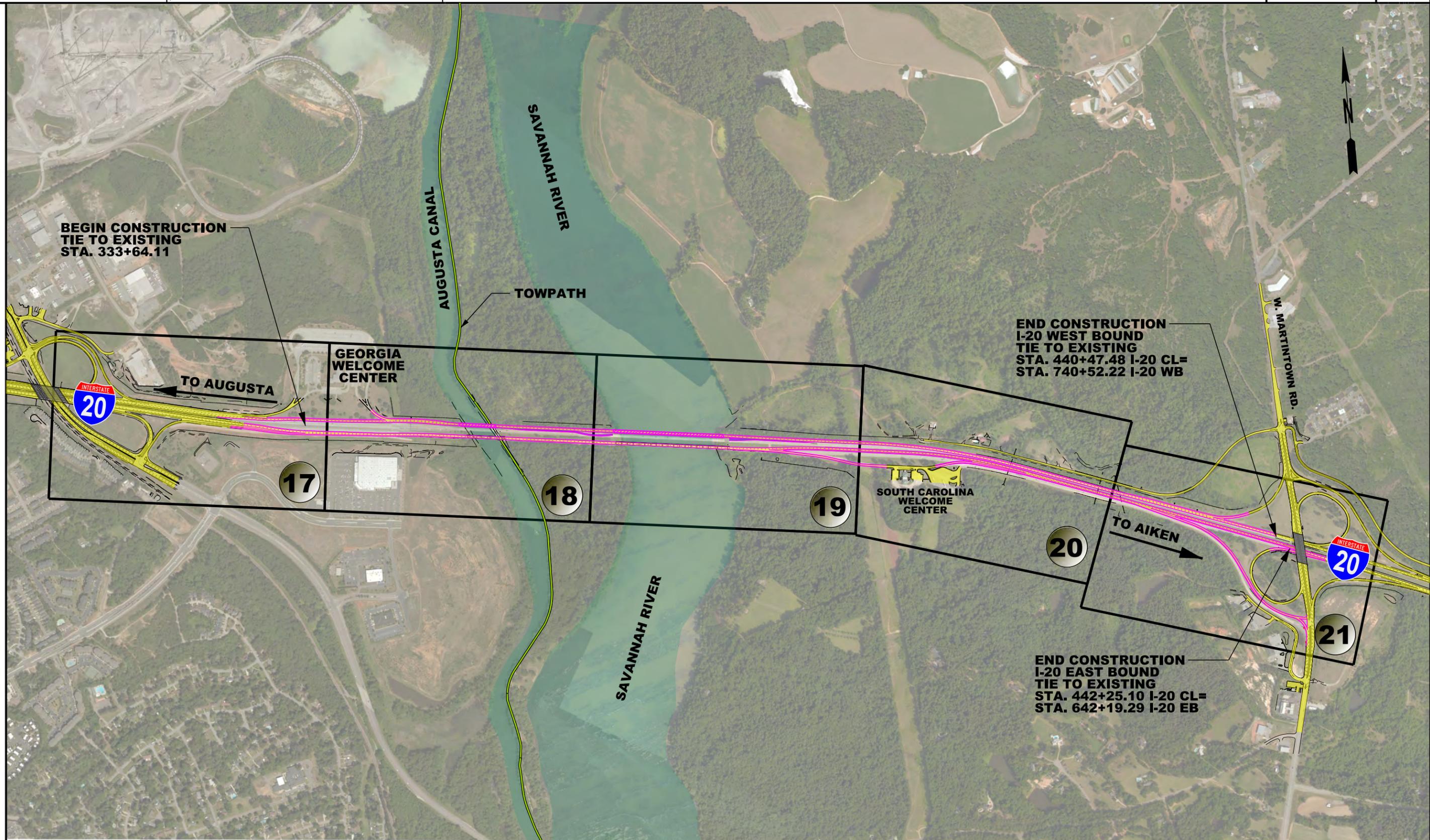
SCDOT
South Carolina Department of Transportation

FLATIRON

PARSONS



CONSTRUCTION STAGING PLAN STAGE 1B			
I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT			
CHECKED:	DATE:	DRAWING No.	
BACKCHECKED:	DATE:	19-0014	
CORRECTED:	DATE:		
VERIFIED:	DATE:		



CONSTRUCTION STAGING PLAN STAGE 2A - KEY PLAN		
I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0015
CORRECTED:	DATE:	
VERIFIED:	DATE:	

Stage-2A :

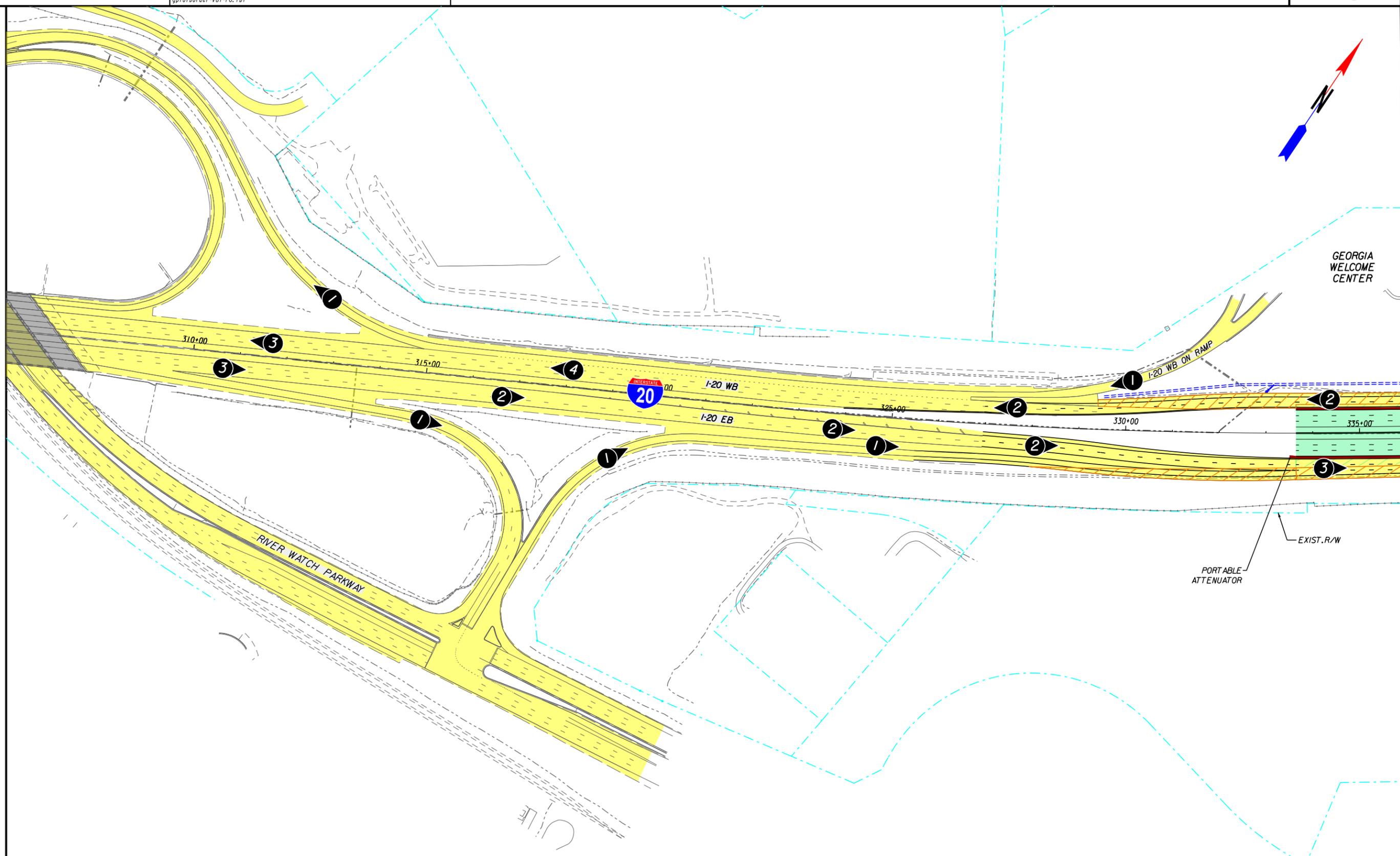
- Shift I-20 WB traffic to the newly constructed I-20 WB roadway, bridges and temporary pavement.
- Maintain EB traffic on existing EB bridges over Augusta Canal and Savannah River.
- Open construction access to construction vehicles/heavy equipment to enter/exit I-20 WB from inside shoulder.
- Install temporary Overhead sign to Exit 200 and Georgia Welcome Center.
- Demolish existing pedestal of Overhead sign to Exit 200 and Georgia Welcome Center.
- Construct permanent drainage and pavement on I-20 and I-20 on-Ramp from Martintown Rd.
- Construct WB and EB bridges over Augusta Canal and Savannah River.



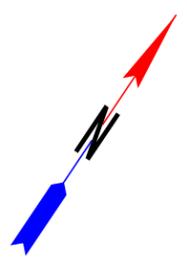
**CONSTRUCTION STAGING PLAN
STAGE 2A - GENERAL NOTES**

I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS
AND ROADWAY WIDENING PROJECT

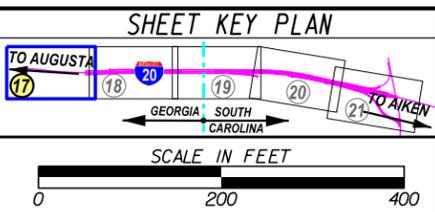
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BACKCHECKED:	DATE:	19-0016
CORRECTED:	DATE:	
VERIFIED:	DATE:	



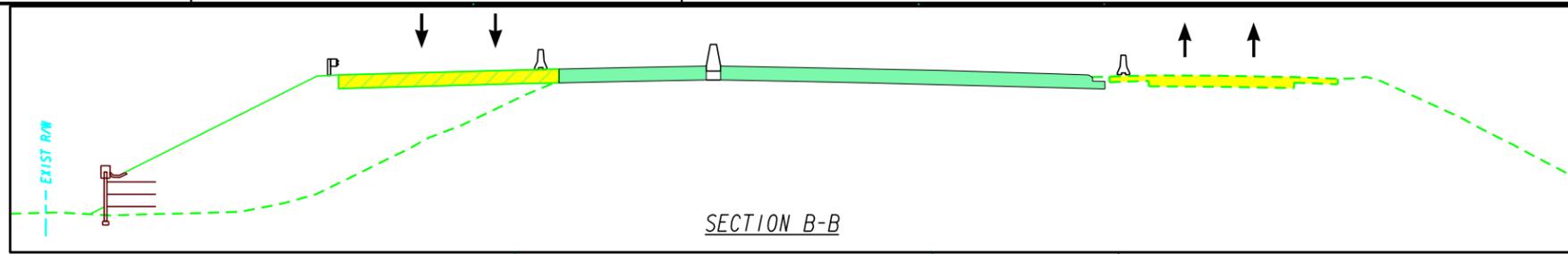
MATCH LINE STA. 336+00 DRAWING No. 19-0018



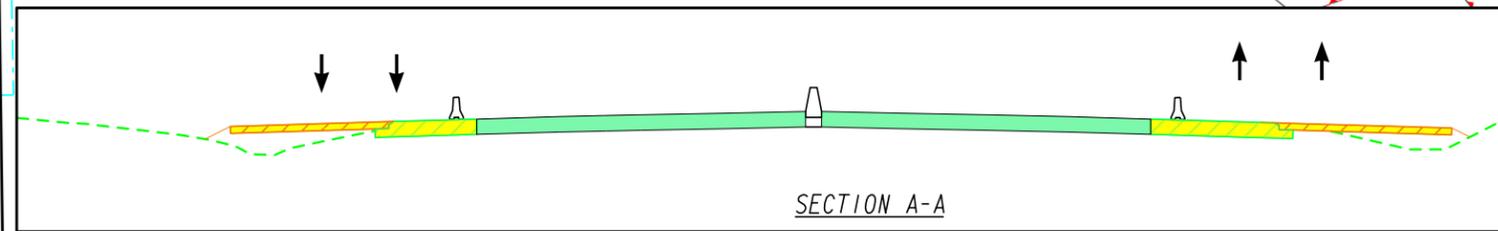
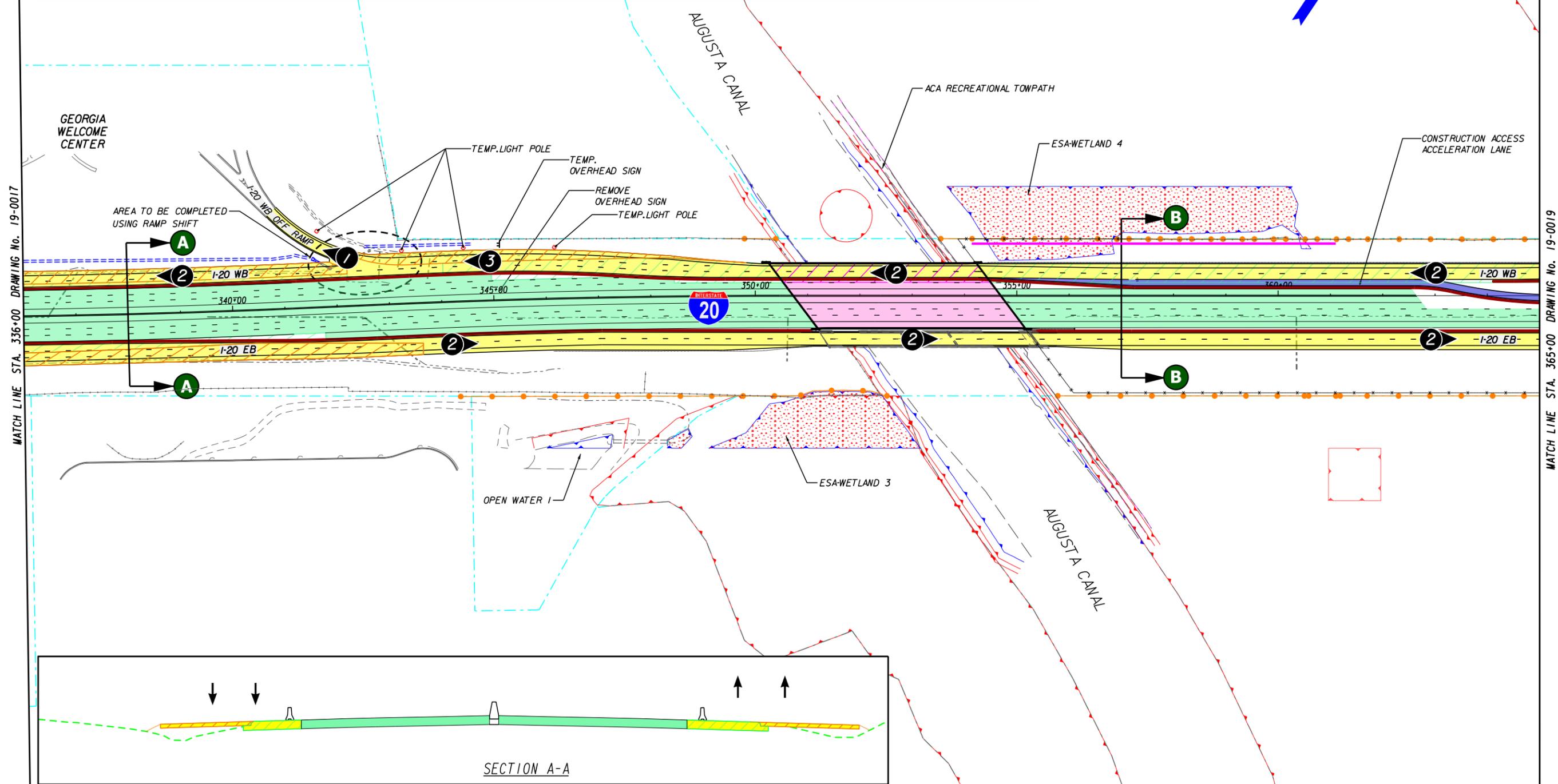
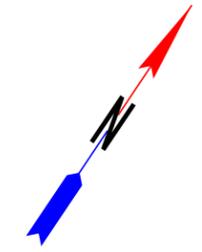
LEGEND			
	Roadway Construction (Current Stage)		Temp. Pvmt. (Current Stage)
	Roadway Construction (Previous Stage)		Temp. Pvmt. (Previous Stage)
	Bridge Construction (Current Stage)		Construction Access
	Bridge Construction (Previous Stage)		Traffic Lane Number
	Traffic Lanes (Current Stage)		Temporary Barrier
			Proposed MSE Wall
			Orange Barrier Fence
			ESA - Env. Sensitive Area (see environmental document)
			Drainage Network



CONSTRUCTION STAGING PLAN STAGE 2A		
I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0017
CORRECTED:	DATE:	
VERIFIED:	DATE:	



SECTION B-B

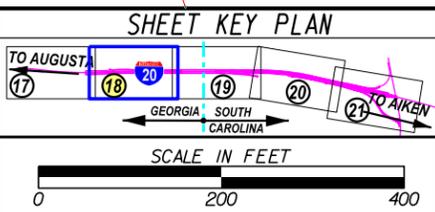


SECTION A-A

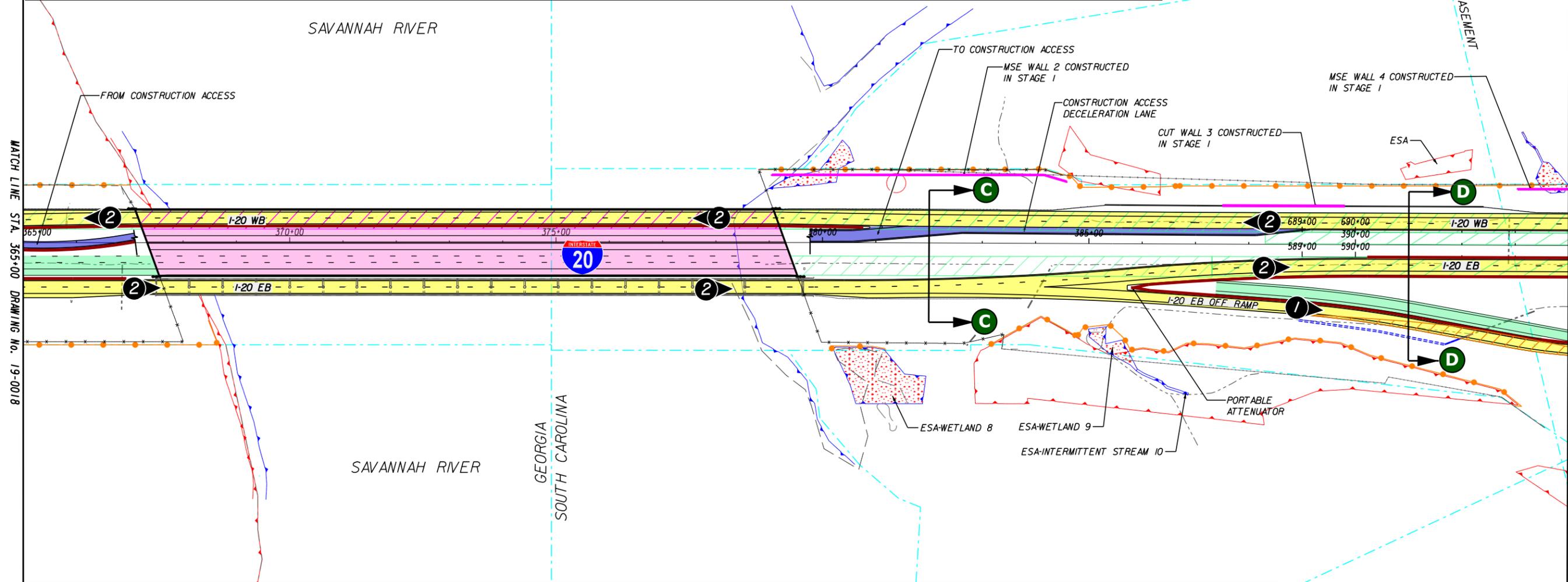
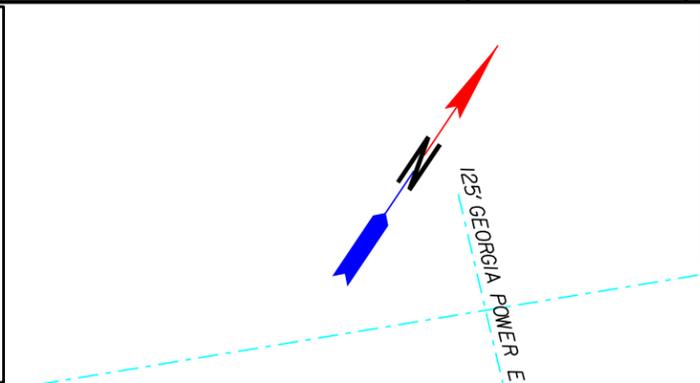
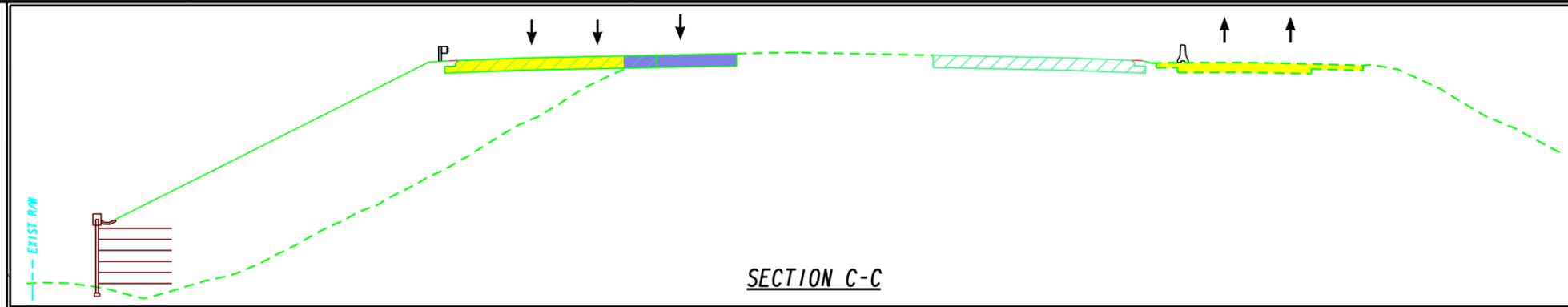
MATCH LINE STA. 336+00 DRAWING No. 19-0017

MATCH LINE STA. 365+00 DRAWING No. 19-0019

LEGEND			
	Roadway Construction (Current Stage)		Temp. Pvmt. (Current Stage)
	Roadway Construction (Previous Stage)		Temp. Pvmt. (Previous Stage)
	Bridge Construction (Current Stage)		Construction Access
	Bridge Construction (Previous Stage)		Traffic Lane Number
	Traffic Lanes (Current Stage)		Temporary Barrier
			Proposed MSE Wall
			Orange Barrier Fence
			ESA - Env. Sensitive Area (see environmental document)
			Drainage Network

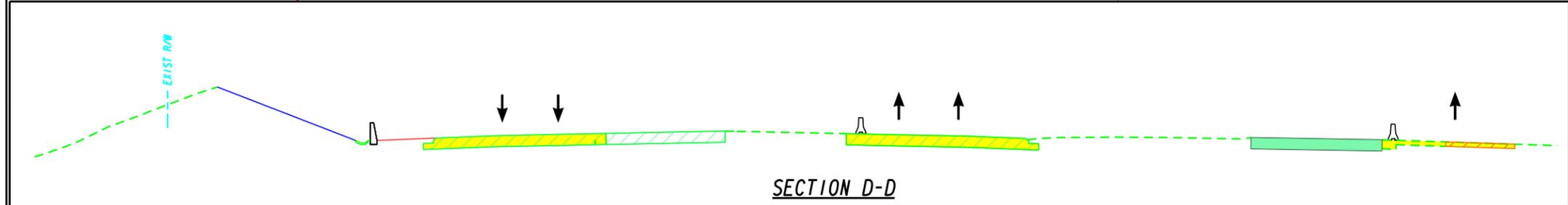


CONSTRUCTION STAGING PLAN STAGE 2A		
1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0018
CORRECTED:	DATE:	
VERIFIED:	DATE:	



MATCH LINE STA. 365+00 DRAWING No. 19-0018

MATCH LINE STA. 394+00 DRAWING No. 19-0020



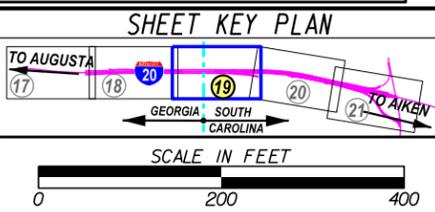
LEGEND			
	Roadway Construction (Current Stage)		Temp. Pvmt. (Current Stage)
	Roadway Construction (Previous Stage)		Temp. Pvmt. (Previous Stage)
	Bridge Construction (Current Stage)		Construction Access
	Bridge Construction (Previous Stage)		Traffic Lane Number
	Traffic Lanes (Current Stage)		Temporary Barrier
			Proposed MSE Wall
			Orange Barrier Fence
			ESA - Env. Sensitive Area (see environmental document)
			Drainage Network

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FLATIRON

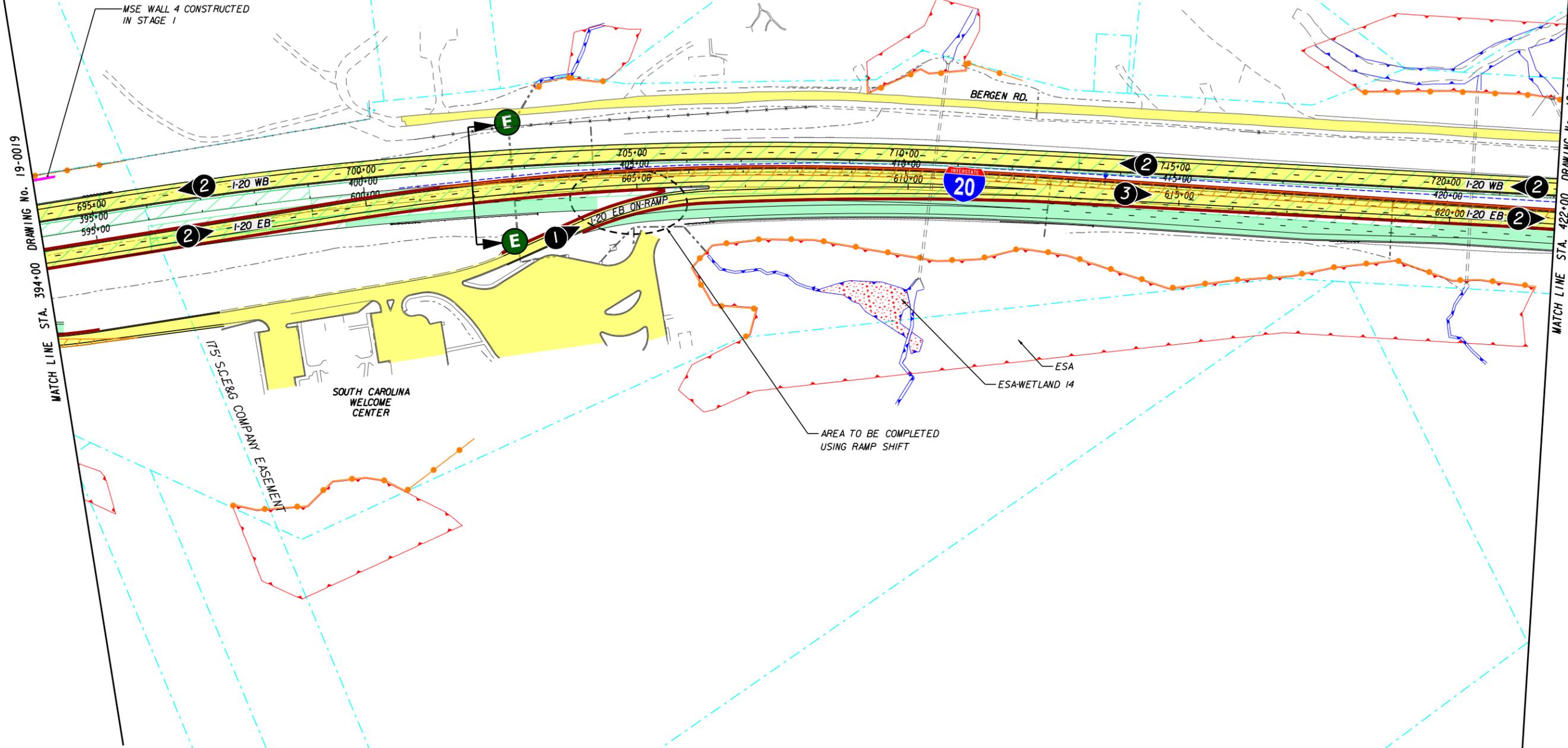
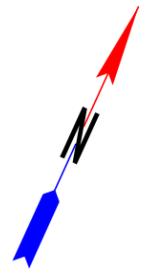
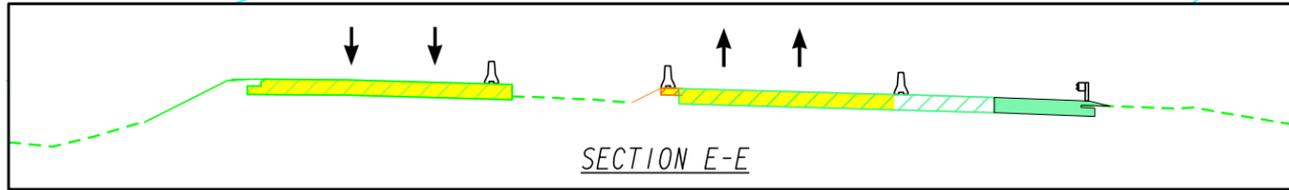
PARSONS



CONSTRUCTION STAGING PLAN
STAGE 2A

1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT

CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0019
CORRECTED:	DATE:	
VERIFIED:	DATE:	

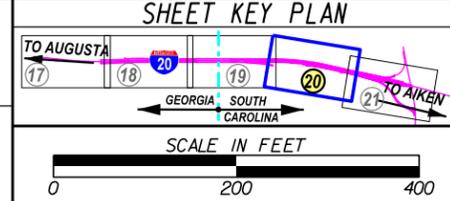


MATCH LINE STA. 394+00 DRAWING No. 19-0019

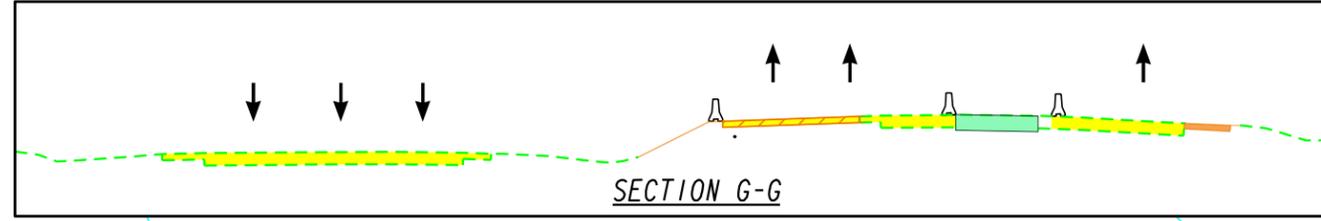
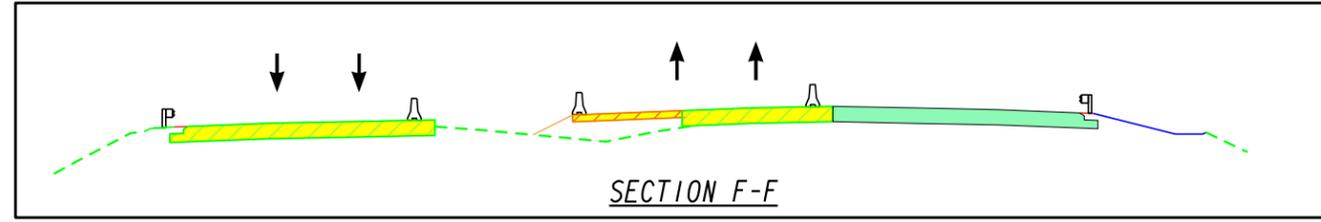
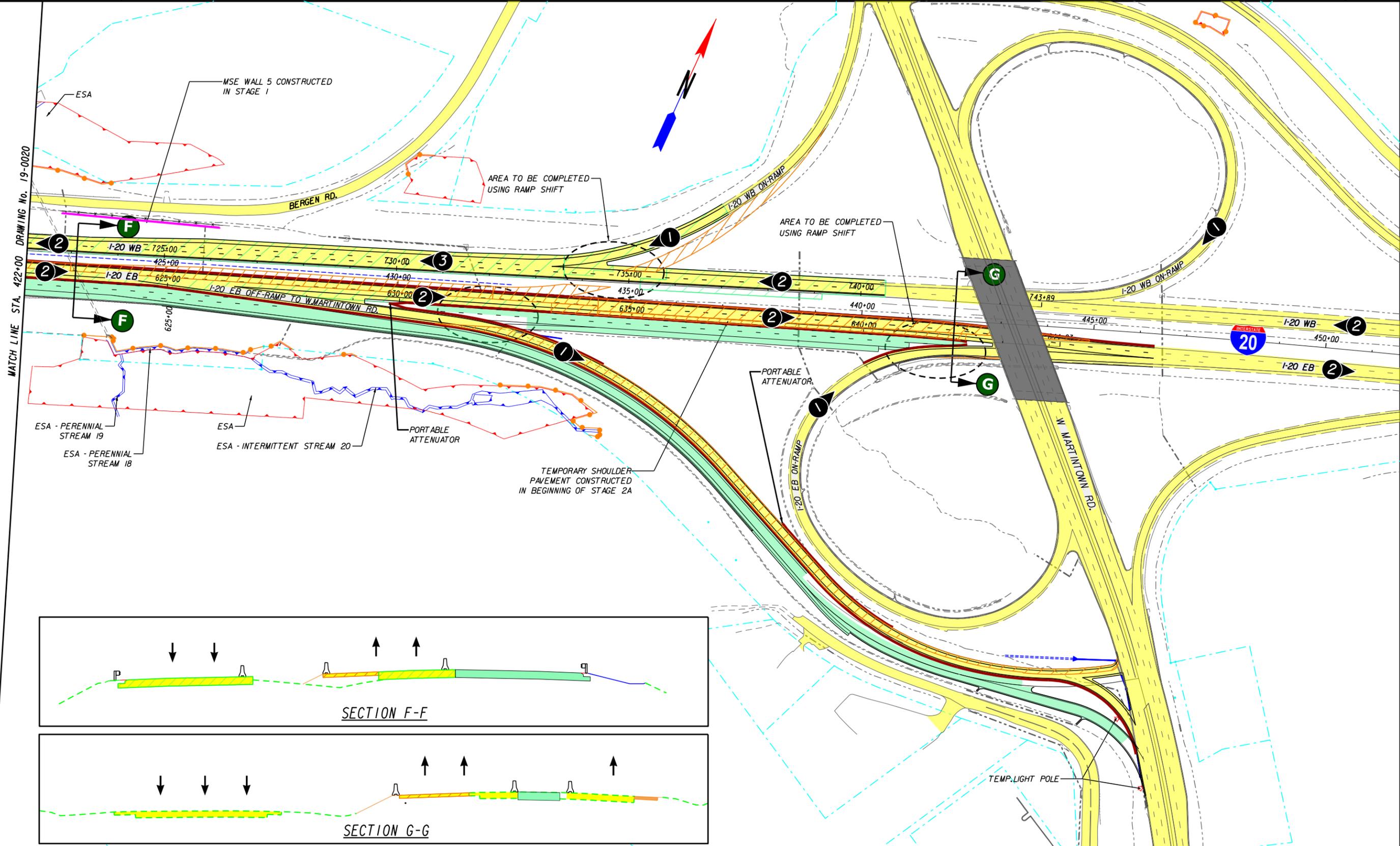
MATCH LINE STA. 422+00 DRAWING No. 19-0021

LEGEND

Roadway Construction (Current Stage)	Temp. Pvmt. (Current Stage)	Temporary Barrier
Roadway Construction (Previous Stage)	Temp. Pvmt. (Previous Stage)	Proposed MSE Wall
Bridge Construction (Current Stage)	Construction Access	Orange Barrier Fence
Bridge Construction (Previous Stage)	Traffic Lane Number	ESA - Env. Sensitive Area (see environmental document)
Traffic Lanes (Current Stage)		Drainage Network



CONSTRUCTION STAGING PLAN STAGE 2A		
I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0020
CORRECTED:	DATE:	
VERIFIED:	DATE:	



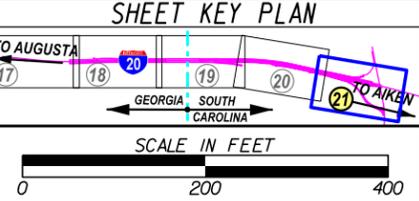
LEGEND			
	Roadway Construction (Current Stage)		Temp. Pvmt. (Current Stage)
	Roadway Construction (Previous Stage)		Temp. Pvmt. (Previous Stage)
	Bridge Construction (Current Stage)		Construction Access
	Bridge Construction (Previous Stage)		Traffic Lane Number
	Traffic Lanes (Current Stage)		Temporary Barrier
			Proposed MSE Wall
			Orange Barrier Fence
			ESA - Env. Sensitive Area (see environmental document)
			Drainage Network

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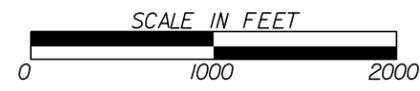
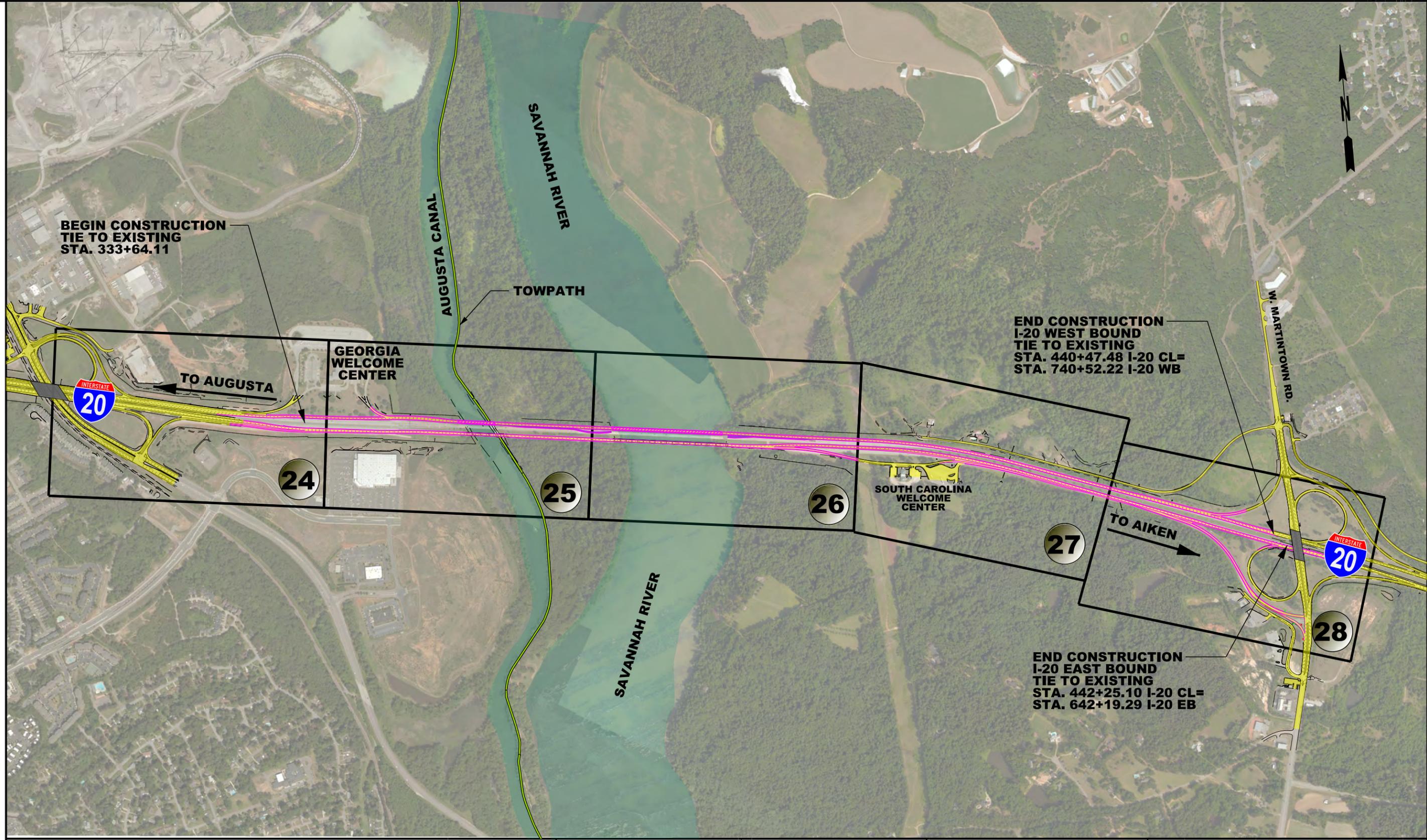
FLATIRON

PARSONS



CONSTRUCTION STAGING PLAN
STAGE 2A
I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT

CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0021
CORRECTED:	DATE:	
VERIFIED:	DATE:	



CONSTRUCTION STAGING PLAN STAGE 2B - KEY PLAN		
I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0022
CORRECTED:	DATE:	
VERIFIED:	DATE:	

Stage-2B :

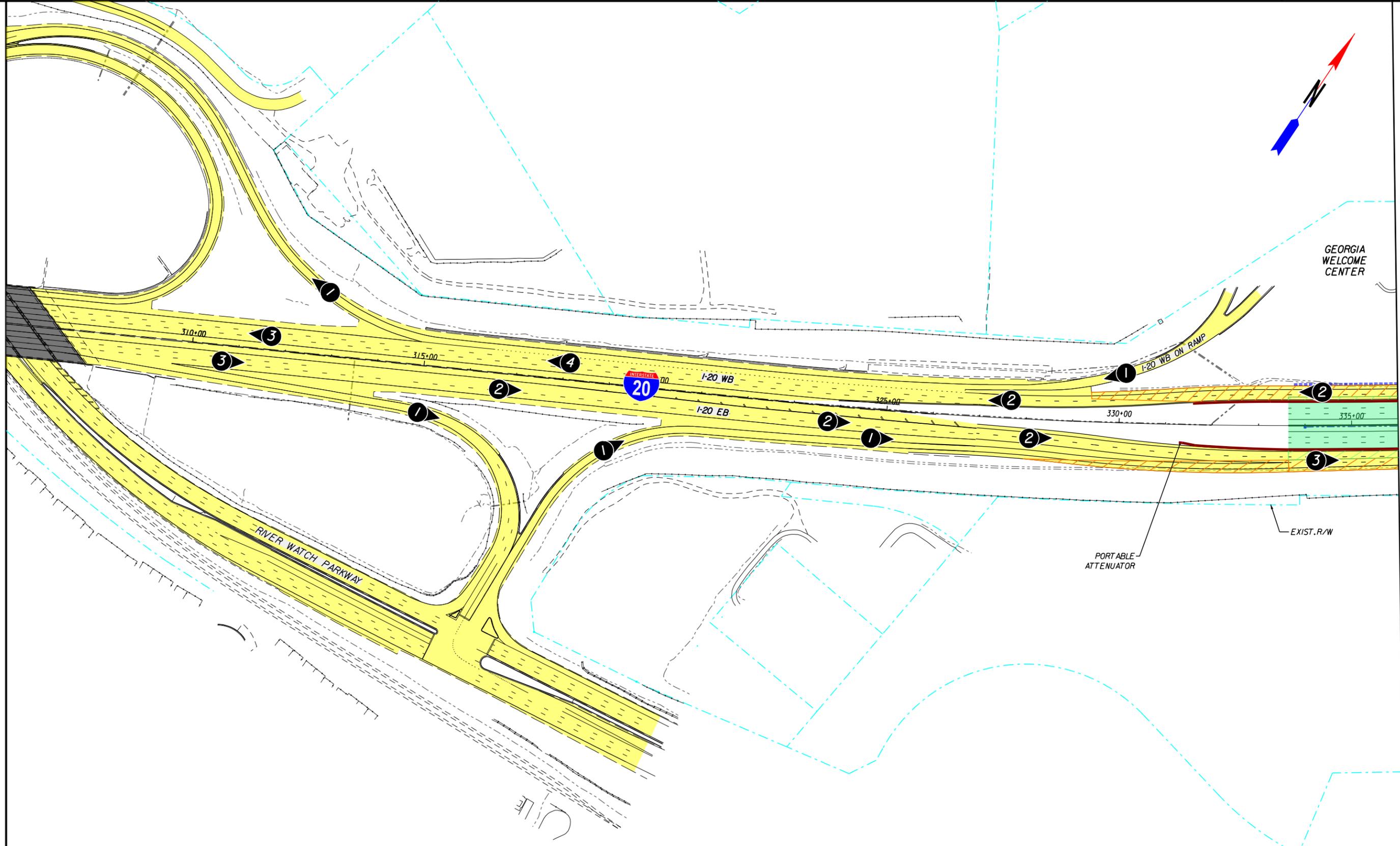
- Shift I-20 EB traffic to the constructed I-20 EB roadway and temporary pavement.
- Maintain EB traffic on existing EB bridges over Augusta Canal and Savannah River.
- Continue and complete the permanent drainage and pavement on I-20.
- Complete installation of proposed Overhead signs as shown on plans.
- Complete installation of permanent street light poles on I-20 off-Ramp to Georgia Welcome Center and along Martintown Rd.
- Complete traffic signals and permanent drainage/pavement on I-20 off-Ramp to Martintown Rd. (this work will be progressed to achieve the Interim Completion deadline)
- Continue and complete the WB and EB bridges over Augusta Canal and Savannah River.
- Shift I-20 EB traffic on the newly constructed EB bridges.
- Remove temporary pavement on I-20 EB and I-20 WB
- Demolish existing EB bridges.



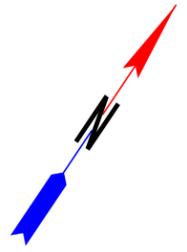
**CONSTRUCTION STAGING PLAN
STAGE 2B - GENERAL NOTES**

I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS
AND ROADWAY WIDENING PROJECT

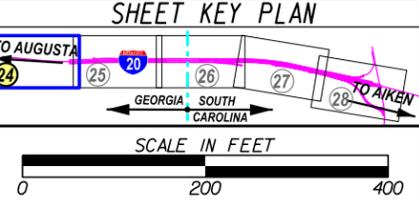
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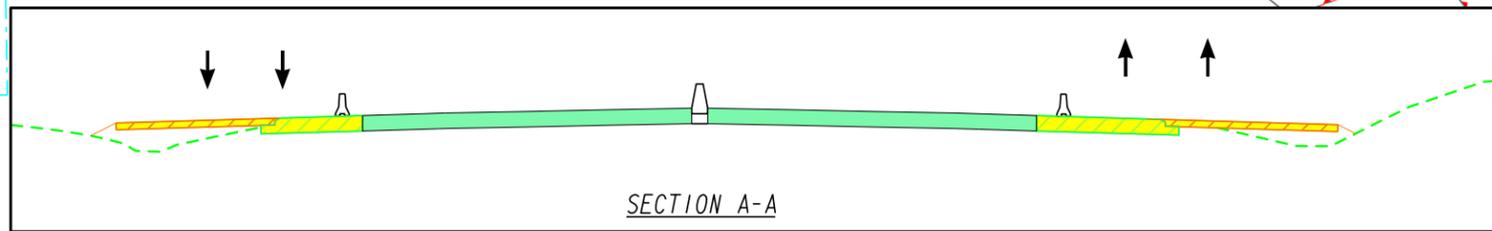
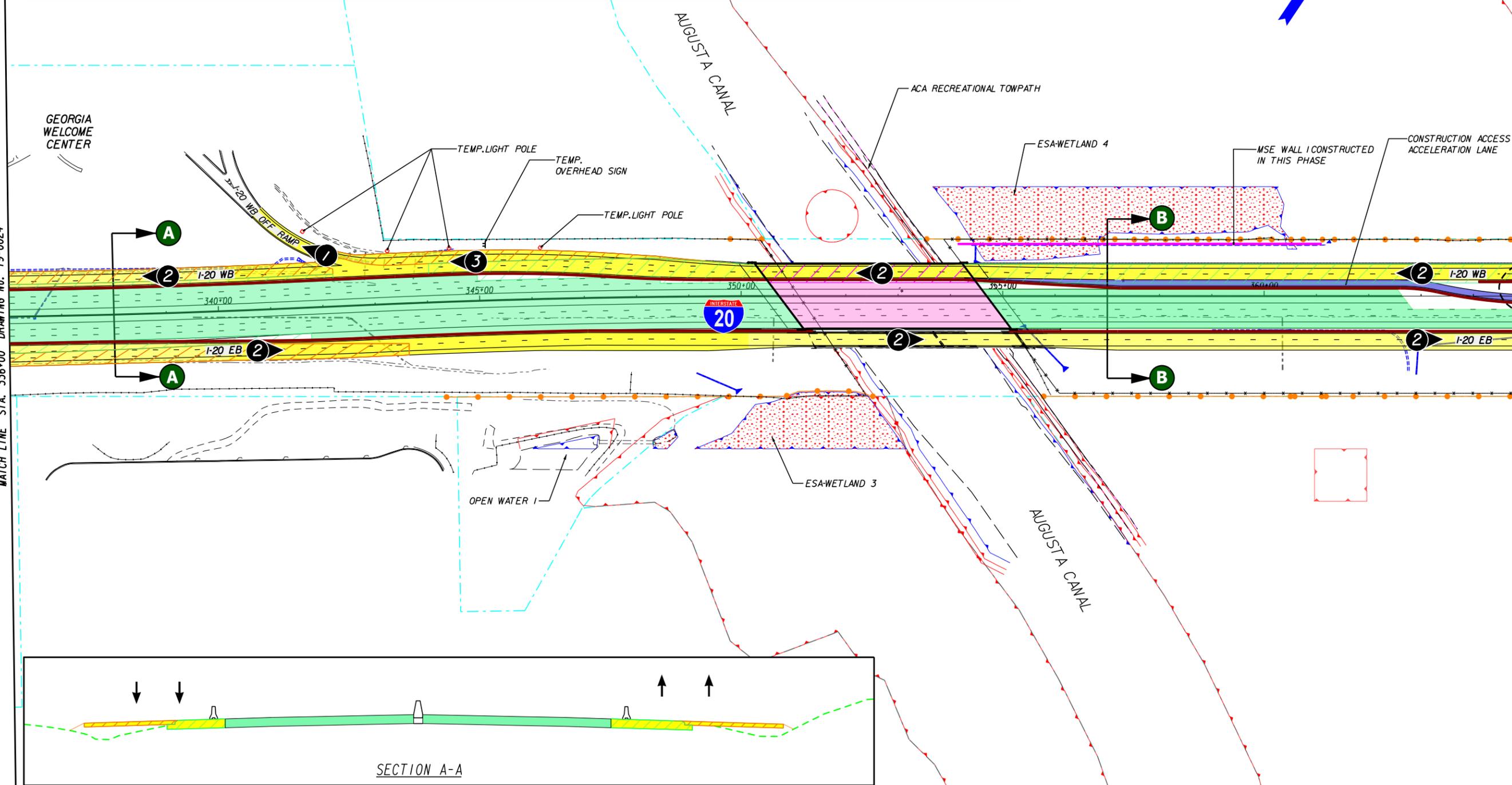
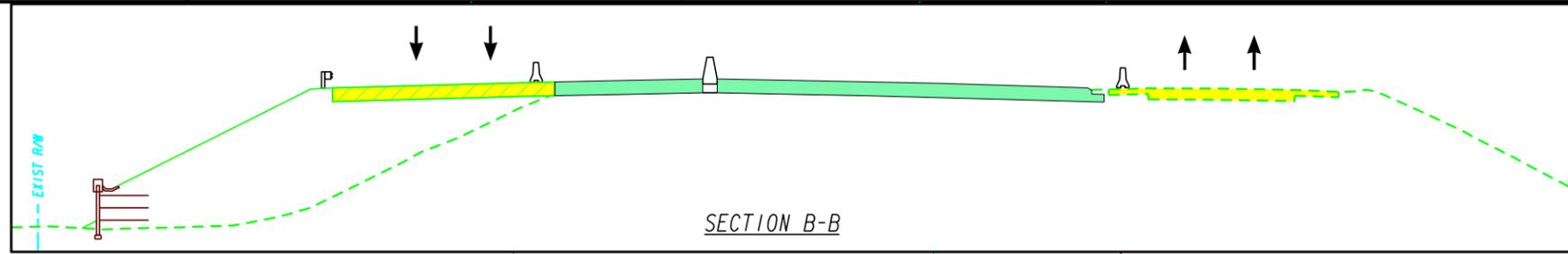
MATCH LINE STA. 336+00 DRAWING No. 19-0025



LEGEND			
	Roadway Construction (Current Stage)		Temp. Pvmt. (Current Stage)
	Roadway Construction (Previous Stage)		Temp. Pvmt. (Previous Stage)
	Bridge Construction (Current Stage)		Construction Access
	Bridge Construction (Previous Stage)		Traffic Lane Number
	Traffic Lanes (Current Stage)		Temporary Barrier
			Proposed MSE Wall
			Orange Barrier Fence
			ESA - Env. Sensitive Area (see environmental document)
			Drainage Network



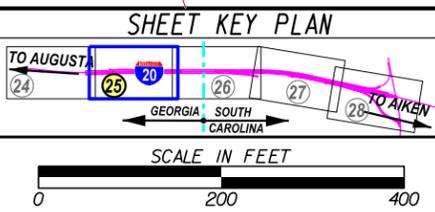
CONSTRUCTION STAGING PLAN STAGE 2B		
I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0024
CORRECTED:	DATE:	
VERIFIED:	DATE:	



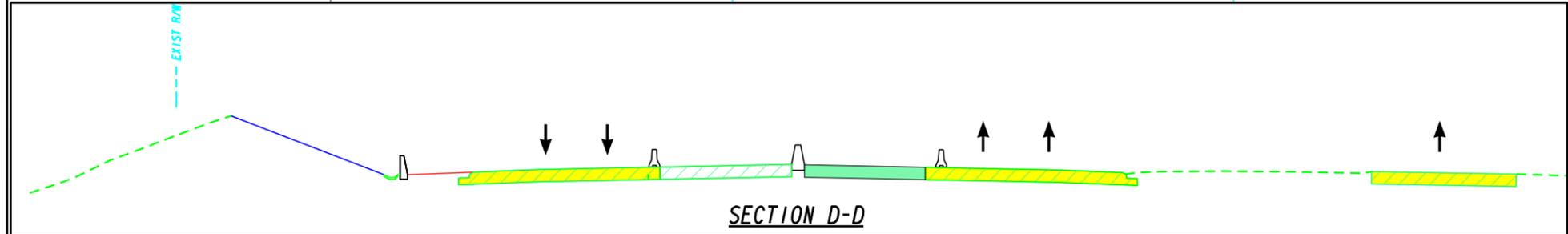
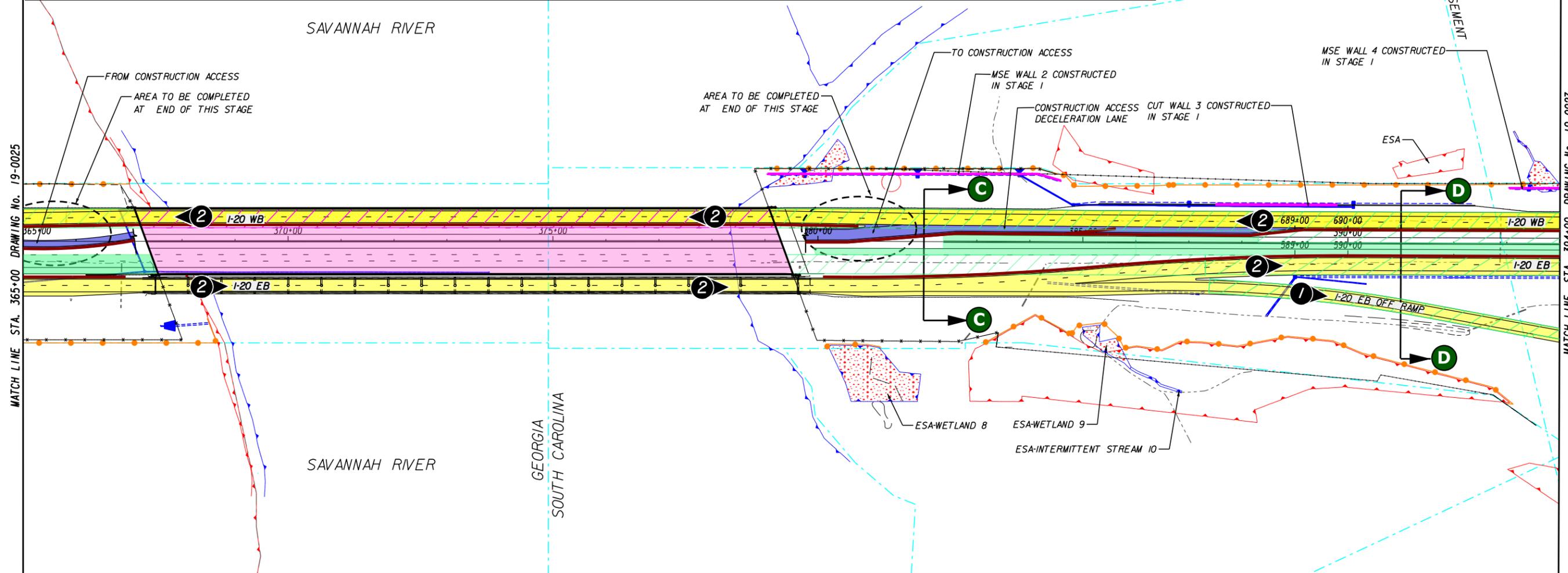
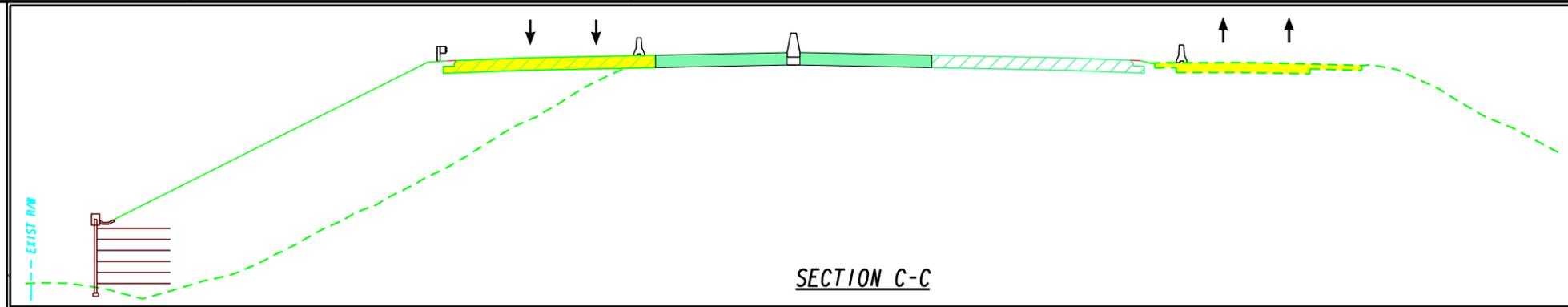
MATCH LINE STA. 336+00 DRAWING No. 19-0024

MATCH LINE STA. 365+00 DRAWING No. 19-0026

LEGEND			
	Roadway Construction (Current Stage)		Temp. Pvmt. (Current Stage)
	Roadway Construction (Previous Stage)		Temp. Pvmt. (Previous Stage)
	Bridge Construction (Current Stage)		Construction Access
	Bridge Construction (Previous Stage)		Traffic Lane Number
	Traffic Lanes (Current Stage)		Temporary Barrier
			Proposed MSE Wall
			Orange Barrier Fence
			ESA - Env. Sensitive Area (see environmental document)
			Drainage Network



CONSTRUCTION STAGING PLAN STAGE 2B		
I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0025
CORRECTED:	DATE:	
VERIFIED:	DATE:	



MATCH LINE STA. 365+00 DRAWING No. 19-0025

MATCH LINE STA. 394+00 DRAWING No. 19-0027

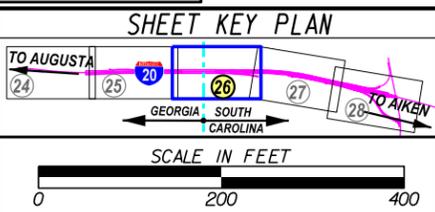
LEGEND			
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	Roadway Construction (Previous Stage)		Temp. Pvm. (Previous Stage)
	Bridge Construction (Current Stage)		Construction Access
	Bridge Construction (Previous Stage)		Traffic Lane Number
	Traffic Lanes (Current Stage)		Temporary Barrier
			Proposed MSE Wall
			Orange Barrier Fence
			ESA - Env. Sensitive Area (see environmental document)
			Drainage Network

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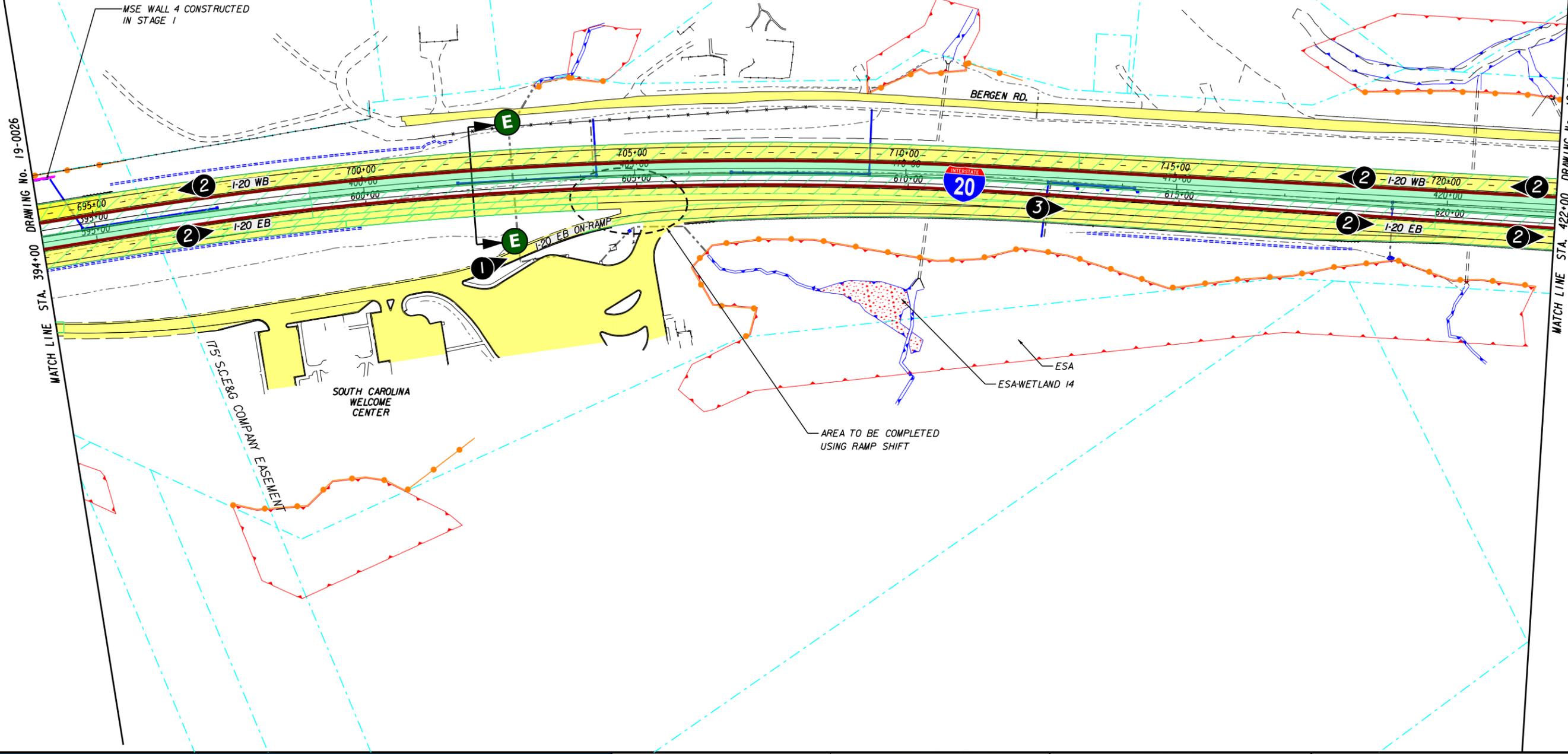
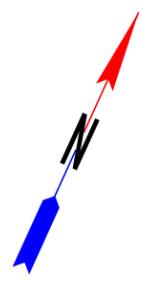
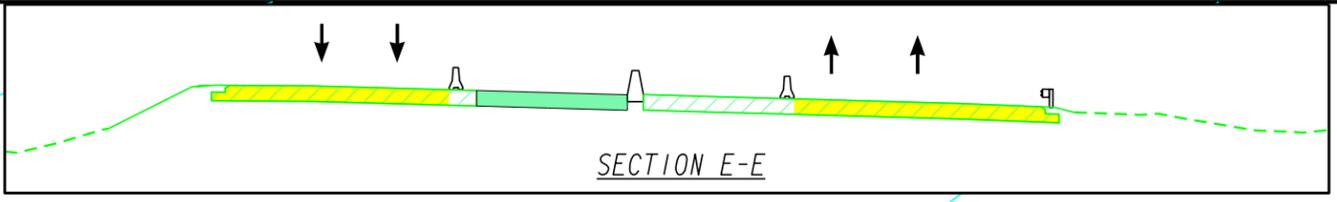
PARSONS



CONSTRUCTION STAGING PLAN
STAGE 2B

1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT

CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0026
CORRECTED:	DATE:	
VERIFIED:	DATE:	

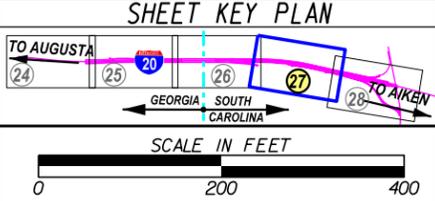


MATCH LINE STA. 394+00 DRAWING No. 19-0026

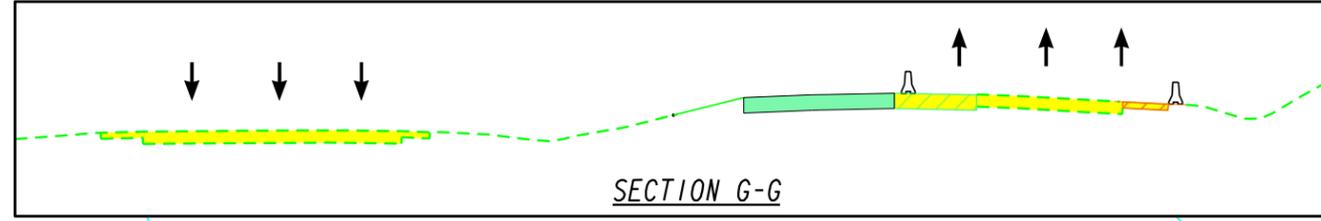
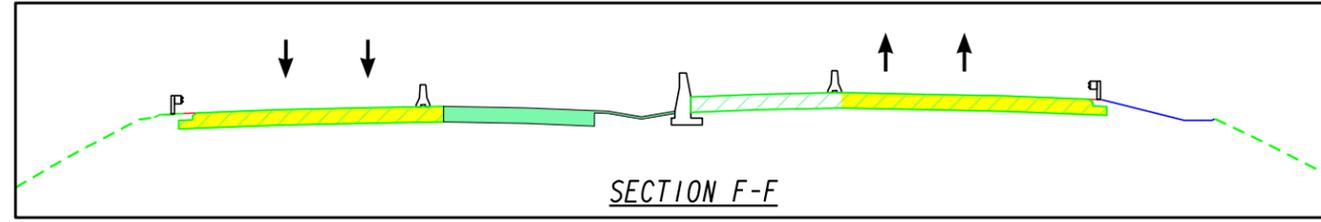
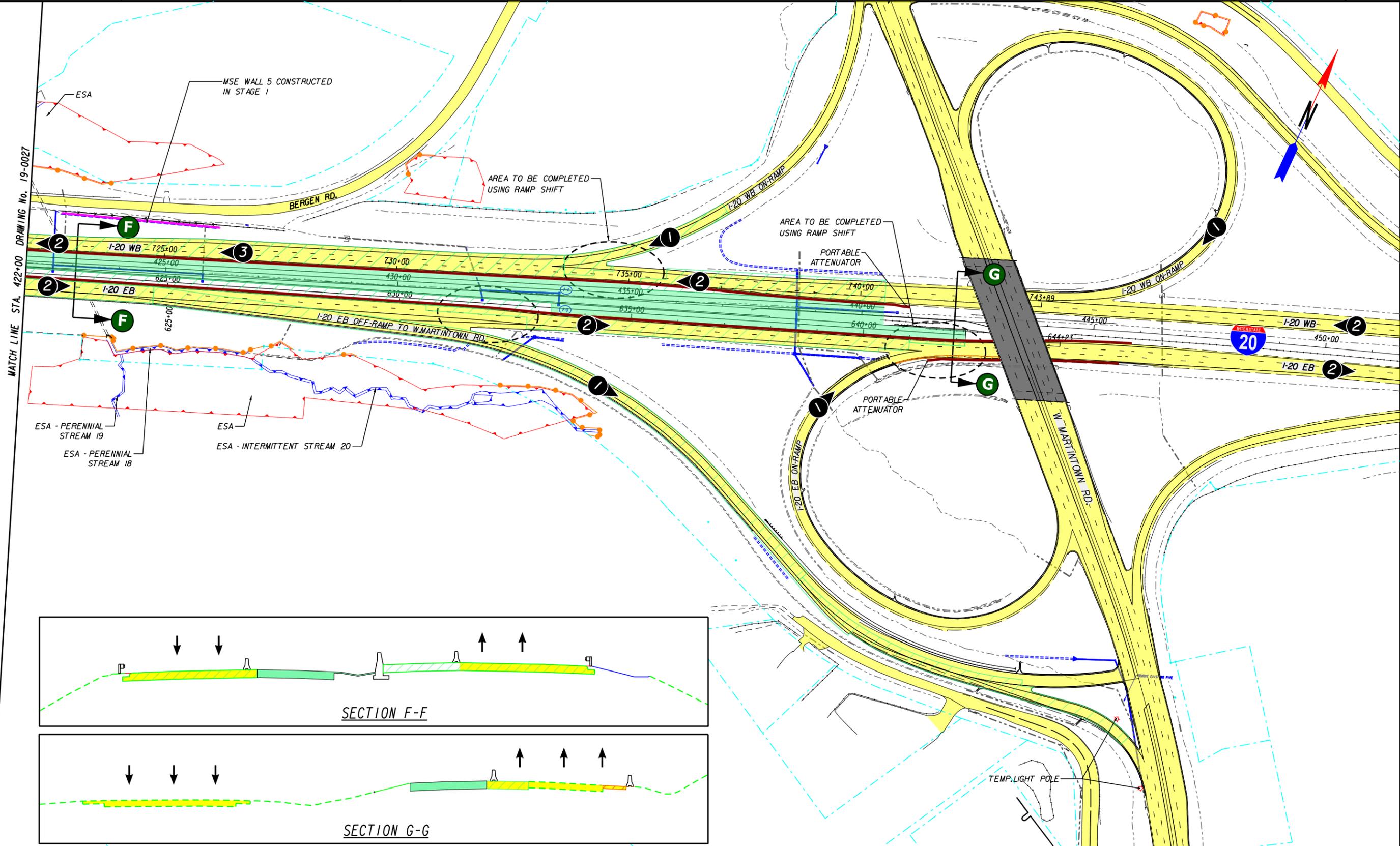
MATCH LINE STA. 422+00 DRAWING No. 19-0028

LEGEND

Roadway Construction (Current Stage)	Temp. Pvmt. (Current Stage)	Temporary Barrier
Roadway Construction (Previous Stage)	Temp. Pvmt. (Previous Stage)	Proposed MSE Wall
Bridge Construction (Current Stage)	Construction Access	Orange Barrier Fence
Bridge Construction (Previous Stage)	Traffic Lane Number	ESA - Env. Sensitive Area (see environmental document)
Traffic Lanes (Current Stage)		Drainage Network



CONSTRUCTION STAGING PLAN STAGE 2B		
1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0027
CORRECTED:	DATE:	
VERIFIED:	DATE:	



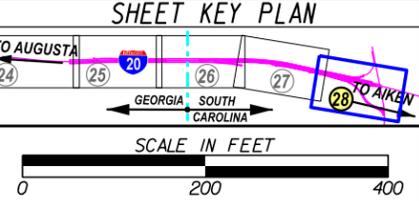
LEGEND			
	Roadway Construction (Current Stage)		Temp. Pvmt. (Current Stage)
	Roadway Construction (Previous Stage)		Temp. Pvmt. (Previous Stage)
	Bridge Construction (Current Stage)		Construction Access
	Bridge Construction (Previous Stage)		Traffic Lane Number
	Traffic Lanes (Current Stage)		Temporary Barrier
			Proposed MSE Wall
			Orange Barrier Fence
			ESA - Env. Sensitive Area (see environmental document)
			Drainage Network

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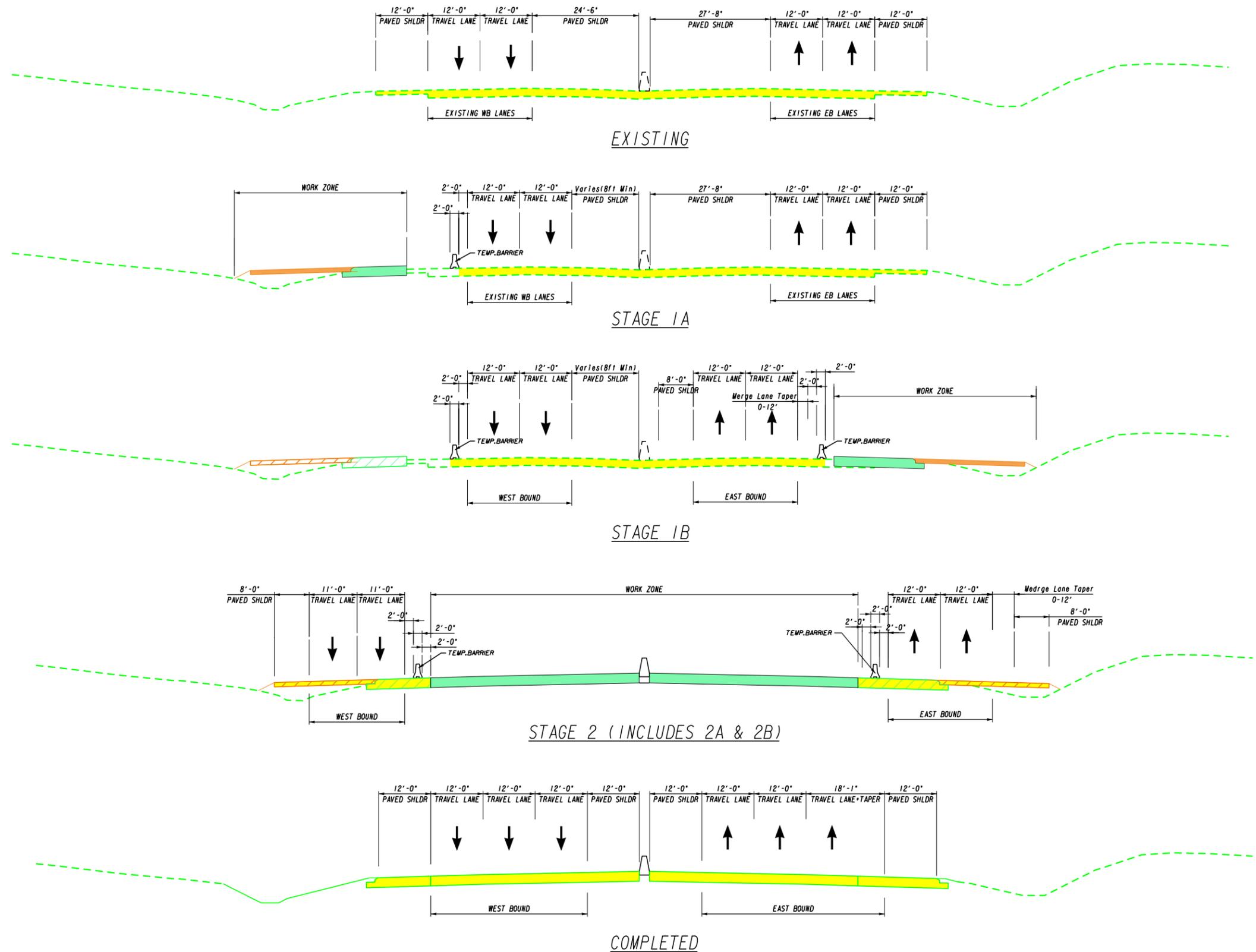
SCDOT
South Carolina Department of Transportation

FLATIRON

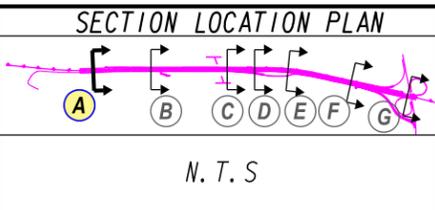
PARSONS



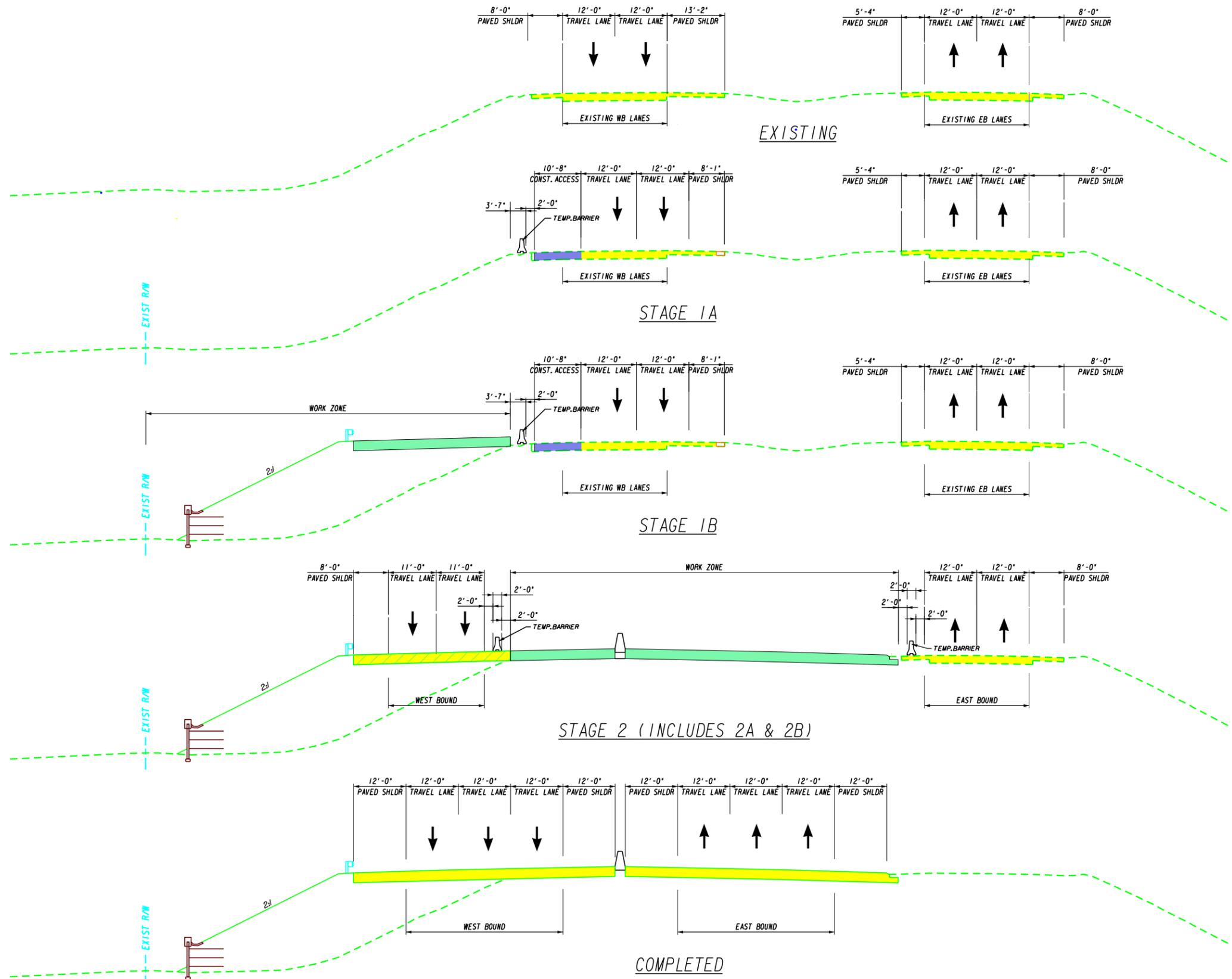
CONSTRUCTION STAGING PLAN STAGE 2B		
I-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0028
CORRECTED:	DATE:	
VERIFIED:	DATE:	



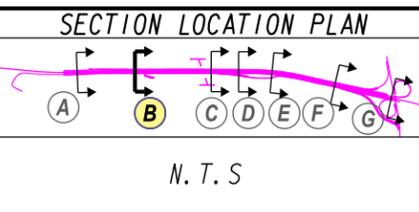
LEGEND	
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	Temp. Pvm. (Current Stage)
	Roadway Construction (Previous Stage)
	Temp. Pvm. (Previous Stage)
	Bridge Construction (Current Stage)
	Bridge Construction (Previous Stage)
	Traffic Lanes (Current Stage)



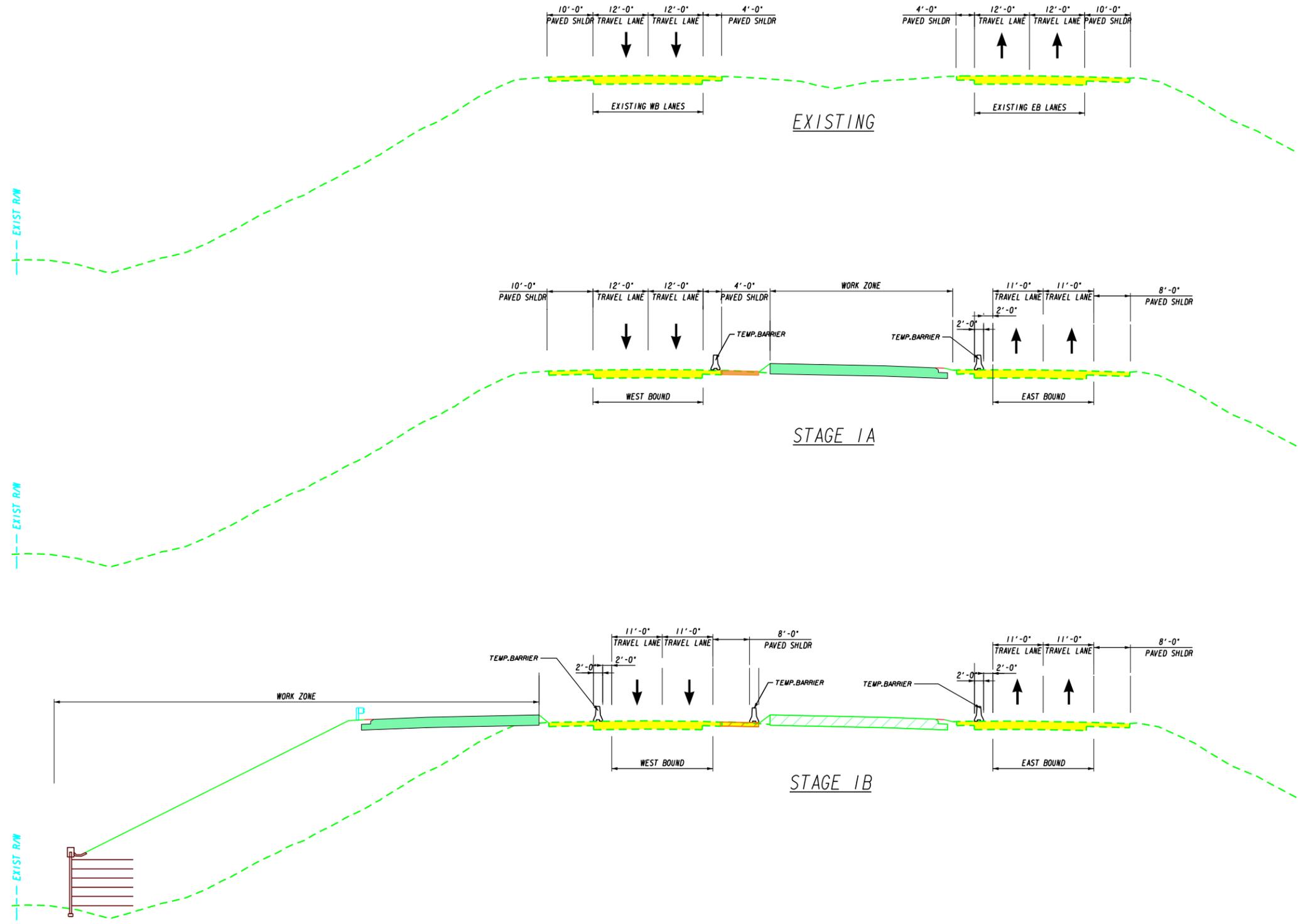
CONSTRUCTION STAGING PLAN		
TYPICAL SECTION A-A		
1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0029
CORRECTED:	DATE:	
VERIFIED:	DATE:	



LEGEND	
	Roadway Construction (Current Stage)
	Roadway Construction (Previous Stage)
	Bridge Construction (Current Stage)
	Bridge Construction (Previous Stage)
	Traffic Lanes (Current Stage)
	Temp. Pvm. (Current Stage)
	Temp. Pvm. (Previous Stage)

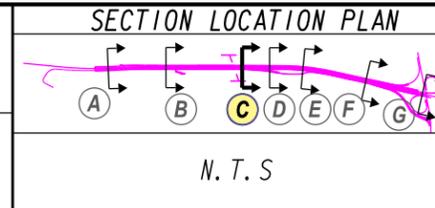


CONSTRUCTION STAGING PLAN		
TYPICAL SECTION B-B		
1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0030
CORRECTED:	DATE:	
VERIFIED:	DATE:	



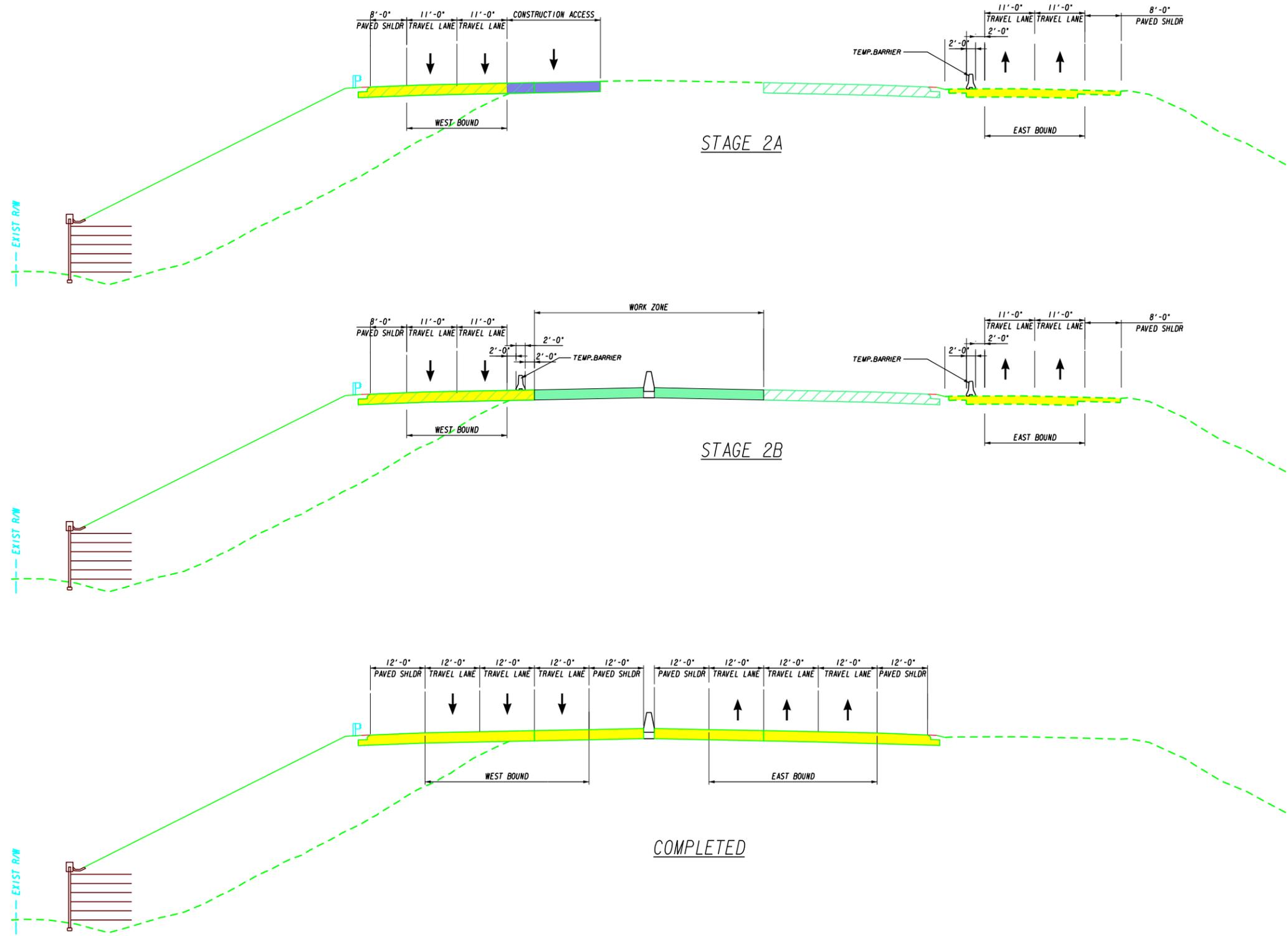
LEGEND

	Roadway Construction (Current Stage)		Temp. Pvmt. (Current Stage)
	Roadway Construction (Previous Stage)		Temp. Pvmt. (Previous Stage)
	Bridge Construction (Current Stage)		
	Bridge Construction (Previous Stage)		
	Traffic Lanes (Current Stage)		

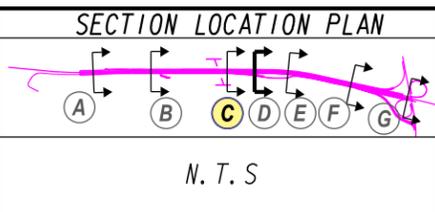


CONSTRUCTION STAGING PLAN
TYPICAL SECTION C-C
1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS
AND ROADWAY WIDENING PROJECT

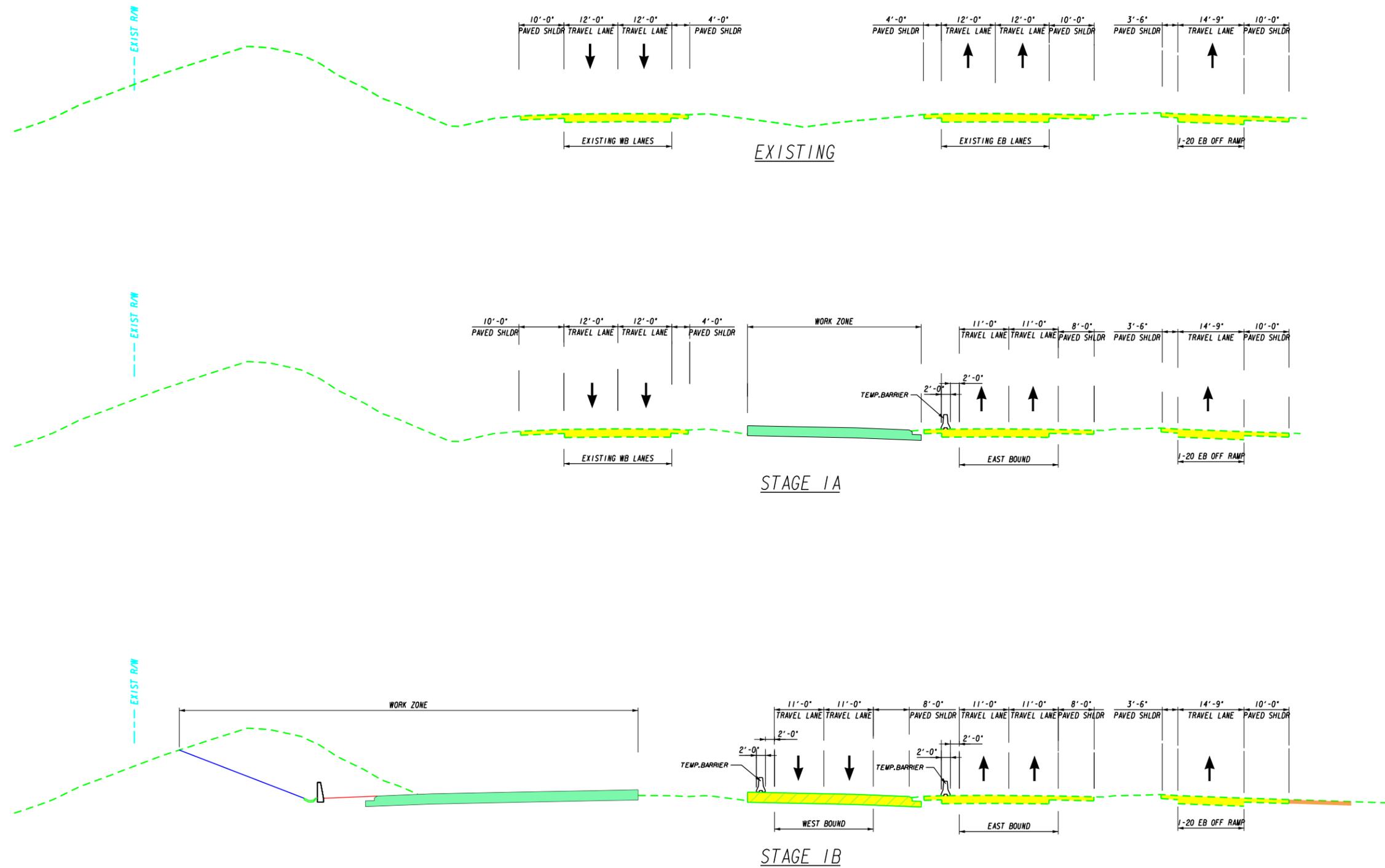
CHECKED:	DATE:	DRAWING No.
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VERIFIED:	DATE:	



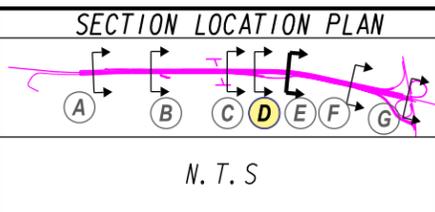
LEGEND	
	Roadway Construction (Current Stage)
	Roadway Construction (Previous Stage)
	Bridge Construction (Current Stage)
	Bridge Construction (Previous Stage)
	Traffic Lanes (Current Stage)
	Temp. Pvmt. (Current Stage)
	Temp. Pvmt. (Previous Stage)



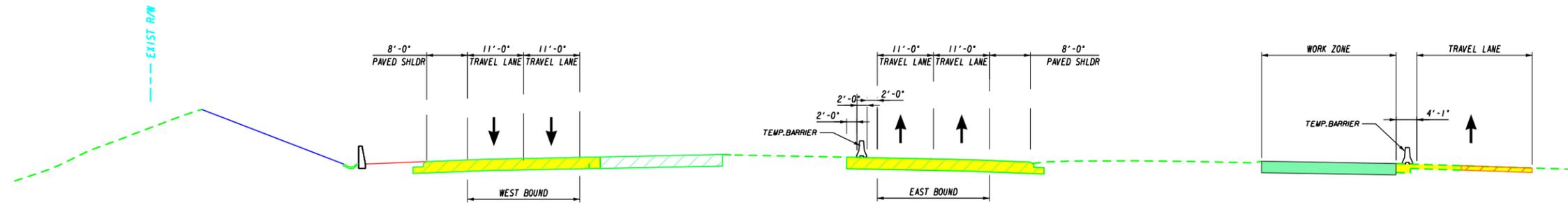
CONSTRUCTION STAGING PLAN TYPICAL SECTION C-C 1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0032
CORRECTED:	DATE:	
VERIFIED:	DATE:	



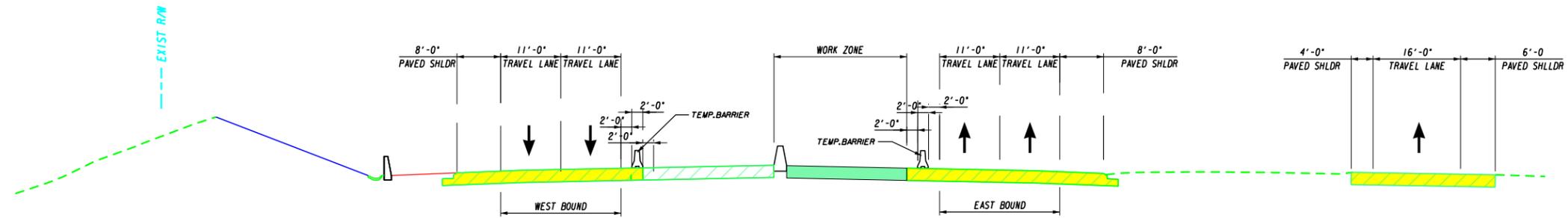
LEGEND	
	Roadway Construction (Current Stage)
	Roadway Construction (Previous Stage)
	Bridge Construction (Current Stage)
	Bridge Construction (Previous Stage)
	Traffic Lanes (Current Stage)
	Temp. Pvm. (Current Stage)
	Temp. Pvm. (Previous Stage)



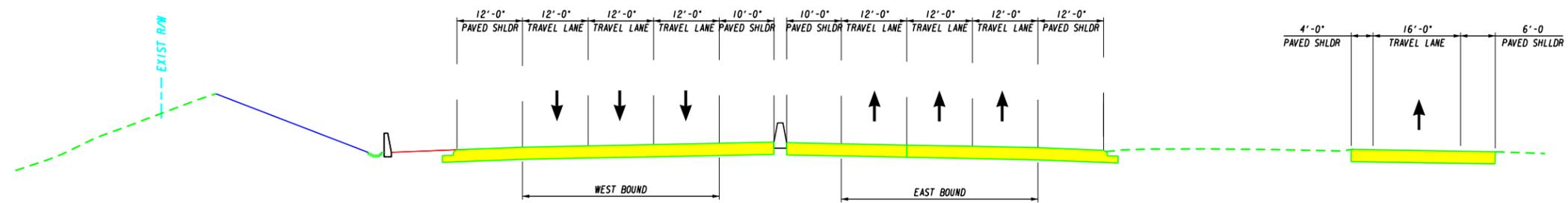
CONSTRUCTION STAGING PLAN		
TYPICAL SECTION D-D		
1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0033
CORRECTED:	DATE:	
VERIFIED:	DATE:	



STAGE 2A



STAGE 2B



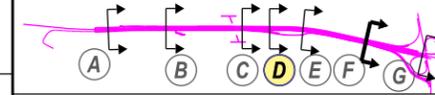
COMPLETED

LEGEND

- Roadway Construction (Current Stage)
- Roadway Construction (Previous Stage)
- Bridge Construction (Current Stage)
- Bridge Construction (Previous Stage)
- Traffic Lanes (Current Stage)
- Temp. Pvm. (Current Stage)
- Temp. Pvm. (Previous Stage)



SECTION LOCATION PLAN



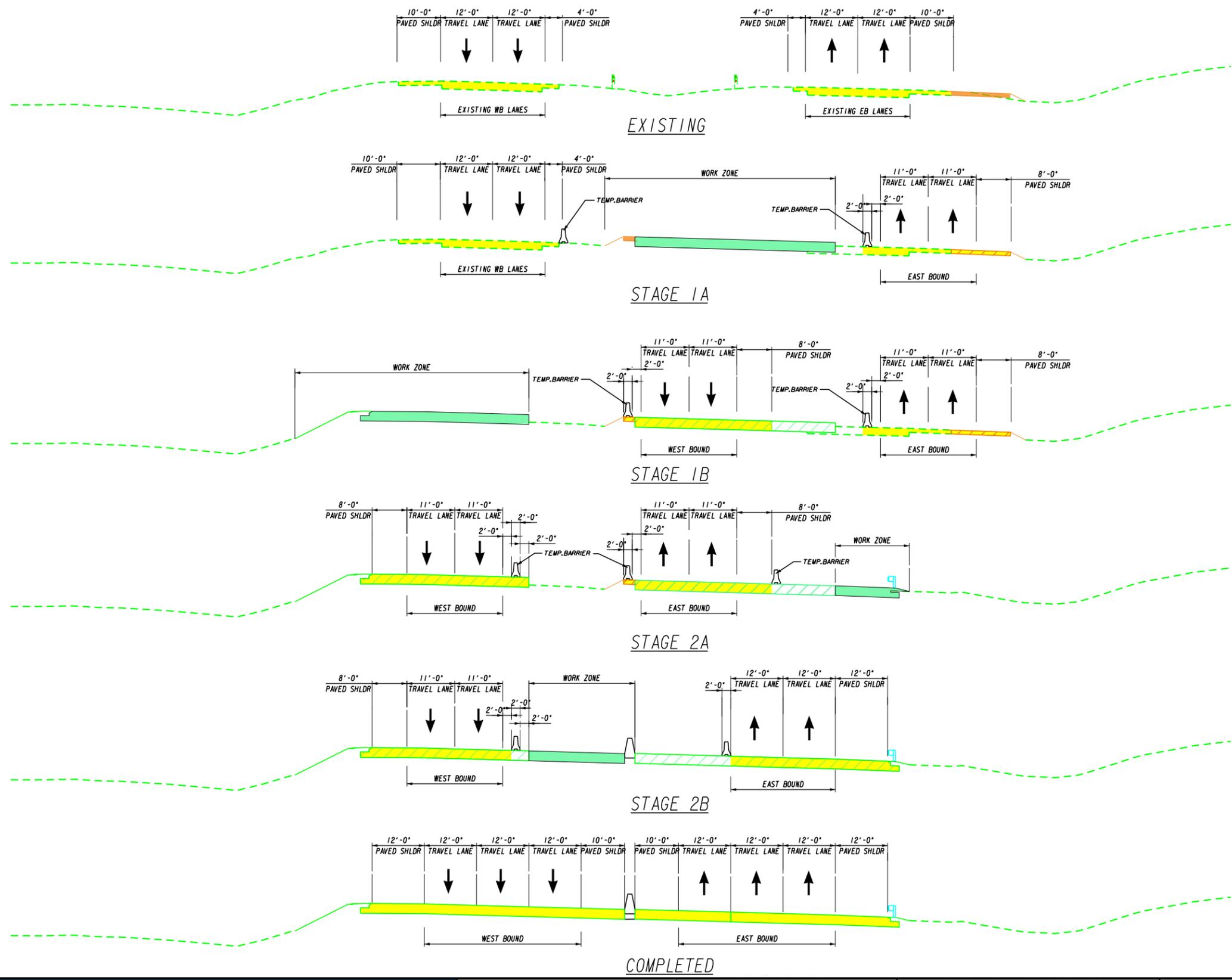
N. T. S

CONSTRUCTION STAGING PLAN

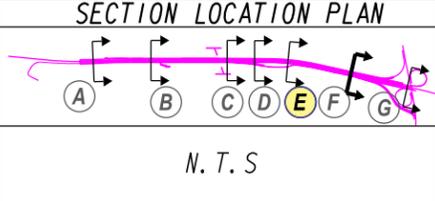
TYPICAL SECTION D-D

1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT

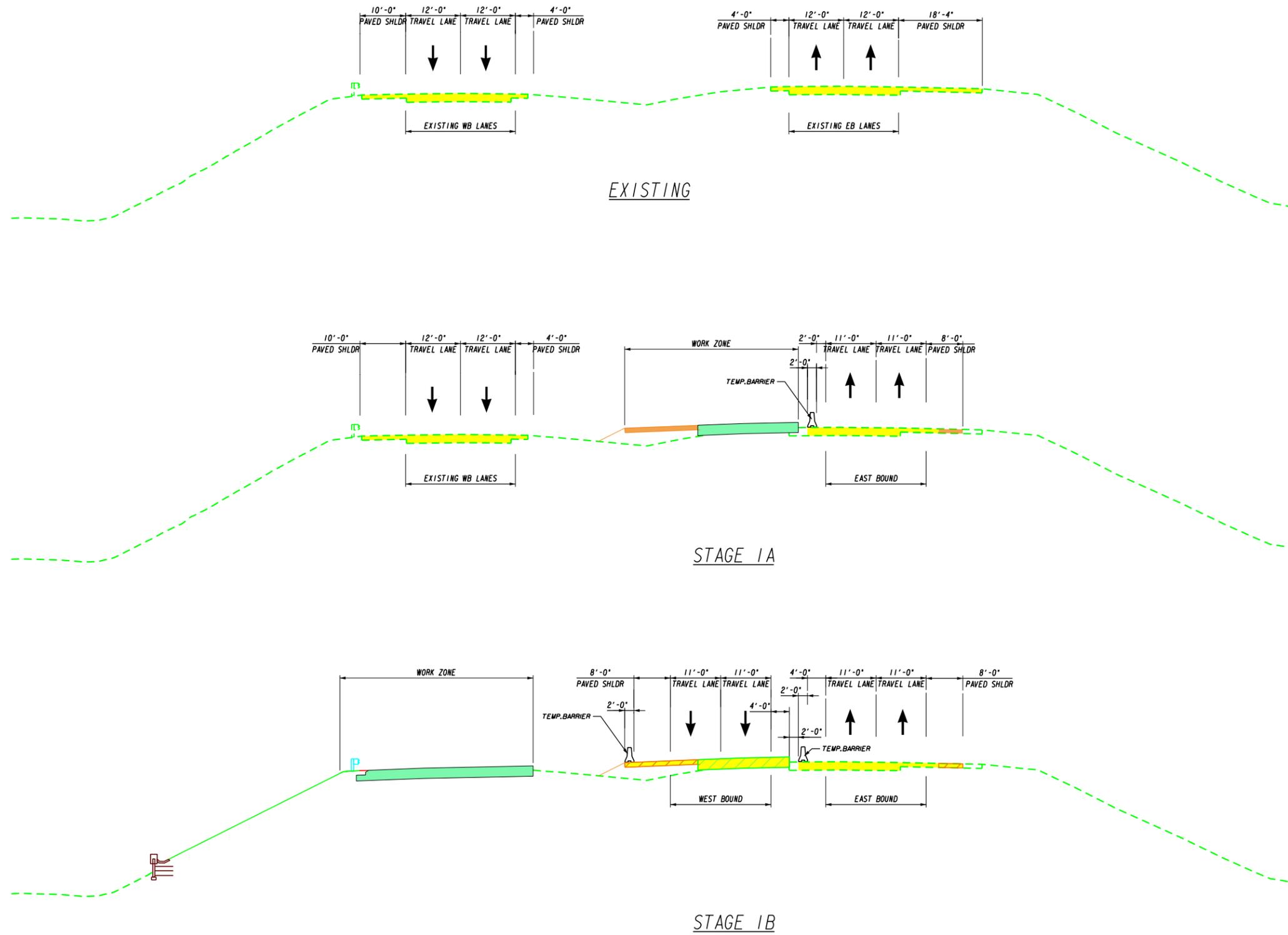
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0034
CORRECTED:	DATE:	
VERIFIED:	DATE:	



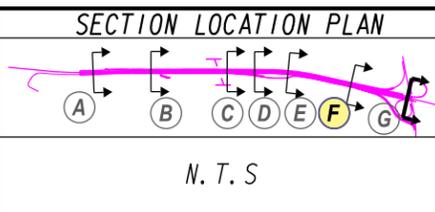
LEGEND	
	Roadway Construction (Current Stage)
	Roadway Construction (Previous Stage)
	Bridge Construction (Current Stage)
	Bridge Construction (Previous Stage)
	Traffic Lanes (Current Stage)
	Temp. Pvm. (Current Stage)
	Temp. Pvm. (Previous Stage)



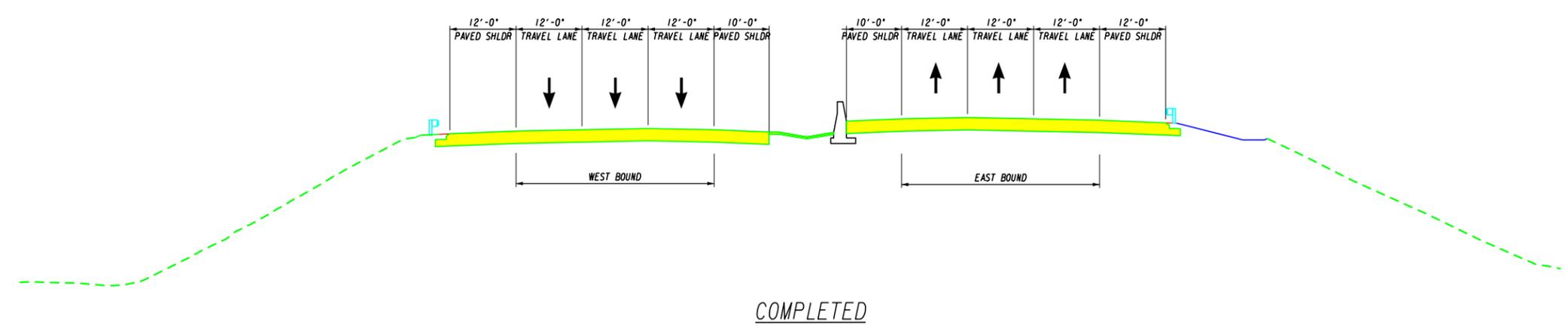
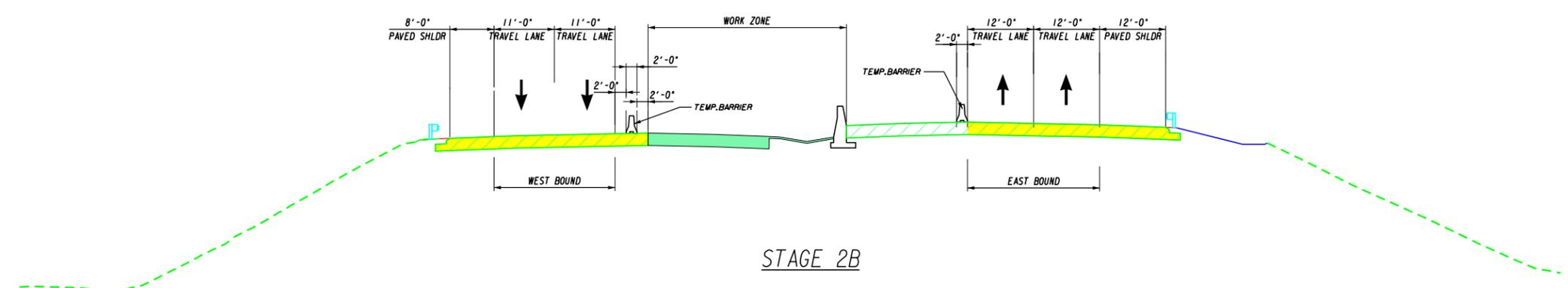
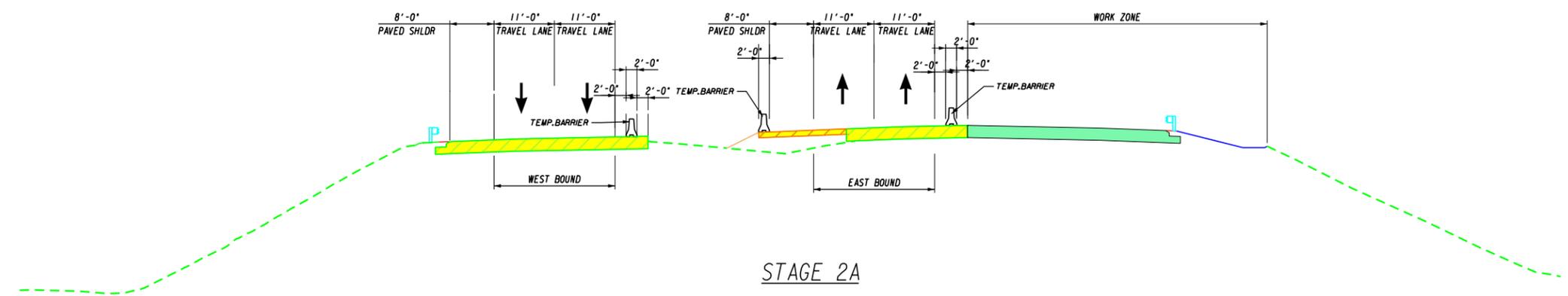
CONSTRUCTION STAGING PLAN		
TYPICAL SECTION E-E		
1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0035
CORRECTED:	DATE:	
VERIFIED:	DATE:	



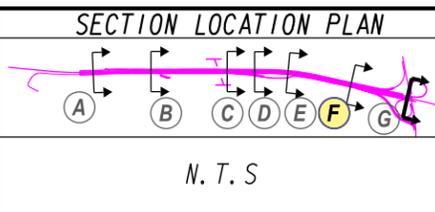
LEGEND	
	Roadway Construction (Current Stage)
	Roadway Construction (Previous Stage)
	Bridge Construction (Current Stage)
	Bridge Construction (Previous Stage)
	Traffic Lanes (Current Stage)
	Temp. Pvmt. (Current Stage)
	Temp. Pvmt. (Previous Stage)



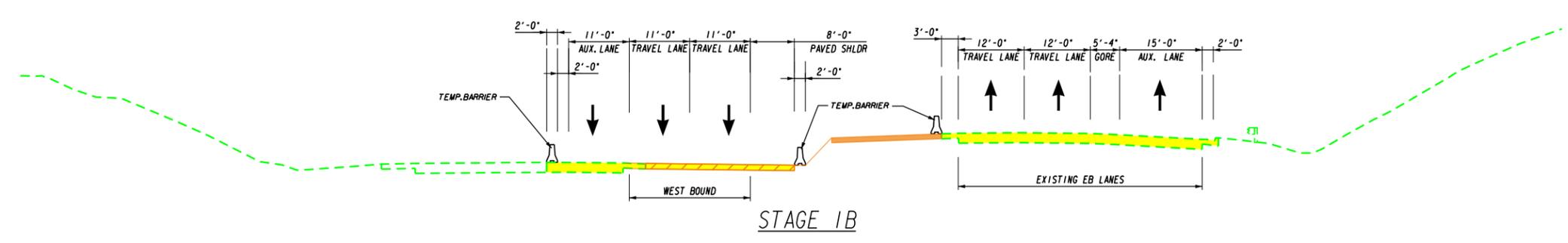
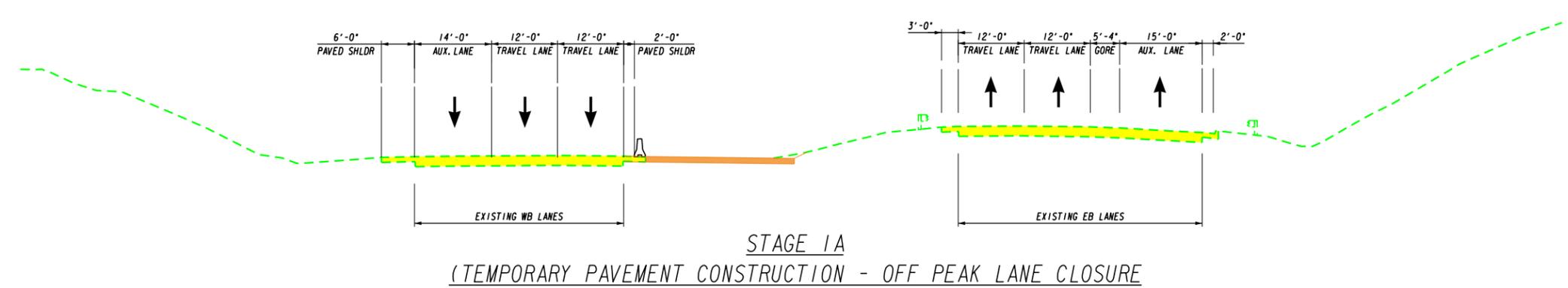
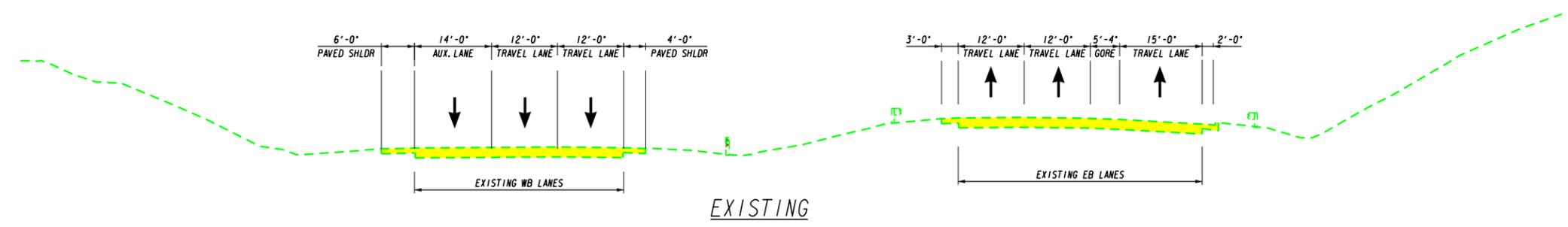
CONSTRUCTION STAGING PLAN TYPICAL SECTION F-F 1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0036
CORRECTED:	DATE:	
VERIFIED:	DATE:	



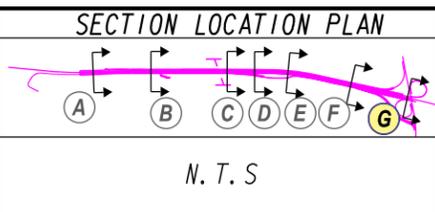
LEGEND	
	Roadway Construction (Current Stage)
	Roadway Construction (Previous Stage)
	Bridge Construction (Current Stage)
	Bridge Construction (Previous Stage)
	Traffic Lanes (Current Stage)
	Temp. Pvmt. (Current Stage)
	Temp. Pvmt. (Previous Stage)



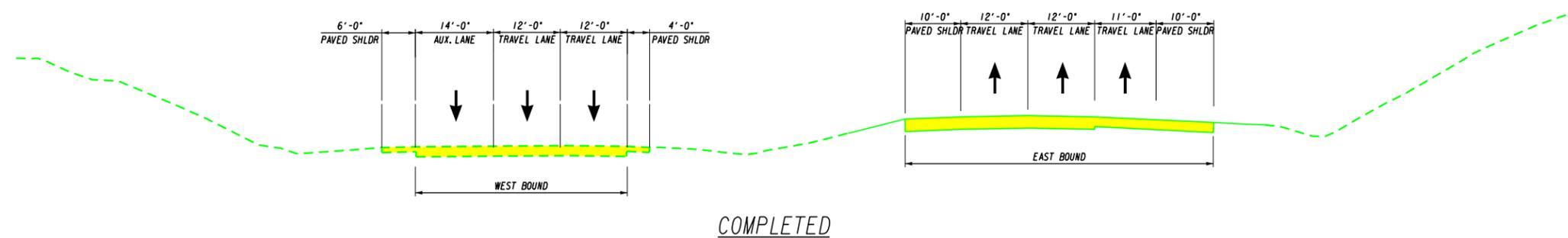
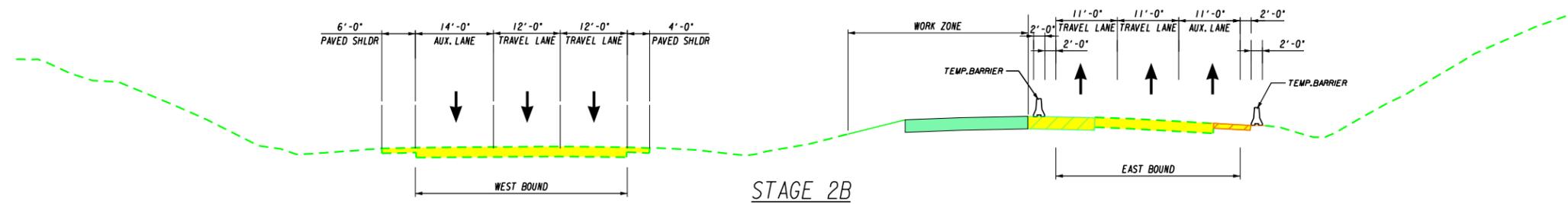
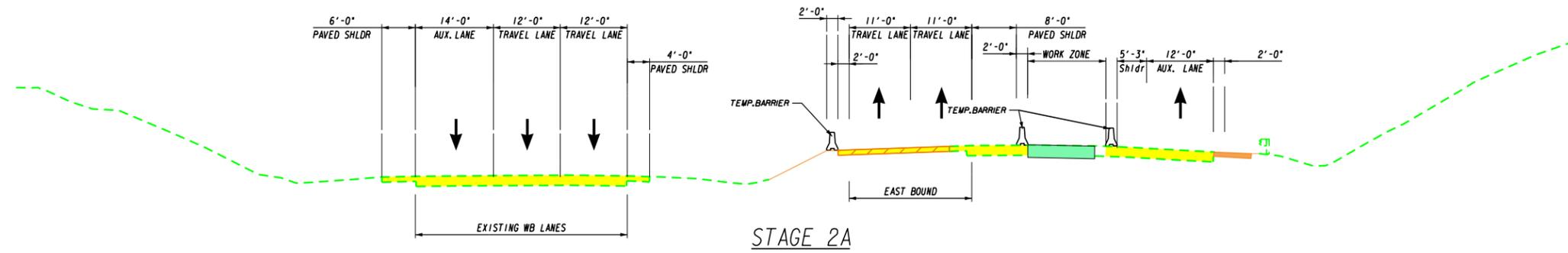
CONSTRUCTION STAGING PLAN		
TYPICAL SECTION F-F		
1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0037
CORRECTED:	DATE:	
VERIFIED:	DATE:	



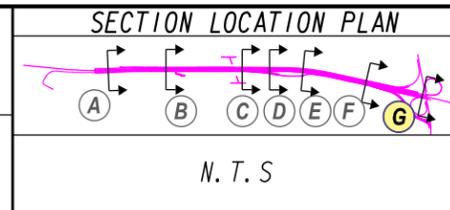
LEGEND	
	Roadway Construction (Current Stage)
	Temp. Pvmt. (Current Stage)
	Roadway Construction (Previous Stage)
	Temp. Pvmt. (Previous Stage)
	Bridge Construction (Current Stage)
	Bridge Construction (Previous Stage)
	Traffic Lanes (Current Stage)



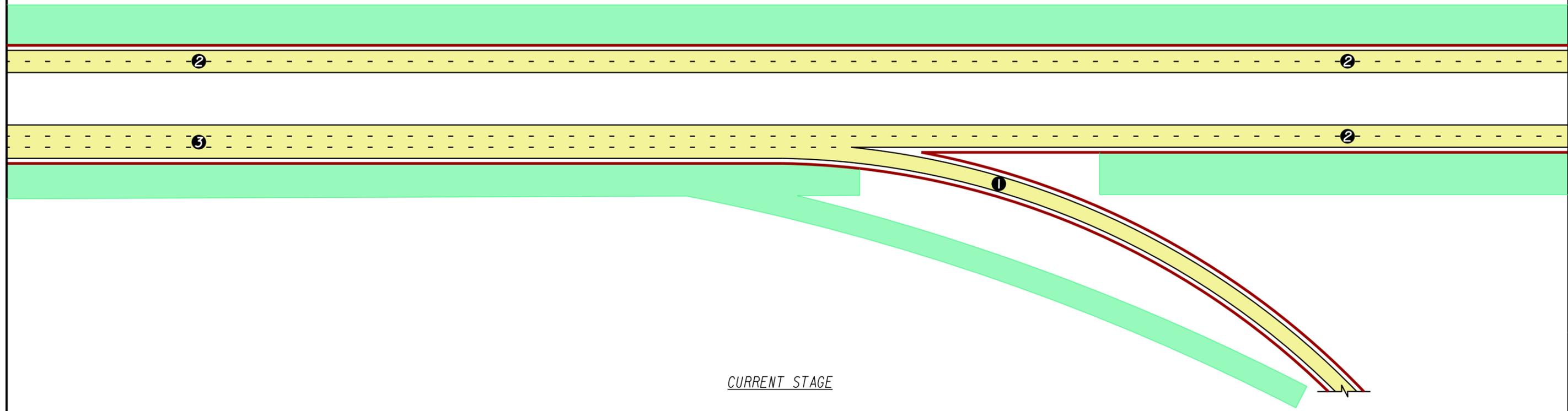
CONSTRUCTION STAGING PLAN		
TYPICAL SECTION G-G		
1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0038
CORRECTED:	DATE:	
VERIFIED:	DATE:	



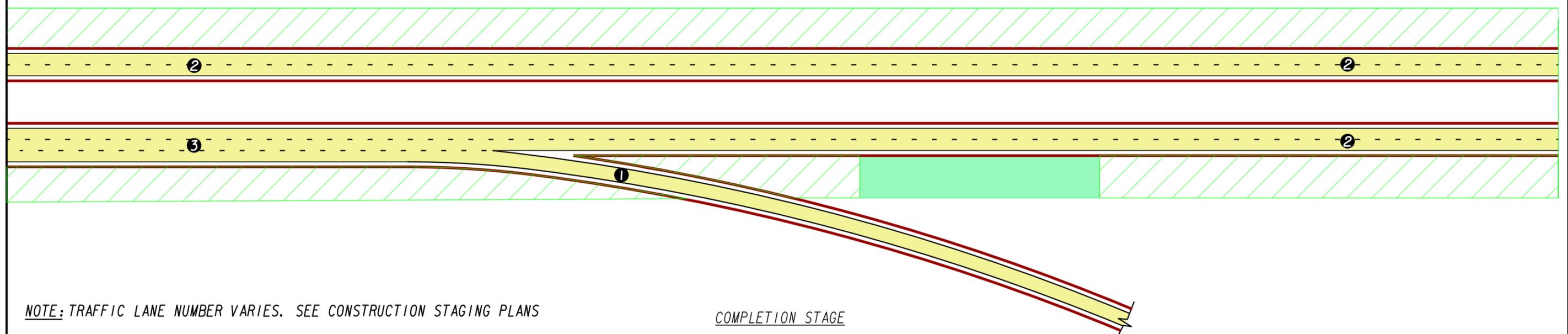
LEGEND	
	Roadway Construction (Current Stage)
	Roadway Construction (Previous Stage)
	Bridge Construction (Current Stage)
	Bridge Construction (Previous Stage)
	Traffic Lanes (Current Stage)
	Temp. Pvmt. (Current Stage)
	Temp. Pvmt. (Previous Stage)



CONSTRUCTION STAGING PLAN		
TYPICAL SECTION G-G		
1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS AND ROADWAY WIDENING PROJECT		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0039
CORRECTED:	DATE:	
VERIFIED:	DATE:	



CURRENT STAGE



COMPLETION STAGE

NOTE: TRAFFIC LANE NUMBER VARIES. SEE CONSTRUCTION STAGING PLANS

LEGEND

- Roadway Construction (Current Stage)
- Temp. Pvm. (Current Stage)
- Roadway Construction (Previous Stage)
- Temp. Pvm. (Previous Stage)
- Bridge Construction (Current Stage)
- Bridge Construction (Previous Stage)
- Traffic Lanes (Current Stage)



N. T. S

CONSTRUCTION STAGING PLAN

RAMP SHIFT DETAIL
1-20 SAVANNAH RIVER BRIDGE REPLACEMENTS
AND ROADWAY WIDENING PROJECT

CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	19-0040
CORRECTED:	DATE:	
VERIFIED:	DATE:	

C.1.2 Proposal (Project) Schedule

Activity ID	Activity Name	Duration	Start	Finish	2019												2020												2021												2022	
					Oct	N	D	J	F	M	A	M	J	Jul	A	S	Oct	N	D	J	F	M	Apr	M	J	Jul	A	S	Oct	N	D	J	F	M	A	M	J	Jul	A	S	Oct	N
I-20 at Savannah River Bridge Replacements and Roadway Widening					819	19-Oct-18	05-Jan-22																																			
CONTRACT ADMIN					819	19-Oct-18	05-Jan-22																																			
Milestones					819	19-Oct-18	05-Jan-22																																			
General Project Milestones					819	19-Oct-18	05-Jan-22																																			
MILE-1000	Letting (Selection of Apparent Successful Proposer)	0	19-Oct-18		◆ Letting (Selection of Apparent Successful Proposer)																																					
MILE-1020	DB Contract/Bonds/Insurance	27	19-Oct-18	27-Nov-18	■ DB Contract/Bonds/Insurance																																					
MILE-1030	Notice to Proceed 1 (Commence Preliminary Design)	0	28-Nov-18		◆ Notice to Proceed 1 (Commence Preliminary Design)																																					
MILE-1120	Notice to Proceed 2 (Complete Final Design)	0		11-Jan-19	◆ Notice to Proceed 2 (Complete Final Design)																																					
MILE-1070	Begin Construction	0	16-Aug-19		◆ Begin Construction																																					
MILE-1080	Notice to Proceed 3 (Release for Construction)	0	16-Aug-19		◆ Notice to Proceed 3 (Release for Construction)																																					
MILE-1050	Substantial Completion (On or Before December 31, 2021)	0		03-Nov-21	◆ Substantial Completion																																					
MILE-1060	Final Acceptance	0		05-Jan-22	◆ Final Acceptance																																					
Interim Milestones					220	30-Jul-20	24-Jun-21																																			
MILE-1110	Interim Completion Deadline #3 - Open to Traffic for WB Lanes	0		30-Jul-20	◆ Interim Completion Deadline #3 - Open to Traffic for WB Lanes																																					
MILE-1090	Interim Completion Deadline #1 - Open to Intersection Traffic	0		26-Feb-21	◆ Interim Completion Deadline #1 - Open to Intersection Traffic																																					
MILE-1100	Interim Completion Deadline #2 - Open to Traffic for EB Lanes	0		24-Jun-21	◆ Interim Completion Deadline #2 - Open to Traffic for EB Lanes																																					
Project Management					792	28-Nov-18	04-Jan-22																																			
Contract					1134	28-Nov-18	04-Jan-22																																			
ADMN-1030	Contract Duration (Calendar Days)	1134	28-Nov-18	04-Jan-22	■ Contract Duration (Calendar Days)																																					
Bridge Durations					539	26-Aug-19	03-Nov-21																																			
ADMN-1040	Bridge 2 Phase 1 Savannah River Bridge Working Days	199	26-Aug-19	22-Jun-20	■ Bridge 2 Phase 1 Savannah River Bridge Working Days																																					
ADMN-1070	Bridge 1 Phase 1 Augusta Canal Bridge Working Days	138	16-Oct-19	18-May-20	■ Bridge 1 Phase 1 Augusta Canal Bridge Working Days																																					
ADMN-1050	Bridge 2 Phase 2 Savannah River Bridge Working Days	217	30-Jul-20	21-Jun-21	■ Bridge 2 Phase 2 Savannah River Bridge Working Days																																					
ADMN-1080	Bridge 1 Phase 2 Augusta Canal Bridge Working Days	126	30-Jul-20	10-Feb-21	■ Bridge 1 Phase 2 Augusta Canal Bridge Working Days																																					
ADMN-1060	Bridge 2 Phase 3 Savannah River Bridge Working Days	94	24-Jun-21	03-Nov-21	■ Bridge 2 Phase 3 Savannah River Bridge Working Days																																					
ADMN-1090	Bridge 1 Phase 3 Augusta Canal Bridge Working Days	28	24-Jun-21	03-Aug-21	■ Bridge 1 Phase 3 Augusta Canal Bridge Working Days																																					
Project Controls					38	28-Nov-18	22-Jan-19																																			
Submittals					38	28-Nov-18	22-Jan-19																																			
Prepare/Submit					13	28-Nov-18	14-Dec-18																																			
SUB1000	Prepare/Submit Quality Management Plan	13	28-Nov-18	14-Dec-18	■ Prepare/Submit Quality Management Plan																																					
SUB1010	Prepare/Submit Safety Plan	13	28-Nov-18	14-Dec-18	■ Prepare/Submit Safety Plan																																					
SUB1020	Prepare/Submit Schedule of Values	13	28-Nov-18	14-Dec-18	■ Prepare/Submit Schedule of Values																																					
SUB1030	Prepare/Submit Project Baseline Schedule	13	28-Nov-18	14-Dec-18	■ Prepare/Submit Project Baseline Schedule																																					
SUB1040	Prepare/Submit Traffic Control Plan	13	28-Nov-18	14-Dec-18	■ Prepare/Submit Traffic Control Plan																																					
SUB1050	Prepare/Submit Transportation Management Plan	13	28-Nov-18	14-Dec-18	■ Prepare/Submit Transportation Management Plan																																					
SUB1060	Prepare/Submit Public Information and Communications Plan	13	28-Nov-18	14-Dec-18	■ Prepare/Submit Public Information and Communications Plan																																					
SUB1070	Prepare/Submit Construction Phasing Plan of Project	13	28-Nov-18	14-Dec-18	■ Prepare/Submit Construction Phasing Plan of Project																																					
SUB1080	Prepare/Submit Construction Maintenance Limits Plan	13	28-Nov-18	14-Dec-18	■ Prepare/Submit Construction Maintenance Limits Plan																																					
SUB1090	Prepare/Submit Comprehensive Environmental Protection Program	13	28-Nov-18	14-Dec-18	■ Prepare/Submit Comprehensive Environmental Protection Program																																					
SUB1100	Prepare/Submit Demolition and Abandonment Plan	13	28-Nov-18	14-Dec-18	■ Prepare/Submit Demolition and Abandonment Plan																																					
SUB1110	Prepare/Submit Maintenance Management Plan	13	28-Nov-18	14-Dec-18	■ Prepare/Submit Maintenance Management Plan																																					
SUB1120	Prepare/Submit Post-Construction Stormwater Report	13	28-Nov-18	14-Dec-18	■ Prepare/Submit Post-Construction Stormwater Report																																					
SUB1130	Prepare/Submit Worksite Utility Control, Erosion Control, Traffic Control Supervisors	13	28-Nov-18	14-Dec-18	■ Prepare/Submit Worksite Utility Control, Erosion Control, Traffic Control Supervisors																																					
Review/Approve					25	14-Dec-18	22-Jan-19																																			
REV1000	Review/Approve Quality Management Plan	25	14-Dec-18	22-Jan-19	■ Review/Approve Quality Management Plan																																					
REV1010	Review/Approve Safety Plan	25	14-Dec-18	22-Jan-19	■ Review/Approve Safety Plan																																					
REV1020	Review/Approve Schedule of Values	25	14-Dec-18	22-Jan-19	■ Review/Approve Schedule of Values																																					
REV1030	Review/Approve Project Baseline Schedule	25	14-Dec-18	22-Jan-19	■ Review/Approve Project Baseline Schedule																																					
REV1040	Review/Approve Traffic Control Plan	25	14-Dec-18	22-Jan-19	■ Review/Approve Traffic Control Plan																																					
REV1050	Review/Approve Transportation Management Plan	25	14-Dec-18	22-Jan-19	■ Review/Approve Transportation Management Plan																																					
REV1060	Review/Approve Public Information and Communications Plan	25	14-Dec-18	22-Jan-19	■ Review/Approve Public Information and Communications Plan																																					
REV1070	Review/Approve Construction Phasing Plan of Project	25	14-Dec-18	22-Jan-19	■ Review/Approve Construction Phasing Plan of Project																																					
REV1080	Review/Approve Construction Maintenance Limits Plan	25	14-Dec-18	22-Jan-19	■ Review/Approve Construction Maintenance Limits Plan																																					

Activity ID	Activity Name	Duration	Start	Finish	2019												2020												2021												2022											
					Oct	N	D	J	F	M	A	M	J	Jul	A	S	Oct	N	D	J	F	M	Apr	M	J	Jul	A	S	Oct	N	D	J	F	M	A	M	J	Jul	A	S	Oct	N	D	J	F							
REV1090	Review/Approve Comprehensive Environmental Protection Program	25	14-Dec-18	22-Jan-19	Review/Approve Comprehensive Environmental Protection Program																																															
REV1100	Review/Approve Demolition and Abandonment Plan	25	14-Dec-18	22-Jan-19	Review/Approve Demolition and Abandonment Plan																																															
REV1110	Review/Approve Maintenance Management Plan	25	14-Dec-18	22-Jan-19	Review/Approve Maintenance Management Plan																																															
REV1120	Review/Approve Post-Construction Stormwater Report	25	14-Dec-18	22-Jan-19	Review/Approve Post-Construction Stormwater Report																																															
REV1130	Review/Approve Worksite Utility Control, ErosionControl, Traffic Control Supervisors	25	14-Dec-18	22-Jan-19	Review/Approve Worksite Utility Control, ErosionControl, Traffic Control Supervisors																																															
SERVICES		226	19-Oct-18	10-Sep-19																																																
Design		226	19-Oct-18	10-Sep-19																																																
Concept Design		58	19-Oct-18	11-Jan-19																																																
Conceptual Layout Plan		58	19-Oct-18	11-Jan-19																																																
SP.10090	Line & Grade Plan - Roadway	20	19-Oct-18	15-Nov-18	Line & Grade Plan - Roadway																																															
SP.10100	Line & Grade Plan - Drainage	20	19-Oct-18	15-Nov-18	Line & Grade Plan - Drainage																																															
SP.10110	Line & Grade Plan - Bridge	20	19-Oct-18	15-Nov-18	Line & Grade Plan - Bridge																																															
SP.10120	Line & Grade Plan - MOT	20	19-Oct-18	15-Nov-18	Line & Grade Plan - MOT																																															
SP.10130	Line & Grade Plan - IDR/CR/QA/Transmittal	10	16-Nov-18	30-Nov-18	Line & Grade Plan - IDR/CR/QA/Transmittal																																															
SP.10140	Line & Grade Plan - QA Review	1	03-Dec-18	03-Dec-18	Line & Grade Plan - QA Review																																															
SP.10150	Line & Grade Plan - Submit to GDOT	1	04-Dec-18	04-Dec-18	Line & Grade Plan - Submit to GDOT																																															
SP.10160	Line & Grade Plan - GDOT Review	30	05-Dec-18	03-Jan-19	Line & Grade Plan - GDOT Review																																															
SP.10170	Line & Grade Plan - Address Comments	5	04-Jan-19	10-Jan-19	Line & Grade Plan - Address Comments																																															
SP.10180	Line & Grade Plan - Final Submittal	1	11-Jan-19	11-Jan-19	Line & Grade Plan - Final Submittal																																															
Environmental		204	19-Oct-18	08-Aug-19																																																
Environmental Special Studies		204	19-Oct-18	08-Aug-19																																																
SP.10210	Receive Plans showing impacts to environmental areas	1	28-Nov-18	28-Nov-18	Receive Plans showing impacts to environmental areas																																															
Special Studies - Ecology		99	28-Nov-18	18-Apr-19																																																
SP.10230	Ecology Study - Start	1	28-Nov-18	28-Nov-18	Ecology Study - Start																																															
SP.10240	Ecology Study - DB Team Prepares Information for Ecology Addendum	5	29-Nov-18	05-Dec-18	Ecology Study - DB Team Prepares Information for Ecology Addendum																																															
SP.10250	Ecology Study - DB Team Provide Input to GDOT	1	06-Dec-18	06-Dec-18	Ecology Study - DB Team Provide Input to GDOT																																															
SP.10260	Ecology Study - GDOT Incorporates DB Team Input and Finalizes Ecology Addendum	15	07-Dec-18	28-Dec-18	Ecology Study - GDOT Incorporates DB Team Input and Finalizes Ecology Addendum																																															
SP.10270	Ecology Study - GDOT Project Team Review-1 Ecology Addendum	30	29-Dec-18	27-Jan-19	Ecology Study - GDOT Project Team Review-1 Ecology Addendum																																															
SP.10280	Ecology Study - GDOT Addresses Comments on Ecology Addendum	5	29-Jan-19	04-Feb-19	Ecology Study - GDOT Addresses Comments on Ecology Addendum																																															
SP.10290	Ecology Study - GDOT Project Team Review-2 Ecology Addendum	14	05-Feb-19	18-Feb-19	Ecology Study - GDOT Project Team Review-2 Ecology Addendum																																															
SP.10300	Ecology Study - GDOT Addresses Comments on Ecology Addendum	5	19-Feb-19	25-Feb-19	Ecology Study - GDOT Addresses Comments on Ecology Addendum																																															
SP.10310	Ecology Study - FHWA Review / Concurrence of Ecology Addendum	30	26-Feb-19	27-Mar-19	Ecology Study - FHWA Review / Concurrence of Ecology Addendum																																															
SP.10320	Ecology Study - GDOT Addresses FHWA Comments with DB Team Input	5	28-Mar-19	03-Apr-19	Ecology Study - GDOT Addresses FHWA Comments with DB Team Input																																															
SP.10330	Ecology Study - GDOT Ecology Review and Submit Ecology Addendum to FHWA	1	04-Apr-19	04-Apr-19	Ecology Study - GDOT Ecology Review and Submit Ecology Addendum to FHWA																																															
SP.10340	Ecology Study - FHWA Approval of Ecology Addendum	10	05-Apr-19	18-Apr-19	Ecology Study - FHWA Approval of Ecology Addendum																																															
Special Studies - History		58	28-Nov-18	20-Feb-19																																																
SP.10360	History Study - Start	1	28-Nov-18	28-Nov-18	History Study - Start																																															
SP.10370	History Study - DB Team Prepares Information for History Addendum	15	29-Nov-18	19-Dec-18	History Study - DB Team Prepares Information for History Addendum																																															
SP.10380	History Study - DB Team Provide Input to GDOT	1	20-Dec-18	20-Dec-18	History Study - DB Team Provide Input to GDOT																																															
SP.10390	History Study - GDOT Incorporates DB Team Input and Finalizes History Addendum	5	21-Dec-18	28-Dec-18	History Study - GDOT Incorporates DB Team Input and Finalizes History Addendum																																															
SP.10400	History Study - GDOT Project Team Reviews History Addendum	14	29-Dec-18	11-Jan-19	History Study - GDOT Project Team Reviews History Addendum																																															
SP.10410	History Study - GDOT Addresses Comments on History Addendum	5	14-Jan-19	18-Jan-19	History Study - GDOT Addresses Comments on History Addendum																																															
SP.10420	History Study - GDOT submits History Addendum to SHPO	1	21-Jan-19	21-Jan-19	History Study - GDOT submits History Addendum to SHPO																																															
SP.10430	History Study - SHPO Review / Concurrence of History Addendum	30	22-Jan-19	20-Feb-19	History Study - SHPO Review / Concurrence of History Addendum																																															
Special Studies - Noise		56	28-Nov-18	18-Feb-19																																																
SP.10450	Noise Study - Start	1	28-Nov-18	28-Nov-18	Noise Study - Start																																															
SP.10460	Noise Study - DB Team Prepares Information (Noise Report) for Noise Addendum	10	29-Nov-18	12-Dec-18	Noise Study - DB Team Prepares Information (Noise Report) for Noise Addendum																																															
SP.10470	Noise Study - DB Team Provide Input to GDOT	1	13-Dec-18	13-Dec-18	Noise Study - DB Team Provide Input to GDOT																																															
SP.10480	Noise Study - GDOT Incorporates DB Team Input and Finalizes Noise Addendum	5	14-Dec-18	20-Dec-18	Noise Study - GDOT Incorporates DB Team Input and Finalizes Noise Addendum																																															

Activity ID	Activity Name	Duration	Start	Finish	2019														2020														2021														2022									
					Oct	N	D	J	F	M	A	M	J	Jul	A	S	Oct	N	D	J	F	M	Apr	M	J	Jul	A	S	Oct	N	D	J	F	M	A	M	J	Jul	A	S	Oct	N	D	J	F											
Phase 1 Bridge 2																																																								
Phase 1 Bridge 2: Construct Trestle																																																								
TRES1000	Build West Access Point Phase 1 Bridge 2 I-20 over Savannah River	15	26-Aug-19	17-Sep-19	■ Build West Access Point Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1010	Construct Trestle 2 Phase 1 Bridge 2 I-20 over Savannah River	10	17-Sep-19	01-Oct-19	■ Construct Trestle 2 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1020	Construct Trestle 3 Phase 1 Bridge 2 I-20 over Savannah River	2	01-Oct-19	02-Oct-19	■ Construct Trestle 3 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1030	Construct T Finger 3 Phase 1 Bridge 2 I-20 over Savannah River	2	02-Oct-19	04-Oct-19	■ Construct T Finger 3 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1040	Construct Trestle 4 Phase 1 Bridge 2 I-20 over Savannah River	2	04-Oct-19	07-Oct-19	■ Construct Trestle 4 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1050	Construct Trestle 5 Phase 1 Bridge 2 I-20 over Savannah River	2	07-Oct-19	09-Oct-19	■ Construct Trestle 5 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1060	Construct Trestle 6 Phase 1 Bridge 2 I-20 over Savannah River	2	09-Oct-19	11-Oct-19	■ Construct Trestle 6 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1070	Construct T Finger 6 Phase 1 Bridge 2 I-20 over Savannah River	2	11-Oct-19	14-Oct-19	■ Construct T Finger 6 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1080	Construct Trestle 7 Phase 1 Bridge 2 I-20 over Savannah River	2	14-Oct-19	16-Oct-19	■ Construct Trestle 7 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1090	Construct Trestle 8 Phase 1 Bridge 2 I-20 over Savannah River	2	16-Oct-19	17-Oct-19	■ Construct Trestle 8 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1100	Construct Trestle 9 Phase 1 Bridge 2 I-20 over Savannah River	2	17-Oct-19	21-Oct-19	■ Construct Trestle 9 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1110	Construct T Finger 9 Phase 1 Bridge 2 I-20 over Savannah River	2	21-Oct-19	23-Oct-19	■ Construct T Finger 9 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1120	Construct Trestle 10 Phase 1 Bridge 2 I-20 over Savannah River	2	23-Oct-19	24-Oct-19	■ Construct Trestle 10 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1130	Construct Trestle 11 Phase 1 Bridge 2 I-20 over Savannah River	2	24-Oct-19	28-Oct-19	■ Construct Trestle 11 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1140	Construct Trestle 12 Phase 1 Bridge 2 I-20 over Savannah River	2	28-Oct-19	29-Oct-19	■ Construct Trestle 12 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1160	Construct T Finger 12 Phase 1 Bridge 2 I-20 over Savannah River	2	29-Oct-19	31-Oct-19	■ Construct T Finger 12 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1170	Construct Trestle 13 Phase 1 Bridge 2 I-20 over Savannah River	2	31-Oct-19	04-Nov-19	■ Construct Trestle 13 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1180	Construct Trestle 14 Phase 1 Bridge 2 I-20 over Savannah River	2	04-Nov-19	05-Nov-19	■ Construct Trestle 14 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1190	Construct Trestle 15 Phase 1 Bridge 2 I-20 over Savannah River	2	05-Nov-19	07-Nov-19	■ Construct Trestle 15 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1200	Construct T Finger 15 Phase 1 Bridge 2 I-20 over Savannah River	2	07-Nov-19	08-Nov-19	■ Construct T Finger 15 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1210	Construct Trestle 16 Phase 1 Bridge 2 I-20 over Savannah River	2	08-Nov-19	12-Nov-19	■ Construct Trestle 16 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1220	Construct Trestle 17 Phase 1 Bridge 2 I-20 over Savannah River	2	12-Nov-19	14-Nov-19	■ Construct Trestle 17 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1230	Construct Trestle 18 Phase 1 Bridge 2 I-20 over Savannah River	2	14-Nov-19	15-Nov-19	■ Construct Trestle 18 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1240	Construct T Finger 18 Phase 1 Bridge 2 I-20 over Savannah River	2	15-Nov-19	19-Nov-19	■ Construct T Finger 18 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1250	Construct Trestle 19 Phase 1 Bridge 2 I-20 over Savannah River	2	19-Nov-19	20-Nov-19	■ Construct Trestle 19 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1260	Construct Trestle 20 Phase 1 Bridge 2 I-20 over Savannah River	2	20-Nov-19	22-Nov-19	■ Construct Trestle 20 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1270	Construct Trestle 21 Phase 1 Bridge 2 I-20 over Savannah River	2	22-Nov-19	04-Dec-19	■ Construct Trestle 21 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1280	Construct T Finger 21 Phase 1 Bridge 2 I-20 over Savannah River	2	04-Dec-19	05-Dec-19	■ Construct T Finger 21 Phase 1 Bridge 2 I-20 over Savannah River																																																			
TRES1290	Construct Trestle 22 Phase 1 Bridge 2 I-20 over Savannah River	2	05-Dec-19	09-Dec-19	■ Construct Trestle 22 Phase 1 Bridge 2 I-20 over Savannah River																																																			

Closure Durations, Interim Completion, Substantial Completion, and Final Acceptance Proposal - Form M

FORM M

Closure Durations, Interim Completion, Substantial Completion, and Final Acceptance Proposal

Proposer Name: Flatiron Constructors, Inc.

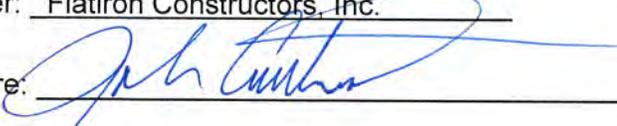
The Proposer shall complete the fields below for each portion (segment) of the Work for which the Proposer will commit to an Interim Completion Deadline.

Required fields are identified with an asterisk (*).

Interim Completion Deadline #1 - Open to Intersection Traffic (duration in Days from NTP 1 to Interim Completion Deadline #1)	821
Interim Completion Deadline #2 - Open to traffic for EB lanes (duration in Days from NTP 1 to Interim Completion Deadline #2)	939
Interim Completion Deadline #3 - Open to traffic for WB lanes (duration in Days from NTP 1 to Interim Completion Deadline #3)	610
* Substantial Completion Deadline (duration in Days from NTP 1 to achievement of Substantial Completion)	1071
* Final Acceptance Deadline (duration in Days after Substantial Completion to achievement of Final Acceptance)	63
* Total aggregate closure duration for EB lanes (in hours)	1380
* Total aggregate closure duration for WB lanes (in hours)	1380
* Closure duration for the single allowed Augusta Canal closure (in Days)	42
* Closure duration for allowed Augusta Canal towpath closure #1 (in Days)	14
* Closure duration for allowed Augusta Canal towpath closure #2 (in Days)	14

Date: September 21, 2018

Proposer: Flatiron Constructors, Inc.

Signature: 

Title: Vice President