I-95 and SR 896 Interchange

DelDOT Contract No. T201609002

Transportation Management Plan

Draft

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Submitted by

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Table of Contents

1 Project Description

1.1 Introduction

The Interstate Route 95 (I-95) and Delaware State Route 896 (SR 896) interchange project will upgrade a major congestion point along the I-95 and SR 896 corridors. The project will improve the operational efficiency and safety of the interchange by providing new ramps to accommodate the heavy traffic along southbound I-95 leading up to the northbound and southbound exits for SR 896. **Figure 1** locates the project site on a state map.

Figure 1. Project Site Location

This document addresses the safety and mobility impacts of the I-95 and SR 896 interchange project and outlines strategies to manage these impacts. According to DelDOT's *Work Zone Safety and Mobility Procedures and Guidelines*, this is a "significant project," as the project is on an interstate and will occupy a location for more than three days with either intermittent or continuous lane closures. Since this project is significant, a Type B Transportation Management Plan (TMP) is required. This document includes all the required components of a Type B TMP, including a Temporary Traffic Control Plan (TTCP), Public Information Plan (PIP) and Transportation Operation Plan (TOP), and a quantitative Work Zone Impact Assessment.

This TMP is a dynamic document that will be updated throughout the project. DelDOT's design consultant (Century Engineering, Inc.) and subconsultant (Rybinski Engineering) will be responsible for completing all revisions to the TMP document throughout the project, whether the changes are proposed by DelDOT or the selected contractor. The TMP kickoff meeting minutes are provided in **Appendix A**. The current version of this TMP reflects the status at the completion of the preliminary design stage of the project.

1.2 Project Background

The I-95 and SR 896 interchange is being modified to help relieve congestion along the I-95 and SR 896 corridors. The weaving traffic along the SR 896 southbound bridge over I-95 is especially problematic; vehicles entering SR 896 southbound on Ramp C (**Figure 2**) back up, causing traffic queues to extend for over a mile to the north on I-95. The heavy traffic congestion and substandard ramp alignments have contributed to more than 400 crashes over three years. **Figure 2** shows the existing conditions. The operational and safety analysis led to the development of three alternatives to improve the interchange. The alternatives were presented to the public; ultimately Alternative 1, **Figure 3**, was selected.

Figure 2. Existing Conditions

Figure 3. Preferred Improvement Alternative

1.3 Project Schedule and Timeline

The project schedule and timeline are designed to minimize effects on the traveling public. Construction is expected to begin in FY 2025 and last three years.

- Preliminary design: 2019 - 2020
- Semi-final design: 2020 - 2021
- Final design: 2021 - 2022
- PS&E: 2023
- Construction: 2025 - 2027

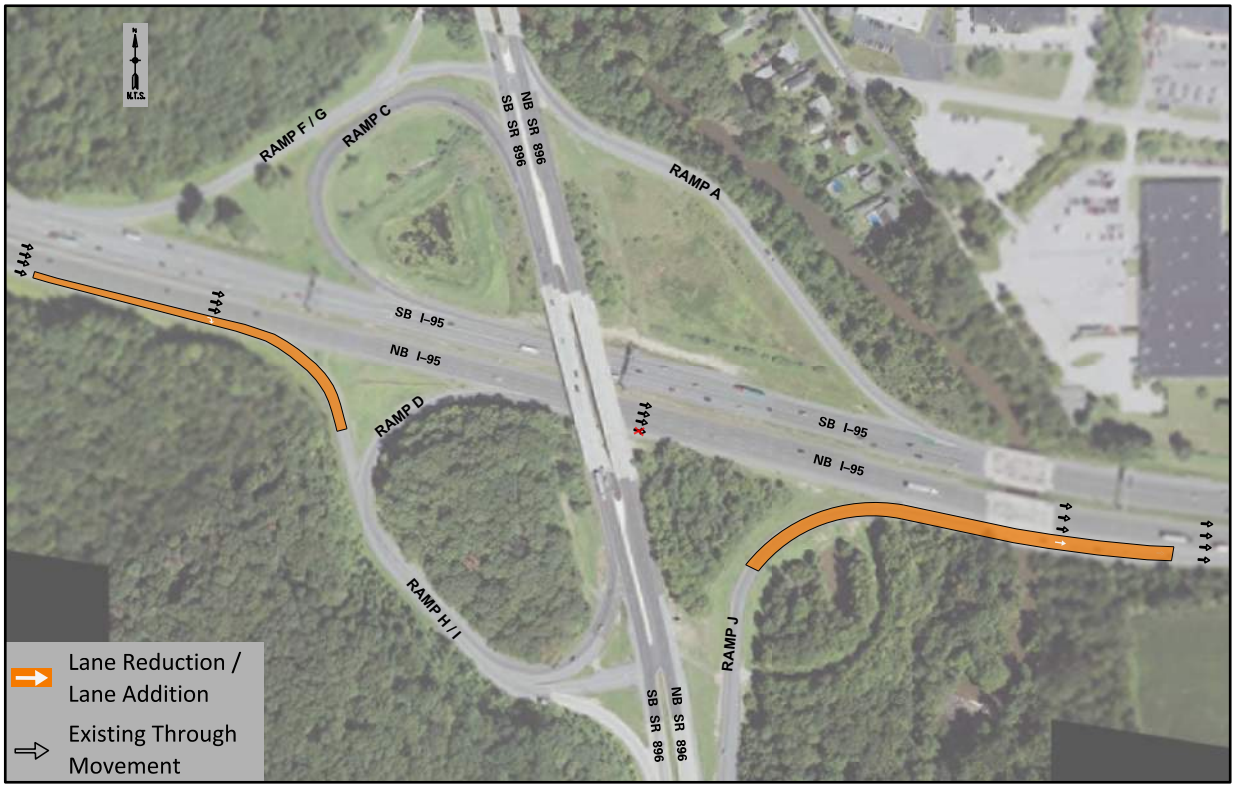
1.4 Related Projects

Three interim projects at the interchange and a fourth project on SR 896 south of the interchange will affect the I-95 and SR 896 interchange project.

1.4.1 I-95 Northbound Lane Drop

The I-95 northbound lane drop, as shown in **Figure 4**, will drop the fourth I-95 lane at Ramp I (I-95 northbound to SR 896 southbound). Three I-95 northbound lanes will be carried through and the fourth lane will be reintroduced at Ramp J (SR 896 northbound to I-95 northbound). Construction began in January 2020.

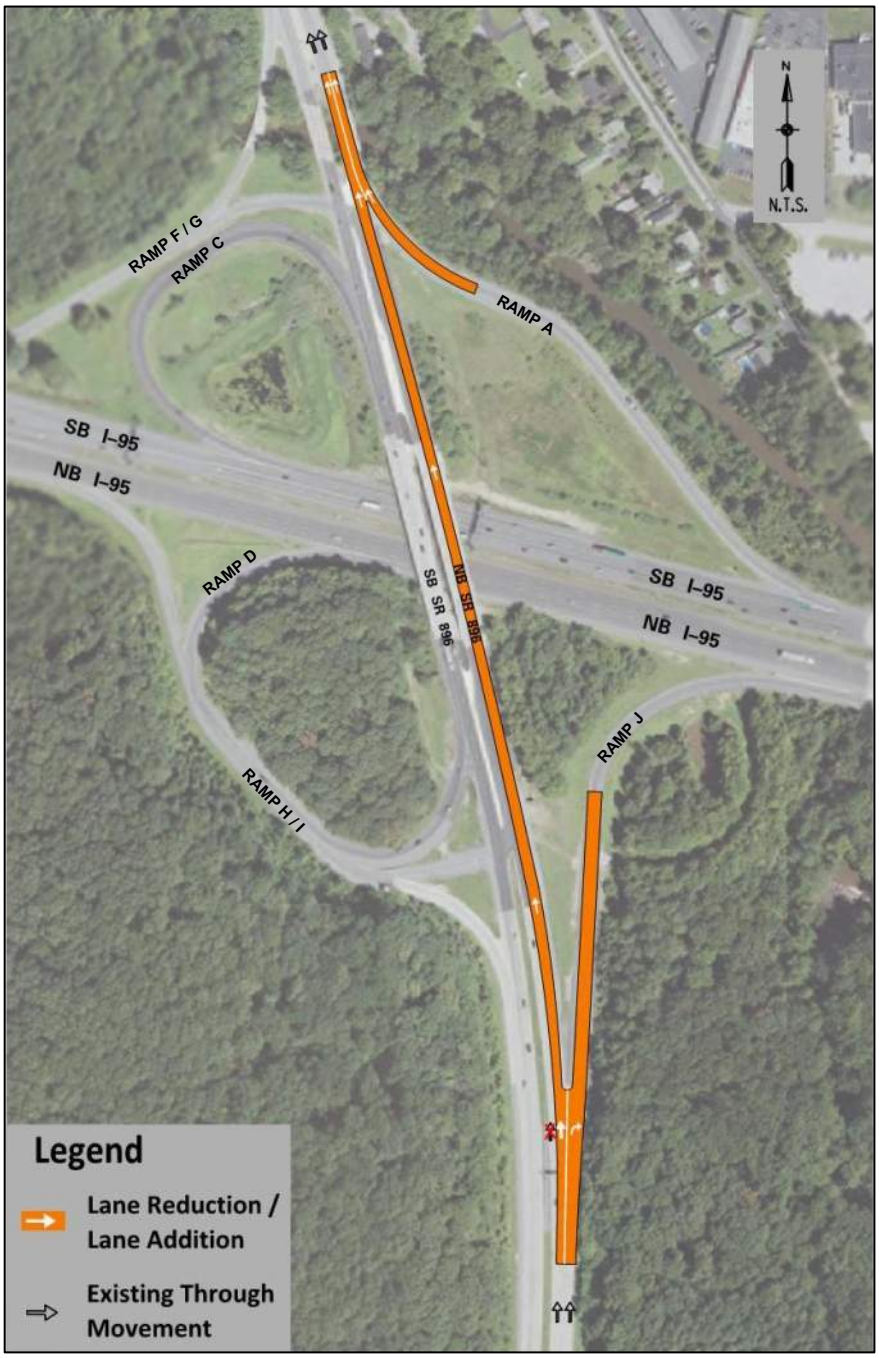
Figure 4. I-95 Northbound Lane Drop Project



1.4.2 SR 896 Northbound Lane Drop

The SR 896 northbound lane drop, as shown in **Figure 5**, will drop the second SR 896 northbound lane at Ramp J (SR 896 northbound to I-95 northbound), carry one SR 896 northbound lane through the interchange, and reintroduce the second lane at Ramp A. Construction is expected to occur in 2020.

Figure 5. SR 896 Northbound Lane Drop Project



1.4.3 I-95 Southbound Lane Drop

The I-95 southbound lane drop, as shown in **Figure 6**, consists of converting the outside (right-most) I-95 southbound travel lane to an Exit Only lane and maintaining three I-95 southbound through lanes (two EZ Pass Only lanes and one Cash lane). The Exit Only lane will become a two-lane exit (at approximately 0.8 miles north of the Ramp A gore), providing one exit lane for Ramp A and one exit lane for Ramp C. The Exit Only lane will be separated from the I-95 southbound through lanes by means of pavement markings and rumble strips. In addition, Guide Signs along I-95 southbound in advance of the Ramp A and Ramp C exits will be revised to be consistent with the proposed lane utilization. Construction is expected to occur in 2020.

Figure 6. I-95 Southbound Lane Drop

1.4.4 SR 896 and Old Baltimore Pike Improvements

SR 896 and Old Baltimore Pike improvements, as shown in **Figure 7**, will widen SR 896 to three through lanes from the I-95 interchange to south of Old Baltimore Pike. The additional capacity will improve operations at this intersection. Construction is expected to occur prior to the I-95 and SR 896 interchange project.

Figure 7. SR 896 and Baltimore Pike Improvements

2 Existing Conditions

2.1 Existing Roadway Characteristics

2.1.1 I-95

Within the interchange study area, I-95 is an eight-lane divided limited-access interstate facility with a posted speed limit of 65 mph. Access between I-95 and SR 896 is provided by ramps.

At the interchange, northbound I-95 consists of four through lanes and one exit lane for the combined ramps to northbound SR 896 (Ramp H) and southbound SR 896 (Ramp I). Downstream on northbound I-95, Ramp D from southbound SR 896 merges onto northbound I-95 with an acceleration lane under the SR 896 bridges (1-703 and 1-703A). Further down, Ramp J from northbound SR 896 merges onto northbound I-95 with an acceleration lane.

The connection from Ramp H to northbound SR 896 is a stop-controlled T intersection with an acceleration lane in the northbound direction. Motorists from northbound I-95 who wish to head north on SR 896 must stop at the end of Ramp H and then turn left to enter the acceleration lane along northbound SR 896.

Southbound I-95 at the interchange consists of four through lanes and one exit lane for Ramp A to northbound SR 896. Further down southbound I-95 is another exit lane for Ramp C, which merges onto an acceleration lane on southbound SR 896. This acceleration lane is a weave lane that also serves as the deceleration lane for Ramp D. Further downstream, the single-lane ramp that combines Ramp F from southbound SR 896 and Ramp G from northbound SR 896 merges onto southbound I-95 through an acceleration lane.

To reach Ramp G to southbound I-95, traffic on northbound SR 896 must turn left at an unsignalized intersection, stopping to yield to oncoming traffic on southbound SR 896. Then traffic on Ramp F from southbound SR 896 yields to Ramp G traffic and merges with it before entering southbound I-95.

Southbound I-95 divides into four lanes in advance of the toll plaza located about one mile south of the SR 896 interchange. The two leftmost lanes are for E-ZPass holders only, while the two rightmost lanes are for cash and E-ZPass holders. Traffic from Ramp F and Ramp G do not have access to the southbound I-95 E-ZPass-only lanes and must go through the cash/E-ZPass lanes.

2.1.2 SR 896

Within the study area, SR 896 (South College Avenue) is a four-lane divided roadway with a posted speed limit of 35 mph to the north of I-95 and 50 mph to the south of I-95. It allows local traffic, as well as traffic from the commercial and employment centers in Newark and Glasgow (including the University of Delaware), to access I-95. Within the study area, SR 896 operates as an urban arterial.

The nearest SR 896 traffic signal north of the interchange is at Welsh Tract Road. Welsh Tract Road is a two-lane roadway with a posted speed limit of 35 mph. The nearest traffic signal south of the interchange is at Old Baltimore Pike, a two-lane roadway with a posted speed limit of 35 mph.

2.2 Local Community and Businesses

The I-95 and SR 896 interchange is located in a developed area near schools, the University of Delaware, businesses, and residential communities, particularly along SR 896 north of the interchange which is a heavy commuter route. Outreach to inform stakeholders and businesses about how their travel will be affected will help this project proceed smoothly, with as little inconvenience to travelers as possible.

2.3 Transit

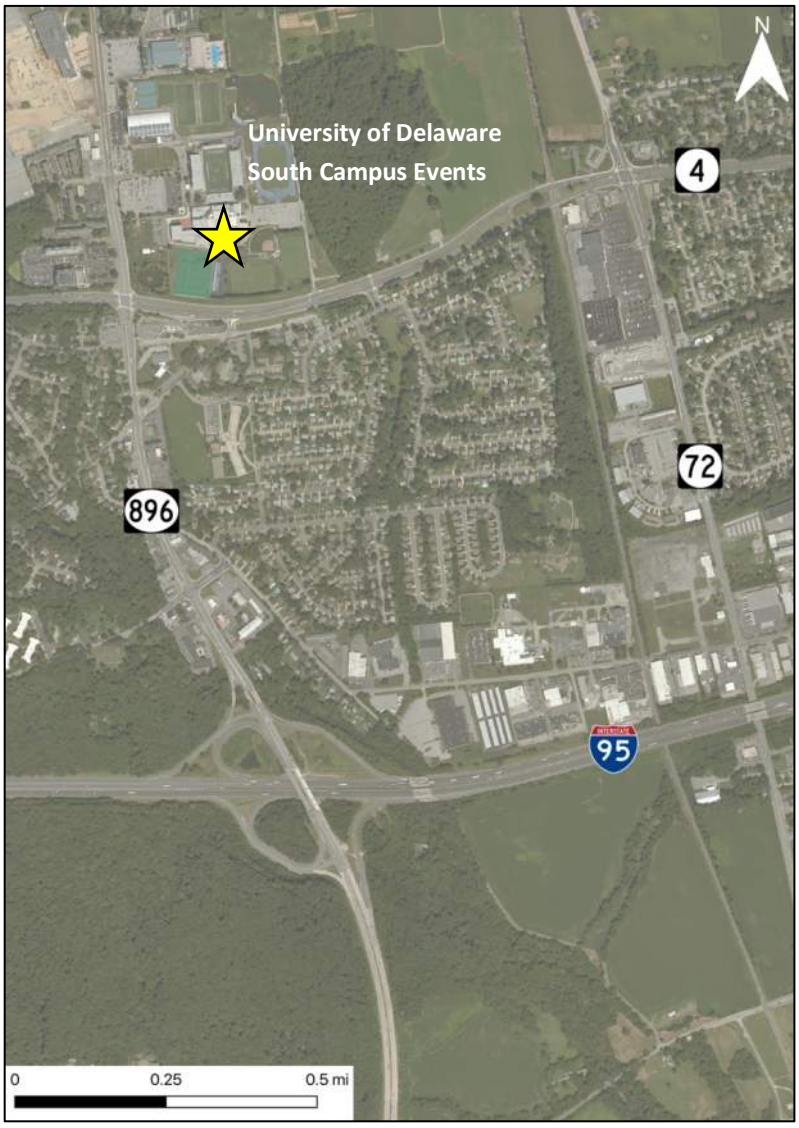
The Delaware Authority for Regional Transit (DART) has several bus routes along the SR 896 corridor and a few bus routes along I-95. The bus routes that may be affected by this project are shown in **Figure 8**.

2.4 Local and Regional Events

Events at the University of Delaware's South Campus area (**Figure 9**) during construction, such as athletic events, concerts, and graduation ceremonies, are likely to bring more traffic than usual.

Figure 8. DART Bus Routes

Figure 9. University of Delaware Events Location



2.5 Crash Data

DelDOT provided crash data and summary statistics from the Crash Analysis Reporting System (CARS) for the period from September 1, 2013, to August 31, 2016. The corresponding police reports outline the details of each crash. The team verified the crash types in the CARS summary tables by following Model Minimum Uniform Crash Criteria (MMUCC) standards adopted by the National Highway Traffic Safety Administration (NHTSA). The MMUCC standards define the crash types and the team verified each crash type in the CARS summary tables then adjusted crash types when they did not match what police

reports described. The MMUCC crash type definitions can be found in **Appendix B**. The crash data and police reports were used to identify and assess the following:

- Locations of crashes by severity and crash type
- Identification of crash clusters and the attributes contributing to each.

Figure 10 provides plots of the crash locations on aerial photographs, including data on crash types. **Appendix B** provides detailed crash summary tables. Review of this detailed information identified the following crash trends of particular interest:

- In the three-year period studied, 405 reported crashes occurred within the project area.
- Of these crashes, 213 (53%) occurred along I-95, 64 (15%) occurred on the interchange ramps, and 128 (32%) occurred along SR 896.
- Of the 405 crashes, 94 (23%) resulted in one or more injuries, for a total of 140 injuries.
- There were two fatalities, both involving alcohol.
- The total number of crashes in the study area has increased by approximately 11% per year.
- The number of crashes per year on the interchange ramps has remained relatively constant. The annual increases have been driven by an increase of approximately 7% per year along I-95 and approximately 14% per year along SR 896.

Table 1 presents a summary of the crash data for the study area.

Table 1. Crash Data Summary, September 2013 to August 2016

Crash Type	# of Crashes
Total crashes	405
Fatal crashes	2
Total alcohol-related crashes	14
Total non-alcohol-related crashes	391
Total fatalities	2
Total pedestrian fatalities	0
Total pedestrian injuries	1
Total pedestrian crashes	1
Total motorcycle crashes	1
Total bicycle crashes	0

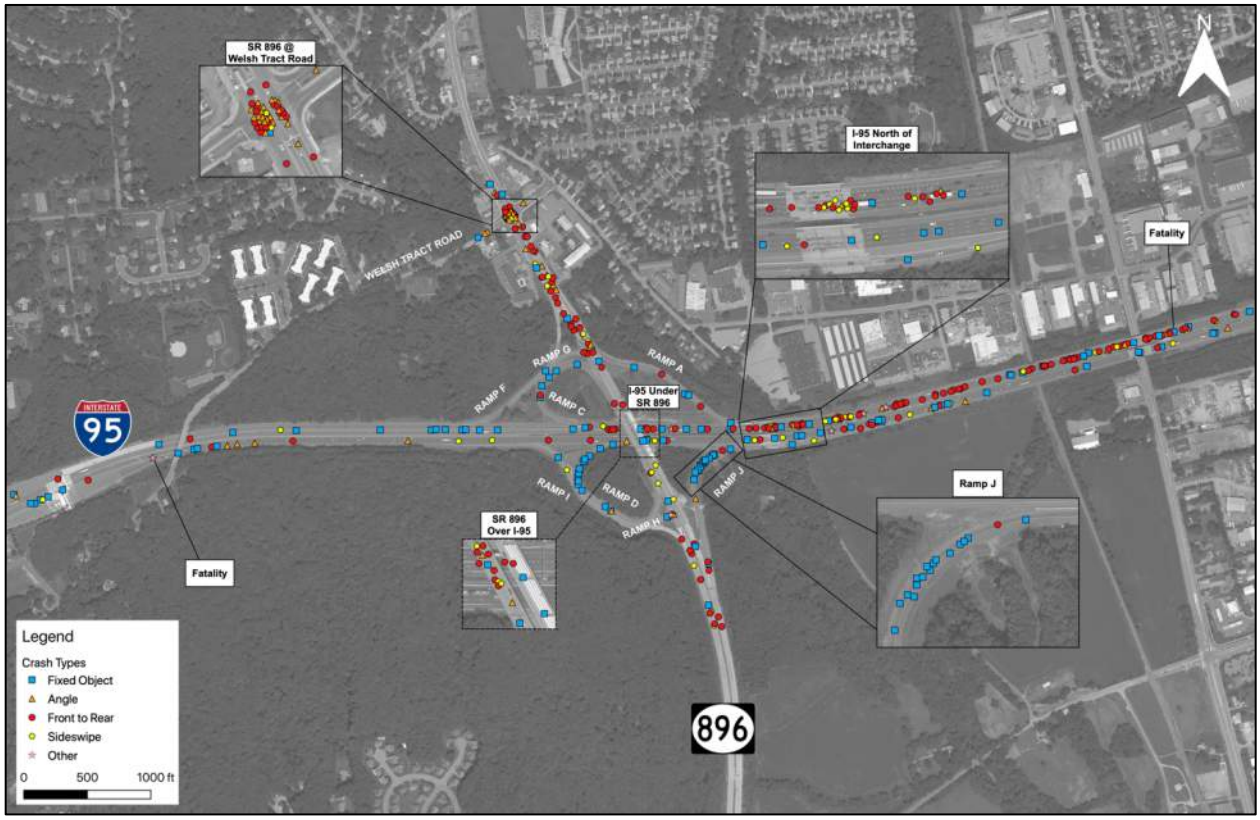
The study identified several crash clusters:

- Ramp J, from northbound SR 896 to northbound I-95
- Ramp D, from southbound SR 896 to northbound I-95
- Southbound I-95 approaching the interchange
- The signalized intersection at SR 896 and Welsh Tract Road

Most crashes on the interchange ramps occurred when vehicles ran off the road at sharp curves and hit a fixed object. Crashes in wet surface conditions occurred at significantly higher rates on the ramps than at other locations in the study area. These findings indicate that drivers are attempting to negotiate sharp ramp curves at speeds above the safe limit.

The majority of crashes along southbound I-95 approaching the interchange were rear-end crashes. A high concentration of side-swipe crashes also occurred in this area. These findings indicate that drivers are aggressively changing lanes in advance of the exit ramps to SR 896, most likely because of the southbound I-95 toll plaza lane split and the heavy traffic volume trying to exit SR 896. This situation may be causing drivers to abruptly decelerate, thus creating a high concentration of rear-end crashes.

Figure 10. Project Area Crash Types and Locations



2.6 Existing Traffic Data

2.6.1 Traffic Data Collection

Intersection turning movement counts (ITMCs), including pedestrians and bicycles, were performed in September 2016. The ITMCs covered 13 hours, between 6:15 AM and 7:15 PM, during typical weekdays (Tuesday, Wednesday, and Thursday) while schools were in session. An additional AM and PM peak period count was conducted at the Welsh Tract Road intersection in October 2016. The locations selected for counts are major signalized intersections with high volumes of traffic where the interchange project could bring increases or decreases in traffic volume.

Historical traffic data on the I-95 corridor and the interchange ramps came from the Integrated Transportation Management System (ITMS) maintained by the DelDOT Transportation Management Center (TMC). Wavetronix devices provided real-time data on vehicle counts, speeds, and classification by length. Data from system loop detectors, also maintained by the TMC, were used to supplement and validate the ITMCs.

The 2016 traffic volumes derived from these data sources are shown in **Figure 11**. The 2016 pedestrian and bicycle volumes are shown in **Figure 12**. The semi-final TMP will update traffic counts with 2019 information.

Figure 11. 2016 Traffic Volumes

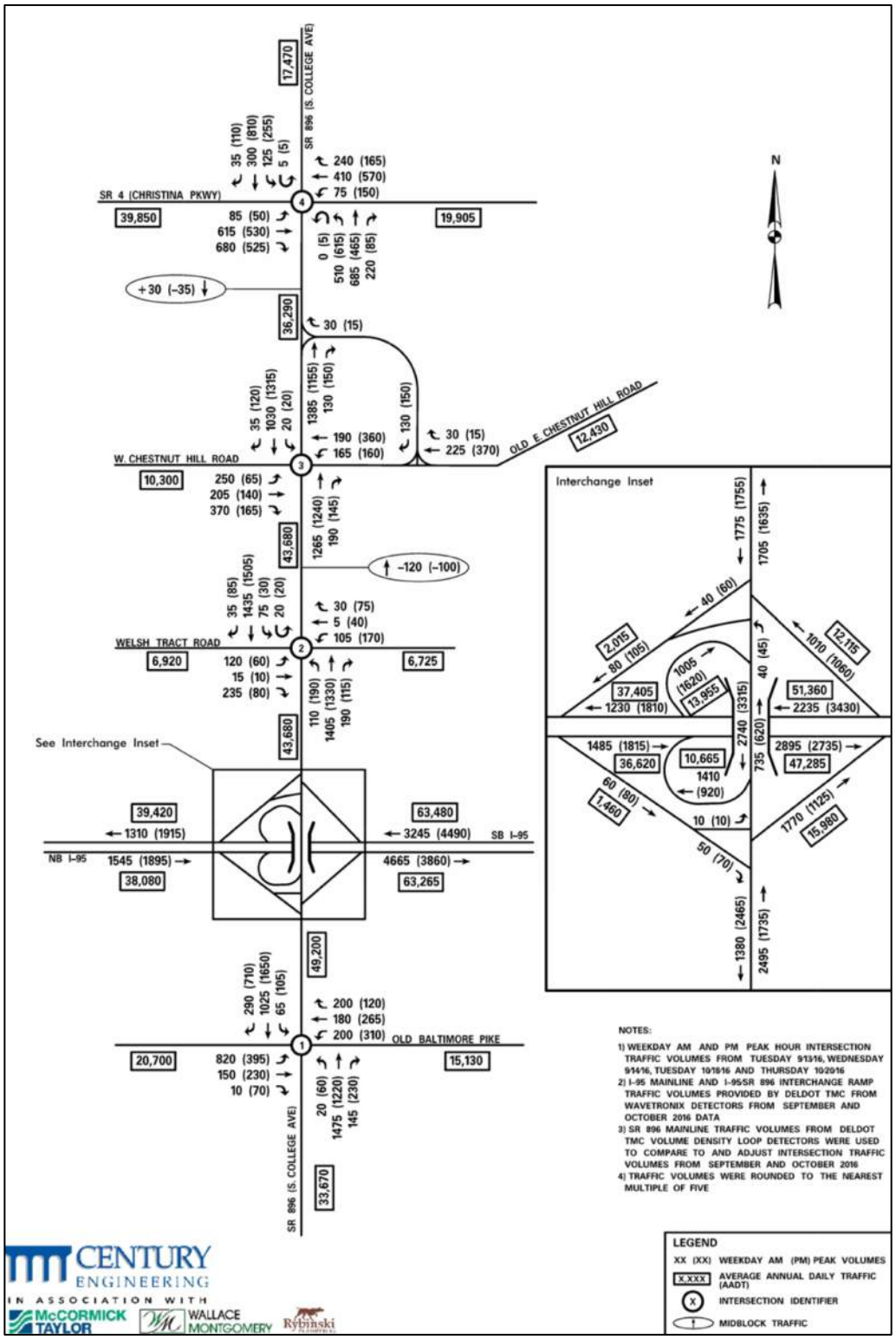
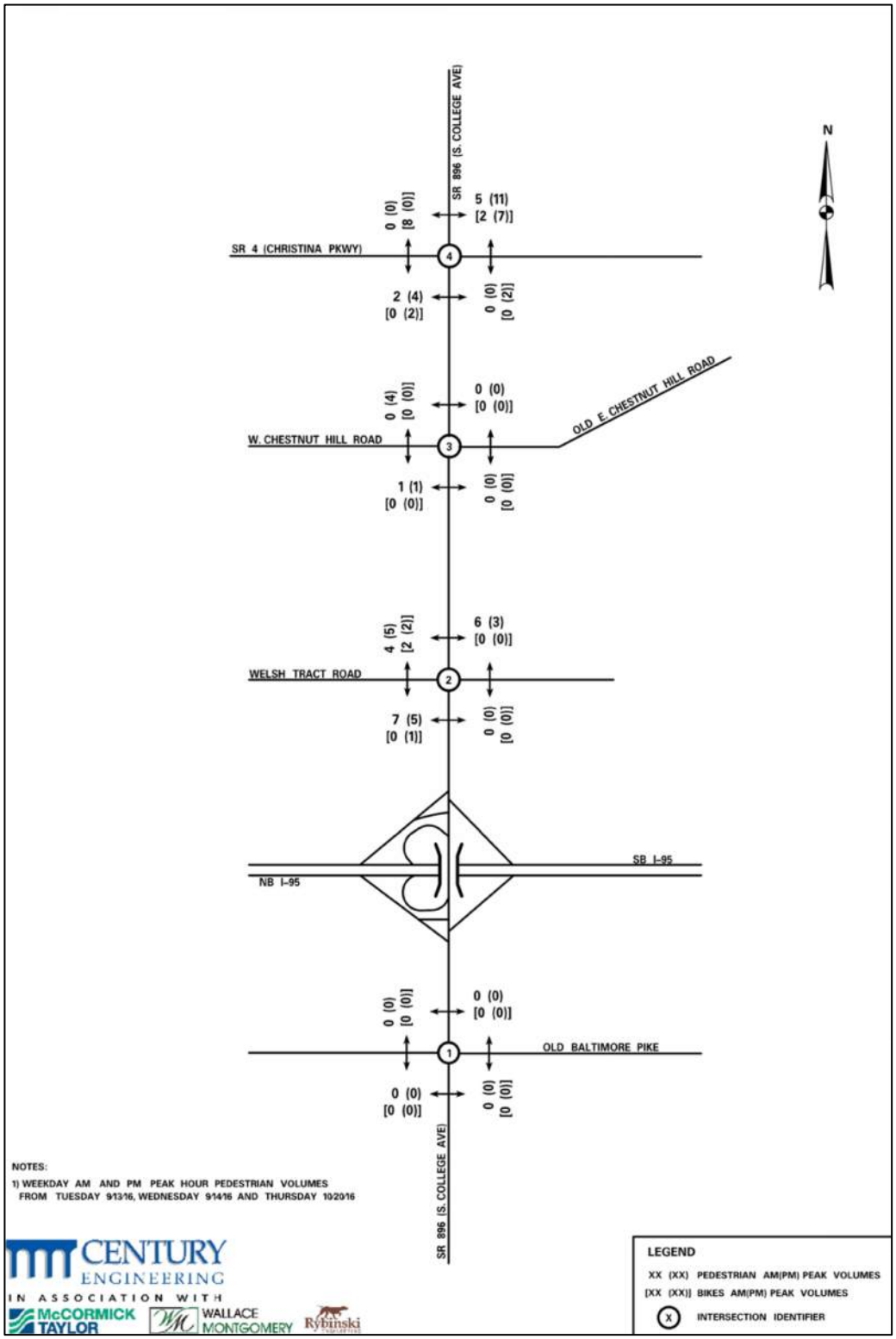


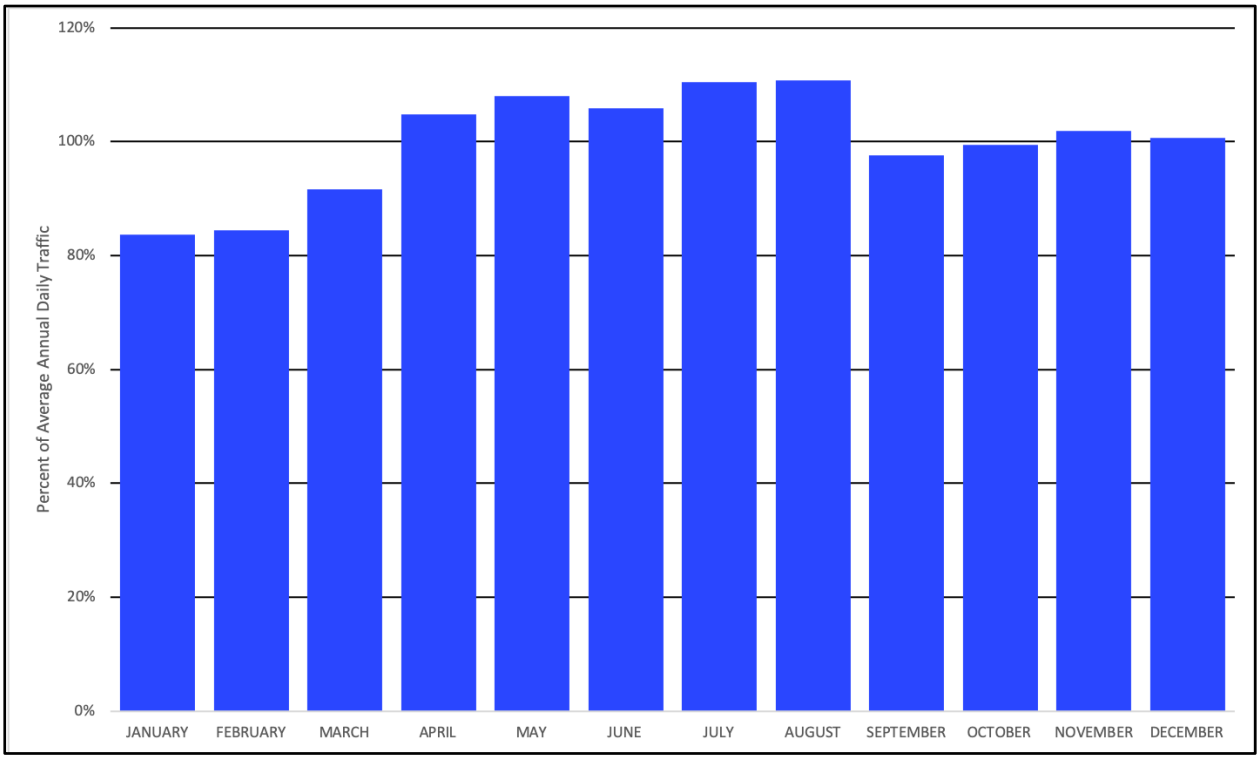
Figure 12. 2016 Pedestrian and Bicycle Traffic Volumes



2.6.2 Traffic Variation

A review of the average daily volumes by month, as shown in **Figure 13**, indicates higher traffic volumes from April through August, with the lowest volumes in January and February. Higher volumes during the late spring and summer months can likely be attributed to increased travel during spring break and summer vacation.

Figure 13. I-95 Average Daily Traffic Distribution, by Month



Figures 14 and **15** show the I-95 northbound and southbound hourly volumes by day of the week. Volumes are relatively consistent Monday through Thursday. Friday volumes follow a typical weekday pattern in the morning but are higher in the afternoon than on other weekdays. Saturday and Sunday hourly volumes follow a bell curve pattern with peaks in the late morning on Saturdays and in the early afternoon on Sundays. The high weekend volumes can be attributed to through volumes on I-95 rather than to traffic to or from SR 896.

Figures 16 and **17** show the SR 896 northbound and southbound hourly volumes by day of the week. Weekday volumes are relatively consistent. Hourly volumes on Saturday and Sunday follow a bell curve pattern; peaks are in the early afternoon on Saturdays and in the late afternoon on Sundays. Unlike I-95, SR 896 has much lower peak volumes on weekends than on weekdays.

Figure 14. I-95 Northbound Hourly Volumes by Day of Week

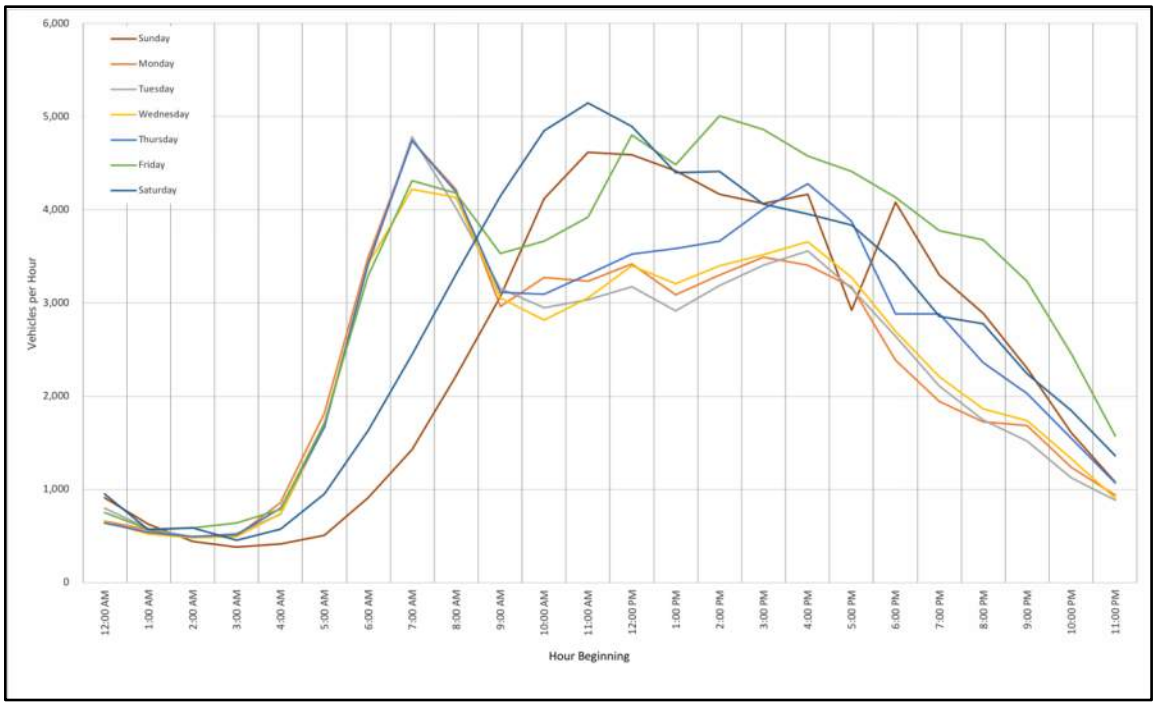


Figure 15. I-95 Southbound Hourly Volumes by Day of Week

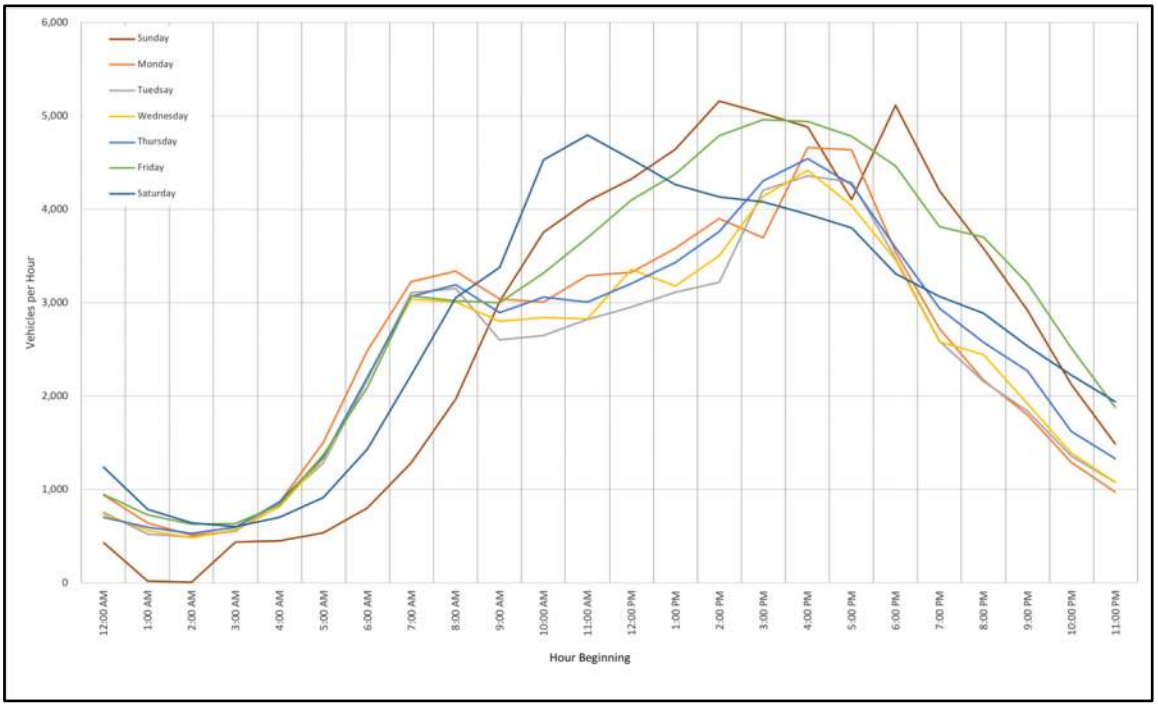


Figure 16. SR 896 Northbound Hourly Volumes by Day of Week

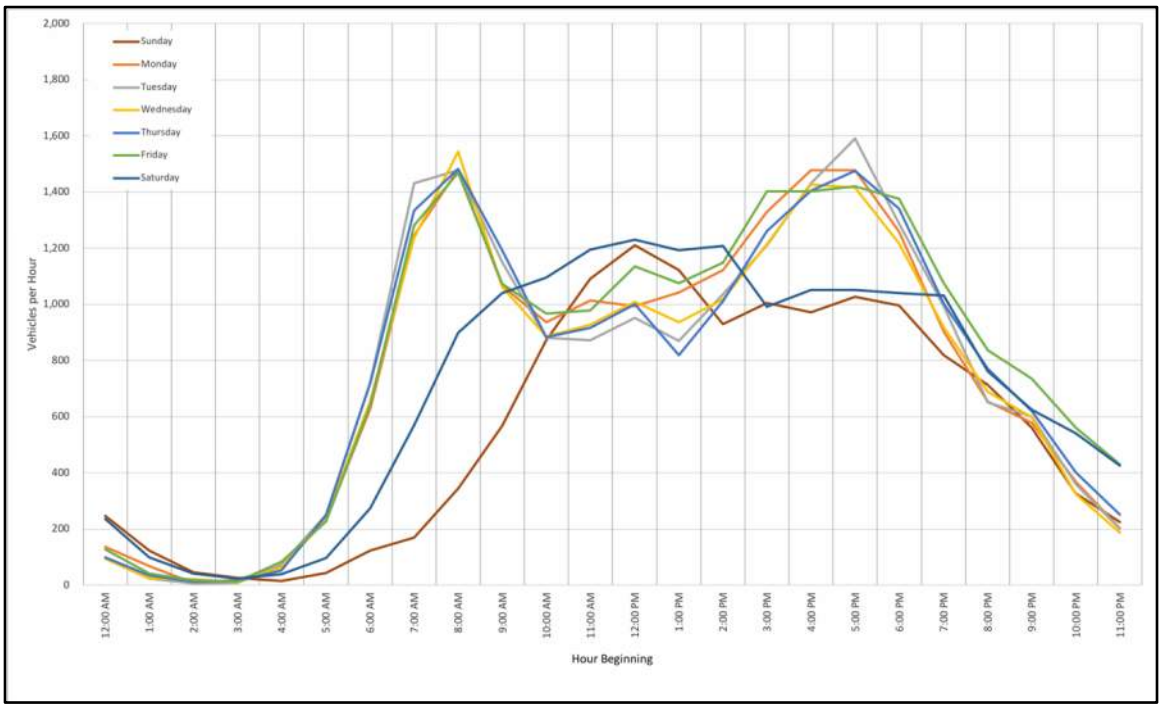
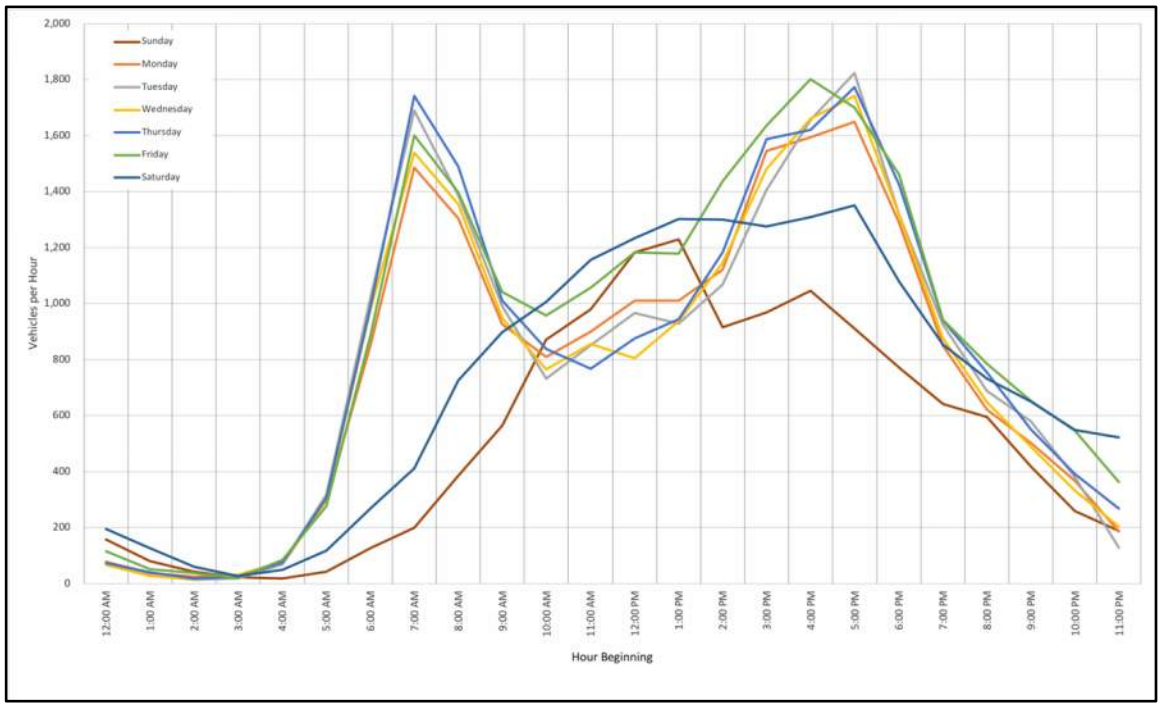


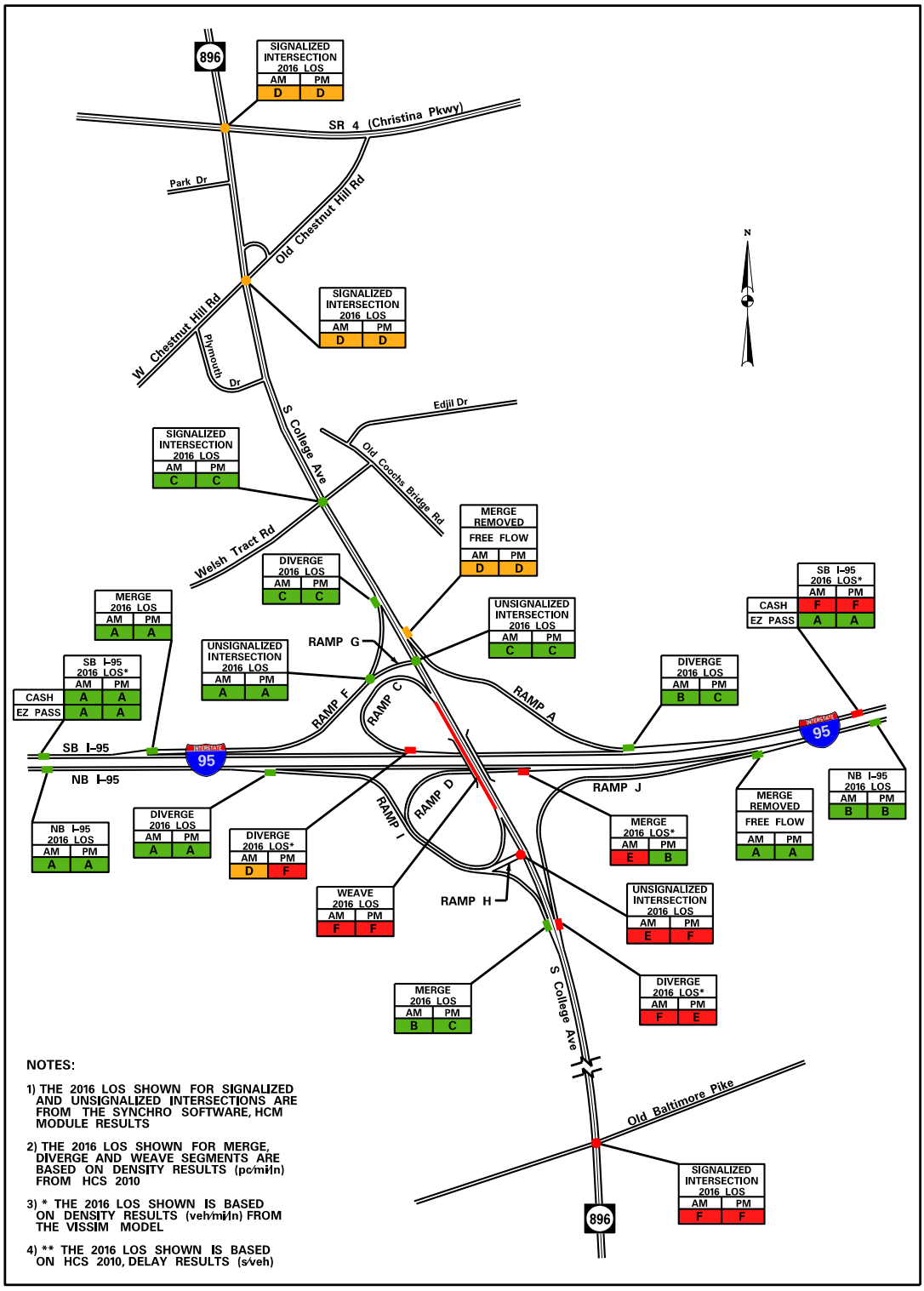
Figure 17. SR 896 Southbound Hourly Volumes by Day of Week



2.7 Existing Traffic Operations

To analyze traffic operations, models of existing traffic patterns were created using Synchro, Highway Capacity Software (HCS), and VISSIM. The models include a capacity and level of service (LOS) analysis for the study area during weekday AM and PM peak periods. Synchro was used for SR 896 and its intersections. HCS was used to evaluate traffic entering and exiting I-95. Because HCS is limited in its ability to model oversaturated conditions, VISSIM was used to more realistically measure the delay of I-95. oversaturated sections of I-95. The results of the analyses, which include changes from the I-95 and SR 896 interim projects described in Section 1.4, are illustrated in **Figure 18**. Details are in the 2017 traffic operations analysis report prepared by Wallace Montgomery & Associates.

Figure 18. LOS Summary with Interim Improvements, 2016 Data



3 Work Zone Impact Assessment

3.1 Introduction

A Work Zone Impact Assessment is performed to determine the type, severity, and extent of the anticipated work zone impacts of various project alternatives. Both a qualitative assessment and a quantitative assessment are required for a Type B TMP. The purpose of the Work Zone Impact Assessment is to identify the impacts of proposed lane closures or detours in the study area and to promote more efficient and effective construction staging.

This section presents a qualitative and quantitative analysis of operations during construction, describes the proposed construction phasing, outlines traffic maintenance strategies, discusses lane closure restrictions, and details road user costs.

3.2 Projected Traffic Volumes During Construction

Updated traffic data will be obtained from the TMC during semi-final design. The updated volumes will be compared to the 2016 actual data and the previously forecasted 2025 volumes provided by DelDOT to monitor the projected traffic growth. This traffic growth review will be used to estimate the base construction year traffic volumes to be used for the Work Zone Impact Assessment. The 2025 projected traffic volumes and Level of Service summary are shown in **Figure 19** and **Figure 20**, respectively.

Figure 19. Projected 2025 Traffic Volumes

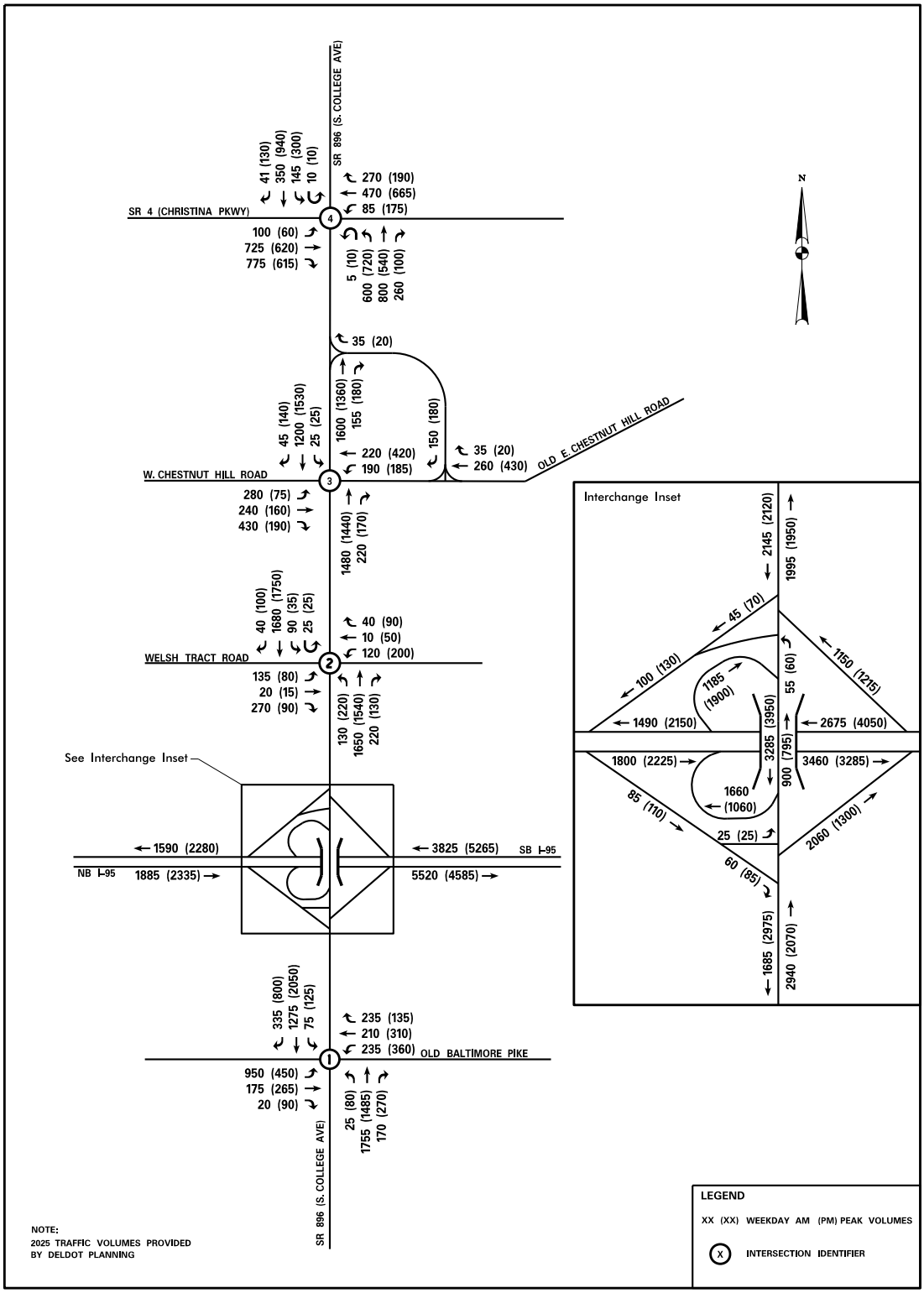
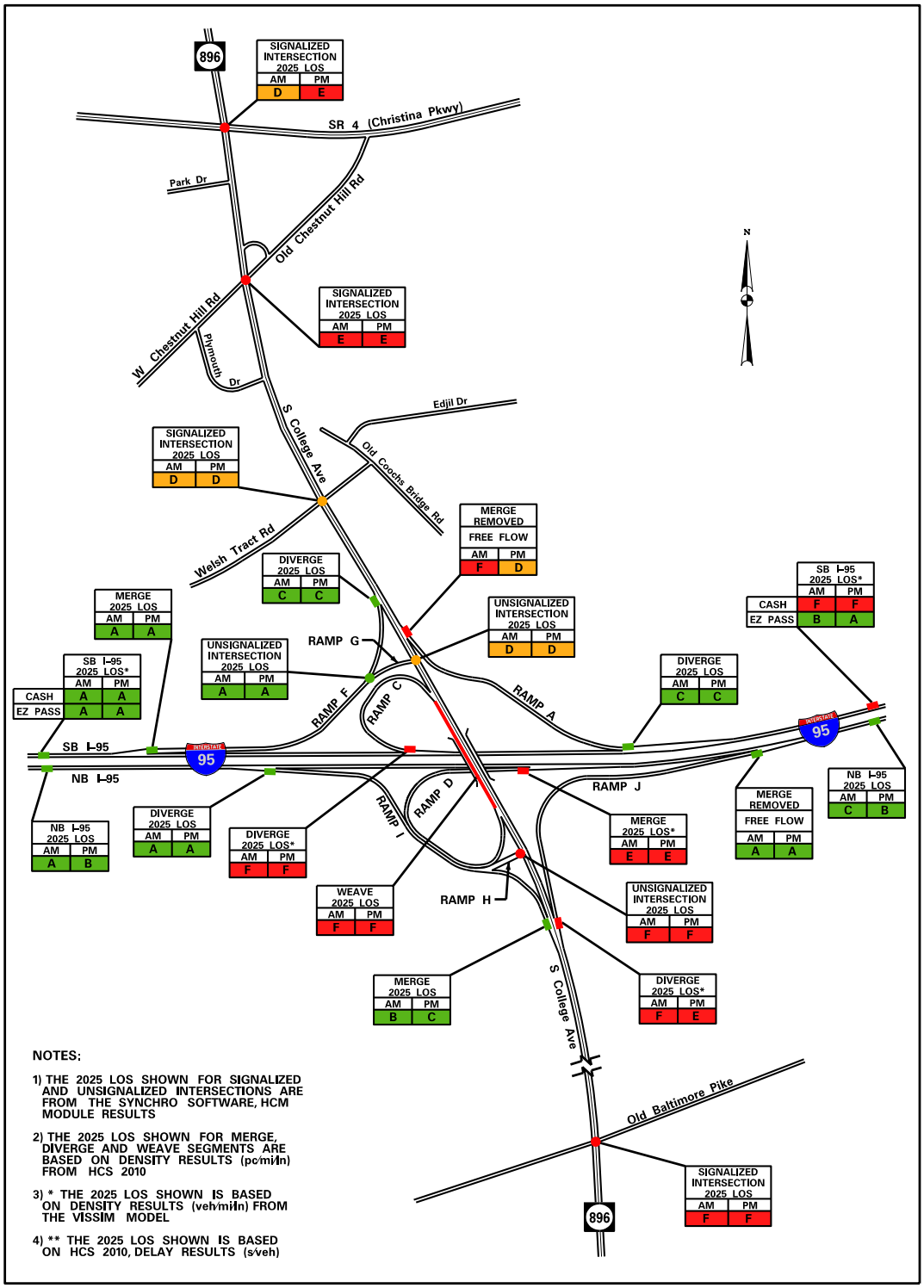


Figure 20. 2025 LOS Summary (With Interim Improvements)



3.3 Construction Phases

3.3.1 Approach

The development of the construction phasing focused on how to build portions of the new interchange without major impacts to the high-volume interchange ramps. As illustrated below in **Figures 21** and **22**, Ramp A, Ramp C, Ramp D, and Ramp J all have peak hour volumes over 1,000 vehicles. Due to the already congested arterial system on SR 896, SR 4, and Old Baltimore Pike, it is not feasible to detour these ramps other than during off-peak hours. On the other hand, Ramp F, G and Ramp H, I peak hour volumes are typically less than 100 vehicles per hour and long-term detours would have little impact to the surrounding roadway network.

Figure 21. Interchange AADT

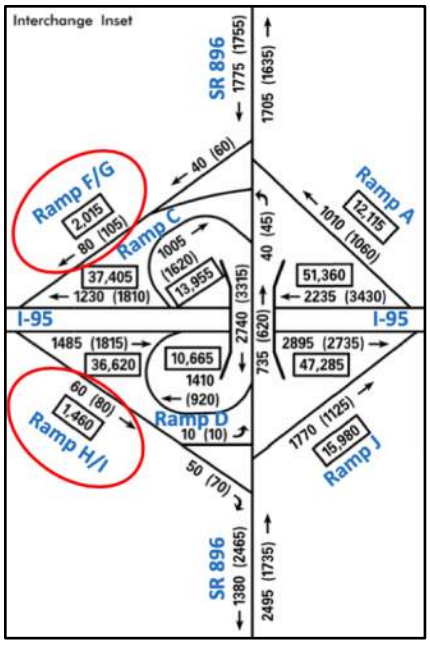
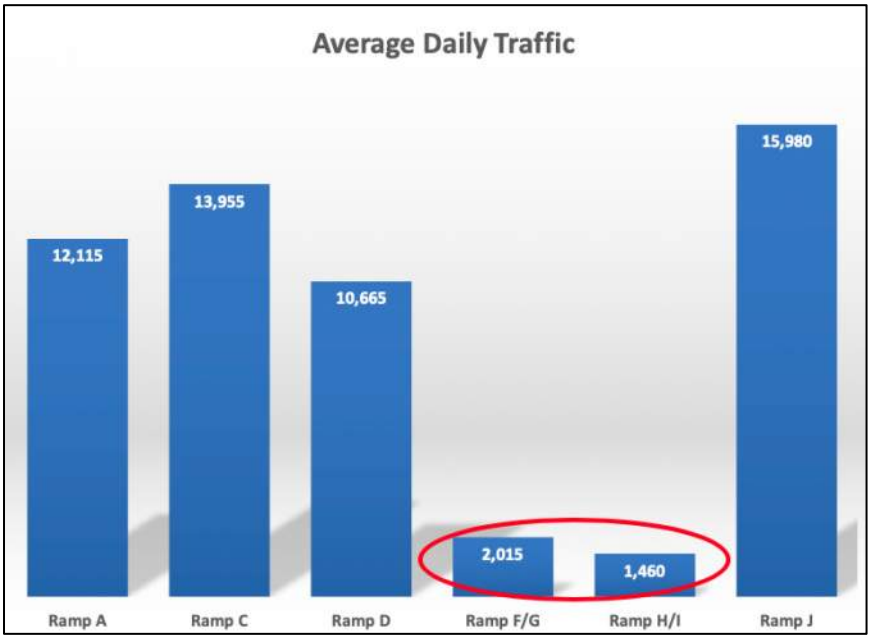


Figure 22. Interchange Ramp ADT

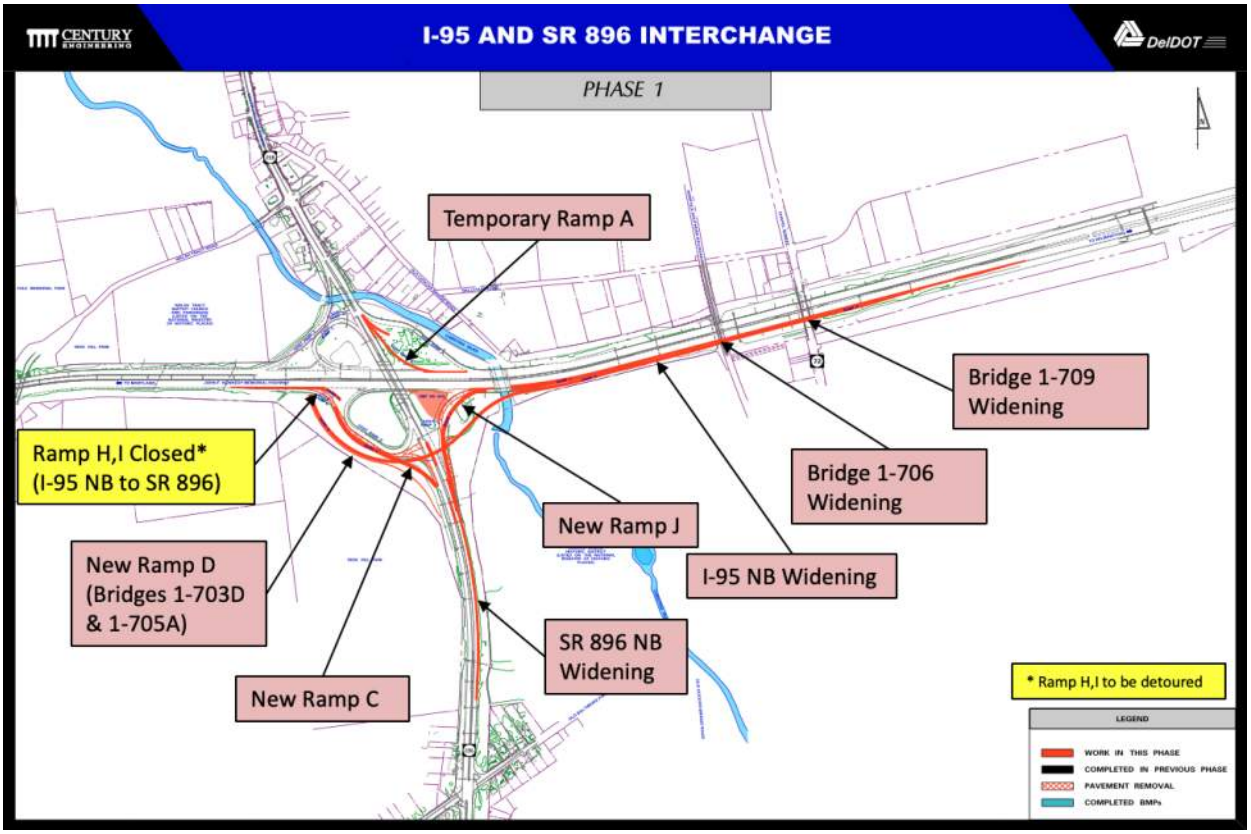


The I-95 and SR 896 interchange project is expected to be completed in the five phases described below and illustrated in **Figures 23** through **29**.

3.3.2 Construction Phase 1

During Phase 1, a temporary Ramp A will be constructed, maintaining access from southbound I-95 to northbound SR 896. New Ramp D will be constructed, which includes construction of new Bridges 1-703D over SR 896 and 1-705A over the Christiana River. To accommodate the new Ramp D, northbound I-95, including Bridges 1-706 over Norfolk Southern Railway and 1-709 over South Chapel Street (SR 72) will be widened. A section of Ramp C will be constructed on the southeastern end of the interchange. New Ramp J will be constructed to improve access from northbound SR 896 to northbound I-95.

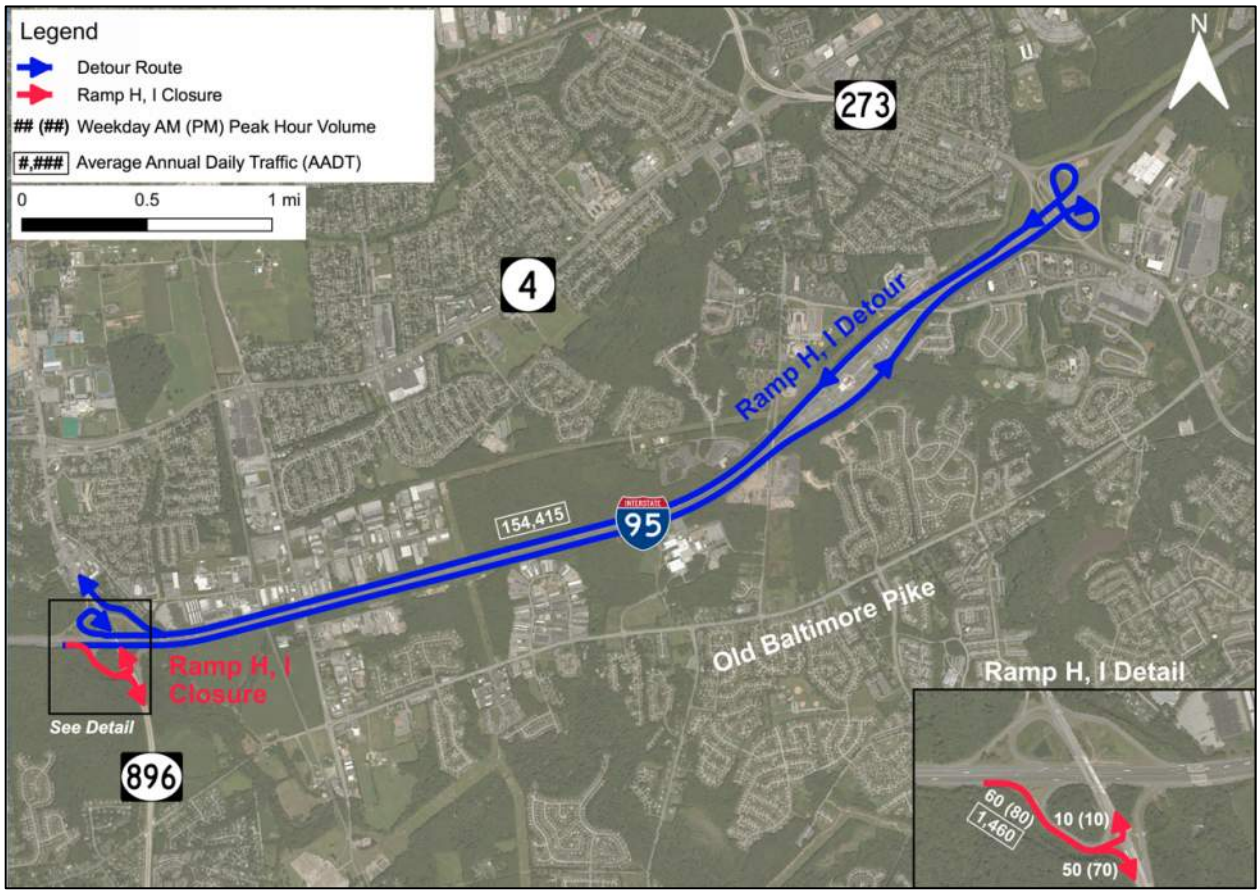
Figure 23. Construction Phase 1



Ramp J will be closed and detoured during nighttime hours to complete the tie-ins to New Ramp J. The Ramp J detour will be provided during semi-final design.

Ramp H, I will be closed and detoured via I-95 northbound and exit at the SR 273 interchange (Exit 3B). The detour route is shown in **Figure 24**. The signing will then direct the detoured traffic onto I-95 southbound back to the SR 896 interchange. Ramp H, I will reopen following Phase 5. The Ramp H, I detour signing plan is provided in **Appendix C**.

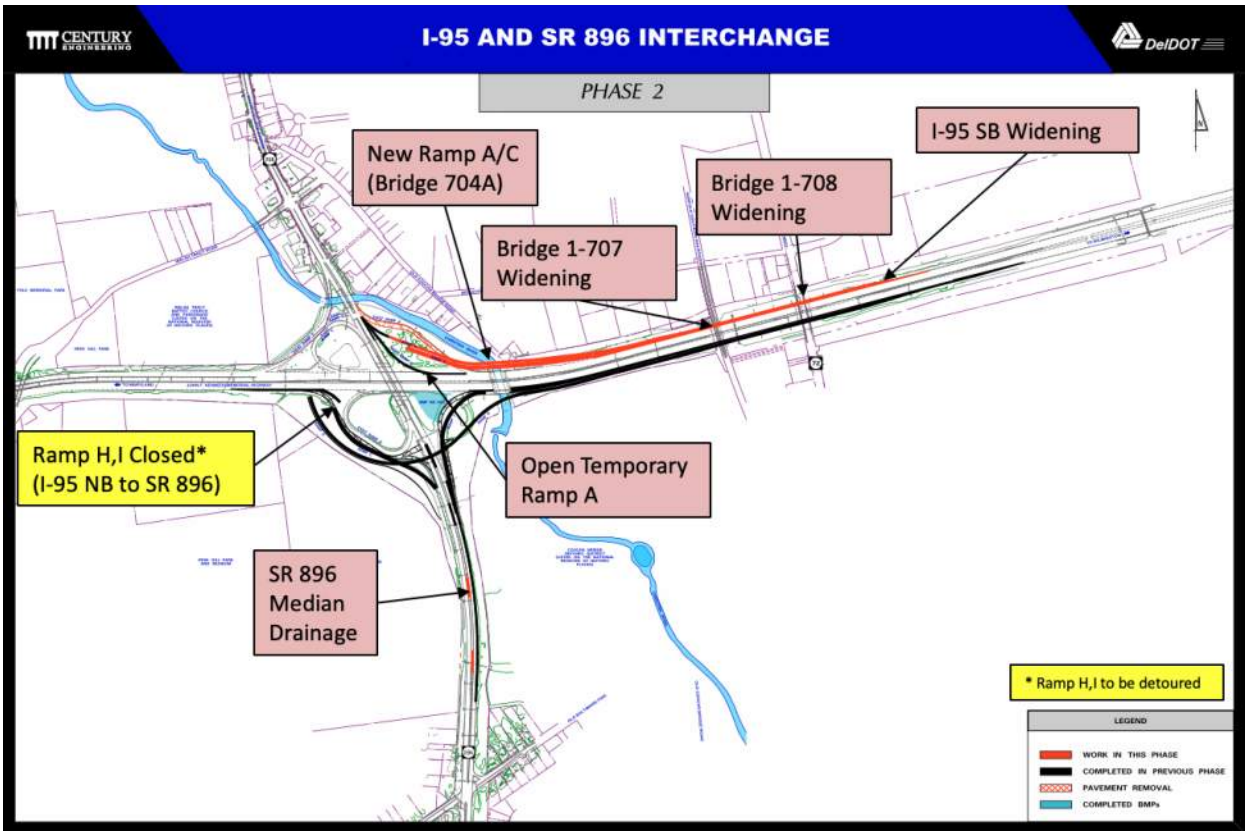
Figure 24. Ramp H, I Detour Route



3.3.3 Construction Phase 2

In Phase 2, temporary Ramp A will be opened to traffic. Southbound I-95 will be widened to accommodate the new Ramps A and C, including new Bridge 1-704A over the Christiana River, widening of Bridge 1-707 over Norfolk Southern Railway, and widening of Bridge 1-708 over South Chapel Street (SR 72). Drainage facilities will be installed within the SR 896 median south of the interchange.

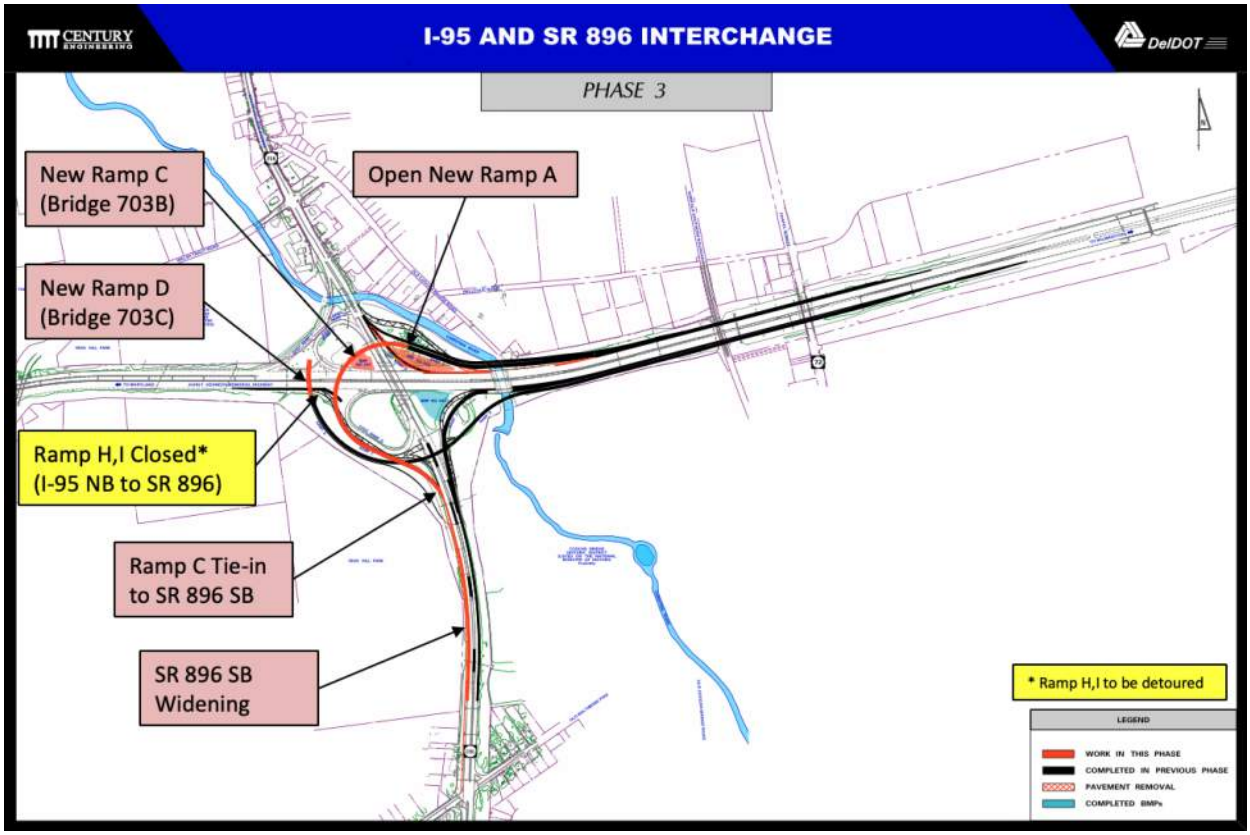
Figure 25. Construction Phase 2



3.3.4 Construction Phase 3

In Phase 3, the new Ramp A will be open to traffic and temporary Ramp A will be removed. Ramp C (Bridge 1-703B) will be constructed, completing the connection from southbound I-95 to southbound SR 896. Ramp D (Bridge 1-703C) will be constructed, adding a bridge segment for the southbound SR 896 to northbound I-95 flyover ramp. Southbound SR 896 will be widened to accommodate the new Ramp C tie-in south of the interchange.

Figure 26. Construction Phase 3

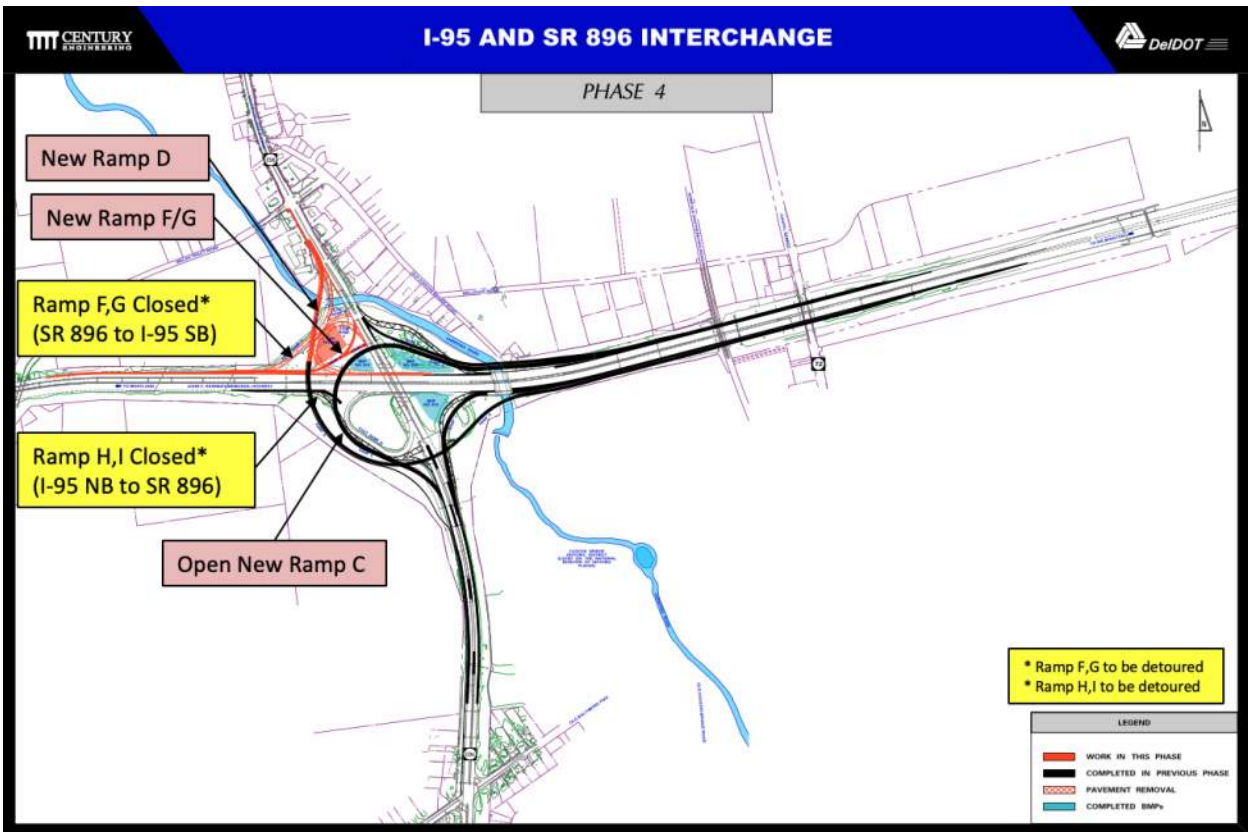


The bridge beam setting for Bridges 1-703B and 1-703C over I-95 will require a rolling road closure between 12:00 a.m. and 5:00 a.m. on Mondays through Thursdays.

3.3.5 Construction Phase 4

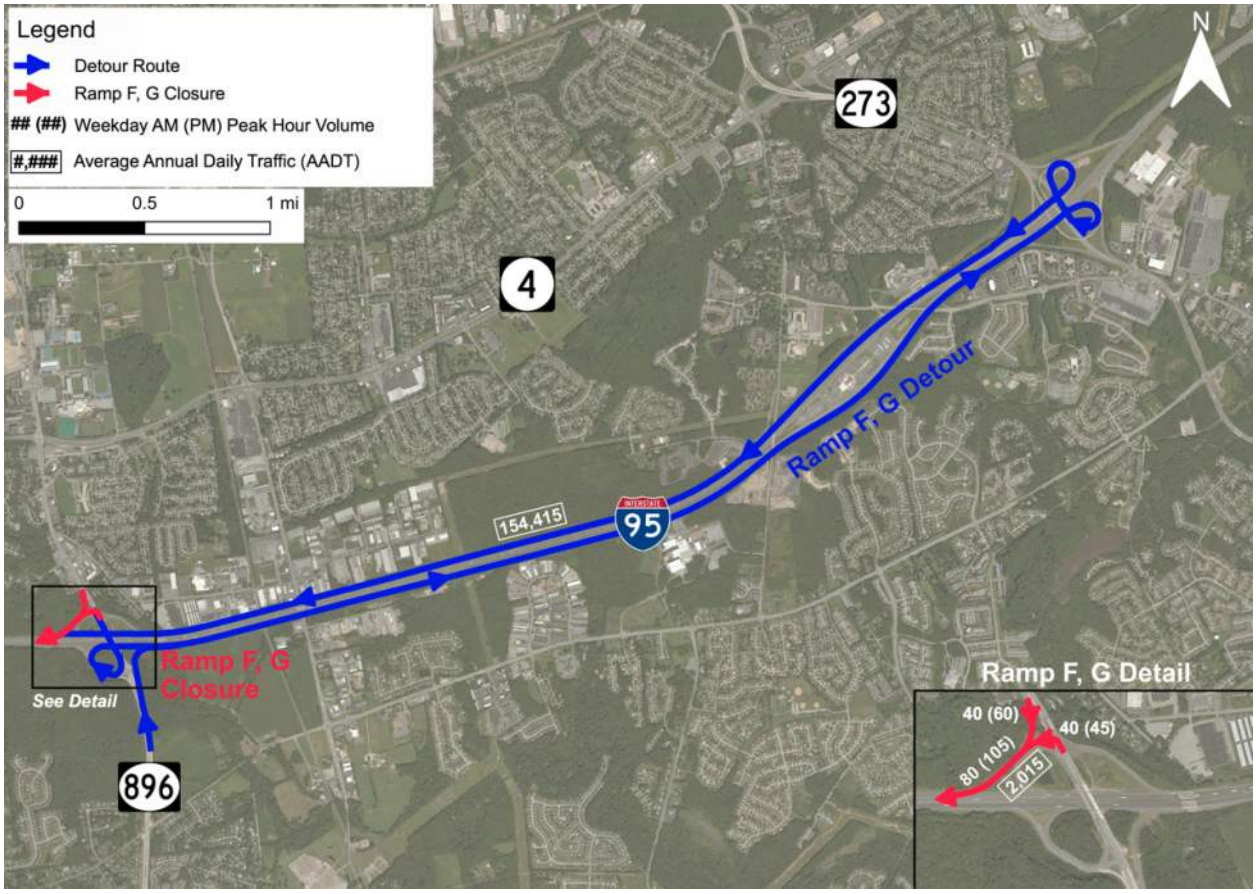
Ramp construction will continue during Phase 4. Ramp D will be completed, providing access from southbound SR 896 to northbound I-95. During this phase, the new Ramp C will be opened and the existing Ramp C will be closed. New Ramp F, G and Bridge I-649B will be completed in this stage, thus improving access to I-95 southbound. The shared used path will be constructed along southbound SR 896 from New Ramp D to Welsh Tract Road. Ramp F, G and Bridge 1-341 will be removed.

Figure 27. Construction Phase 4



Ramp F, G will be closed and detoured via I-95 northbound and exit at the SR 273 interchange (Exit 3B). The detour route is shown in **Figure 28**. The signing will then direct the detoured traffic onto I-95 southbound back to the SR 896 interchange. The Ramp F, G detour signing plan is provided in **Appendix C**.

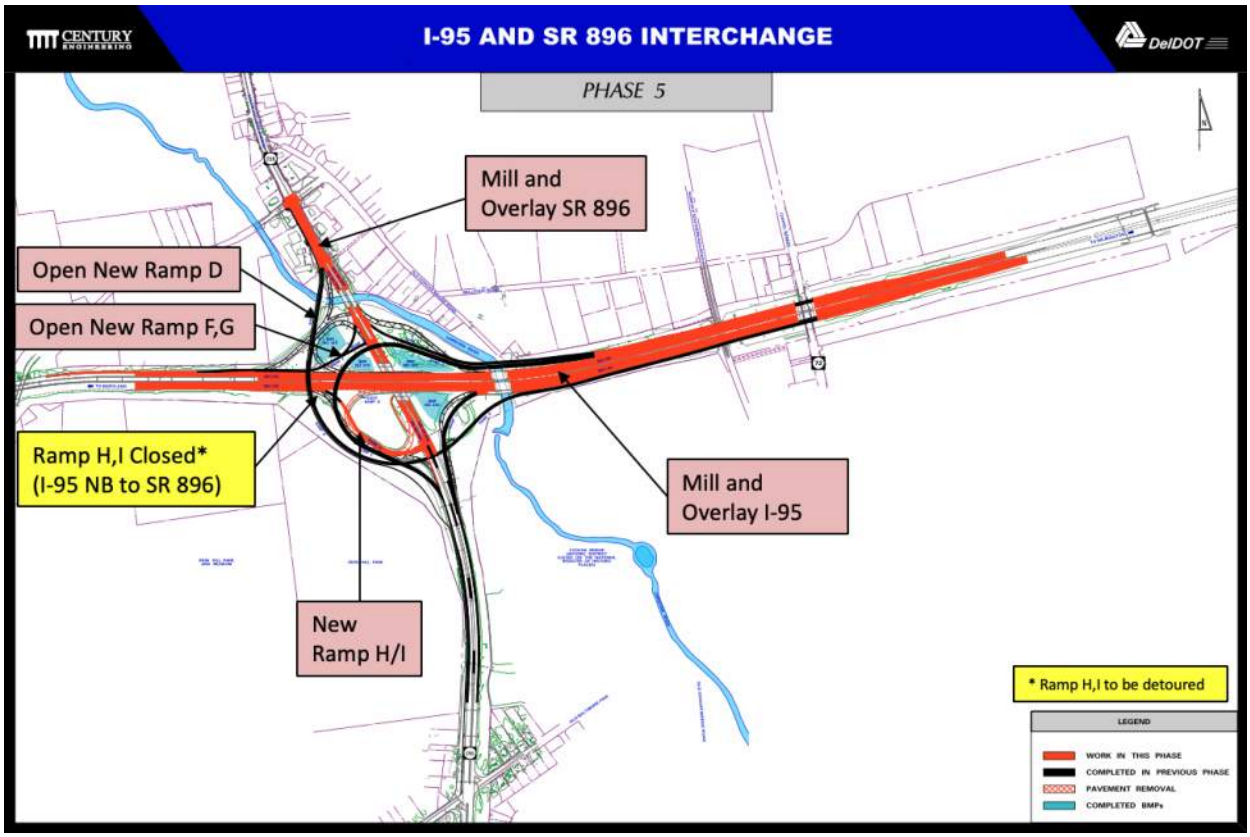
Figure 28. Ramp F, G Detour Route



3.3.6 Construction Phase 5

During Phase 5, the new Ramp D will be opened to traffic providing access from southbound SR 896 to northbound I-95. Ramp H, I will be completed, thus improving access from northbound I-95 to SR 896. The existing Ramp D will be removed. The final pavement and pavement markings will be installed during this phase.

Figure 29. Construction Phase 5



3.4 Traffic Operations Analysis During Construction

This section presents a qualitative analysis of the impacts of project construction on traffic. The semi-final TMP will include a detailed quantitative analysis.

3.4.1 I-95

Throughout construction, northbound and southbound I-95 will experience off-peak shoulder closures for various construction activities. Temporary traffic barrier will be placed to separate and protect workers from the travel lanes.

3.4.2 Interchange Ramps

Ramps H, I will be closed in Phase 1 and remain closed throughout the projects. Ramp F, G will be closed in Phase 4 and reopened in Phase 5. All other ramps will remain open except for overnight closures to accommodate ramp tie-ins

3.4.3 SR 896

Throughout construction, northbound and southbound SR 896 will experience off-peak shoulder closures for various construction activities. Temporary traffic barrier will be placed to separate and protect workers from the travel lanes.

3.4.4 South Chapel Road (SR 72)

South Chapel Road will be narrowed to a single lane in each direction to accommodate the Bridge 1-709 and 1-708 widening in Phases 1 and 2, respectively. **Table 2** shows the projected Level of Service for SR 72 and **Table 3** shows the projected queue lengths along SR 72. Construction phasing plan details and recommendations on minimizing impacts will be provided in the semi-final TMP.

Table 2. SR 72 Lane Reduction Level of Service Projections

Intersection	Approach		SR 72 Lane Reduction (MOT)					
			AM Peak		Mid-Day Peak		PM Peak	
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
SR 72 (South Chapel Street) and Bellevue Road/Dawson Road	EB	L	42.5	D	39.9	D	34.9	C
		T						
		R						
	WB	L	46.6	D	43.9	D	44.7	D
		T						
		R	43.4	D	50.1	D	34.5	C
	NB	L	22.8	C	21.5	C	25.0	C
		T	28.2	C	23.1	C	19.1	B
		R						
	SB	L	21.8	C	16.8	B	13.6	B
		T	36.3	D	70.2	**E**	300.4	**F**
		R	8.6	A	5.9	A	7.0	A
	Overall		31.4	C	42.8	D	165.2	**F**

LOS/Delay based on HCM 6th Edition Methodology
Assumes no signal timing adjustments

Table 3. SR 72 Lane Reduction Queue Length Projections

Intersection	Approach		Adjacent Intersection		SR 72 Lane Reduction (MOT) 95th Percentile Queue (ft.)		
			Lane Type/ Side Street	Distance (ft.)	AM Peak	Mid-Day Peak	PM Peak
SR 72 (South Chapel Street) and Bellevue Road/Dawson Road	EB	L	Parking Lot	300	0	28	0
		T					
		R					
	WB	L	Parking Lot	250	104	100	238
		T					
		R	Turn Lane	175	0	51	49
	NB	L	Turn Lane	220	14	16	6
		T	Brook Hill Drive	1,050	445	218	293
		R					
	SB	L	Turn Lane	170	181	2	15
		T	Blue Hen Drive	1,500	748	255	1,698
		R	Lane Drop	1,500	14	0	0

3.5 Lane Closure Restrictions

The semi-final TMP will detail lane closure restrictions for I-95 and SR 896. A review of I-95 monthly volumes indicates significant seasonal variation; therefore, separate I-95 lane closure restrictions will be prepared for April 1 through Labor Day and Labor Day through March 31.

3.6 Road User Delay Costs

Road user delay is a method of assessing costs to the traveling public to be charged to the contractor for not ending road lane closures within the required time. The costs are used as guidance for determining liquidated damage penalties for the contractor. The preliminary road user delay costs outlined here are based on the projected 2025 traffic volumes.

3.6.1 Daily Road User Delay Costs

Daily road user delay costs have been calculated for long-term detours, that is, detours of more than one day. The road user delay costs for each detour are summarized in **Table 4**.

Table 4. Daily User Delay Costs - Detours

Detour	2025 AADT (veh/day)	Detour Phase	Detour Duration (days)	Detour Length (miles)	Daily Roadway User Cost (dollars)
Ramp H	285	Phase 1-5	1,088	9.65	$2,325.74
Ramp I	1,749	Phase 1-5	1,088	10.20	$14,950.40
Ramp F	1,353	Phase 4	196	10.30	$12,824.76
Ramp G	1,152	Phase 4	196	9.76	$10,353.59

The daily road user delay costs calculations for the detours are provided in **Appendix D**.

3.6.2 Hourly Road User Delay Costs for Lane Closures

Hourly road user delay costs for lane closures will be provided in the semi-final TMP.

4 Work Zone Impact Management Strategies

4.1 Temporary Traffic Control Plan

The TTCP of this TMP has been developed in accordance with DelDOT's *Work Zone Safety and Mobility Procedures and Guidelines* is included **Appendix E**.

4.2 Public Information Plan

DelDOT's Community Relations division will use the strategies outlined below to communicate construction-related issues to travelers and other affected entities. DelDOT staff, facilities, and equipment will be used in developing and implementing the public outreach campaign.

- Public meetings. Before construction begins, DelDOT will hold public meetings to inform the public about the project, the anticipated schedule, and the expected impacts to the roadway network.
- Portable changeable message signs (PCMSs). Ten calendar days before construction starts, PCMSs will be setup on the relevant roadways to inform the traveling public about the impending construction. They are to remain in place for five days after the new traffic pattern is implemented. The PCMSs are expected to be integrated with smart work zone technology that will monitor real-time traffic conditions and provide information to the traveling public.
- WTMC 1380 AM travel advisory radio. The TMC will use its radio station to inform travelers about traffic, work zone activities, lane closures, and alternate routes.
- The DelDOT website. A project website on the DelDOT website will describe the project background, needs, plans, schedule, expected impacts, and traveler information.
- The DelDOT mobile phone app. The smartphone app will alert users to delays, lane closures, and incidents; it also offers a direct feed to WTMC travel advisory radio.

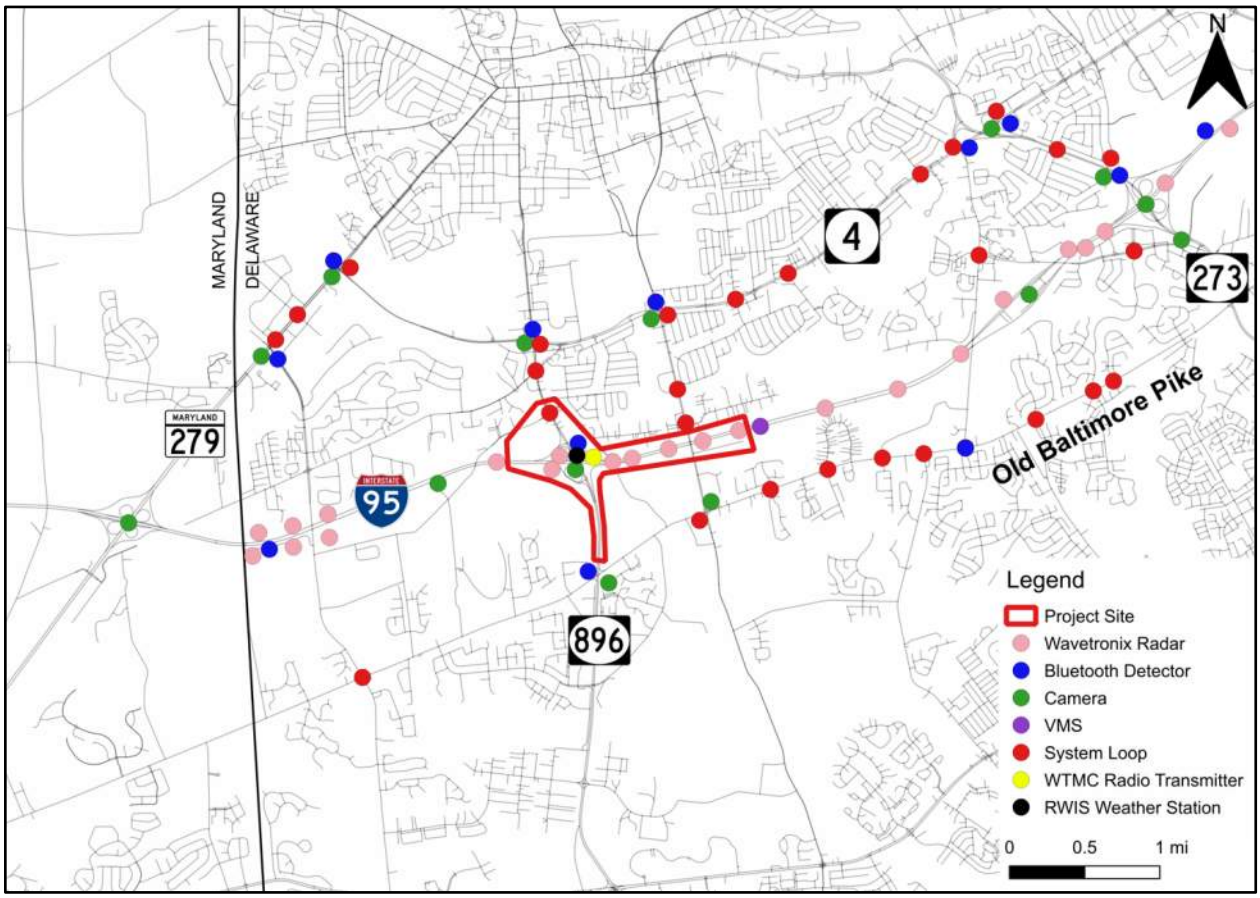
4.3 Transportation Operations Plan

4.3.1 Intelligent Transportation Management System Strategies

The TMC has deployed a significant number of ITMS devices throughout the state to monitor traffic and disseminate real-time traffic information to DelDOT staff, public entities, and the traveling public. **Figure 30** shows the ITMS devices that will be used to monitor the I-95 and SR 896 interchange construction zone. The ITMS devices include:

- Wavetronix devices for traffic volume, speed, and congestion information
- Bluetooth devices for travel time information
- Traffic cameras for video monitoring
- Traffic signal system loops for traffic volume and congestion information
- PCMSs for communicating important messages to the travelers as they approach work zones
- A radio transmitter for the WTMC 1380 AM radio station to provide real time traffic updates to travelers
- A weather station to monitor the weather conditions at the interchange

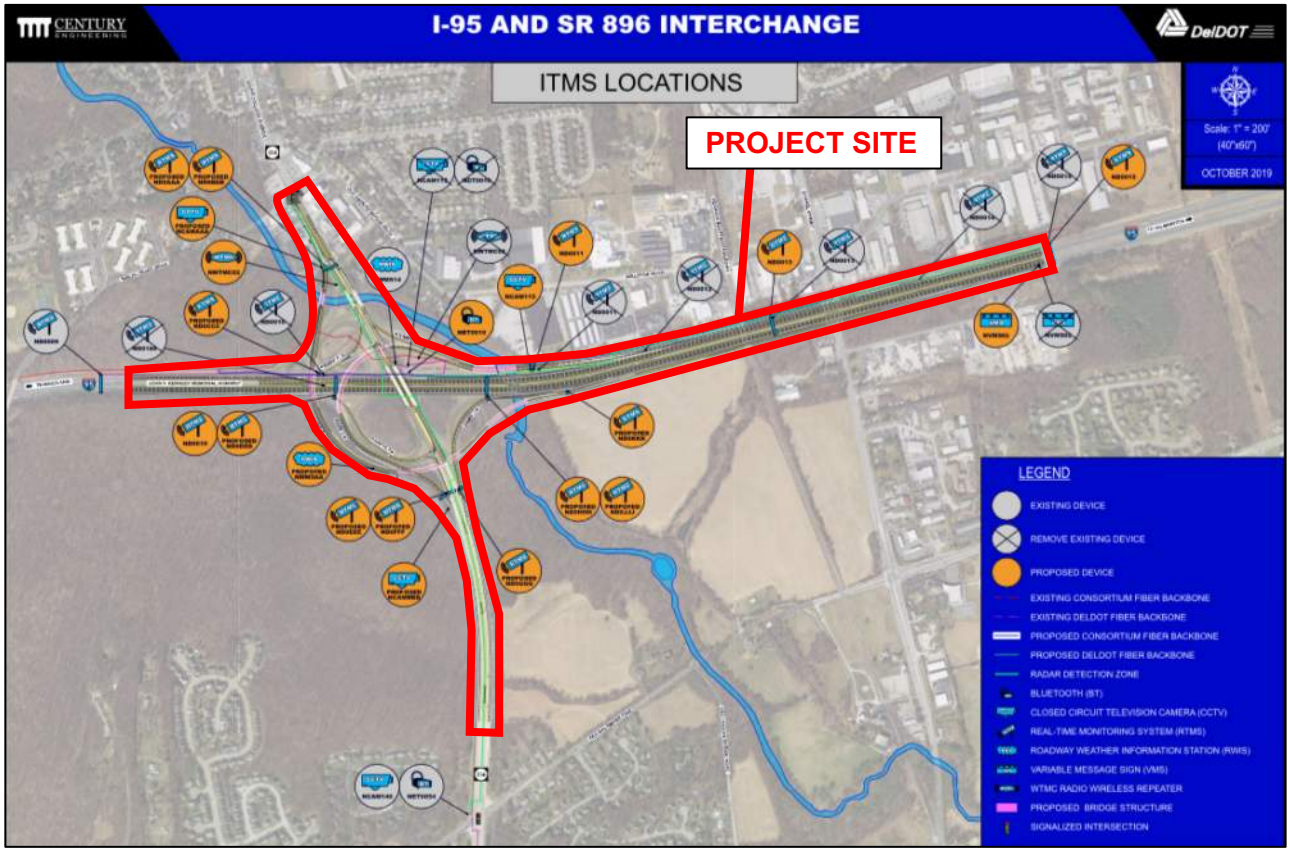
Figure 30. Existing ITMS Devices



Several new ITMS devices will be installed as part of this project as shown in **Figure 31**. The new ITMS devices include:

- Wavetronix detectors along SR 896 and the interchange ramps for monitoring vehicle speed, volume, and congestion.
- Additional Bluetooth devices for travel time information.
- Permanent Variable Message Signs on SR 896 to convey important messages to travelers as they approach US 40.
- Additional traffic cameras for video monitoring.
- Roadway weather monitoring stations for real-time reports on roadway conditions.
- Reinstallation and rerouting of fiber optic cable for ITMS system communication.

Figure 31. Proposed ITMS Locations



4.3.2 Smart Work Zone Strategies

Potential smart work zone strategies include automated systems for queue detection, speed monitoring, construction equipment alerts, travel time assessment, and incident detection. The semi-final TMP will include an evaluation of specific smart work zone strategies.

4.3.3 Traffic Incident Management and Enforcement Strategies

- Police will be posted at the approach to each detour.
- The DelDOT Community Relations division will coordinate with the media in order to disseminate information about changes to closures and detour routes as quickly and widely as possible.

5 TMP Monitoring Requirements

5.1 Process for Monitoring TMP Performance

The DelDOT district safety officer will document any issues with the deployment of the TTCP and any crashes within the work zone. During construction, the TMC will monitor traffic in the work zone and broadcast any delay information using WTMC 1380, PCMSs, and the DelDOT website and mobile app.

DelDOT or its consultant should monitor all temporary traffic control device setups at the beginning of each construction phase and of any critical subphase that requires a long-term setup.

5.2 Corrective Action: TMP Performance Requirements Not Met

When actual conditions do not resemble the predicted impacts or DelDOT determines that the TMP is not working effectively, DelDOT will implement corrective actions such as adjusting signal timings, placing traffic officers at key locations to direct traffic, or developing alternative or additional detour routes to facilitate traffic flow. DelDOT will also publish additional detour information as recommended by the inspector in charge.

5.3 Process for Submission and Approval of Alternative TMPs

Except when delay would affect public safety or cause a breakdown of traffic flow, all changes to the TMP must be coordinated with DelDOT Traffic Design and Traffic Safety sections before implementation. Any such modifications will be added to this TMP with the approval of the DelDOT project manager.

6 Contingency Plan

The contingency plan for this TMP provides actions to be taken in order to restore traffic flow or minimize the effects on the traveling public of unplanned incidents in the work zone or higher than predicted traffic demand. The TMC will continuously monitor the project to ensure that traffic flows safely and efficiently.

6.1 Triggers That Require Reopening All Travel Lanes

The following situations would justify reopening all travel lanes on I-95 and SR 896:

- A serious security breach at any of the nearby schools or at a business
- An extreme weather event that would cause unsafe roadway conditions or an evacuation
- A severe traffic incident near the work zone
- Excessively long delays not anticipated by the TMP, as determined by the TMC Operations Manager
- Any other event determined by the TMC Operations Manager

If these or other unplanned events occur, the TMC will coordinate traffic and incident management activities by state and local police, fire departments, and other emergency response teams within and around the work zone.

6.2 Incident Management Contacts and Responsibilities

Table 5 shows a contact list for distribution among field personnel directly involved in the project. Field personnel should dial 911 if someone needs immediate assistance or immediate danger is present.

Table 5. Emergency Contact Information

Name	Title	Agency	Phone Number	Email
Breanna Kovach	Project Manager	DelDOT	(302) 760-2522	breanna.kovach@state.de.us
Mark Buckalew	Chief of Construction and Materials	DelDOT	(302) 659-4073	mark.buckalew@state.de.us
Jerry Nagyiski	Chief Safety Officer	DelDOT	(302) 222-9763	gerald.nagyiski@state.de.us
Transportation Management Center	TMC	DelDOT	(302) 659-4600	deldottmc@state.de.us
Steven Penoza	Consultant Project Manager	Century Engineering	(302) 525-6022	spenoza@centuryeng.com

6.3 Incident Management Process

The TMC and the DelDOT Safety section will coordinate with the contractor on traffic and incident management activities in and around the project area. Before construction begins, the contractor will provide the TMC and Safety section with updated construction schedules and current contact information, including 24-hour emergency phone numbers for key personnel. The consultant and subconsultant will update this information as soon as any changes occur.

The plan set will establish signed detours for alternate routes to which traffic can be diverted to avoid delays associated with incidents.

The TMC and DelDOT Community Relations division will work with local media outlets in advance to establish procedures to publicize traffic delays, incidents, and incident management.

6.4 Availability of Equipment and Agency Personnel for Incident Response

The transportation management team and TMC will coordinate personnel and resources for incident response during the project.

7 TMP Implementation Costs

The semi-final TMP will provide a breakdown of TMP elements and costs.

Appendix A:

TMP Kickoff Meeting Minutes

MEETING MINUTES

DATE: **April 2, 2019**

MEETING DATE: March 20, 2019

IN ATTENDANCE:

Breanna Kovach	DelDOT
Brad Damtoft	DelDOT
Mark Buckalew	DelDOT
Jerry Nagyiski	DelDOT
Jon Ledger	DelDOT
Jeff Van Horn	DelDOT
Lei Xu	DelDOT
Joseph Spadaro	DelDOT
Steven Penoza	Century Engineering
Kate Smagala	Century Engineering
Jaime Vargas	Wallace Montgomery & Associates
Gillian Bruno	Rybinski Engineering
Steve Sharp	Rybinski Engineering

SUBJECT: **I-95 and SR 896 Interchange**
Transportation Management Plan Kickoff Meeting

PREPARED BY: Steve Sharp

DISCUSSION:

Meeting Purpose:
The I-95 and SR 896 Interchange Project has been deemed "significant" per the DelDOT Work Zone Safety and Mobility Guidelines and warrants a transportation management plan (TMP). The purpose of this meeting was to introduce the project to the DelDOT stakeholders, discuss the preliminary TMP approach, and obtain feedback and expectations from various perspectives within DelDOT.

Project Background:
The existing interchange routinely experiences traffic congestion and impacts safety along I-95 and SR 896, particularly during peak periods. Over 400 crashes have occurred at the interchange in 3 years. The preferred alternative provides two flyover ramps eliminating the problematic weaving section along the southbound SR 896 overpass and improving ramp geometry. The project is currently in preliminary design. Construction is anticipated to begin in 2021 pending a FHWA grant approval.

Two interim projects will be constructed before the ultimate interchange.

- I-95 Northbound Lane Reduction from Ramp I to Ramp J – will improve the Ramp J (SR 896 northbound to I-95 northbound) movement by converting the merge with I-95 to an add lane.

- SR 896 Northbound Lane Reduction from Ramp J to Ramp A – will improve the Ramp A (I-95 southbound to SR 896 northbound) movement by converting the merge with SR 896 to an add lane.

Construction Phasing:
The project team has developed conceptual phasing plans for the interchange construction. 5 main construction phases are proposed. The anticipated construction duration is 3 years.

Roadway Closures:
No long-term closures are proposed for Ramp A (I-95 southbound to SR 896 northbound), Ramp C (I-95 southbound to SR 896 southbound), Ramp D (SR 896 southbound to I-95 northbound), or Ramp J (SR 896 northbound to I-95 northbound).

Ramp H/I (I-95 northbound to SR 896) and Ramp F/G (SR 896 to I-95 southbound) have significantly lower traffic volumes than the other interchange ramps.

Ramp H/I will be closed for the majority of the project duration (Phases 1-5). It was agreed that Ramp H/I traffic should be detoured via I-95 northbound to Exit 3B (SR 273) and returning to SR 896 via I-95 southbound. This route is simple to follow and avoids impacts to the toll plaza and congested signalized corridors.

Ramp F/G will be closed during phase 4. It was agreed that Ramp F/G traffic should be detoured via I-95 northbound to Exit 3B (SR 273) and returning to I-95 southbound. This route is simple to follow and avoids impacts to the toll plaza and congested signalized corridors. Additional signing will be added for Ramp G SR 896 northbound to I-95 southbound) directing traffic to follow SR 896 northbound to the jughandle at Chestnut Hill Road and returning to SR 896 southbound.

The project team will obtain available ramp detour plans prepared for previous projects and will modify appropriately for this project.

The placement of the bridges over I-95 may require overnight closures of I-95. Extensive coordination with Maryland and other states will be required. The coordination must consider impacts to oversized/overweight vehicles and the toll plaza. The project team will examine solutions that may limit or avoid full closure of I-95.

Preliminary TMP:
The TMP will be prepared per the DelDOT Work Zone Safety and Mobility Guidelines. The TMP will be revised and updated during semi-final and final design.

The preliminary traffic analysis will be primarily qualitative and will reference the traffic data collected as part of the project's 2017 Traffic Operational Analysis Report. Updated traffic counts will be collected during semi-final design. The updated traffic data will be used for quantitative analysis of traffic operations during the construction phases and identifying mitigating strategies.

The preliminary TMP will reference the crash data collected as part of the project's 2017 Traffic Operational Analysis Report. Updated crash data will be collected during semi-final design and will include an evaluation of the interim projects' safety benefits.

Hourly lane closure restrictions are to be developed by the day of week and season of year to account for the traffic variations on I-95 and SR 896.

Road user liquidated damages will be prepared for lane closure hours and ramp closure durations.

The preliminary TMP will identify Smart Work Zone strategies and use of ITMS devices (Wavetronix, Bluetooth, Cameras, Variable Message Signs, etc.) appropriate for the project.

Traffic officers will be placed at commencement of detours.

The traveling public will be notified via WTMC 1380 AM, DelDOT app, MyDelDOT emails, and public meetings.

The details of the TMP monitoring requirements, contingency plans, and cost estimates will be prepared during semi-final design.

Stakeholder Coordination:
This project will require significant stakeholder outreach including the traveling public, University of Delaware, DART, nearby schools, emergency and incident management, neighboring states, and local businesses along SR 896. The project team in coordination with DelDOT Safety will meet with the New Castle County Transportation Management Team during semi-final design.

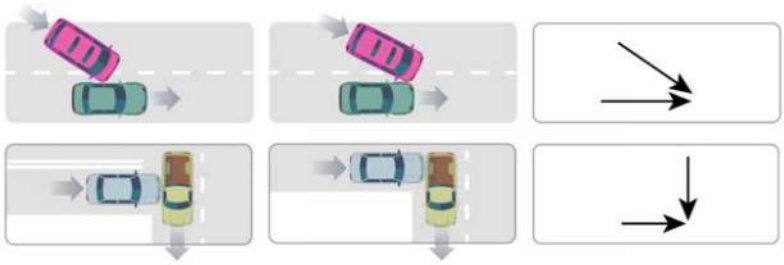
Appendix B:

MMUCC Standards and Crash Summary Tables

Figure 2: Manner of Collision and Associated Crash Diagrams

Front to Rear Collision Example and Crash Diagram

Front to Front Collision Examples and Crash Diagram



Angle Collision Examples and Crash Diagram

Sideswipe, Same Direction Collision Example and Crash Diagram

Sideswipe, Opposite Direction Collision Example and Crash Diagram

Rear to Side Collision Example and Crash Diagram

Rear to Rear Collision Example and Crash Diagram

I-95 / SR 896 INTERCHANGE STUDY AREA
SEPT 2013 - AUG 2016

Summary	
	# of Crashes
Total Crashes	405
Fatal Crashes	2
Total Alcohol-Related Crashes	14
Total Non Alcohol-Related Crashes	391
Total Fatalities	2
Total Pedestrian Fatalities	0
Total Pedestrian Injuries	1
Total Pedestrian Crashes	1
Total Motorcycle Crashes	1
Total Pedalcyclist Crashes	0

Day of Week		
	# of Crashes	% of Total Crashes
Sunday	43	10.6%
Monday	57	14.1%
Tuesday	75	18.5%
Wednesday	59	14.6%
Thursday	69	17.0%
Friday	65	16.0%
Saturday	37	9.1%
Total	405	

Manner of Impact		
	# of Crashes	% of Total Crashes
Angle	52	12.8%
Fixed Object	125	30.9%
Front to Front	3	0.7%
Front to Rear	172	42.5%
Other	3	0.7%
Sideswipe, Opposite Direction	0	0.0%
Sideswipe, Same Direction	50	12.3%
Rear to side	0	0.0%
Rear to rear	0	0.0%
Unknown	0	0.0%
Total	405	

Alcohol Related Crashes by Classification					
	Non-Reportable	**Reportable**	**Personal Injury**	**Fatality**	**Total**
Alcohol Related	0	11	3	2	**16**
Non-Alcohol Related	0	299	90	0	**389**
Total	**0**	**310**	**93**	**2**	**405**

Manner of Impact by Classification					
	Non-Reportable	**Reportable**	**Personal Injury**	**Fatality**	**Total**
Angle	0	36	16	0	**52**
Fixed Object	0	99	25	1	**125**
Front to Front	0	2	0	1	**3**
Front to Rear	0	123	49	0	**172**
Other	0	3	0	0	**3**
Sideswipe, Opposite Direction	0	0	0	0	**0**
Sideswipe, Same Direction	0	47	3	0	**50**
Rear to side	0	0	0	0	**0**
Rear to rear	0	0	0	0	**0**
Unknown	0	0	0	0	**0**
Total	**0**	**310**	**93**	**2**	**405**

Time of Day		
	# of Crashes	% of Total Crashes
00:00 - 00:59	6	0.8%
01:00 - 01:59	4	0.6%
02:00 - 02:59	7	1.0%
03:00 - 03:59	2	0.3%
04:00 - 04:59	3	0.4%
05:00 - 05:59	3	0.4%
06:00 - 06:59	13	1.8%
07:00 - 07:59	19	2.6%
08:00 - 08:59	27	3.7%
09:00 - 09:59	14	1.9%
10:00 - 10:59	13	1.8%
11:00 - 11:59	15	2.1%
12:00 - 12:59	16	2.2%
13:00 - 13:59	12	1.7%
14:00 - 14:59	16	2.2%
15:00 - 15:59	29	4.0%
16:00 - 16:59	44	6.1%
17:00 - 17:59	65	8.9%
18:00 - 18:59	34	4.7%
19:00 - 19:59	14	1.9%
20:00 - 20:59	15	2.1%
21:00 - 21:59	12	1.7%
22:00 - 22:59	16	2.2%
23:00 - 23:59	6	0.8%
Total	405	

Surface Conditions		
	# of Crashes	% of Total Crashes
Dry	292	72.1%
Ice/Frost	7	1.7%
Sand	0	0.0%
Slush	9	2.2%
Snow	8	2.0%
Unknown	1	0.2%
Water (Standing, Moving)	2	0.5%
Wet	86	21.2%
Total	405	

Lighting Conditions		
	# of Crashes	% of Total Crashes
Dark Lighted	87	21.5%
Dark Unknown Lighting	0	0.0%
Dark-Not Lighted	39	9.6%
Dawn	5	1.2%
Daylight	264	65.2%
Dusk	7	1.7%
Other	1	0.2%
Unknown	2	0.5%
Total	405	

Weather Conditions		
	# of Crashes	% of Total Crashes
Blowing Sand, Soil, Dirt	0	0.0%
Blowing Snow	2	0.5%
Clear	256	63.2%
Cloudy	66	16.3%
Fog, Smog, Smoke	0	0.0%
Rain	60	14.8%
Sleet, Hail	6	1.5%
Snow	13	3.2%
Unknown	2	0.5%
Total	405	

First Harmful Event			
Code	**Description**	**# of Crashes**	**% of Total Crashes**
1	Overturn/Rollover, Non-Collision	5	1.2%
2	Fire/Explosion, Non-Collision	3	0.7%
3	Immersion, Non-Collision	0	0.0%
4	Jackknife, Non-Collision	0	0.0%
5	Cargo/Equipment Loss or Shift, Non-Collision	0	0.0%
6	Fell/Jumped From Motor Vehicle, Non-Collision	0	0.0%
7	Thrown or Falling Object, Non-Collision	3	0.7%
8	Other Non-Collision, Non-Collision	5	1.2%
9	Pedestrian, Collision With Person, Motor Vehicle, or Non-Fixed	1	0.2%
10	Pedalcycle, Collision With Person, Motor Vehicle, or Non-Fixed	0	0.0%
11	Railway Vehicle (train, engine), Collision With Person, Motor Vehicle, or Non-Fixed	0	0.0%
12	Animal, Collision With Person, Motor Vehicle, or Non-Fixed	7	1.7%
13	Motor Vehicle in Transport, Collision With Person, Motor Vehicle, or Non-Fixed	293	72.3%
14	Legally Parked Motor Vehicle, Collision With Person, Motor Vehicle, or Non-Fixed	0	0.0%
15	Struck by Anything Set in Motion by Vehicle, Collision With Person, Motor Vehicle or Non-Fixed	1	0.2%
16	Work Zone / Maintenance Equipment, Collision With Person, Motor Vehicle, or Non-Fixed	1	0.2%
17	Other Non-Fixed Object, Collision With Person, Motor Vehicle, or Non-Fixed	4	1.0%
18	Impact Attenuator/Crash Cushion, Collision With Fixed Object	3	0.7%
19	Bridge Overhead Structure, Collision With Fixed Object	0	0.0%
20	Bridge Pier or Support, Collision With Fixed Object	0	0.0%
21	Bridge Rail, Collision With Fixed Object	0	0.0%
22	Cable Barrier, Collision With Fixed Object	0	0.0%
23	Culvert, Collision With Fixed Object	0	0.0%
24	Curb, Collision With Fixed Object	3	0.7%
25	Ditch, Collision With Fixed Object	2	0.5%
26	Embankment, Collision With Fixed Object	3	0.7%
27	Guardrail Face, Collision With Fixed Object	25	6.2%
28	Guardrail End, Collision With Fixed Object	8	2.0%
29	Concrete Traffic Barrier, Collision With Fixed Object	14	3.5%

30	Other Traffic Barrier, Collision With Fixed Object	0	0.0%
31	Tree (standing), Collision With Fixed Object	1	0.2%
32	Utility Pole, Collision With Fixed Object	0	0.0%
33	Light Support, Collision With Fixed Object	1	0.2%
34	Traffic Sign Support, Collision With Fixed Object	1	0.2%
35	Overhead Sign Support, Collision With Fixed Object	0	0.0%
36	Traffic Signal Support, Collision With Fixed Object	0	0.0%
37	Fence, Collision With Fixed Object	0	0.0%
38	Mailbox, Collision With Fixed Object	0	0.0%
39	Other Post, Pole or Support, Collision With Fixed Object	3	0.7%
40	Other Fixed Object (wall, building, tunnel, etc.), Collision With Fixed Object	1	0.2%
41	Illegally Parked Motor Vehicle, Collision With Person, Vehicle, Or Object Not Fixed	0	0.0%
42	Stopped Motor Vehicle, Collision With Person, Vehicle, Or Object Not Fixed	16	4.0%
99	Unknown, Collision With Fixed Object	1	0.2%
Total		**405**	

Primary Contributing Circumstance			
Code	**Description**	**# of Crashes**	**% of Total Crashes**
1	Speeding	5	1.2%
2	Failed to yield right of way	18	4.4%
3	Passed Stop Sign	1	0.2%
4	Disregard Traffic Signal	3	0.7%
5	Wrong side or wrong way	1	0.2%
6	Improper Passing	7	1.7%
7	Improper lane change	37	9.1%
8	Following too close	77	19.0%
9	Made improper turn	2	0.5%
10	Driving under the influence	12	3.0%
11	Driver inattention, distraction, or fatigue	63	15.6%
12	Driving in a careless or reckless manner	67	16.5%
13	Driving in an aggressive manner	0	0.0%
14	Improper backing	5	1.2%
15	Other improper driving	5	1.2%
16	Mechanical defects	12	3.0%
17	Animal in Roadway - Deer	8	2.0%
18	Animal in Roadway - Other Animal	0	0.0%
19	Other environmental circumstances - weather, glare	16	4.0%
20	Roadway circumstances - debris, holes, work zone	9	2.2%
21	Pedestrian	1	0.2%
88	Other	19	4.7%
99	Unknown	37	9.1%
Total		**405**	

Appendix C:

Ramp H/I and Ramp F/G Detour Signing Plans

PORTABLE CHANGEABLE MESSAGE SIGNS

PRIOR TO DETOUR

(10 DAYS PRIOR TO BEGINNING OF DETOUR)

PCMS-1

RAMP TO SR 896 TO CLOSE	STARTING XX/XX/XX

DURING DETOUR

(DISPLAY FOR 5 DAYS AFTER IMPLEMENTATION OF DETOUR)

PCMS-1

RAMP TO SR 896 CLOSED	FOLLOW DETOUR

SPECIAL SIGNS

(Y)

DETOUR *M4-8*

896 *M1-5*

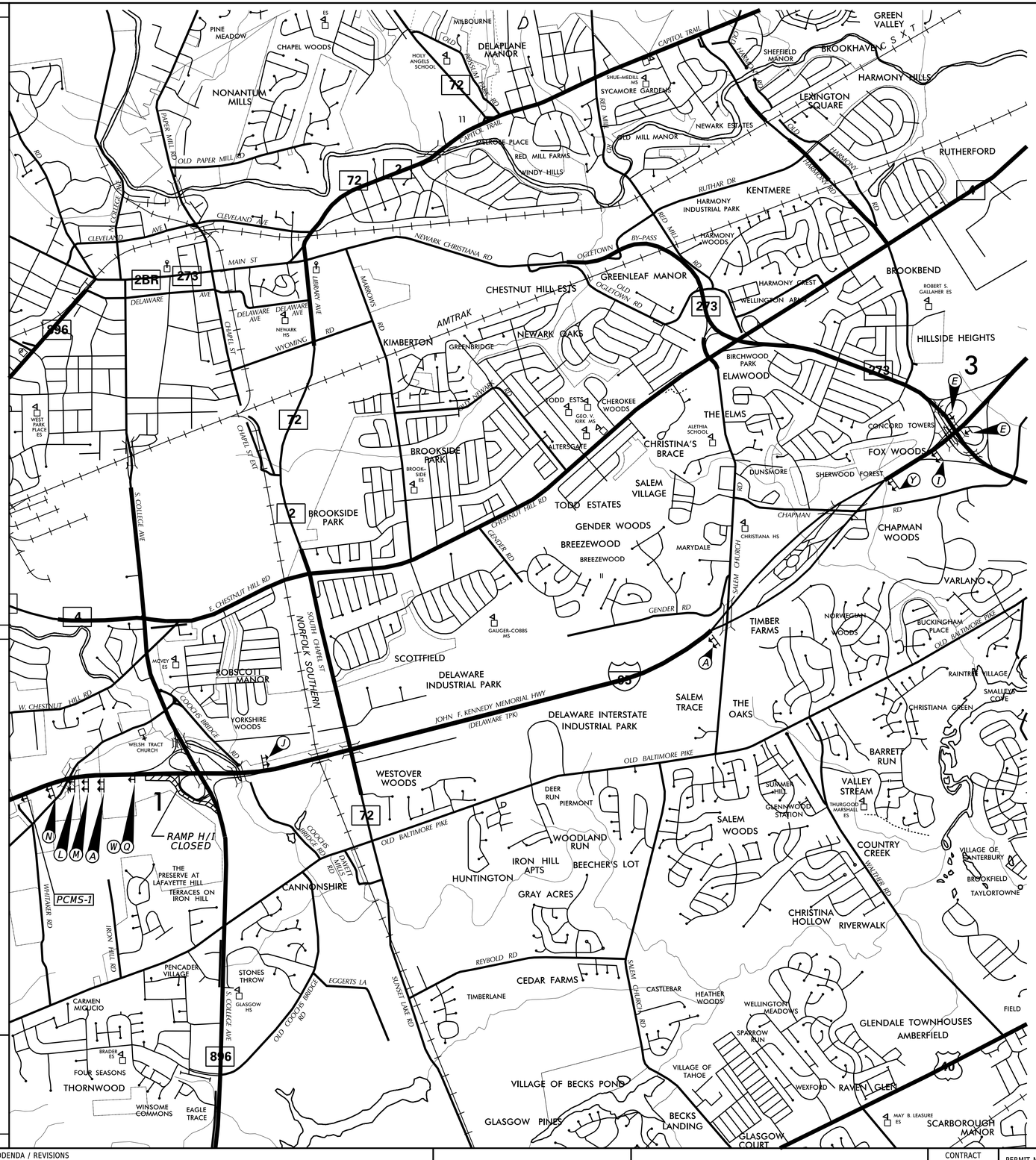
1/2 MILE

2'-0" | 3" | 8C | 2" | 8C | 3"

5.4" 19.2" 5.4"

2'-6"

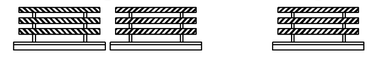
D/G RETROREFLECTIVE ORANGE BLACK LEGEND



LEGEND

(A) DETOUR 896 M4-8 / M1-5 / M6-3	(B) DETOUR 896 M4-8 / M1-5 / M6-1(L)	(C) DETOUR 896 M4-8 / M1-5 / M6-1(R)	(D) DETOUR 896 M4-8 / M1-5 / M6-2(L)	
(E) DETOUR 896 M4-8 / M1-5 / M6-2(R)	(F) DETOUR 896 M4-8 / M1-5 / M5-1(L)	(G) DETOUR 896 M4-8 / M1-5 / M5-1(R)	(H) DETOUR 896 M4-8 / M1-5 / M5-2(L)	
(I) DETOUR 896 M4-8 / M1-5 / M5-2(R)	(J) END DETOUR M4-8a / 896 M1-5	(K) DETOUR AHEAD W20-2	(L) DETOUR 1000 FT W20-2	
(M) DETOUR 500 FT W20-2	(N) RAMP CLOSED AHEAD W20-3	(O) RAMP CLOSED 1000 FT W20-3	(P) RAMP CLOSED 500 FT W20-3	
(Q) RAMP CLOSED R11-2	(R) DETOUR M4-10(L)	(S) DETOUR M4-10(R)		
(T) ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY R11-3a	(U) BRIDGE OUT XX MILES AHEAD LOCAL TRAFFIC ONLY R11-3b	(V) ROAD CLOSED TO THRU TRAFFIC R11-4		

(W) (X)



GENERAL NOTES

1. ALL TEMPORARY TRAFFIC CONTROL DEVICES ARE TO BE SUPPLIED AND MAINTAINED BY THE GENERAL CONTRACTOR AND SHALL BE IN UNIFORM TRAFFIC CONTROL DEVICES (DE MUTCD) LATEST EDITION.
2. SIGNS "N" THROUGH "Q" AND "T" AND "V", THE WORD "ROAD" SHALL BE CHANGED TO "RAMP", "RR XING" OR "BRIDGE" WHERE APPLICABLE.
3. "W" TYPE 3 BARRICADES AT A ROAD CLOSURE SHALL BE PLACED COMPLETELY ACROSS THE ROADWAY, FROM CURB TO CURB, OR FROM EDGE OF ROAD TO EDGE OF ROAD, WITH THE STRIPES POSITIONED DOWNWARD TOWARD THE CENTER OF THE ROADWAY.
4. BARRICADES SHALL BE A MINIMUM OF 6 FEET WIDE UNLESS DIRECTED BY THE ENGINEER.

CONCURRENCE FOR IMPLEMENTATION

TRAFFIC SAFETY _____ DATE _____

PREPARED BY McCORMICK TAYLOR

THIS SEAL APPLIES TO ALL SHEETS BEARING THE "McT" SECTION DESIGNATION.

XX/XX/XX DATE

SEAL

ADDENDA / REVISIONS

NOT TO SCALE

I-95 AND SR 896 INTERCHANGE

CONTRACT	T201600902	PERMIT NO.	X
COUNTY	NEW CASTLE	DESIGNED BY:	Z. NERWINSKI
		CHECKED BY:	S. RUKOWICZ

DETOUR PLAN - VEHICULAR RAMP H/I PHASES 1-5

SECTION	McT
SHEET NO.	238

PORTABLE CHANGEABLE MESSAGE SIGNS

PRIOR TO DETOUR

(10 DAYS PRIOR TO BEGINNING OF DETOUR)

PCMS-1

RAMP TO I-95 SB TO CLOSE	STARTING XX/XX/XX

DURING DETOUR

(DISPLAY FOR 5 DAYS AFTER IMPLEMENTATION OF DETOUR)

PCMS-1

RAMP TO I-95 SB CLOSED	FOLLOW DETOUR

SPECIAL SIGNS

(Y)

DETOUR — M4-8

SOUTH — M3-3

INTERSTATE 95 — M1-1

1/2 MILE

2'-0" (3" 8C 2" 8C 3")

5.4" 19.2" 5.4" = 2'-6"

D/G RETROREFLECTIVE ORANGE BLACK LEGEND

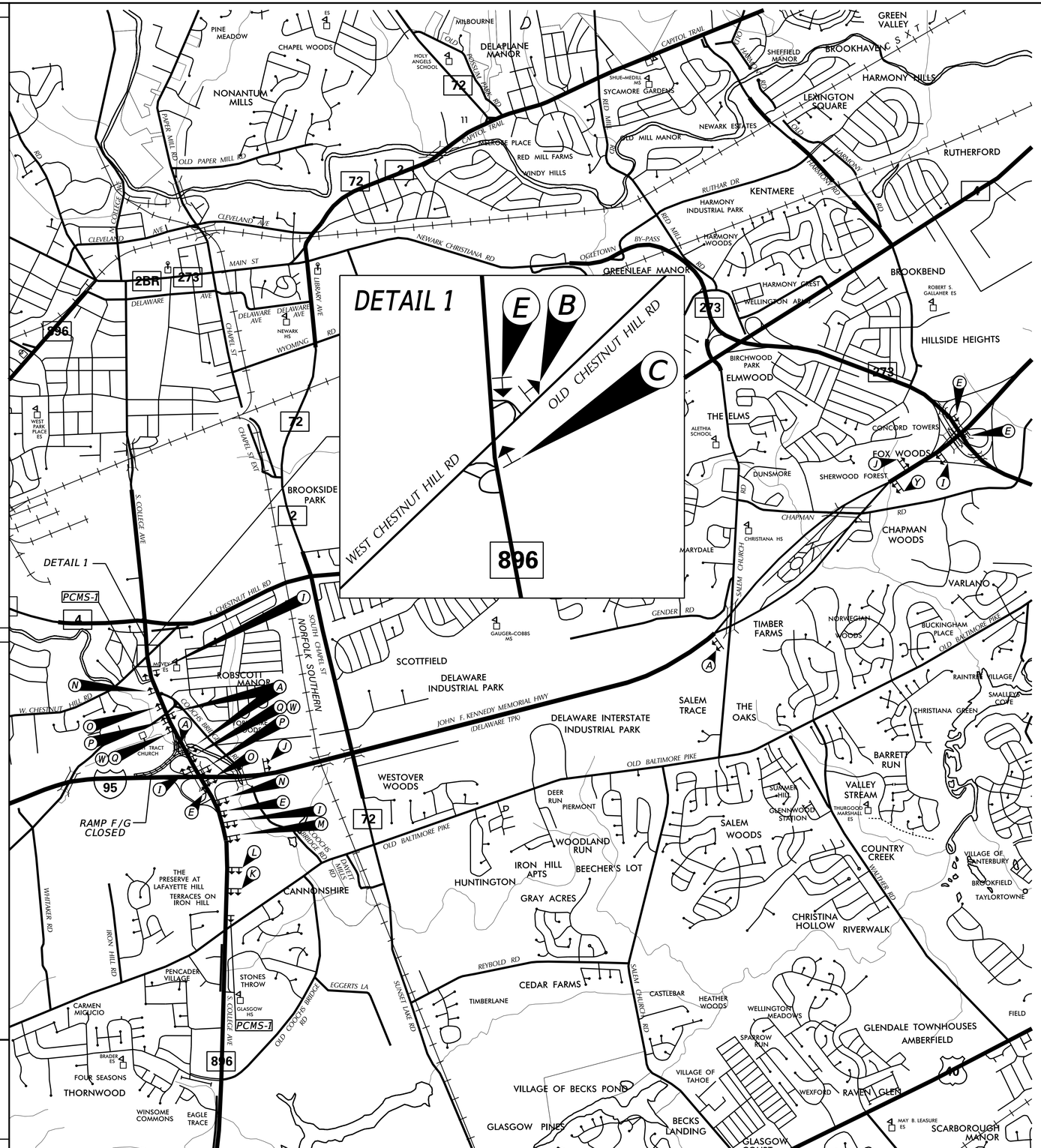
PREPARED BY

McCORMICK TAYLOR

THIS SEAL APPLIES TO ALL SHEETS BEARING THE "McT" SECTION DESIGNATION.

XX/XX/XX DATE

SEAL



LEGEND

(A) DETOUR / SOUTH / 95 — M4-8, M3-3, M1-1, M6-3	(B) DETOUR / SOUTH / 95 — M4-8, M3-3, M1-1, M6-1(L)	(C) DETOUR / SOUTH / 95 — M4-8, M3-3, M1-1, M6-1(R)	(D) DETOUR / SOUTH / 95 — M4-8, M3-3, M1-1, M6-2(L)
(E) DETOUR / SOUTH / 95 — M4-8, M3-3, M1-1, M6-2(R)	(F) DETOUR / SOUTH / 95 — M4-8, M3-3, M1-1, M5-1(L)	(G) DETOUR / SOUTH / 95 — M4-8, M3-3, M1-1, M5-1(R)	(H) DETOUR / SOUTH / 95 — M4-8, M3-3, M1-1, M5-2(L)
(I) DETOUR / SOUTH / 95 — M4-8, M3-3, M1-1, M5-2(R)	(J) END DETOUR / SOUTH / 95 — M4-8a, M3-3, M1-1	(K) DETOUR AHEAD — W20-2	(L) DETOUR 1000 FT — W20-2
(M) DETOUR 500 FT — W20-2	(N) RAMP CLOSED AHEAD — W20-3	(O) RAMP CLOSED 1000 FT — W20-3	(P) RAMP CLOSED 500 FT — W20-3
(Q) RAMP CLOSED — R11-2	(R) DETOUR — M4-10(L)	(S) DETOUR — M4-10(R)	
(T) ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY — R11-3a	(U) BRIDGE OUT XX MILES AHEAD LOCAL TRAFFIC ONLY — R11-3b	(V) ROAD CLOSED TO THRU TRAFFIC — R11-4	
(W)	(X)		

GENERAL NOTES

1. ALL TEMPORARY TRAFFIC CONTROL DEVICES ARE TO BE SUPPLIED AND MAINTAINED BY THE GENERAL CONTRACTOR AND SHALL BE IN UNIFORM TRAFFIC CONTROL DEVICES (DE MUTCD) LATEST EDITION.
2. SIGNS "N" THROUGH "Q" AND "T" AND "V", THE WORD "ROAD" SHALL BE CHANGED TO "RAMP", "RR XING" OR "BRIDGE" WHERE APPLICABLE.
3. "W" TYPE 3 BARRICADES AT A ROAD CLOSURE SHALL BE PLACED COMPLETELY ACROSS THE ROADWAY, FROM CURB TO CURB, OR FROM EDGE OF ROAD TO EDGE OF ROAD, WITH THE STRIPES POSITIONED DOWNWARD TOWARD THE CENTER OF THE ROADWAY.
4. BARRICADES SHALL BE A MINIMUM OF 6 FEET WIDE UNLESS DIRECTED BY THE ENGINEER.

CONCURRENCE FOR IMPLEMENTATION

TRAFFIC SAFETY — DATE

ADDENDA / REVISIONS

NOT TO SCALE

I-95 AND SR 896 INTERCHANGE

CONTRACT	T201600902	PERMIT NO.	X
COUNTY	NEW CASTLE	DESIGNED BY:	Z. NERWINSKI
		CHECKED BY:	S. RUKOWICZ

DETOUR PLAN - VEHICULAR RAMP F/G - PHASE 4

SECTION: McT

SHEET NO.: 237

Appendix D:

Daily Road User Cost Calculations

Detour Road User Cost

Project: I-95 and SR 896 Interchange **Ramp H NB I-95 to NB SR 896**
Other: **2025 Volumes**

Average Daily Detoured Traffic:	285	veh/day

Road User Cost Components	Vehicle Class	Class Percent (%)	Total Vehicles (No.)	Normal Travel Time (hr/veh)	Detour Travel Time (hr/veh)	Normal Travel Length (mi/veh)	Detour Travel Length (mi/veh)	Values of Time ($/veh-hr)	Operating Cost w/o Detour ($/mi)	Operating Cost w/ Detour ($/mi)	Road User Cost ($)
Detour Delay Cost	Cars	75%	214	0.02	0.18	N/A	N/A	$21.40	N/A	N/A	$731.88
	Light Truck	10%	29	0.02	0.18	N/A	N/A	$21.92	N/A	N/A	$99.96
	Heavy Truck	15%	43	0.02	0.18	N/A	N/A	$29.79	N/A	N/A	$203.76
Detour Operating Cost	Cars	75%	214	N/A	N/A	0.6	9.7	N/A	$0.434	$0.413	$796.23
	Light Truck	10%	29	N/A	N/A	0.6	9.7	N/A	$0.895	$0.774	$197.56
	Heavy Truck	15%	43	N/A	N/A	0.6	9.7	N/A	$0.895	$0.774	$296.35

Daily Road User Cost	**$2,325.74**
Number of Days for Detour	**1,088**
Total Road User Cost for Detour	**$2,530,405.51**

Assumptions:

1. ADT Volumes and Truck Percentage (10%, 15%) were taken from Sections 2.6 and 3.2 of TMP. No classification was available for trucks, so split 75/10/15

2. Travel lengths were taken from Google Earth; Travel Times are based on posted speed limits.

Segment	Road	Length (mi)	Posted Speed (mph)	Time (hr)	Speed (weighted)	
Normal Travel	Ramp H	0.32	25	0.01	8	
	SR 896 NB	0.28	40	0.01	11.2	
	Total:	0.6	-	0.02	19.2	
					32.0	Used 25 mph average for detour route operating costs.
Detour Travel	I-95 NB	4.47	65	0.07	290.55	
	273 Interchange Ramps	1.02	25	0.04	25.5	
	SR 273	0.1	45	0	4.5	
	I-95 SB	3.8	65	0.06	247	
	Ramp A	0.26	25	0.01	6.5	
	Total:	9.65	-	0.18	574.05	
					59.5	Used 55 mph average for detour route operating costs.

3. Cost Rates taken from DGM 1-24 Attachment, Updated 1/15/2020

4. Operating Costs for normal conditions assumes 25 mph based on posted speed limit and 55 mph for detour route based on weighted average of speed limits along the detour route.

5. Assumed calendar days (7 days per week), not work days (5 days per week).

Detour Road User Cost

Project: I-95 and SR 896 Interchange **Ramp I** NB I-95 to SB SR 896
Other: **2025 Volumes**

Average Daily Detoured Traffic:	1,749	veh/day

Road User Cost Components	Vehicle Class	Class Percent (%)	Total Vehicles (No.)	Normal Travel Time (hr/veh)	Detour Travel Time (hr/veh)	Normal Travel Length (mi/veh)	Detour Travel Length (mi/veh)	Values of Time ($/veh-hr)	Operating Cost w/o Detour ($/mi)	Operating Cost w/ Detour ($/mi)	Road User Cost ($)
Detour Delay Cost	Cars	79%	1,382	0.02	0.19	N/A	N/A	$21.40	N/A	N/A	$5,026.66
	Light Truck	11%	192	0.02	0.19	N/A	N/A	$21.92	N/A	N/A	$716.92
	Heavy Truck	10%	175	0.02	0.19	N/A	N/A	$29.79	N/A	N/A	$885.75
Detour Operating Cost	Cars	79%	1,382	N/A	N/A	0.43	10.2	N/A	$0.434	$0.413	$5,562.74
	Light Truck	11%	192	N/A	N/A	0.43	10.2	N/A	$0.895	$0.774	$1,444.84
	Heavy Truck	10%	175	N/A	N/A	0.43	10.2	N/A	$0.895	$0.774	$1,313.49
									Daily Road User Cost		**$14,950.40**
									Number of Days for Detour		**1,088**
									Total Road User Cost for Detour		**$16,266,030.31**

Assumptions:

1. ADT Volumes and Truck Percentage (11%, 10%) were taken from Sections 2.6 and 3.2 of TMP. No classification was available for trucks, so split 79/11/10

2. Travel lengths were taken from Google Earth; Travel Times are based on posted speed limits.

Segment	Road	Length (mi)	Posted Speed (mph)	Time (hr)	Speed (weighted)	
Normal Travel	Ramp I	0.43	25	0.02	10.75	
	Total:	0.43	-	0.02	10.75	
					25.0	Used 25 mph average for detour route operating costs.
Detour Travel	I-95 NB	4.47	65	0.07	290.55	
	273 Interchange Ramps	1.02	25	0.04	25.5	
	SR 273	0.1	45	0	4.5	
	I-95 SB	4	65	0.06	260	
	Ramp C	0.27	25	0.01	6.75	
	SR 896	0.34	40	0.01	13.6	
	Total:	10.2	-	0.19	600.9	
					58.9	Used 55 mph average for detour route operating costs.

3. Cost Rates taken from DGM 1-24 Attachment, Updated 1/15/2020

4. Operating Costs for normal conditions assumes 25 mph based on posted speed limit and 55 mph for detour route based on weighted average of speed limits along the detour route.

5. Assumed calendar days (7 days per week), not work days (5 days per week).

Detour Road User Cost

Project: I-95 and SR 896 Interchange **Ramp F SB SR 896 to SB I-95**
Other: **2025 Volumes**

Average Daily Detoured Traffic:	1,353	veh/day

Road User Cost Components	Vehicle Class	Class Percent (%)	Total Vehicles (No.)	Normal Travel Time (hr/veh)	Detour Travel Time (hr/veh)	Normal Travel Length (mi/veh)	Detour Travel Length (mi/veh)	Values of Time ($/veh-hr)	Operating Cost w/o Detour ($/mi)	Operating Cost w/ Detour ($/mi)	Road User Cost ($)
Detour Delay Cost	Cars	62%	839	0.02	0.20	N/A	N/A	$21.40	N/A	N/A	$3,231.29
	Light Truck	27%	365	0.02	0.20	N/A	N/A	$21.92	N/A	N/A	$1,441.37
	Heavy Truck	11%	149	0.02	0.20	N/A	N/A	$29.79	N/A	N/A	$798.06
Detour Operating Cost	Cars	62%	839	N/A	N/A	0.4	10.3	N/A	$0.434	$0.413	$3,430.08
	Light Truck	27%	365	N/A	N/A	0.4	10.3	N/A	$0.895	$0.774	$2,788.08
	Heavy Truck	11%	149	N/A	N/A	0.4	10.3	N/A	$0.895	$0.774	$1,135.89
									Daily Road User Cost		**$12,824.76**
									Number of Days for Detour		**196**
									Total Road User Cost for Detour		**$2,513,653.30**

Assumptions:

1. ADT Volumes and Truck Percentage (27%, 11%) were taken from Sections 2.6 and 3.2 of TMP. No classification was available for trucks, so split 62/27/11. No class split on individual ramps.

2. Travel lengths were taken from Google Earth; Travel Times are based on posted speed limits.

Segment	Road	Length (mi)	Posted Speed (mph)	Time (hr)	Speed (weighted)	
Normal Travel	Ramp F	0.38	25	0.02	9.5	
	Total:	0.38	-	0.02	9.5	
					25.0	Used 25 mph average for detour route operating costs.
Detour Travel	SR 896 SB	0.3	40	0.01	12	
	Ramp D	0.4	25	0.02	10	
	I-95 NB	4.13	65	0.06	268.45	
	273 Interchange Ramps	1.02	25	0.04	25.5	
	SR 273	0.1	45	0	4.5	
	I-95 SB	4.35	65	0.07	282.75	
	Total:	10.3	-	0.2	603.2	
					58.6	Used 55 mph average for detour route operating costs.

3. Cost Rates taken from DGM 1-24 Attachment, Updated 1/15/2020

4. Operating Costs for normal conditions assumes 25 mph based on posted speed limit and 55 mph for detour route based on weighted average of speed limits along the detour route.

5. Assumed calendar days (7 days per week), not work days (5 days per week).

Detour Road User Cost

Project: I-95 and SR 896 Interchange **Ramp G NB SR 896 to SB I-95**
Other: **2025 Volumes**

Average Daily Detoured Traffic:	1,152	veh/day

Road User Cost Components	Vehicle Class	Class Percent (%)	Total Vehicles (No.)	Normal Travel Time (hr/veh)	Detour Travel Time (hr/veh)	Normal Travel Length (mi/veh)	Detour Travel Length (mi/veh)	Values of Time ($/veh-hr)	Operating Cost w/o Detour ($/mi)	Operating Cost w/ Detour ($/mi)	Road User Cost ($)
Detour Delay Cost	Cars	62%	714	0.02	0.19	N/A	N/A	$21.40	N/A	N/A	$2,598.41
	Light Truck	27%	311	0.02	0.19	N/A	N/A	$21.92	N/A	N/A	$1,159.06
	Heavy Truck	11%	127	0.02	0.19	N/A	N/A	$29.79	N/A	N/A	$641.75
Detour Operating Cost	Cars	62%	714	N/A	N/A	0.3	9.8	N/A	$0.434	$0.413	$2,776.72
	Light Truck	27%	311	N/A	N/A	0.3	9.8	N/A	$0.895	$0.774	$2,257.81
	Heavy Truck	11%	127	N/A	N/A	0.3	9.8	N/A	$0.895	$0.774	$919.85
									Daily Road User Cost		**$10,353.59**
									Number of Days for Detour		**196**
									Total Road User Cost for Detour		**$2,029,302.98**

Assumptions:

1. ADT Volumes and Truck Percentage (27%, 11%) were taken from Sections 2.6 and 3.2 of TMP. No classification was available for trucks, so split 62/27/11. No class split on individual ramps.

2. Travel lengths were taken from Google Earth; Travel Times are based on posted speed limits.

Segment	Road	Length (mi)	Posted Speed (mph)	Time (hr)	Speed (weighted)	
Normal Travel	Ramp G	0.33	25	0.01	8.25	
	Total:	0.33	-	0.01	8.25	
					25.0	Used 25 mph average for detour route operating costs.
Detour Travel	Ramp J	0.45	25	0.02	11.25	
	I-95 NB	3.84	65	0.06	249.6	
	273 Interchange Ramps	1.02	25	0.04	25.5	
	SR 273	0.1	45	0	4.5	
	I-95 SB	4.35	65	0.07	282.75	
	Total:	9.76	-	0.19	573.6	
					58.8	Used 55 mph average for detour route operating costs.

3. Cost Rates taken from DGM 1-24 Attachment, Updated 1/15/2020

4. Operating Costs for normal conditions assumes 25 mph based on posted speed limit and 55 mph for detour route based on weighted average of speed limits along the detour route.

5. Assumed calendar days (7 days per week), not work days (5 days per week).

DGM 1-24 Attachment

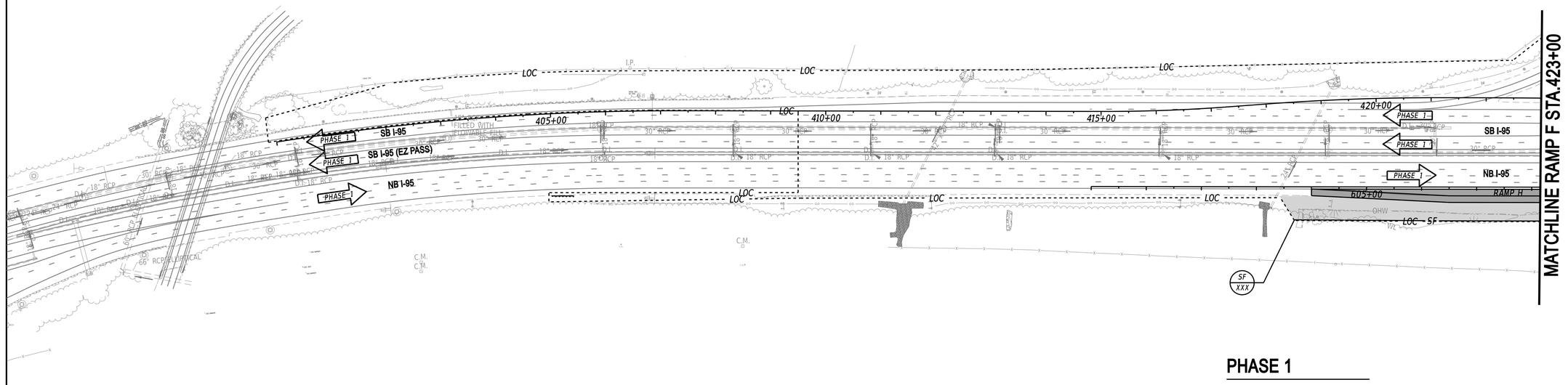
Updated 1/15/2020

Table 1 –2020 Values of Time (VOT)	
Automobiles	$21.40 per hour
Light Trucks	$21.92 per hour
Heavy Trucks	$29.79 per hour

Table 2 – 2020 Operating Costs		
Speed (mph)	Autos ($/mi)	Trucks ($/mi)
15	$0.460	$1.041
25	$0.434	$0.895
35	$0.422	$0.830
45	$0.415	$0.795
55	$0.413	$0.774
65	$0.408	$0.760

Appendix E:

Temporary Traffic Control Plan (TTCP)



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PHASE 1

STAGE 1:
1. *PLACE CHANGEABLE PORTABLE MESSAGE SIGNS TEN (10) DAYS PRIOR TO CONSTRUCTION*
2. *PLACE PHASE 1 PERMANENT WARNING SIGNS*
3. *PLACE PHASE 1 EROSION AND SEDIMENT CONTROLS*
4. *CLEAR AND GRUBB WITHIN PHASE 1 LIMITS*

STAGE 2: (PORTION OF RAMP D & C @ IRON HILL AND BRIDGE BRI-703D ABUTMENTS)
1. *SET DETOUR TO CLOSE EXISTING RAMP H & I*
2. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE*
3. *BEGIN CONSTRUCTING RAMP D & C @ IRON HILL. INSTALL PROPOSED DRAINAGE AND MSE WALL ALONG RAMPS*
4. *BEGIN EMBANKMENT AND MSE WALL FOR BRI-703D EAST OF SR896*
5. *COMPLETE THE WEST APPROACH TO BRI-703D*
6. *CONSTRUCT GRADED AGGREGATE BASE TO PREPARE FOR PCC PAVEMENT*
7. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND SHARED USE PATH*

STAGE 3: (RAMP J)
1. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE*
2. *CONSTRUCT SEDIMENT POND*
3. *DURING OFF PEAK HOURS, INSTALL CROSS PIPES FOR RAMP J*
4. *CONSTRUCT PORTION OF RAMP J THAT DOES NOT INTERFERE WITH EXISTING RAMP J TRAFFIC*
5. *COMPLETE THE TIE-INS TO EXISTING RAMP J, UTILIZING A DETOUR, DURING NIGHTTIME HOURS*
6. *PLACE TEMPORARY STRIPING AND REMOVE DETOUR*

STAGE 4: (TEMPORARY RAMP A)
1. *CONSTRUCT PORTION OF TEMPORARY RAMP A HOTMIX PAVEMENT THAT DOES NOT INTERFERE WITH TRAFFIC*
2. *USE TA-33, DURING OFF PEAK HOURS, TO CONSTRUCT TIE IN AT NORTHBOUND SR896*
3. *USE TA-5A, DURING OFF PEAK HOURS, TO CONSTRUCT TIE IN AT SOUTHBOUND I-95*
4. *TEMPORARY RAMP A SHALL REMAIN CLOSED UNTIL EXISTING RAMP A IS READY TO BE CLOSED*

STAGE 5: (BRI-703D PIER/BRIDGE AND SR896 MEDIAN)
1. *USE TA-33 IN BOTH DIRECTIONS NB AND SB IN ORDER TO CLOSE THE INSIDE LANES TO CONSTRUCT BRI-703D PIER*
2. *CONSTRUCT MEDIAN CURB AND GUARDRAIL*
3. *PAVE HOTMIX PATCHING*
4. *CONSTRUCT BRIDGE BRI-703D*

STAGE 6: (NORTHBOUND I-95 WIDENING / SOUTHEAST QUADRANT RAMP D / BRI-705A)
1. *USING TA-33, SET BARRIER ALONG NB I-95*
2. *EXTEND CULVERT AND INSTALL OTHER DRAINAGE FACILITIES SHOWN IN THE SOUTHEAST QUADRANT TO NORTH LIMITS*
3. *SAWCUT, REMOVE EXISTING PAVEMENT AND GRADE PAVEMENT BOX*
4. *CONSTRUCT WALLS, PCC BARRIER, AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
5. *COMPLETE BRI-706 & BRI-709 WIDENING AND BRI-705A*
6. *POUR PCC PAVEMENT FOR RAMP D*
7. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
8. *PLACE HOTMIX TIE IN AND WIDENING PAVEMENT*
9. *PLACE REQUIRED SIGNING AND STRIPING*

STAGE 7: (NORTHBOUND SR896 WIDENING)
1. *USE TA-33 TO CONSTRUCT NORTHBOUND SR896 WIDENING*
2. *SAWCUT AND REMOVE EXISTING PAVEMENT SHOWN*
3. *CONSTRUCT DRAINAGE FACILITIES AND GRADED AGGREGATE BASE COURSE*
4. *POUR PCC PAVEMENT*
5. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
6. *PLACE REQUIRED SIGNING AND STRIPING*

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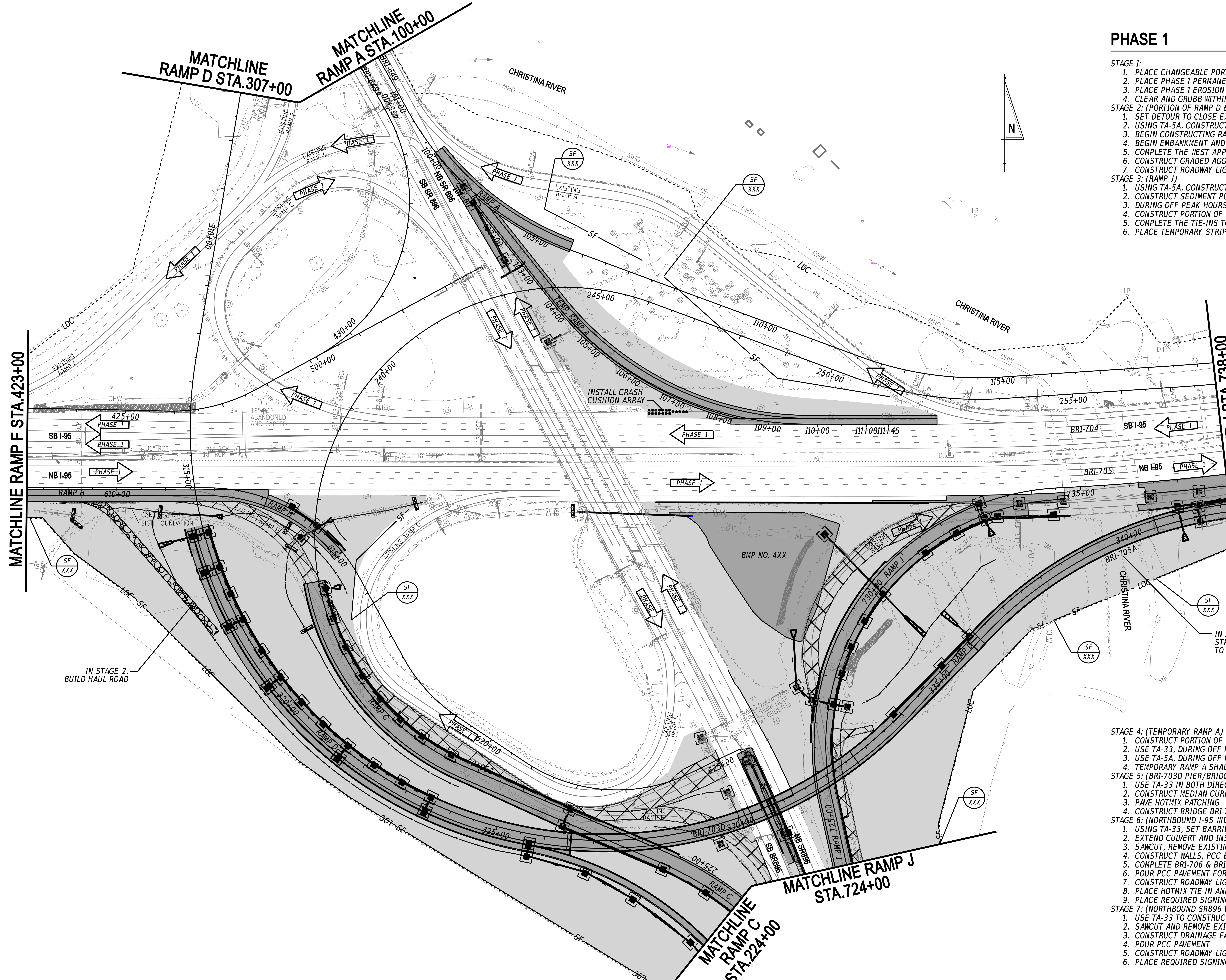
ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 1	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 207
					CHECKED BY: S. PENOZA		



PHASE 1

STAGE 1:
1. *PLACE CHANGEABLE PORTABLE MESSAGE SIGNS TEN (10) DAYS PRIOR TO CONSTRUCTION*
2. *PLACE PHASE 1 PERMANENT WARNING SIGNS*
3. *PLACE PHASE 1 EROSION AND SEDIMENT CONTROLS*
4. *CLEAR AND GRUBB WITHIN PHASE 1 LIMITS*

STAGE 2: (PORTION OF RAMP D & C @ IRON HILL AND BRIDGE BRI-703D ABUTMENTS)
1. *SET DETOUR TO CLOSE EXISTING RAMP H & I*
2. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE*
3. *BEGIN CONSTRUCTING RAMP D & C @ IRON HILL. INSTALL PROPOSED DRAINAGE AND MSE WALL ALONG RAMPS*
4. *BEGIN EMBANKMENT AND MSE WALL FOR BRI-703D EAST OF SR896*
5. *COMPLETE THE WEST APPROACH TO BRI-703D*
6. *CONSTRUCT GRADED AGGREGATE BASE TO PREPARE FOR PCC PAVEMENT*
7. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND SHARED USE PATH*

STAGE 3: (RAMP J)
1. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE*
2. *CONSTRUCT SEDIMENT POND*
3. *DURING OFF PEAK HOURS, INSTALL CROSS PIPES FOR RAMP J*
4. *CONSTRUCT PORTION OF RAMP J THAT DOES NOT INTERFERE WITH EXISTING RAMP J TRAFFIC*
5. *COMPLETE THE TIE-INS TO EXISTING RAMP J, UTILIZING A DETOUR, DURING NIGHTTIME HOURS*
6. *PLACE TEMPORARY STRIPING AND REMOVE DETOUR*

STAGE 4: (TEMPORARY RAMP A)
1. *CONSTRUCT PORTION OF TEMPORARY RAMP A HOTMIX PAVEMENT THAT DOES NOT INTERFERE WITH TRAFFIC*
2. *USE TA-33, DURING OFF PEAK HOURS, TO CONSTRUCT TIE IN AT NORTHBOUND SR896*
3. *USE TA-5A, DURING OFF PEAK HOURS, TO CONSTRUCT TIE IN AT SOUTHBOUND I-95*
4. *TEMPORARY RAMP A SHALL REMAIN CLOSED UNTIL EXISTING RAMP A IS READY TO BE CLOSED*

STAGE 5: (BRI-703D PIER/BRIDGE AND SR896 MEDIAN)
1. *USE TA-33 IN BOTH DIRECTIONS NB AND SB IN ORDER TO CLOSE THE INSIDE LANES TO CONSTRUCT BRI-703D PIER*
2. *CONSTRUCT MEDIAN CURB AND GUARDRAIL*
3. *PAVE HOTMIX PATCHING*
4. *CONSTRUCT BRIDGE BRI-703D*

STAGE 6: (NORTHBOUND I-95 WIDENING / SOUTHEAST QUADRANT RAMP D / BRI-705A)
1. *USING TA-33, SET BARRIER ALONG NB I-95*
2. *EXTEND CULVERT AND INSTALL OTHER DRAINAGE FACILITIES SHOWN IN THE SOUTHEAST QUADRANT TO NORTH LIMITS*
3. *SAWCUT, REMOVE EXISTING PAVEMENT AND GRADE PAVEMENT BOX*
4. *CONSTRUCT WALLS, PCC BARRIER, AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
5. *COMPLETE BRI-706 & BRI-709 WIDENING AND BRI-705A*
6. *POUR PCC PAVEMENT FOR RAMP D*
7. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
8. *PLACE HOTMIX TIE IN AND WIDENING PAVEMENT*
9. *PLACE REQUIRED SIGNING AND STRIPING*

STAGE 7: (NORTHBOUND SR896 WIDENING)
1. *USE TA-33 TO CONSTRUCT NORTHBOUND SR896 WIDENING*
2. *SAWCUT AND REMOVE EXISTING PAVEMENT SHOWN*
3. *CONSTRUCT DRAINAGE FACILITIES AND GRADED AGGREGATE BASE COURSE*
4. *POUR PCC PAVEMENT*
5. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
6. *PLACE REQUIRED SIGNING AND STRIPING*

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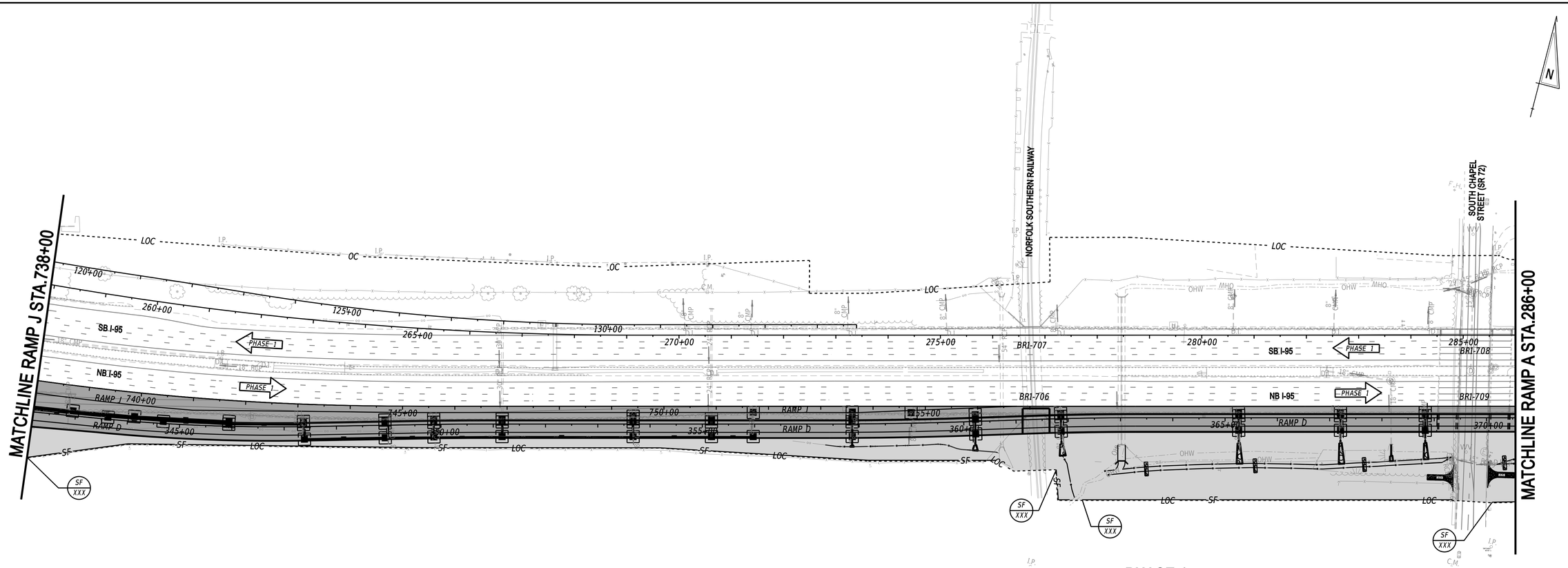
ADDENDA / REVISIONS	SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 1	SECTION CEI
			COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA CHECKED BY: S. PENOZA		SHEET NO. 208



PHASE 1

STAGE 1:
1. *PLACE CHANGEABLE PORTABLE MESSAGE SIGNS TEN (10) DAYS PRIOR TO CONSTRUCTION*
2. *PLACE PHASE 1 PERMANENT WARNING SIGNS*
3. *PLACE PHASE 1 EROSION AND SEDIMENT CONTROLS*
4. *CLEAR AND GRUBB WITHIN PHASE 1 LIMITS*

STAGE 2: (PORTION OF RAMP D & C @ IRON HILL AND BRIDGE BRI-703D ABUTMENTS)
1. *SET DETOUR TO CLOSE EXISTING RAMP H & I*
2. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE*
3. *BEGIN CONSTRUCTING RAMP D & C @ IRON HILL. INSTALL PROPOSED DRAINAGE AND MSE WALL ALONG RAMPS*
4. *BEGIN EMBANKMENT AND MSE WALL FOR BRI-703D EAST OF SR896*
5. *COMPLETE THE WEST APPROACH TO BRI-703D*
6. *CONSTRUCT GRADED AGGREGATE BASE TO PREPARE FOR PCC PAVEMENT*
7. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND SHARED USE PATH*

STAGE 3: (RAMP J)
1. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE*
2. *CONSTRUCT SEDIMENT POND*
3. *DURING OFF PEAK HOURS, INSTALL CROSS PIPES FOR RAMP J*
4. *CONSTRUCT PORTION OF RAMP J THAT DOES NOT INTERFERE WITH EXISTING RAMP J TRAFFIC*
5. *COMPLETE THE TIE-INS TO EXISTING RAMP J, UTILIZING A DETOUR, DURING NIGHTTIME HOURS*
6. *PLACE TEMPORARY STRIPING AND REMOVE DETOUR*

STAGE 4: (TEMPORARY RAMP A)
1. *CONSTRUCT PORTION OF TEMPORARY RAMP A HOTMIX PAVEMENT THAT DOES NOT INTERFERE WITH TRAFFIC*
2. *USE TA-33, DURING OFF PEAK HOURS, TO CONSTRUCT TIE IN AT NORTHBOUND SR896*
3. *USE TA-5A, DURING OFF PEAK HOURS, TO CONSTRUCT TIE IN AT SOUTHBOUND I-95*
4. *TEMPORARY RAMP A SHALL REMAIN CLOSED UNTIL EXISTING RAMP A IS READY TO BE CLOSED*

STAGE 5: (BRI-703D PIER/BRIDGE AND SR896 MEDIAN)
1. *USE TA-33 IN BOTH DIRECTIONS NB AND SB IN ORDER TO CLOSE THE INSIDE LANES TO CONSTRUCT BRI-703D PIER*
2. *CONSTRUCT MEDIAN CURB AND GUARDRAIL*
3. *PAVE HOTMIX PATCHING*
4. *CONSTRUCT BRIDGE BRI-703D*

STAGE 6: (NORTHBOUND I-95 WIDENING / SOUTHEAST QUADRANT RAMP D / BRI-705A)
1. *USING TA-33, SET BARRIER ALONG NB I-95*
2. *EXTEND CULVERT AND INSTALL OTHER DRAINAGE FACILITIES SHOWN IN THE SOUTHEAST QUADRANT TO NORTH LIMITS*
3. *SAWCUT, REMOVE EXISTING PAVEMENT AND GRADE PAVEMENT BOX*
4. *CONSTRUCT WALLS, PCC BARRIER, AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
5. *COMPLETE BRI-706 & BRI-709 WIDENING AND BRI-705A*
6. *POUR PCC PAVEMENT FOR RAMP D*
7. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
8. *PLACE HOTMIX TIE IN AND WIDENING PAVEMENT*
9. *PLACE REQUIRED SIGNING AND STRIPING*

STAGE 7: (NORTHBOUND SR896 WIDENING)
1. *USE TA-33 TO CONSTRUCT NORTHBOUND SR896 WIDENING*
2. *SAWCUT AND REMOVE EXISTING PAVEMENT SHOWN*
3. *CONSTRUCT DRAINAGE FACILITIES AND GRADED AGGREGATE BASE COURSE*
4. *POUR PCC PAVEMENT*
5. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
6. *PLACE REQUIRED SIGNING AND STRIPING*

ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 1	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 209
					CHECKED BY: S. PENOZA		

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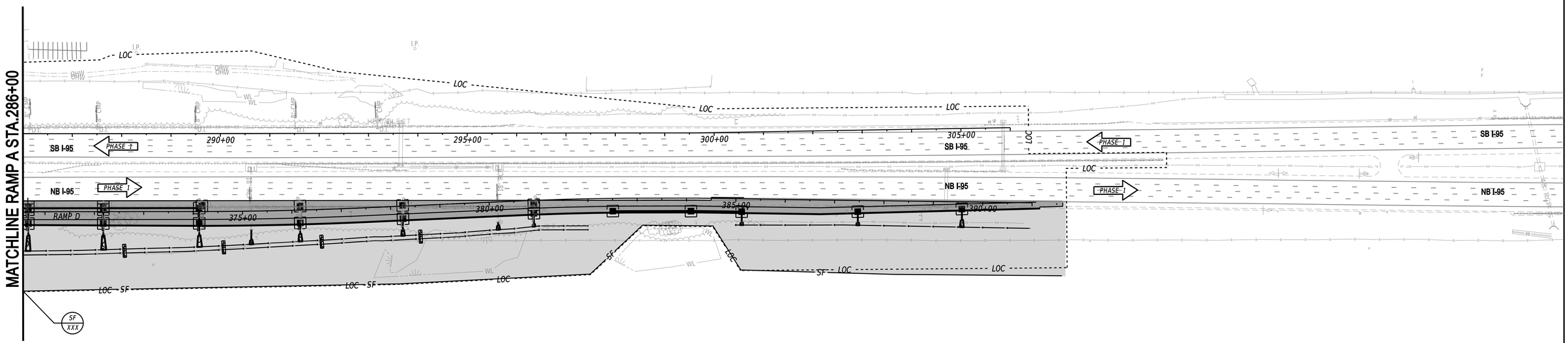

PHASE 1

STAGE 1:
1. *PLACE CHANGEABLE PORTABLE MESSAGE SIGNS TEN (10) DAYS PRIOR TO CONSTRUCTION*
2. *PLACE PHASE 1 PERMANENT WARNING SIGNS*
3. *PLACE PHASE 1 EROSION AND SEDIMENT CONTROLS*
4. *CLEAR AND GRUBB WITHIN PHASE 1 LIMITS*

STAGE 2: (PORTION OF RAMP D & C @ IRON HILL AND BRIDGE BRI-703D ABUTMENTS)
1. *SET DETOUR TO CLOSE EXISTING RAMP H & I*
2. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE*
3. *BEGIN CONSTRUCTING RAMP D & C @ IRON HILL. INSTALL PROPOSED DRAINAGE AND MSE WALL ALONG RAMPS*
4. *BEGIN EMBANKMENT AND MSE WALL FOR BRI-703D EAST OF SR896*
5. *COMPLETE THE WEST APPROACH TO BRI-703D*
6. *CONSTRUCT GRADED AGGREGATE BASE TO PREPARE FOR PCC PAVEMENT*
7. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND SHARED USE PATH*

STAGE 3: (RAMP J)
1. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE*
2. *CONSTRUCT SEDIMENT POND*
3. *DURING OFF PEAK HOURS, INSTALL CROSS PIPES FOR RAMP J*
4. *CONSTRUCT PORTION OF RAMP J THAT DOES NOT INTERFERE WITH EXISTING RAMP J TRAFFIC*
5. *COMPLETE THE TIE-INS TO EXISTING RAMP J, UTILIZING A DETOUR, DURING NIGHTTIME HOURS*
6. *PLACE TEMPORARY STRIPING AND REMOVE DETOUR*

STAGE 4: (TEMPORARY RAMP A)
1. *CONSTRUCT PORTION OF TEMPORARY RAMP A HOTMIX PAVEMENT THAT DOES NOT INTERFERE WITH TRAFFIC*
2. *USE TA-33, DURING OFF PEAK HOURS, TO CONSTRUCT TIE IN AT NORTHBOUND SR896*
3. *USE TA-5A, DURING OFF PEAK HOURS, TO CONSTRUCT TIE IN AT SOUTHBOUND I-95*
4. *TEMPORARY RAMP A SHALL REMAIN CLOSED UNTIL EXISTING RAMP A IS READY TO BE CLOSED*

STAGE 5: (BRI-703D PIER/BRIDGE AND SR896 MEDIAN)
1. *USE TA-33 IN BOTH DIRECTIONS NB AND SB IN ORDER TO CLOSE THE INSIDE LANES TO CONSTRUCT BRI-703D PIER*
2. *CONSTRUCT MEDIAN CURB AND GUARDRAIL*
3. *PAVE HOTMIX PATCHING*
4. *CONSTRUCT BRIDGE BRI-703D*

STAGE 6: (NORTHBOUND I-95 WIDENING / SOUTHEAST QUADRANT RAMP D / BRI-705A)
1. *USING TA-33, SET BARRIER ALONG NB I-95*
2. *EXTEND CULVERT AND INSTALL OTHER DRAINAGE FACILITIES SHOWN IN THE SOUTHEAST QUADRANT TO NORTH LIMITS*
3. *SAWCUT, REMOVE EXISTING PAVEMENT AND GRADE PAVEMENT BOX*
4. *CONSTRUCT WALLS, PCC BARRIER, AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
5. *COMPLETE BRI-706 & BRI-709 WIDENING AND BRI-705A*
6. *POUR PCC PAVEMENT FOR RAMP D*
7. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
8. *PLACE HOTMIX TIE IN AND WIDENING PAVEMENT*
9. *PLACE REQUIRED SIGNING AND STRIPING*

STAGE 7: (NORTHBOUND SR896 WIDENING)
1. *USE TA-33 TO CONSTRUCT NORTHBOUND SR896 WIDENING*
2. *SAWCUT AND REMOVE EXISTING PAVEMENT SHOWN*
3. *CONSTRUCT DRAINAGE FACILITIES AND GRADED AGGREGATE BASE COURSE*
4. *POUR PCC PAVEMENT*
5. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
6. *PLACE REQUIRED SIGNING AND STRIPING*

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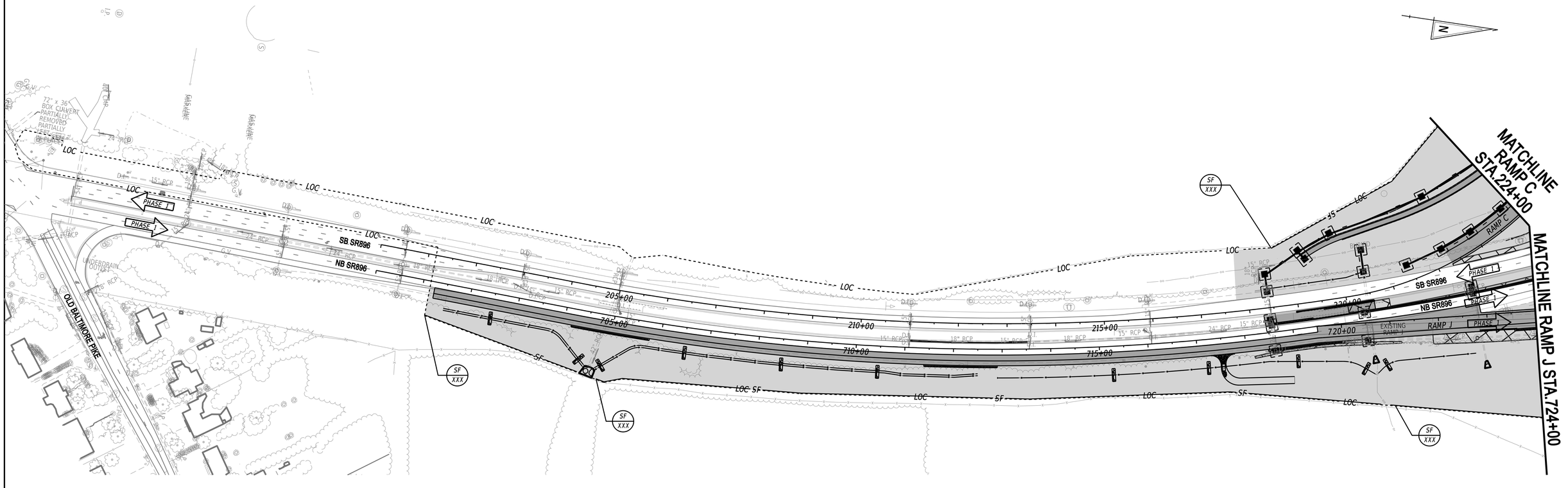
ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 1	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 210
					CHECKED BY: S. PENOZA		



PHASE 1

STAGE 1:
1. *PLACE CHANGEABLE PORTABLE MESSAGE SIGNS TEN (10) DAYS PRIOR TO CONSTRUCTION*
2. *PLACE PHASE 1 PERMANENT WARNING SIGNS*
3. *PLACE PHASE 1 EROSION AND SEDIMENT CONTROLS*
4. *CLEAR AND GRUBB WITHIN PHASE 1 LIMITS*

STAGE 2: (PORTION OF RAMP D & C @ IRON HILL AND BRIDGE BRI-703D ABUTMENTS)
1. *SET DETOUR TO CLOSE EXISTING RAMP H & I*
2. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE*
3. *BEGIN CONSTRUCTING RAMP D & C @ IRON HILL. INSTALL PROPOSED DRAINAGE AND MSE WALL ALONG RAMPS*
4. *BEGIN EMBANKMENT AND MSE WALL FOR BRI-703D EAST OF SR896*
5. *COMPLETE THE WEST APPROACH TO BRI-703D*
6. *CONSTRUCT GRADED AGGREGATE BASE TO PREPARE FOR PCC PAVEMENT*
7. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND SHARED USE PATH*

STAGE 3: (RAMP J)
1. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE*
2. *CONSTRUCT SEDIMENT POND*
3. *DURING OFF PEAK HOURS, INSTALL CROSS PIPES FOR RAMP J*
4. *CONSTRUCT PORTION OF RAMP J THAT DOES NOT INTERFERE WITH EXISTING RAMP J TRAFFIC*
5. *COMPLETE THE TIE-INS TO EXISTING RAMP J, UTILIZING A DETOUR, DURING NIGHTTIME HOURS*
6. *PLACE TEMPORARY STRIPING AND REMOVE DETOUR*

STAGE 4: (TEMPORARY RAMP A)
1. *CONSTRUCT PORTION OF TEMPORARY RAMP A HOTMIX PAVEMENT THAT DOES NOT INTERFERE WITH TRAFFIC*
2. *USE TA-33, DURING OFF PEAK HOURS, TO CONSTRUCT TIE IN AT NORTHBOUND SR896*
3. *USE TA-5A, DURING OFF PEAK HOURS, TO CONSTRUCT TIE IN AT SOUTHBOUND I-95*
4. *TEMPORARY RAMP A SHALL REMAIN CLOSED UNTIL EXISTING RAMP A IS READY TO BE CLOSED*

STAGE 5: (BRI-703D PIER/BRIDGE AND SR896 MEDIAN)
1. *USE TA-33 IN BOTH DIRECTIONS NB AND SB IN ORDER TO CLOSE THE INSIDE LANES TO CONSTRUCT BRI-703D PIER*
2. *CONSTRUCT MEDIAN CURB AND GUARDRAIL*
3. *PAVE HOTMIX PATCHING*
4. *CONSTRUCT BRIDGE BRI-703D*

STAGE 6: (NORTHBOUND I-95 WIDENING / SOUTHEAST QUADRANT RAMP D / BRI-705A)
1. *USING TA-33, SET BARRIER ALONG NB I-95*
2. *EXTEND CULVERT AND INSTALL OTHER DRAINAGE FACILITIES SHOWN IN THE SOUTHEAST QUADRANT TO NORTH LIMITS*
3. *SAWCUT, REMOVE EXISTING PAVEMENT AND GRADE PAVEMENT BOX*
4. *CONSTRUCT WALLS, PCC BARRIER, AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
5. *COMPLETE BRI-706 & BRI-709 WIDENING AND BRI-705A*
6. *POUR PCC PAVEMENT FOR RAMP D*
7. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
8. *PLACE HOTMIX TIE IN AND WIDENING PAVEMENT*
9. *PLACE REQUIRED SIGNING AND STRIPING*

STAGE 7: (NORTHBOUND SR896 WIDENING)
1. *USE TA-33 TO CONSTRUCT NORTHBOUND SR896 WIDENING*
2. *SAWCUT AND REMOVE EXISTING PAVEMENT SHOWN*
3. *CONSTRUCT DRAINAGE FACILITIES AND GRADED AGGREGATE BASE COURSE*
4. *POUR PCC PAVEMENT*
5. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
6. *PLACE REQUIRED SIGNING AND STRIPING*

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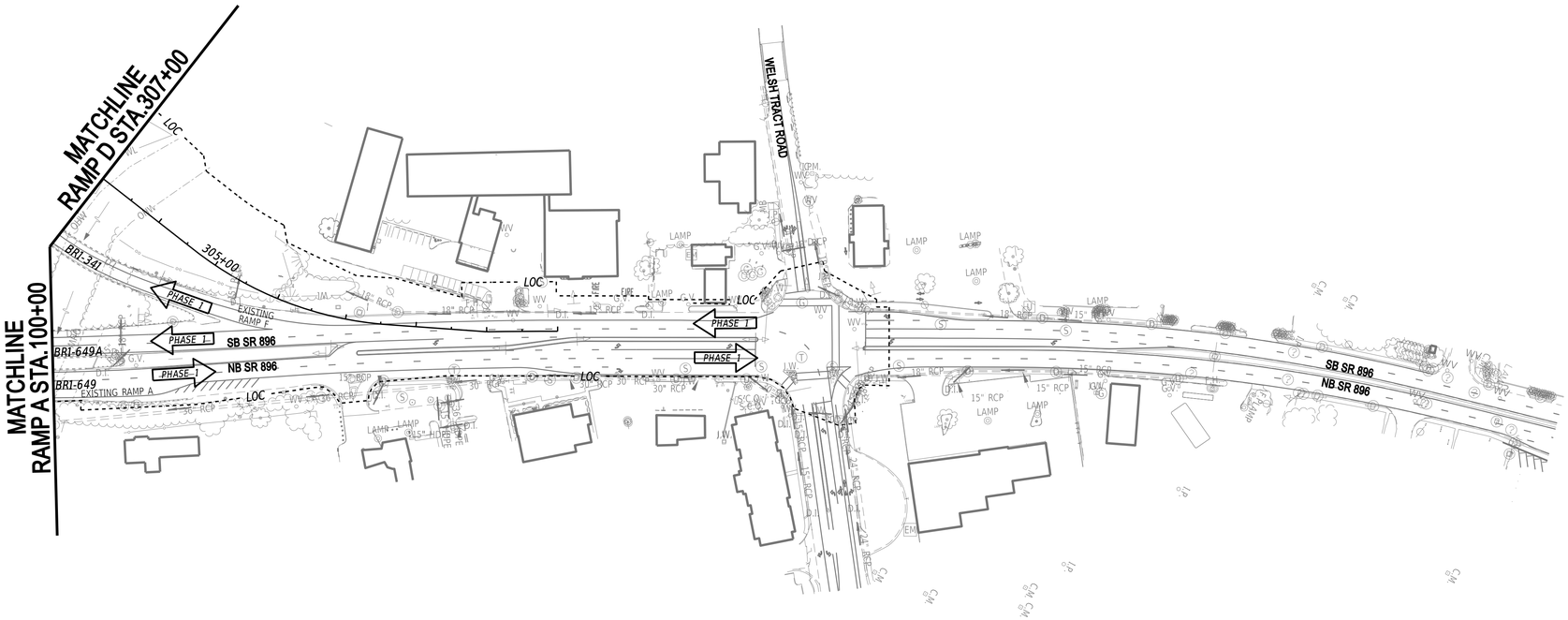
ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 1	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 211
					CHECKED BY: S. PENOZA		



PHASE 1

STAGE 1:
1. *PLACE CHANGEABLE PORTABLE MESSAGE SIGNS TEN (10) DAYS PRIOR TO CONSTRUCTION*
2. *PLACE PHASE 1 PERMANENT WARNING SIGNS*
3. *PLACE PHASE 1 EROSION AND SEDIMENT CONTROLS*
4. *CLEAR AND GRUBB WITHIN PHASE 1 LIMITS*

STAGE 2: (PORTION OF RAMP D & C @ IRON HILL AND BRIDGE BRI-703D ABUTMENTS)
1. *SET DETOUR TO CLOSE EXISTING RAMP H & I*
2. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE*
3. *BEGIN CONSTRUCTING RAMP D & C @ IRON HILL. INSTALL PROPOSED DRAINAGE AND MSE WALL ALONG RAMPS*
4. *BEGIN EMBANKMENT AND MSE WALL FOR BRI-703D EAST OF SR896*
5. *COMPLETE THE WEST APPROACH TO BRI-703D*
6. *CONSTRUCT GRADED AGGREGATE BASE TO PREPARE FOR PCC PAVEMENT*
7. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND SHARED USE PATH*

STAGE 3: (RAMP J)
1. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE*
2. *CONSTRUCT SEDIMENT POND*
3. *DURING OFF PEAK HOURS, INSTALL CROSS PIPES FOR RAMP J*
4. *CONSTRUCT PORTION OF RAMP J THAT DOES NOT INTERFERE WITH EXISTING RAMP J TRAFFIC*
5. *COMPLETE THE TIE-INS TO EXISTING RAMP J, UTILIZING A DETOUR, DURING NIGHTTIME HOURS*
6. *PLACE TEMPORARY STRIPING AND REMOVE DETOUR*

STAGE 4: (TEMPORARY RAMP A)
1. *CONSTRUCT PORTION OF TEMPORARY RAMP A HOTMIX PAVEMENT THAT DOES NOT INTERFERE WITH TRAFFIC*
2. *USE TA-33, DURING OFF PEAK HOURS, TO CONSTRUCT TIE IN AT NORTHBOUND SR896*
3. *USE TA-5A, DURING OFF PEAK HOURS, TO CONSTRUCT TIE IN AT SOUTHBOUND I-95*
4. *TEMPORARY RAMP A SHALL REMAIN CLOSED UNTIL EXISTING RAMP A IS READY TO BE CLOSED*

STAGE 5: (BRI-703D PIER/BRIDGE AND SR896 MEDIAN)
1. *USE TA-33 IN BOTH DIRECTIONS NB AND SB IN ORDER TO CLOSE THE INSIDE LANES TO CONSTRUCT BRI-703D PIER*
2. *CONSTRUCT MEDIAN CURB AND GUARDRAIL*
3. *PAVE HOTMIX PATCHING*
4. *CONSTRUCT BRIDGE BRI-703D*

STAGE 6: (NORTHBOUND I-95 WIDENING / SOUTHEAST QUADRANT RAMP D / BRI-705A)
1. *USING TA-33, SET BARRIER ALONG NB I-95*
2. *EXTEND CULVERT AND INSTALL OTHER DRAINAGE FACILITIES SHOWN IN THE SOUTHEAST QUADRANT TO NORTH LIMITS*
3. *SAWCUT, REMOVE EXISTING PAVEMENT AND GRADE PAVEMENT BOX*
4. *CONSTRUCT WALLS, PCC BARRIER, AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
5. *COMPLETE BRI-706 & BRI-709 WIDENING AND BRI-705A*
6. *POUR PCC PAVEMENT FOR RAMP D*
7. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
8. *PLACE HOTMIX TIE IN AND WIDENING PAVEMENT*
9. *PLACE REQUIRED SIGNING AND STRIPING*

STAGE 7: (NORTHBOUND SR896 WIDENING)
1. *USE TA-33 TO CONSTRUCT NORTHBOUND SR896 WIDENING*
2. *SAWCUT AND REMOVE EXISTING PAVEMENT SHOWN*
3. *CONSTRUCT DRAINAGE FACILITIES AND GRADED AGGREGATE BASE COURSE*
4. *POUR PCC PAVEMENT*
5. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
6. *PLACE REQUIRED SIGNING AND STRIPING*

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ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 1	SECTION
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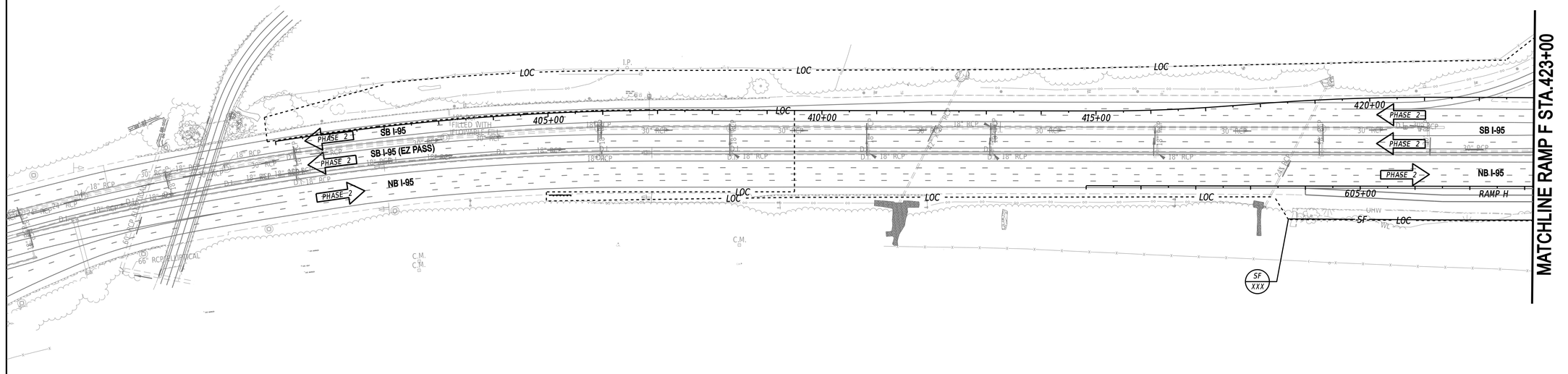
				COUNTY	DESIGNED BY: K. SMAGALA		SHEET NO.
				NEW CASTLE	CHECKED BY: S. PENOZA		212



PHASE 2

STAGE 1: (OPEN TEMPORARY RAMP A)
1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING TEMPORARY RAMP A*
2. *PLACE TEMPORARY PAVEMENT STRIPING ON TEMPORARY RAMP A AND OPEN TO TRAFFIC*
3. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE AND PLACE PHASE 2 EROSION AND SEDIMENT CONTROLS AS SHOWN*
4. *CLEAR AND GRUBB WITHIN PHASE 2 LIMITS*

STAGE 2: (RAMP A AND SOUTHBOUND I-95 WIDENING)
1. *USING TA-33, SET BARRIER ALONG SB I-95*
2. *CONSTRUCT SEDIMENT POND AND INSTALL DRAINAGE FACILITIES SHOWN FOR RAMP A TO NORTH LIMITS*
3. *SAWCUT, REMOVE EXISTING PAVEMENT AND GRADE PAVEMENT BOX*
4. *CONSTRUCT WALLS, PCC BARRIER, AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
5. *COMPLETE BRI-706 & BRI-709 WIDENING AND BRI-704A*
6. *POUR PCC PAVEMENT*
7. *PLACE HOTMIX TIE IN AND WIDENING PAVEMENT*
8. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS, AND GUARDRAIL*
9. *PLACE REQUIRED SIGNING AND STRIPING*

STAGE 3: (SR896 MEDIAN RECONSTRUCTION)
1. *USING TA-33, REGRADE MEDIAN, INSTALL DRAINAGE FACILITIES AND GUARDRAIL ON SR896 SOUTH OF I-95*

ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 2	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 213
					CHECKED BY: S. PENOZA		

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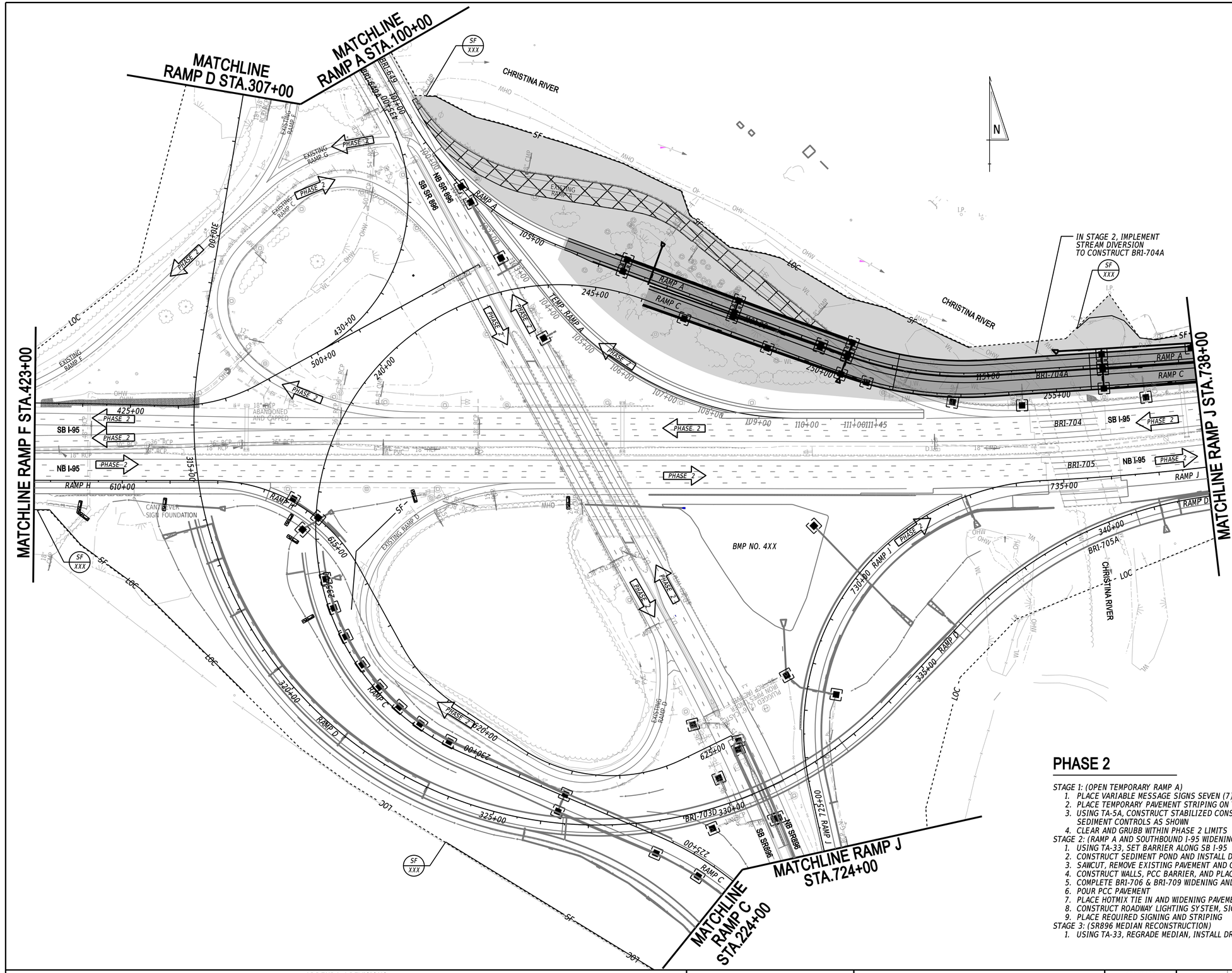

PHASE 2

STAGE 1: (OPEN TEMPORARY RAMP A)

1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING TEMPORARY RAMP A*
2. *PLACE TEMPORARY PAVEMENT STRIPING ON TEMPORARY RAMP A AND OPEN TO TRAFFIC*
3. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE AND PLACE PHASE 2 EROSION AND SEDIMENT CONTROLS AS SHOWN*
4. *CLEAR AND GRUBB WITHIN PHASE 2 LIMITS*

STAGE 2: (RAMP A AND SOUTHBOUND I-95 WIDENING)

1. *USING TA-33, SET BARRIER ALONG SB I-95*
2. *CONSTRUCT SEDIMENT POND AND INSTALL DRAINAGE FACILITIES SHOWN FOR RAMP A TO NORTH LIMITS*
3. *SAWCUT, REMOVE EXISTING PAVEMENT AND GRADE PAVEMENT BOX*
4. *CONSTRUCT WALLS, PCC BARRIER, AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
5. *COMPLETE BRI-706 & BRI-709 WIDENING AND BRI-704A*
6. *POUR PCC PAVEMENT*
7. *PLACE HOTMIX TIE IN AND WIDENING PAVEMENT*
8. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS, AND GUARDRAIL*
9. *PLACE REQUIRED SIGNING AND STRIPING*

STAGE 3: (SR896 MEDIAN RECONSTRUCTION)

1. *USING TA-33, REGRADE MEDIAN, INSTALL DRAINAGE FACILITIES AND GUARDRAIL ON SR896 SOUTH OF I-95*

ADDENDA / REVISIONS	

SCALE
0 100 200 300
FEET

I-95 AND SR 896 INTERCHANGE

CONTRACT	BRIDGE NO.	N/A
T201609002	DESIGNED BY:	K. SMAGALA
COUNTY	CHECKED BY:	S. PENOZA
NEW CASTLE		

CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 2

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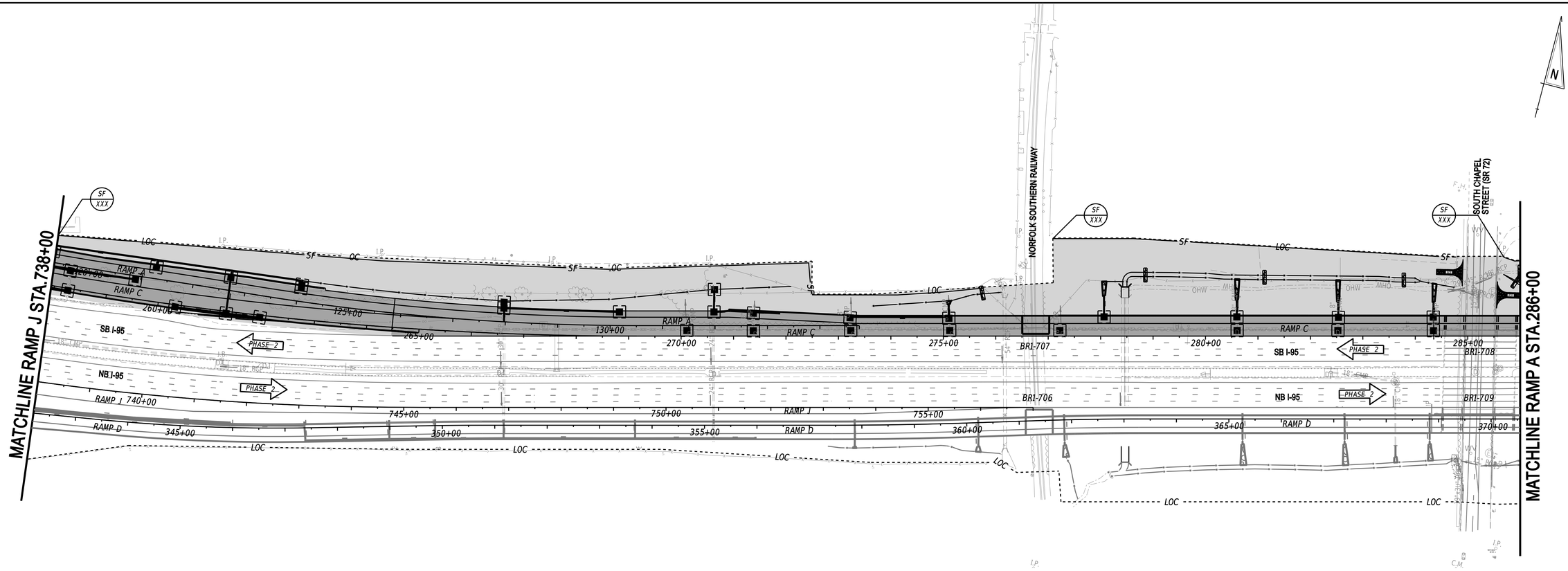

PHASE 2

STAGE 1: (OPEN TEMPORARY RAMP A)

1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING TEMPORARY RAMP A*
2. *PLACE TEMPORARY PAVEMENT STRIPING ON TEMPORARY RAMP A AND OPEN TO TRAFFIC*
3. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE AND PLACE PHASE 2 EROSION AND SEDIMENT CONTROLS AS SHOWN*
4. *CLEAR AND GRUBB WITHIN PHASE 2 LIMITS*

STAGE 2: (RAMP A AND SOUTHBOUND I-95 WIDENING)

1. *USING TA-33, SET BARRIER ALONG SB I-95*
2. *CONSTRUCT SEDIMENT POND AND INSTALL DRAINAGE FACILITIES SHOWN FOR RAMP A TO NORTH LIMITS*
3. *SAWCUT, REMOVE EXISTING PAVEMENT AND GRADE PAVEMENT BOX*
4. *CONSTRUCT WALLS, PCC BARRIER, AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
5. *COMPLETE BRI-706 & BRI-709 WIDENING AND BRI-704A*
6. *POUR PCC PAVEMENT*
7. *PLACE HOTMIX TIE IN AND WIDENING PAVEMENT*
8. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS, AND GUARDRAIL*
9. *PLACE REQUIRED SIGNING AND STRIPING*

STAGE 3: (SR896 MEDIAN RECONSTRUCTION)

1. *USING TA-33, REGRADE MEDIAN, INSTALL DRAINAGE FACILITIES AND GUARDRAIL ON SR896 SOUTH OF I-95*

ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 2	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 215
					CHECKED BY: S. PENOZA		

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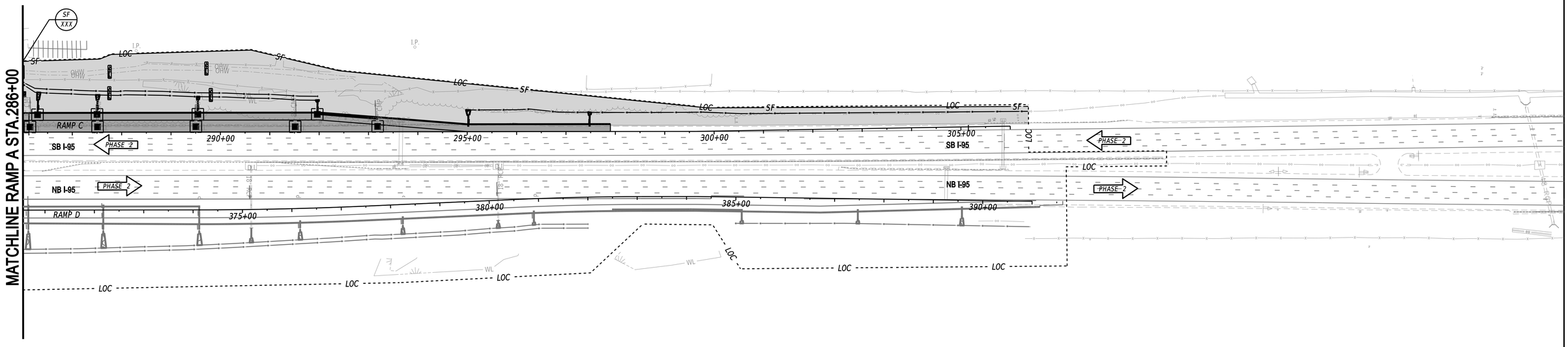

PHASE 2

STAGE 1: (OPEN TEMPORARY RAMP A)

1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING TEMPORARY RAMP A*
2. *PLACE TEMPORARY PAVEMENT STRIPING ON TEMPORARY RAMP A AND OPEN TO TRAFFIC*
3. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE AND PLACE PHASE 2 EROSION AND SEDIMENT CONTROLS AS SHOWN*
4. *CLEAR AND GRUBB WITHIN PHASE 2 LIMITS*

STAGE 2: (RAMP A AND SOUTHBOUND I-95 WIDENING)

1. *USING TA-33, SET BARRIER ALONG SB I-95*
2. *CONSTRUCT SEDIMENT POND AND INSTALL DRAINAGE FACILITIES SHOWN FOR RAMP A TO NORTH LIMITS*
3. *SAWCUT, REMOVE EXISTING PAVEMENT AND GRADE PAVEMENT BOX*
4. *CONSTRUCT WALLS, PCC BARRIER, AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
5. *COMPLETE BRI-706 & BRI-709 WIDENING AND BRI-704A*
6. *POUR PCC PAVEMENT*
7. *PLACE HOTMIX TIE IN AND WIDENING PAVEMENT*
8. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS, AND GUARDRAIL*
9. *PLACE REQUIRED SIGNING AND STRIPING*

STAGE 3: (SR896 MEDIAN RECONSTRUCTION)

1. *USING TA-33, REGRADE MEDIAN, INSTALL DRAINAGE FACILITIES AND GUARDRAIL ON SR896 SOUTH OF I-95*

ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 2	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 216
					CHECKED BY: S. PENOZA		

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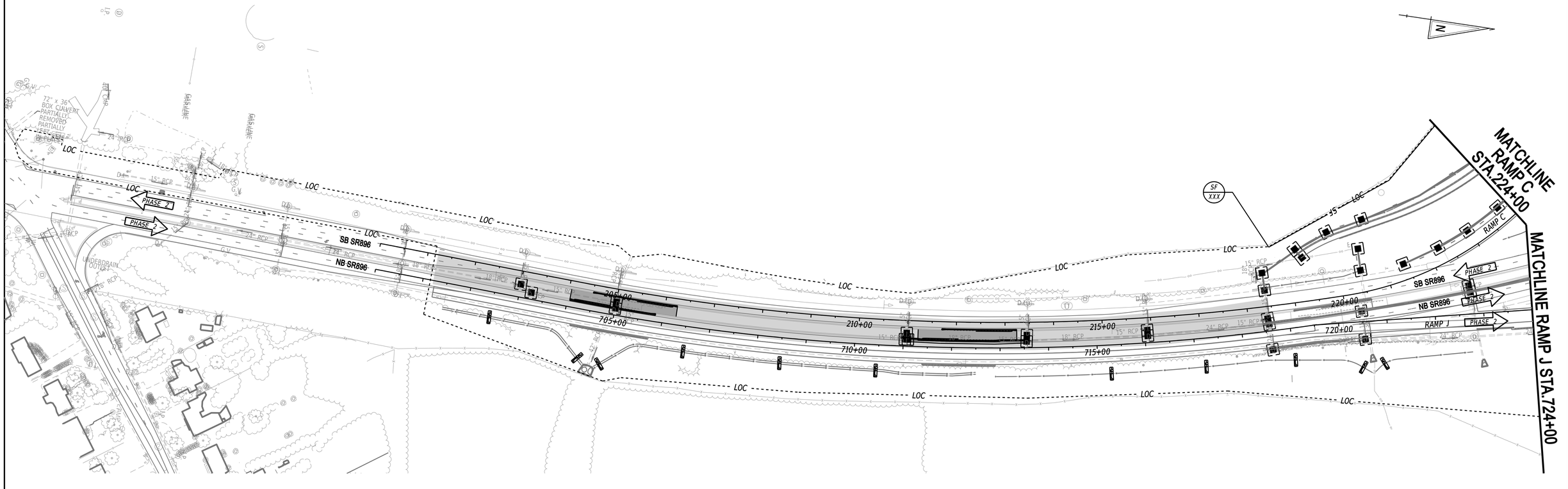

PHASE 2

STAGE 1: (OPEN TEMPORARY RAMP A)
1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING TEMPORARY RAMP A*
2. *PLACE TEMPORARY PAVEMENT STRIPING ON TEMPORARY RAMP A AND OPEN TO TRAFFIC*
3. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE AND PLACE PHASE 2 EROSION AND SEDIMENT CONTROLS AS SHOWN*
4. *CLEAR AND GRUBB WITHIN PHASE 2 LIMITS*

STAGE 2: (RAMP A AND SOUTHBOUND I-95 WIDENING)
1. *USING TA-33, SET BARRIER ALONG SB I-95*
2. *CONSTRUCT SEDIMENT POND AND INSTALL DRAINAGE FACILITIES SHOWN FOR RAMP A TO NORTH LIMITS*
3. *SAWCUT, REMOVE EXISTING PAVEMENT AND GRADE PAVEMENT BOX*
4. *CONSTRUCT WALLS, PCC BARRIER, AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
5. *COMPLETE BRI-706 & BRI-709 WIDENING AND BRI-704A*
6. *POUR PCC PAVEMENT*
7. *PLACE HOTMIX TIE IN AND WIDENING PAVEMENT*
8. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS, AND GUARDRAIL*
9. *PLACE REQUIRED SIGNING AND STRIPING*

STAGE 3: (SR896 MEDIAN RECONSTRUCTION)
1. *USING TA-33, REGRADE MEDIAN, INSTALL DRAINAGE FACILITIES AND GUARDRAIL ON SR896 SOUTH OF I-95*

ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 2	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 217
					CHECKED BY: S. PENOZA		

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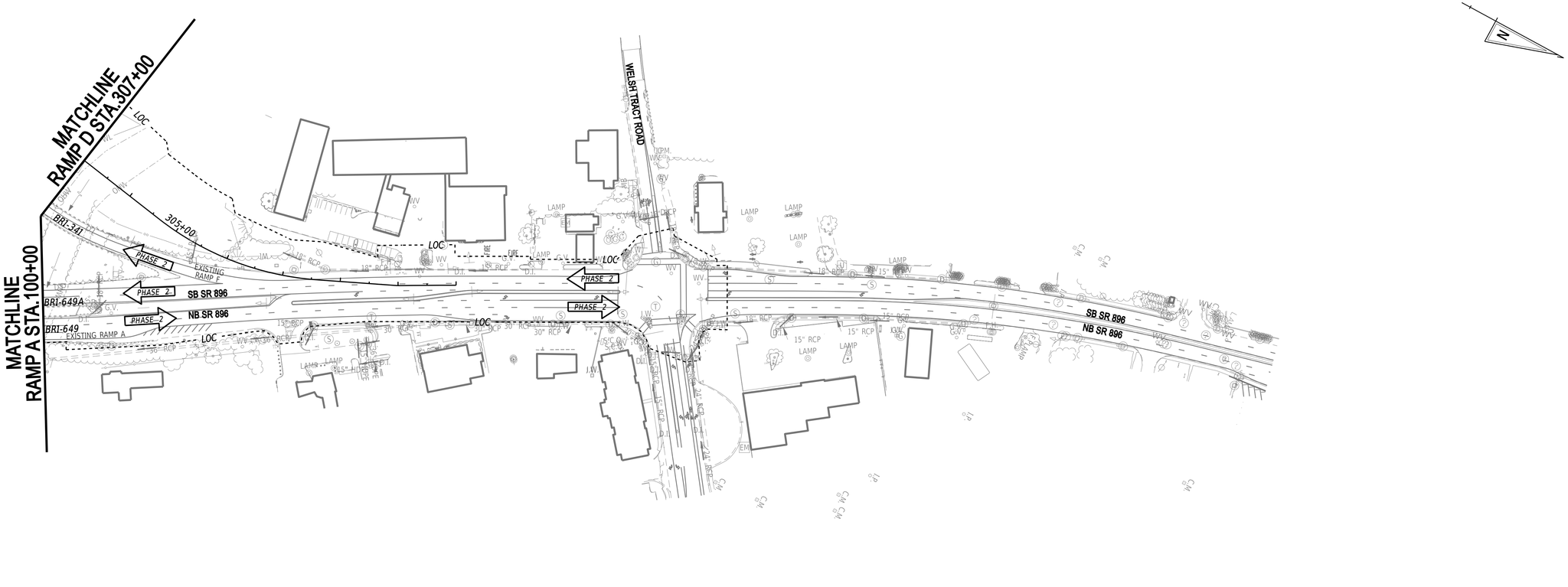

PHASE 2

STAGE 1: (OPEN TEMPORARY RAMP A)

1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING TEMPORARY RAMP A*
2. *PLACE TEMPORARY PAVEMENT STRIPING ON TEMPORARY RAMP A AND OPEN TO TRAFFIC*
3. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE AND PLACE PHASE 2 EROSION AND SEDIMENT CONTROLS AS SHOWN*
4. *CLEAR AND GRUBB WITHIN PHASE 2 LIMITS*

STAGE 2: (RAMP A AND SOUTHBOUND I-95 WIDENING)

1. *USING TA-33, SET BARRIER ALONG SB I-95*
2. *CONSTRUCT SEDIMENT POND AND INSTALL DRAINAGE FACILITIES SHOWN FOR RAMP A TO NORTH LIMITS*
3. *SAWCUT, REMOVE EXISTING PAVEMENT AND GRADE PAVEMENT BOX*
4. *CONSTRUCT WALLS, PCC BARRIER, AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
5. *COMPLETE BRI-706 & BRI-709 WIDENING AND BRI-704A*
6. *POUR PCC PAVEMENT*
7. *PLACE HOTMIX TIE IN AND WIDENING PAVEMENT*
8. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS, AND GUARDRAIL*
9. *PLACE REQUIRED SIGNING AND STRIPING*

STAGE 3: (SR896 MEDIAN RECONSTRUCTION)

1. *USING TA-33, REGRADE MEDIAN, INSTALL DRAINAGE FACILITIES AND GUARDRAIL ON SR896 SOUTH OF I-95*

ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 2	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 218
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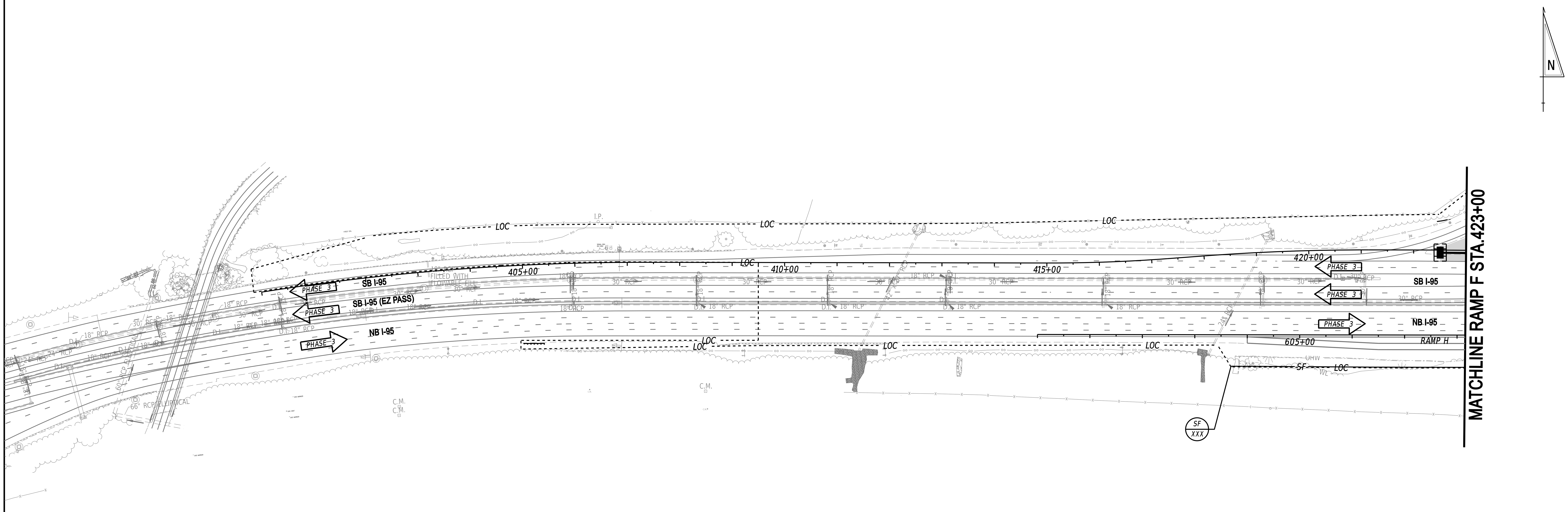

PHASE 3

STAGE 1: (OPEN RAMP A)
1. PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP A
2. PLACE PAVEMENT STRIPING ON RAMP A AND OPEN TO TRAFFIC
3. USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE AND PLACE PHASE 3 EROSION AND SEDIMENT CONTROLS AS SHOWN
4. CLEAR AND GRUBB WITHIN PHASE 3 LIMITS

STAGE 2: (BRI-703B & BRI-703C NORTH ABUTMENTS AND BRIDGE PIERS BRI-703B)
1. CONSTRUCT BRI-703C'S NORTH ABUTMENT. CONSTRUCT MSE WALL AND EMBANKMENT
2. COMPLETE NORTH ABUTMENT OF BRI-703B.
3. CONSTRUCT BRIDGE PIERS LOCATED NORTH OF I-95

STAGE 3: (SOUTHBOUND SR896 WIDENING)
1. USING TA-33, SET BARRIER ON SOUTHBOUND SR896
2. CONSTRUCT DRAINAGE FACILITIES
3. GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT
4. CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS, GUARDRAIL AND SHARED USE PATH
5. PLACE REQUIRED SIGNING AND STRIPING

STAGE 4: (TEMPORARY RAMP A AND STORMWATER FACILITIES NORTH OF I-95)
1. BEGIN CONSTRUCTING DRAINAGE FACILITIES IN THE NORTHWEST QUADRANT
2. INSTALL PROPOSED PIPES CROSSING SOUTHBOUND I-95, USING TA-5A DURING NIGHTTIME HOURS
3. USING TA-5A, REMOVE TEMPORARY RAMP A PAVEMENT AND COMPLETE STORMWATER POND

STAGE 5: (MEDIAN BRIDGE PIERS AND MEDIAN RECONSTRUCTION)
1. USING TA-5A, SET BARRIER ON NORTHBOUND AND SOUTHBOUND I-95
2. BEHIND BARRIER, CONSTRUCT BRIDGE PIER FOR BRI-703C
3. REGRADE MEDIAN, INSTALL DRAINAGE FACILITIES AND GUARDRAIL
4. USING TA-5A, COMPLETE MEDIAN DRAINAGE AND SHOULDER RECONSTRUCTION THROUGHOUT THE LIMITS OF THE PROJECT

STAGE 6: (BRI-703B AND BRI-703C)
1. SET BRIDGE BEAMS FOR BRI-703B AND BRI-703C UNDER A ROLLING ROAD BLOCK BETWEEN 12:00 AM THROUGH 5:00AM ON MONDAYS THROUGH THURSDAYS ONLY.
2. COMPLETE BRIDGE CONSTRUCTION ACTIVITIES UTILIZING TA-5B ON I-95 DURING NIGHTTIME HOURS.
3. POUR PCC PAVEMENT FOR RAMP C AND SR896 WIDENING
4. COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP C

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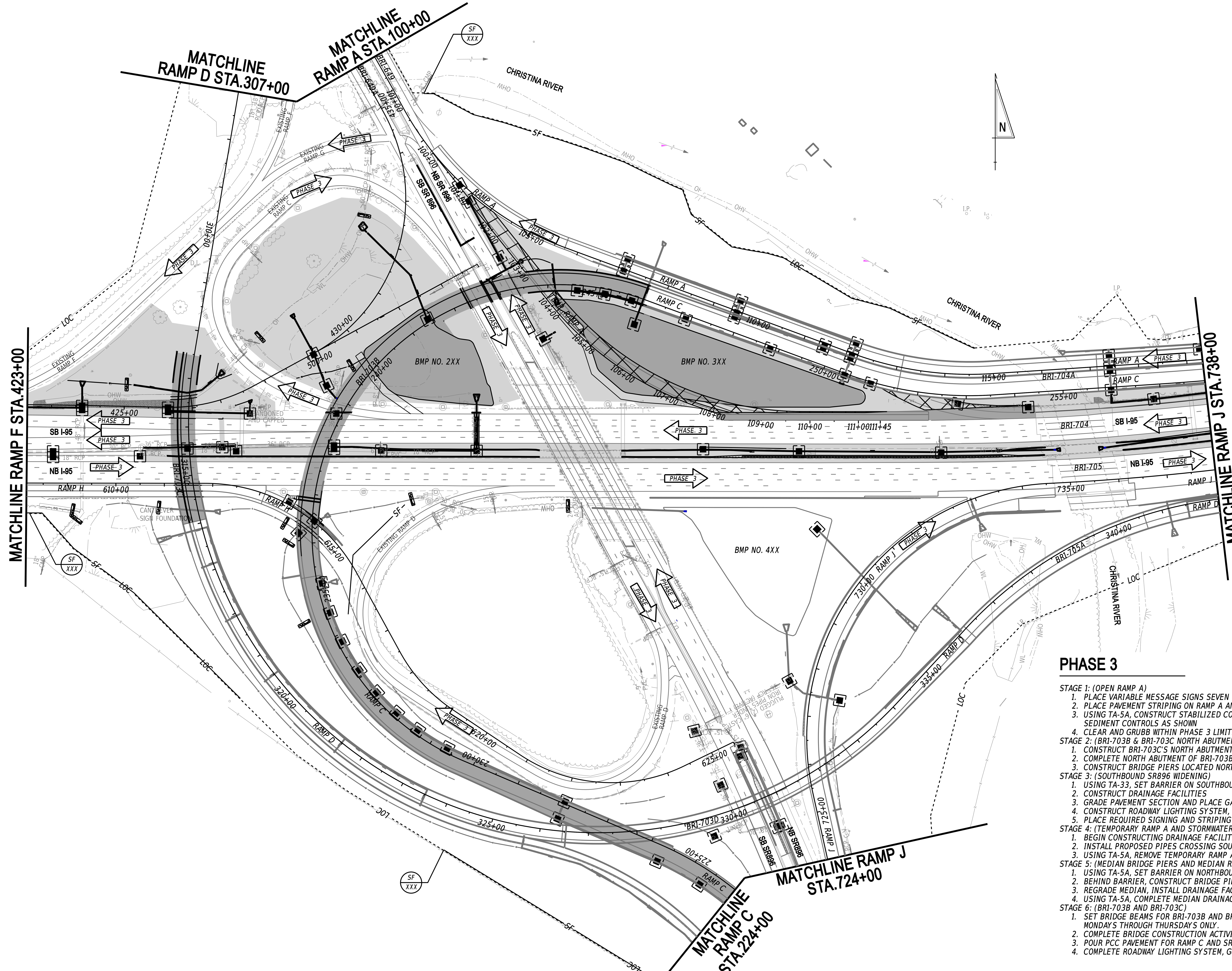
ADDENDA / REVISIONS	SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT	BRIDGE NO.	N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 3	SECTION
			T201609002	DESIGNED BY:	K. SMAGALA		CEI
			COUNTY				SHEET NO.
			NEW CASTLE	CHECKED BY:	S. PENOZA		219



PHASE 3

STAGE 1: (OPEN RAMP A)
1. PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP A
2. PLACE PAVEMENT STRIPING ON RAMP A AND OPEN TO TRAFFIC
3. USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE AND PLACE PHASE 3 EROSION AND SEDIMENT CONTROLS AS SHOWN
4. CLEAR AND GRUBB WITHIN PHASE 3 LIMITS

STAGE 2: (BRI-703B & BRI-703C NORTH ABUTMENTS AND BRIDGE PIERS BRI-703B)
1. CONSTRUCT BRI-703C'S NORTH ABUTMENT. CONSTRUCT MSE WALL AND EMBANKMENT
2. COMPLETE NORTH ABUTMENT OF BRI-703B.
3. CONSTRUCT BRIDGE PIERS LOCATED NORTH OF I-95

STAGE 3: (SOUTHBOUND SR896 WIDENING)
1. USING TA-33, SET BARRIER ON SOUTHBOUND SR896
2. CONSTRUCT DRAINAGE FACILITIES
3. GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT
4. CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS, GUARDRAIL AND SHARED USE PATH
5. PLACE REQUIRED SIGNING AND STRIPING

STAGE 4: (TEMPORARY RAMP A AND STORMWATER FACILITIES NORTH OF I-95)
1. BEGIN CONSTRUCTING DRAINAGE FACILITIES IN THE NORTHWEST QUADRANT
2. INSTALL PROPOSED PIPES CROSSING SOUTHBOUND I-95, USING TA-5A DURING NIGHTTIME HOURS
3. USING TA-5A, REMOVE TEMPORARY RAMP A PAVEMENT AND COMPLETE STORMWATER POND

STAGE 5: (MEDIAN BRIDGE PIERS AND MEDIAN RECONSTRUCTION)
1. USING TA-5A, SET BARRIER ON NORTHBOUND AND SOUTHBOUND I-95
2. BEHIND BARRIER, CONSTRUCT BRIDGE PIER FOR BRI-703C
3. REGRADE MEDIAN, INSTALL DRAINAGE FACILITIES AND GUARDRAIL
4. USING TA-5A, COMPLETE MEDIAN DRAINAGE AND SHOULDER RECONSTRUCTION THROUGHOUT THE LIMITS OF THE PROJECT

STAGE 6: (BRI-703B AND BRI-703C)
1. SET BRIDGE BEAMS FOR BRI-703B AND BRI-703C UNDER A ROLLING ROAD BLOCK BETWEEN 12:00 AM THROUGH 5:00AM ON MONDAYS THROUGH THURSDAYS ONLY.
2. COMPLETE BRIDGE CONSTRUCTION ACTIVITIES UTILIZING TA-5B ON I-95 DURING NIGHTTIME HOURS.
3. POUR PCC PAVEMENT FOR RAMP C AND SR896 WIDENING
4. COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP C

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ADDENDA / REVISIONS	SCALE		CONTRACT	BRIDGE NO.	N/A		SECTION
	0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	T201609002	DESIGNED BY:	K. SMAGALA	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 3	CEI
			COUNTY				SHEET NO.
			NEW CASTLE	CHECKED BY:	S. PENOZA		220

PHASE 3

STAGE 1: (OPEN RAMP A)

1. PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP A
2. PLACE PAVEMENT STRIPING ON RAMP A AND OPEN TO TRAFFIC
3. USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE AND PLACE PHASE 3 EROSION AND SEDIMENT CONTROLS AS SHOWN
4. CLEAR AND GRUBB WITHIN PHASE 3 LIMITS

STAGE 2: (BRI-703B & BRI-703C NORTH ABUTMENTS AND BRIDGE PIERS BRI-703B)

1. CONSTRUCT BRI-703C'S NORTH ABUTMENT. CONSTRUCT MSE WALL AND EMBANKMENT
2. COMPLETE NORTH ABUTMENT OF BRI-703B.
3. CONSTRUCT BRIDGE PIERS LOCATED NORTH OF I-95

STAGE 3: (SOUTHBOUND SR896 WIDENING)

1. USING TA-33, SET BARRIER ON SOUTHBOUND SR896
2. CONSTRUCT DRAINAGE FACILITIES
3. GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT
4. CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS, GUARDRAIL AND SHARED USE PATH
5. PLACE REQUIRED SIGNING AND STRIPING

STAGE 4: (TEMPORARY RAMP A AND STORMWATER FACILITIES NORTH OF I-95)

1. BEGIN CONSTRUCTING DRAINAGE FACILITIES IN THE NORTHWEST QUADRANT
2. INSTALL PROPOSED PIPES CROSSING SOUTHBOUND I-95, USING TA-5A DURING NIGHTTIME HOURS
3. USING TA-5A, REMOVE TEMPORARY RAMP A PAVEMENT AND COMPLETE STORMWATER POND

STAGE 5: (MEDIAN BRIDGE PIERS AND MEDIAN RECONSTRUCTION)

1. USING TA-5A, SET BARRIER ON NORTHBOUND AND SOUTHBOUND I-95
2. BEHIND BARRIER, CONSTRUCT BRIDGE PIER FOR BRI-703C
3. REGRADE MEDIAN, INSTALL DRAINAGE FACILITIES AND GUARDRAIL
4. USING TA-5A, COMPLETE MEDIAN DRAINAGE AND SHOULDER RECONSTRUCTION THROUGHOUT THE LIMITS OF THE PROJECT

STAGE 6: (BRI-703B AND BRI-703C)

1. SET BRIDGE BEAMS FOR BRI-703B AND BRI-703C UNDER A ROLLING ROAD BLOCK BETWEEN 12:00 AM THROUGH 5:00AM ON MONDAYS THROUGH THURSDAYS ONLY.
2. COMPLETE BRIDGE CONSTRUCTION ACTIVITIES UTILIZING TA-5B ON I-95 DURING NIGHTTIME HOURS.
3. POUR PCC PAVEMENT FOR RAMP C AND SR896 WIDENING
4. COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP C

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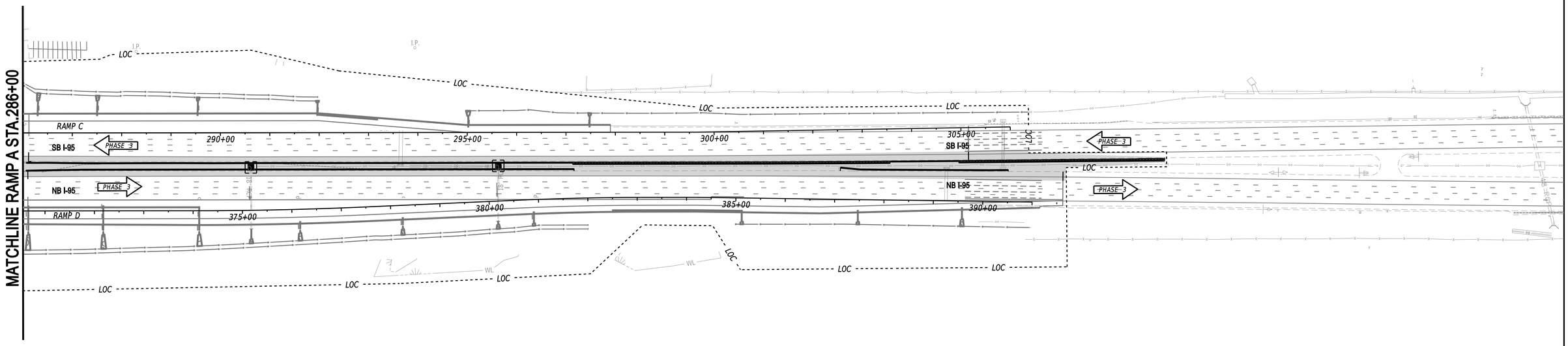
ADDENDA / REVISIONS	SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 3	SECTION
			T201609002	DESIGNED BY: K. SMAGALA		CEI
			COUNTY			SHEET NO.
			NEW CASTLE	CHECKED BY: S. PENOZA		221



PHASE 3

STAGE 1: (OPEN RAMP A)
1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP A*
2. *PLACE PAVEMENT STRIPING ON RAMP A AND OPEN TO TRAFFIC*
3. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE AND PLACE PHASE 3 EROSION AND SEDIMENT CONTROLS AS SHOWN*
4. *CLEAR AND GRUBB WITHIN PHASE 3 LIMITS*

STAGE 2: (BRI-703B & BRI-703C NORTH ABUTMENTS AND BRIDGE PIERS BRI-703B)
1. *CONSTRUCT BRI-703C'S NORTH ABUTMENT. CONSTRUCT MSE WALL AND EMBANKMENT*
2. *COMPLETE NORTH ABUTMENT OF BRI-703B.*
3. *CONSTRUCT BRIDGE PIERS LOCATED NORTH OF I-95*

STAGE 3: (SOUTHBOUND SR896 WIDENING)
1. *USING TA-33, SET BARRIER ON SOUTHBOUND SR896*
2. *CONSTRUCT DRAINAGE FACILITIES*
3. *GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
4. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS, GUARDRAIL AND SHARED USE PATH*
5. *PLACE REQUIRED SIGNING AND STRIPING*

STAGE 4: (TEMPORARY RAMP A AND STORMWATER FACILITIES NORTH OF I-95)
1. *BEGIN CONSTRUCTING DRAINAGE FACILITIES IN THE NORTHWEST QUADRANT*
2. *INSTALL PROPOSED PIPES CROSSING SOUTHBOUND I-95, USING TA-5A DURING NIGHTTIME HOURS*
3. *USING TA-5A, REMOVE TEMPORARY RAMP A PAVEMENT AND COMPLETE STORMWATER POND*

STAGE 5: (MEDIAN BRIDGE PIERS AND MEDIAN RECONSTRUCTION)
1. *USING TA-5A, SET BARRIER ON NORTHBOUND AND SOUTHBOUND I-95*
2. *BEHIND BARRIER, CONSTRUCT BRIDGE PIER FOR BRI-703C*
3. *REGRADE MEDIAN, INSTALL DRAINAGE FACILITIES AND GUARDRAIL*
4. *USING TA-5A, COMPLETE MEDIAN DRAINAGE AND SHOULDER RECONSTRUCTION THROUGHOUT THE LIMITS OF THE PROJECT*

STAGE 6: (BRI-703B AND BRI-703C)
1. *SET BRIDGE BEAMS FOR BRI-703B AND BRI-703C UNDER A ROLLING ROAD BLOCK BETWEEN 12:00 AM THROUGH 5:00AM ON MONDAYS THROUGH THURSDAYS ONLY.*
2. *COMPLETE BRIDGE CONSTRUCTION ACTIVITIES UTILIZING TA-5B ON I-95 DURING NIGHTTIME HOURS.*
3. *POUR PCC PAVEMENT FOR RAMP C AND SR896 WIDENING*
4. *COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP C*

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ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 3	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 222
					CHECKED BY: S. PENOZA		

PHASE 3

STAGE 1: (OPEN RAMP A)
1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP A*
2. *PLACE PAVEMENT STRIPING ON RAMP A AND OPEN TO TRAFFIC*
3. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE AND PLACE PHASE 3 EROSION AND SEDIMENT CONTROLS AS SHOWN*
4. *CLEAR AND GRUBB WITHIN PHASE 3 LIMITS*

STAGE 2: (BR1-703B & BR1-703C NORTH ABUTMENTS AND BRIDGE PIERS BR1-703B)
1. *CONSTRUCT BR1-703C'S NORTH ABUTMENT. CONSTRUCT MSE WALL AND EMBANKMENT*
2. *COMPLETE NORTH ABUTMENT OF BR1-703B.*
3. *CONSTRUCT BRIDGE PIERS LOCATED NORTH OF I-95*

STAGE 3: (SOUTHBOUND SR896 WIDENING)
1. *USING TA-33, SET BARRIER ON SOUTHBOUND SR896*
2. *CONSTRUCT DRAINAGE FACILITIES*
3. *GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
4. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS, GUARDRAIL AND SHARED USE PATH*
5. *PLACE REQUIRED SIGNING AND STRIPING*

STAGE 4: (TEMPORARY RAMP A AND STORMWATER FACILITIES NORTH OF I-95)
1. *BEGIN CONSTRUCTING DRAINAGE FACILITIES IN THE NORTHWEST QUADRANT*
2. *INSTALL PROPOSED PIPES CROSSING SOUTHBOUND I-95, USING TA-5A DURING NIGHTTIME HOURS*
3. *USING TA-5A, REMOVE TEMPORARY RAMP A PAVEMENT AND COMPLETE STORMWATER POND*

STAGE 5: (MEDIAN BRIDGE PIERS AND MEDIAN RECONSTRUCTION)
1. *USING TA-5A, SET BARRIER ON NORTHBOUND AND SOUTHBOUND I-95*
2. *BEHIND BARRIER, CONSTRUCT BRIDGE PIER FOR BR1-703C*
3. *REGRADE MEDIAN, INSTALL DRAINAGE FACILITIES AND GUARDRAIL*
4. *USING TA-5A, COMPLETE MEDIAN DRAINAGE AND SHOULDER RECONSTRUCTION THROUGHOUT THE LIMITS OF THE PROJECT*

STAGE 6: (BR1-703B AND BR1-703C)
1. *SET BRIDGE BEAMS FOR BR1-703B AND BR1-703C UNDER A ROLLING ROAD BLOCK BETWEEN 12:00 AM THROUGH 5:00AM ON MONDAYS THROUGH THURSDAYS ONLY.*
2. *COMPLETE BRIDGE CONSTRUCTION ACTIVITIES UTILIZING TA-5B ON I-95 DURING NIGHTTIME HOURS.*
3. *POUR PCC PAVEMENT FOR RAMP C AND SR896 WIDENING*
4. *COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP C*

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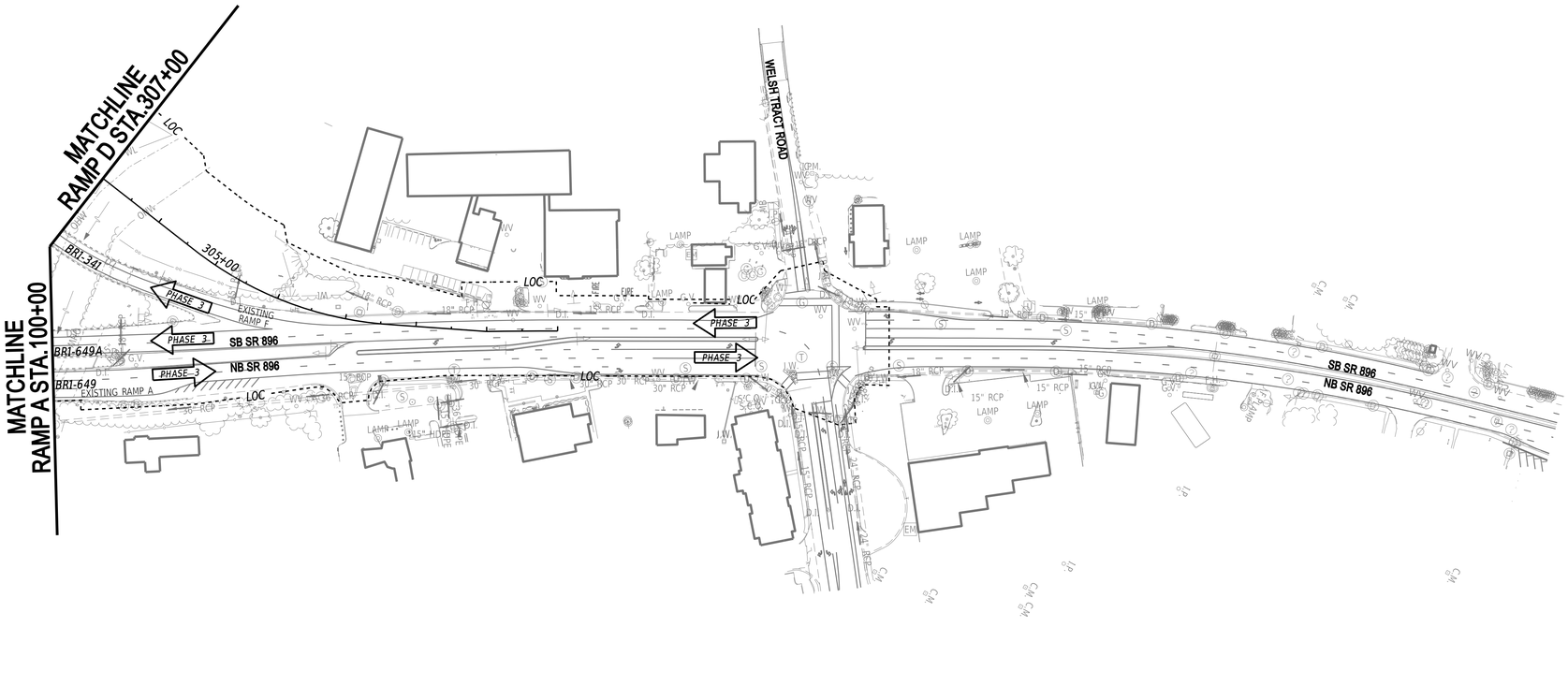
ADDENDA / REVISIONS	SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 3	SECTION CEI
			COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 223
				CHECKED BY: S. PENOZA		



PHASE 3

STAGE 1: (OPEN RAMP A)
1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP A*
2. *PLACE PAVEMENT STRIPING ON RAMP A AND OPEN TO TRAFFIC*
3. *USING TA-5A, CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WHERE APPLICABLE AND PLACE PHASE 3 EROSION AND SEDIMENT CONTROLS AS SHOWN*
4. *CLEAR AND GRUBB WITHIN PHASE 3 LIMITS*

STAGE 2: (BRI-703B & BRI-703C NORTH ABUTMENTS AND BRIDGE PIERS BRI-703B)
1. *CONSTRUCT BRI-703C'S NORTH ABUTMENT. CONSTRUCT MSE WALL AND EMBANKMENT*
2. *COMPLETE NORTH ABUTMENT OF BRI-703B.*
3. *CONSTRUCT BRIDGE PIERS LOCATED NORTH OF I-95*

STAGE 3: (SOUTHBOUND SR896 WIDENING)
1. *USING TA-33, SET BARRIER ON SOUTHBOUND SR896*
2. *CONSTRUCT DRAINAGE FACILITIES*
3. *GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
4. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS, GUARDRAIL AND SHARED USE PATH*
5. *PLACE REQUIRED SIGNING AND STRIPING*

STAGE 4: (TEMPORARY RAMP A AND STORMWATER FACILITIES NORTH OF I-95)
1. *BEGIN CONSTRUCTING DRAINAGE FACILITIES IN THE NORTHWEST QUADRANT*
2. *INSTALL PROPOSED PIPES CROSSING SOUTHBOUND I-95, USING TA-5A DURING NIGHTTIME HOURS*
3. *USING TA-5A, REMOVE TEMPORARY RAMP A PAVEMENT AND COMPLETE STORMWATER POND*

STAGE 5: (MEDIAN BRIDGE PIERS AND MEDIAN RECONSTRUCTION)
1. *USING TA-5A, SET BARRIER ON NORTHBOUND AND SOUTHBOUND I-95*
2. *BEHIND BARRIER, CONSTRUCT BRIDGE PIER FOR BRI-703C*
3. *REGRADE MEDIAN, INSTALL DRAINAGE FACILITIES AND GUARDRAIL*
4. *USING TA-5A, COMPLETE MEDIAN DRAINAGE AND SHOULDER RECONSTRUCTION THROUGHOUT THE LIMITS OF THE PROJECT*

STAGE 6: (BRI-703B AND BRI-703C)
1. *SET BRIDGE BEAMS FOR BRI-703B AND BRI-703C UNDER A ROLLING ROAD BLOCK BETWEEN 12:00 AM THROUGH 5:00AM ON MONDAYS THROUGH THURSDAYS ONLY.*
2. *COMPLETE BRIDGE CONSTRUCTION ACTIVITIES UTILIZING TA-5B ON I-95 DURING NIGHTTIME HOURS.*
3. *POUR PCC PAVEMENT FOR RAMP C AND SR896 WIDENING*
4. *COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP C*

ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 3	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 224
					CHECKED BY: S. PENOZA		

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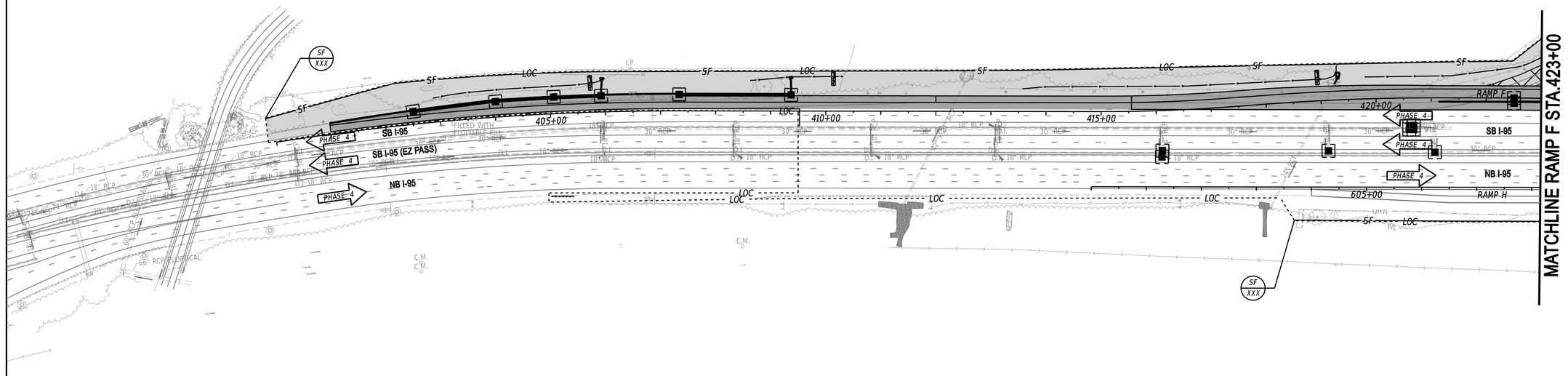

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PHASE 4

STAGE 1: (OPEN RAMP C)

1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP C*
2. *OPEN RAMP C AND CLOSE EXISTING RAMP C*
3. *SET DETOUR AND CLOSE EXISTING RAMP F AND EXISTING RAMP G*
4. *PLACE PHASE 4 EROSION AND SEDIMENT CONTROLS AS SHOWN*
5. *CLEAR AND GRUBB WITHIN PHASE 4 LIMITS*

STAGE 2: (RAMP F & G / BR1-649B)

1. *REMOVE EXISTING RAMP PAVEMENT AND BR1-341*
2. *COMPLETE CONSTRUCTION OF STORMWATER PONDS AND OTHER DRAINAGE FACILITIES SHOWN*
3. *CONSTRUCT BR1-649B*
4. *USE TA-5B DURING NIGHTTIME HOURS TO SET BARRIER ALONG SOUTHBOUND I-95*
5. *CONSTRUCT RAMP F & G. GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
6. *POUR PCC PAVEMENT FOR RAMP F & G*
7. *COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP F & G*
8. *USE TA-33 TO RECONSTRUCT MEDIAN OF SR896 NORTH OF I-95*
9. *REMOVE BARRIER, OPEN RAMP F & G, AND REMOVE DETOUR SIGNING*

STAGE 3: (RAMP D)

1. *COMPLETE RAMP D DRAINAGE FACILITIES AND ALONG SOUTHBOUND SR896*
2. *CONSTRUCT EMBANKMENT AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
3. *USE TA-33 TO CONSTRUCT SR896 SIDEWALK IMPROVEMENTS*
4. *USE TA-33 TO COMPLETE ALL HOTMIX TIE-INS AND PATCHING ALONG SR896 AND PAVE SHARED USE PATH*
5. *POUR PCC PAVEMENT FOR RAMP D*
6. *COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP D*

ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 4	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 225
					CHECKED BY: S. PENOZA		

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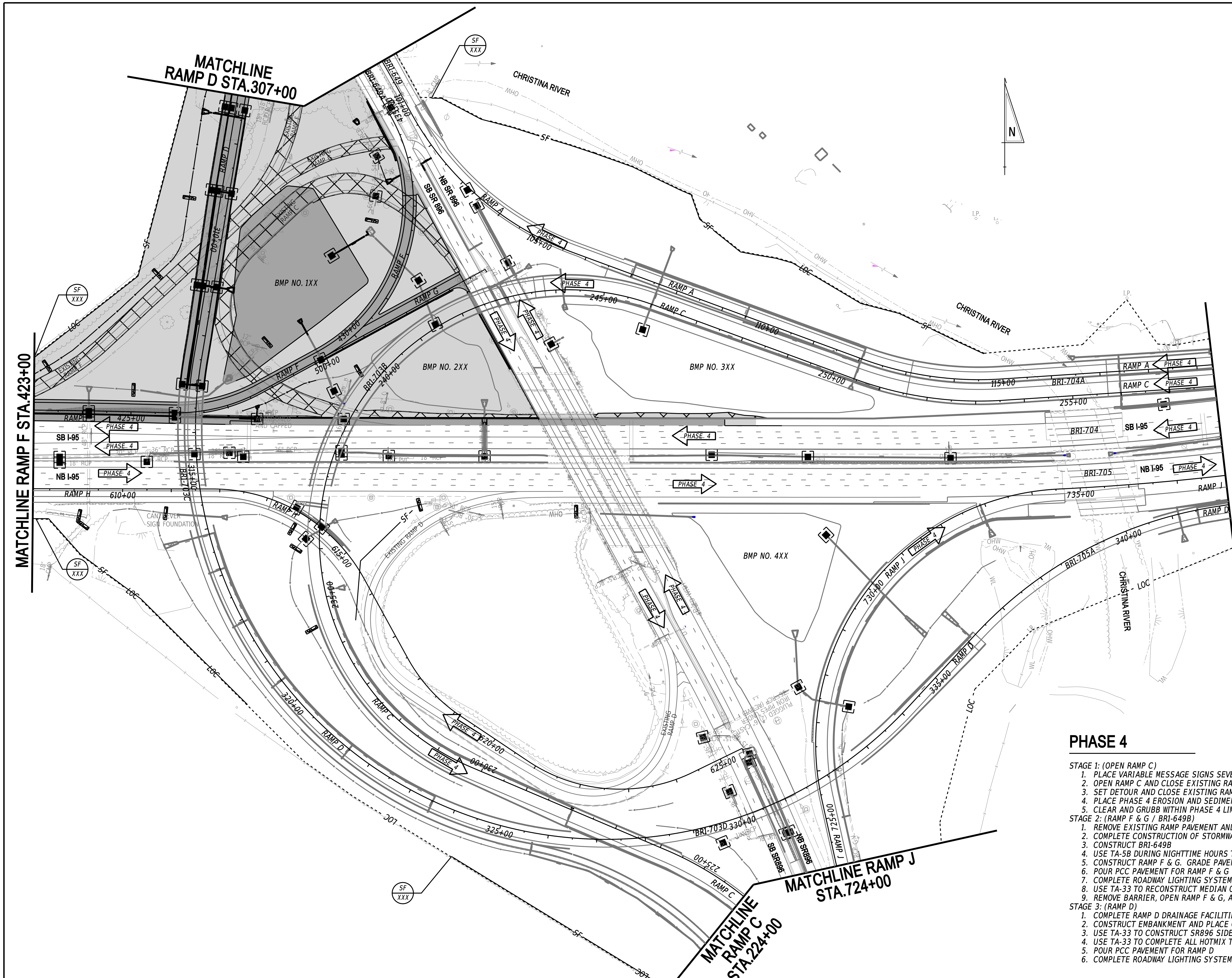

PHASE 4

STAGE 1: (OPEN RAMP C)
1. PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP C
2. OPEN RAMP C AND CLOSE EXISTING RAMP C
3. SET DETOUR AND CLOSE EXISTING RAMP F AND EXISTING RAMP G
4. PLACE PHASE 4 EROSION AND SEDIMENT CONTROLS AS SHOWN
5. CLEAR AND GRUBB WITHIN PHASE 4 LIMITS

STAGE 2: (RAMP F & G / BR1-649B)
1. REMOVE EXISTING RAMP PAVEMENT AND BR1-341
2. COMPLETE CONSTRUCTION OF STORMWATER PONDS AND OTHER DRAINAGE FACILITIES SHOWN
3. CONSTRUCT BR1-649B
4. USE TA-5B DURING NIGHTTIME HOURS TO SET BARRIER ALONG SOUTHBOUND I-95
5. CONSTRUCT RAMP F & G. GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT
6. POUR PCC PAVEMENT FOR RAMP F & G
7. COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP F & G
8. USE TA-33 TO RECONSTRUCT MEDIAN OF SR896 NORTH OF I-95
9. REMOVE BARRIER, OPEN RAMP F & G, AND REMOVE DETOUR SIGNING

STAGE 3: (RAMP D)
1. COMPLETE RAMP D DRAINAGE FACILITIES AND ALONG SOUTHBOUND SR896
2. CONSTRUCT EMBANKMENT AND PLACE GABC TO PREPARE FOR PCC PAVEMENT
3. USE TA-33 TO CONSTRUCT SR896 SIDEWALK IMPROVEMENTS
4. USE TA-33 TO COMPLETE ALL HOTMIX TIE-INS AND PATCHING ALONG SR896 AND PAVE SHARED USE PATH
5. POUR PCC PAVEMENT FOR RAMP D
6. COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP D

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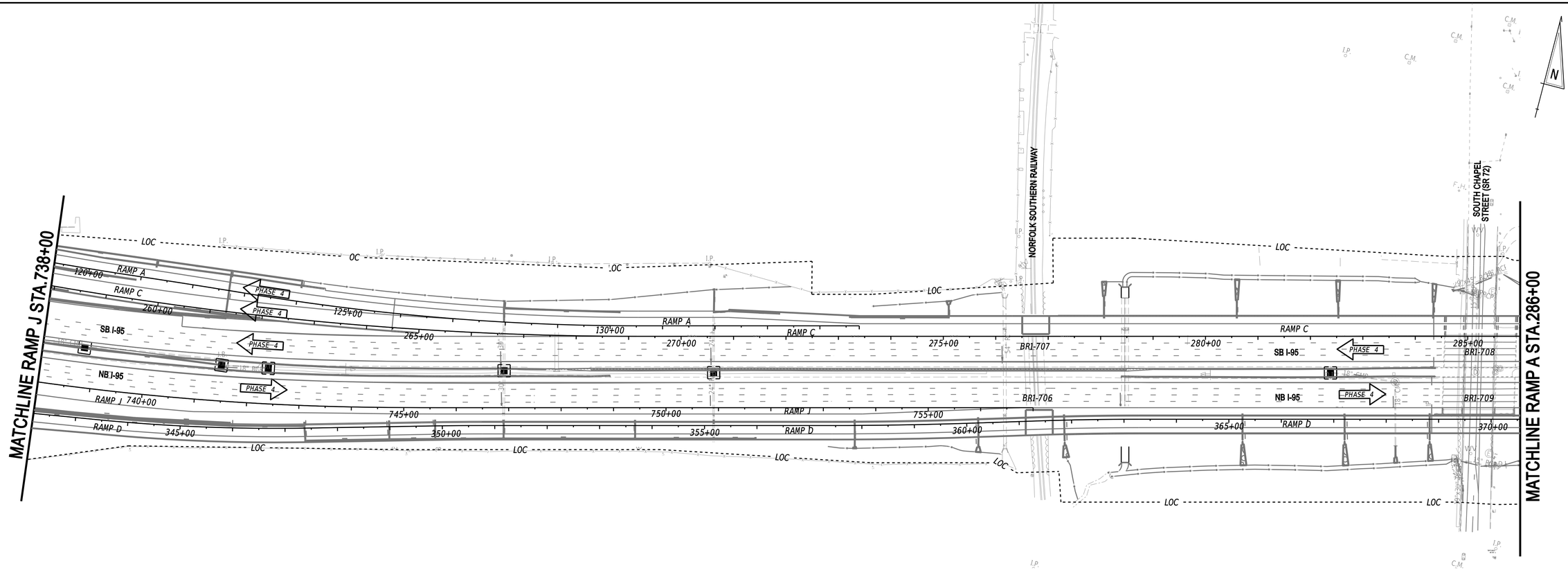
ADDENDA / REVISIONS	SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT	BRIDGE NO.	N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 4	SECTION
			T201609002	DESIGNED BY:	K. SMAGALA		CEI
			COUNTY	CHECKED BY:	S. PENOZA		SHEET NO.
			NEW CASTLE				226



PHASE 4

STAGE 1: (OPEN RAMP C)

1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP C*
2. *OPEN RAMP C AND CLOSE EXISTING RAMP C*
3. *SET DETOUR AND CLOSE EXISTING RAMP F AND EXISTING RAMP G*
4. *PLACE PHASE 4 EROSION AND SEDIMENT CONTROLS AS SHOWN*
5. *CLEAR AND GRUBB WITHIN PHASE 4 LIMITS*

STAGE 2: (RAMP F & G / BRI-649B)

1. *REMOVE EXISTING RAMP PAVEMENT AND BRI-341*
2. *COMPLETE CONSTRUCTION OF STORMWATER PONDS AND OTHER DRAINAGE FACILITIES SHOWN*
3. *CONSTRUCT BRI-649B*
4. *USE TA-5B DURING NIGHTTIME HOURS TO SET BARRIER ALONG SOUTHBOUND I-95*
5. *CONSTRUCT RAMP F & G. GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
6. *POUR PCC PAVEMENT FOR RAMP F & G*
7. *COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP F & G*
8. *USE TA-33 TO RECONSTRUCT MEDIAN OF SR896 NORTH OF I-95*
9. *REMOVE BARRIER, OPEN RAMP F & G, AND REMOVE DETOUR SIGNING*

STAGE 3: (RAMP D)

1. *COMPLETE RAMP D DRAINAGE FACILITIES AND ALONG SOUTHBOUND SR896*
2. *CONSTRUCT EMBANKMENT AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
3. *USE TA-33 TO CONSTRUCT SR896 SIDEWALK IMPROVEMENTS*
4. *USE TA-33 TO COMPLETE ALL HOTMIX TIE-INS AND PATCHING ALONG SR896 AND PAVE SHARED USE PATH*
5. *POUR PCC PAVEMENT FOR RAMP D*
6. *COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP D*

ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 4	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 227
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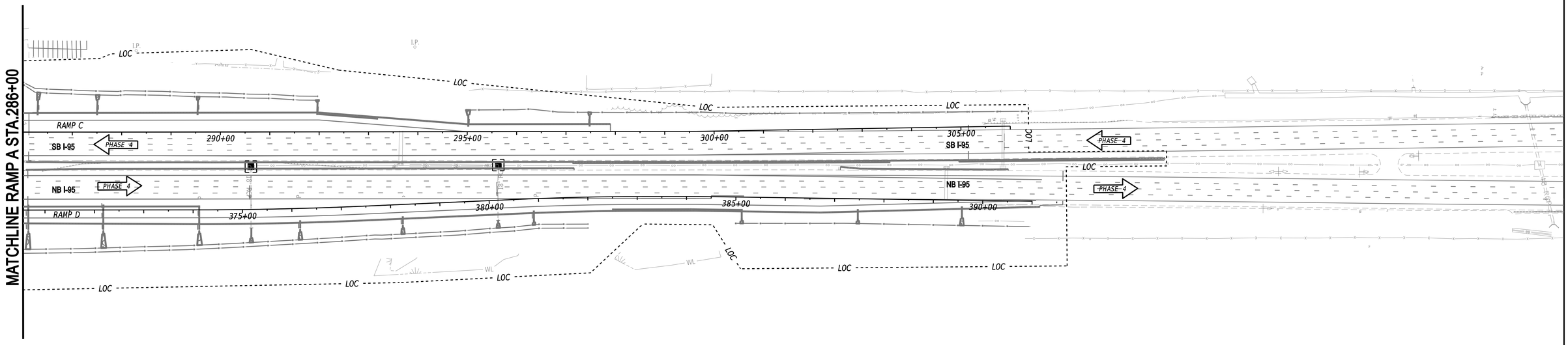

PHASE 4

STAGE 1: (OPEN RAMP C)
1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP C*
2. *OPEN RAMP C AND CLOSE EXISTING RAMP C*
3. *SET DETOUR AND CLOSE EXISTING RAMP F AND EXISTING RAMP G*
4. *PLACE PHASE 4 EROSION AND SEDIMENT CONTROLS AS SHOWN*
5. *CLEAR AND GRUBB WITHIN PHASE 4 LIMITS*

STAGE 2: (RAMP F & G / BRI-649B)
1. *REMOVE EXISTING RAMP PAVEMENT AND BRI-341*
2. *COMPLETE CONSTRUCTION OF STORMWATER PONDS AND OTHER DRAINAGE FACILITIES SHOWN*
3. *CONSTRUCT BRI-649B*
4. *USE TA-5B DURING NIGHTTIME HOURS TO SET BARRIER ALONG SOUTHBOUND I-95*
5. *CONSTRUCT RAMP F & G. GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
6. *POUR PCC PAVEMENT FOR RAMP F & G*
7. *COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP F & G*
8. *USE TA-33 TO RECONSTRUCT MEDIAN OF SR896 NORTH OF I-95*
9. *REMOVE BARRIER, OPEN RAMP F & G, AND REMOVE DETOUR SIGNING*

STAGE 3: (RAMP D)
1. *COMPLETE RAMP D DRAINAGE FACILITIES AND ALONG SOUTHBOUND SR896*
2. *CONSTRUCT EMBANKMENT AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
3. *USE TA-33 TO CONSTRUCT SR896 SIDEWALK IMPROVEMENTS*
4. *USE TA-33 TO COMPLETE ALL HOTMIX TIE-INS AND PATCHING ALONG SR896 AND PAVE SHARED USE PATH*
5. *POUR PCC PAVEMENT FOR RAMP D*
6. *COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP D*

ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 4	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 228
					CHECKED BY: S. PENOZA		

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PHASE 4

STAGE 1: (OPEN RAMP C)
1. PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP C
2. OPEN RAMP C AND CLOSE EXISTING RAMP C
3. SET DETOUR AND CLOSE EXISTING RAMP F AND EXISTING RAMP G
4. PLACE PHASE 4 EROSION AND SEDIMENT CONTROLS AS SHOWN
5. CLEAR AND GRUBB WITHIN PHASE 4 LIMITS

STAGE 2: (RAMP F & G / BR1-649B)
1. REMOVE EXISTING RAMP PAVEMENT AND BR1-341
2. COMPLETE CONSTRUCTION OF STORMWATER PONDS AND OTHER DRAINAGE FACILITIES SHOWN
3. CONSTRUCT BR1-649B
4. USE TA-5B DURING NIGHTTIME HOURS TO SET BARRIER ALONG SOUTHBOUND I-95
5. CONSTRUCT RAMP F & G. GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT
6. POUR PCC PAVEMENT FOR RAMP F & G
7. COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP F & G
8. USE TA-33 TO RECONSTRUCT MEDIAN OF SR896 NORTH OF I-95
9. REMOVE BARRIER, OPEN RAMP F & G, AND REMOVE DETOUR SIGNING

STAGE 3: (RAMP D)
1. COMPLETE RAMP D DRAINAGE FACILITIES AND ALONG SOUTHBOUND SR896
2. CONSTRUCT EMBANKMENT AND PLACE GABC TO PREPARE FOR PCC PAVEMENT
3. USE TA-33 TO CONSTRUCT SR896 SIDEWALK IMPROVEMENTS
4. USE TA-33 TO COMPLETE ALL HOTMIX TIE-INS AND PATCHING ALONG SR896 AND PAVE SHARED USE PATH
5. POUR PCC PAVEMENT FOR RAMP D
6. COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP D

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ADDENDA / REVISIONS	SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 4	SECTION
			T201609002	DESIGNED BY: K. SMAGALA		CEI
			COUNTY			SHEET NO.
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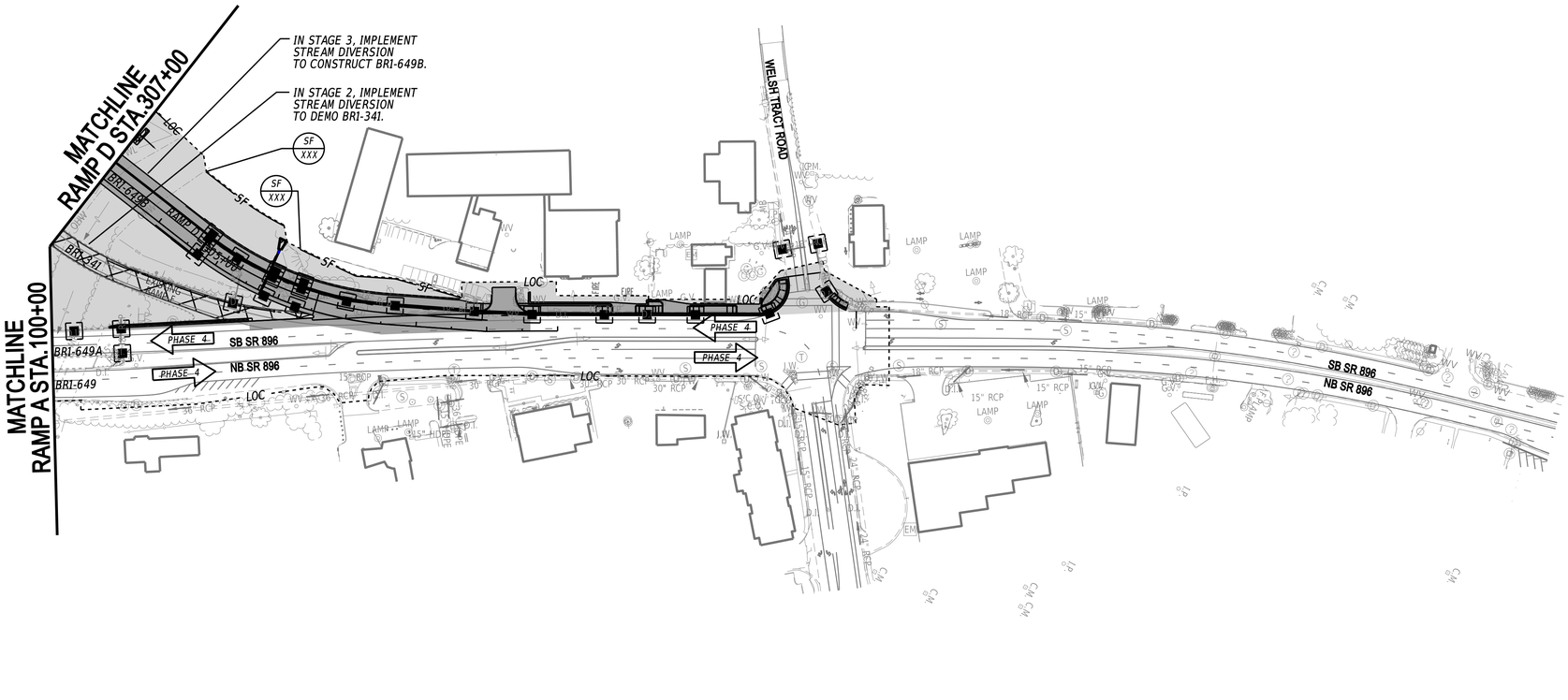

PHASE 4

STAGE 1: (OPEN RAMP C)

1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP C*
2. *OPEN RAMP C AND CLOSE EXISTING RAMP C*
3. *SET DETOUR AND CLOSE EXISTING RAMP F AND EXISTING RAMP G*
4. *PLACE PHASE 4 EROSION AND SEDIMENT CONTROLS AS SHOWN*
5. *CLEAR AND GRUBB WITHIN PHASE 4 LIMITS*

STAGE 2: (RAMP F & G / BRI-649B)

1. *REMOVE EXISTING RAMP PAVEMENT AND BRI-341*
2. *COMPLETE CONSTRUCTION OF STORMWATER PONDS AND OTHER DRAINAGE FACILITIES SHOWN*
3. *CONSTRUCT BRI-649B*
4. *USE TA-5B DURING NIGHTTIME HOURS TO SET BARRIER ALONG SOUTHBOUND I-95*
5. *CONSTRUCT RAMP F & G. GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
6. *POUR PCC PAVEMENT FOR RAMP F & G*
7. *COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP F & G*
8. *USE TA-33 TO RECONSTRUCT MEDIAN OF SR896 NORTH OF I-95*
9. *REMOVE BARRIER, OPEN RAMP F & G, AND REMOVE DETOUR SIGNING*

STAGE 3: (RAMP D)

1. *COMPLETE RAMP D DRAINAGE FACILITIES AND ALONG SOUTHBOUND SR896*
2. *CONSTRUCT EMBANKMENT AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
3. *USE TA-33 TO CONSTRUCT SR896 SIDEWALK IMPROVEMENTS*
4. *USE TA-33 TO COMPLETE ALL HOTMIX TIE-INS AND PATCHING ALONG SR896 AND PAVE SHARED USE PATH*
5. *POUR PCC PAVEMENT FOR RAMP D*
6. *COMPLETE ROADWAY LIGHTING SYSTEM, GUARDRAIL INSTALLATION, PROPOSED SIGNING AND STRIPING FOR RAMP D*

ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 4	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 230
					CHECKED BY: S. PENOZA		

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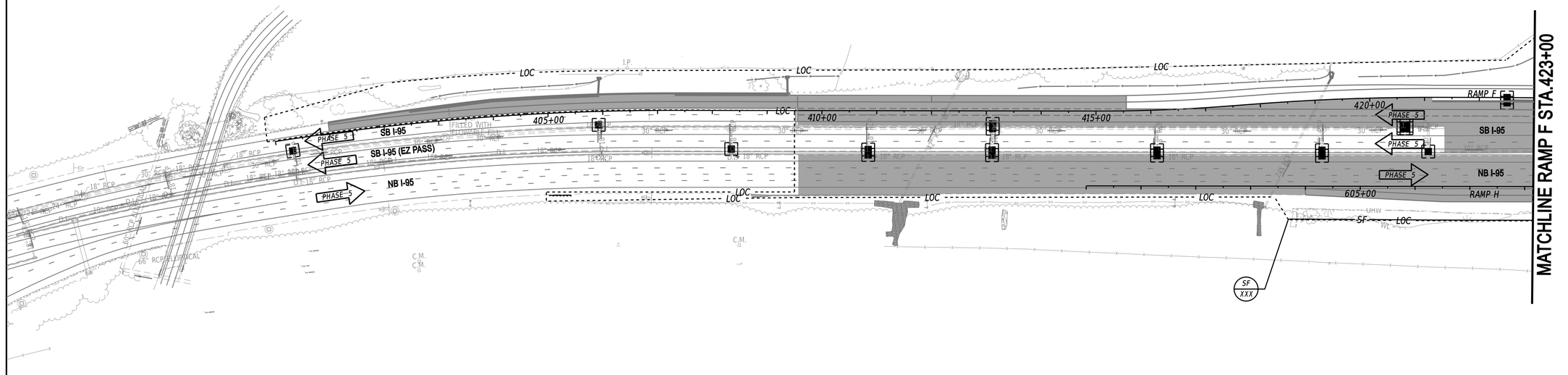

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PHASE 5

STAGE 1: (OPEN RAMP C)
1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP C*
2. *OPEN RAMP D TO TRAFFIC AND CLOSE EXISTING RAMP D*
3. *PLACE PHASE 5 EROSION AND SEDIMENT CONTROLS AS SHOWN*
4. *CLEAR AND GRUBB WITHIN PHASE 5 LIMITS*

STAGE 2: (RAMP H)
1. *REMOVE EXISTING RAMP D PAVEMENT AND CONSTRUCT DRAINAGE FACILITIES*
2. *GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
3. *POUR PCC PAVEMENT FOR RAMP H*
4. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
5. *PLACE HOTMIX TIE IN PATCHING*
6. *PLACE REQUIRED SIGNING AND STRIPING*
7. *OPEN RAMP H AND REMOVE DETOUR SIGNING*

STAGE 3: (I-95)
1. *MILL EXISTING HOTMIX PAVEMENT & OVERLAY WITH 2"OF TYPE C BITUMINOUS CONCRETE THROUGH THE LIMITS OF I-95 AND PLACE FINAL PERMANENT PAVEMENT MARKING*
2. *ALL DISTURBED AREAS SHALL BE GRADED TO DRAIN PROPERLY. THE CONTRACTOR SHALL PLACE TOPSOIL, PERMANENT SEEDING, AND MULCH BLANKET ON ALL AREAS IN FINAL CONDITIONS OR DIRECTED BY THE ENGINEER*
3. *THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF THE FINAL SIGNAGE WITH STATE FORCES, WHERE APPLICABLE. THE CONTRACTOR SHALL NOT REMOVE ANY TEMPORARY SIGNAGE UNLESS APPROVED BY THE ENGINEER IN THE FIELD*
4. *THE CONTRACTOR SHALL REMOVE ALL EROSION AND SEDIMENT CONTROL SYSTEMS STILL REMAINING PER THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR*

STAGE 4: (SR896)
1. *MILL EXISTING HOTMIX PAVEMENT & OVERLAY WITH 2" OF TYPE C BITUMINOUS CONCRETE THROUGH THE LIMITS OF SR896 AND PLACE FINAL PERMANENT PAVEMENT MARKING*
2. *ALL DISTURBED AREAS SHALL BE GRADED TO DRAIN PROPERLY. THE CONTRACTOR SHALL PLACE TOPSOIL, PERMANENT SEEDING, AND MULCH BLANKET ON ALL AREAS IN FINAL CONDITIONS OR DIRECTED BY THE ENGINEER*
3. *THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF THE FINAL SIGNAGE WITH STATE FORCES, WHERE APPLICABLE. THE CONTRACTOR SHALL NOT REMOVE ANY TEMPORARY SIGNAGE UNLESS APPROVED BY THE ENGINEER IN THE FIELD*
4. *THE CONTRACTOR SHALL REMOVE ALL EROSION AND SEDIMENT CONTROL SYSTEMS STILL REMAINING PER THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR*

ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 5	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 231
					CHECKED BY: S. PENOZA		

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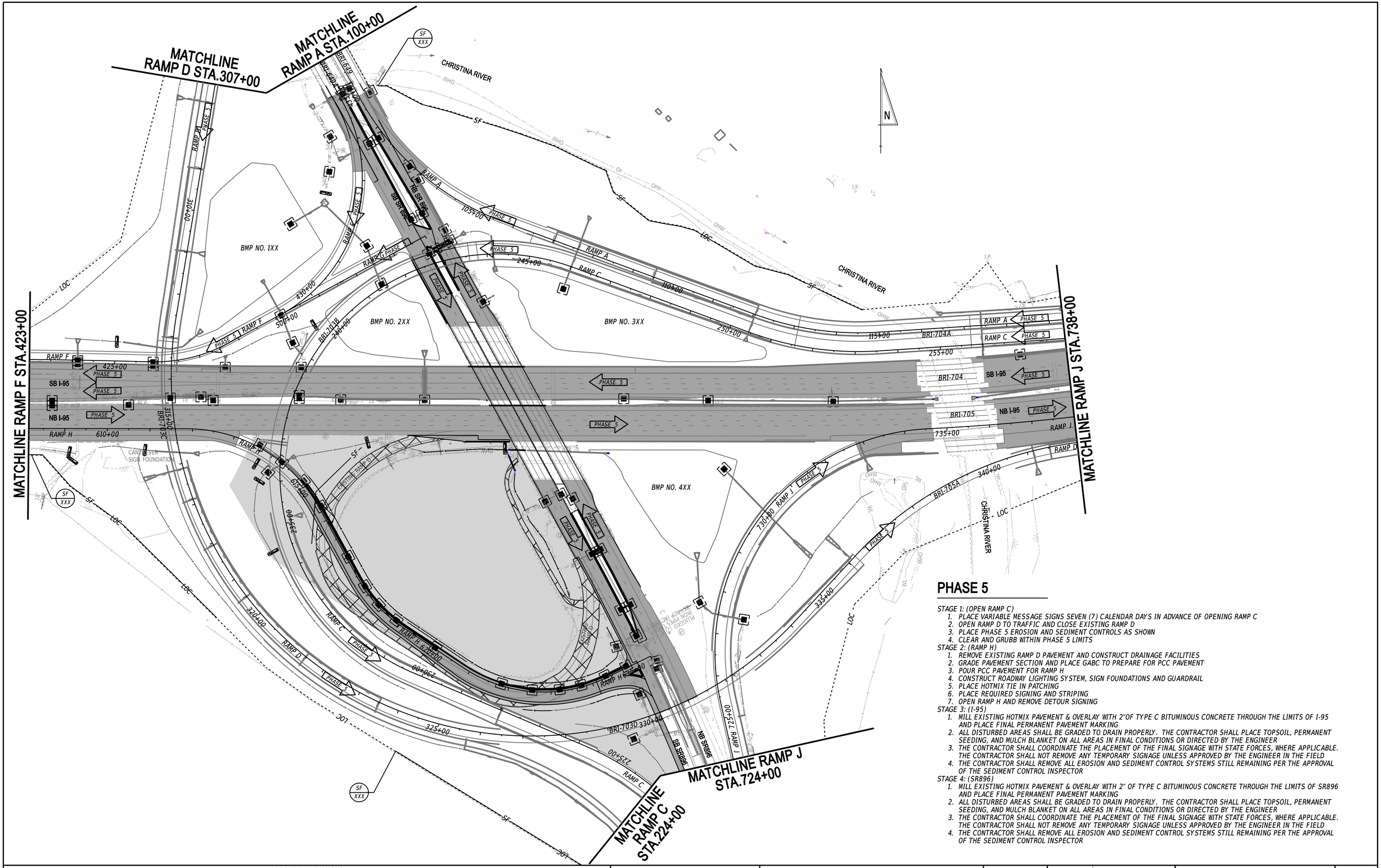

PHASE 5

STAGE 1: (OPEN RAMP C)

1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP C*
2. *OPEN RAMP D TO TRAFFIC AND CLOSE EXISTING RAMP D*
3. *PLACE PHASE 5 EROSION AND SEDIMENT CONTROLS AS SHOWN*
4. *CLEAR AND GRUBB WITHIN PHASE 5 LIMITS*

STAGE 2: (RAMP H)

1. *REMOVE EXISTING RAMP D PAVEMENT AND CONSTRUCT DRAINAGE FACILITIES*
2. *GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
3. *POUR PCC PAVEMENT FOR RAMP H*
4. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
5. *PLACE HOTMIX TIE IN PATCHING*
6. *PLACE REQUIRED SIGNING AND STRIPING*
7. *OPEN RAMP H AND REMOVE DETOUR SIGNING*

STAGE 3: (I-95)

1. *MILL EXISTING HOTMIX PAVEMENT & OVERLAY WITH 2"OF TYPE C BITUMINOUS CONCRETE THROUGH THE LIMITS OF I-95 AND PLACE FINAL PERMANENT PAVEMENT MARKING*
2. *ALL DISTURBED AREAS SHALL BE GRADED TO DRAIN PROPERLY. THE CONTRACTOR SHALL PLACE TOPSOIL, PERMANENT SEEDING, AND MULCH BLANKET ON ALL AREAS IN FINAL CONDITIONS OR DIRECTED BY THE ENGINEER*
3. *THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF THE FINAL SIGNAGE WITH STATE FORCES, WHERE APPLICABLE. THE CONTRACTOR SHALL NOT REMOVE ANY TEMPORARY SIGNAGE UNLESS APPROVED BY THE ENGINEER IN THE FIELD*
4. *THE CONTRACTOR SHALL REMOVE ALL EROSION AND SEDIMENT CONTROL SYSTEMS STILL REMAINING PER THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR*

STAGE 4: (SR896)

1. *MILL EXISTING HOTMIX PAVEMENT & OVERLAY WITH 2" OF TYPE C BITUMINOUS CONCRETE THROUGH THE LIMITS OF SR896 AND PLACE FINAL PERMANENT PAVEMENT MARKING*
2. *ALL DISTURBED AREAS SHALL BE GRADED TO DRAIN PROPERLY. THE CONTRACTOR SHALL PLACE TOPSOIL, PERMANENT SEEDING, AND MULCH BLANKET ON ALL AREAS IN FINAL CONDITIONS OR DIRECTED BY THE ENGINEER*
3. *THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF THE FINAL SIGNAGE WITH STATE FORCES, WHERE APPLICABLE. THE CONTRACTOR SHALL NOT REMOVE ANY TEMPORARY SIGNAGE UNLESS APPROVED BY THE ENGINEER IN THE FIELD*
4. *THE CONTRACTOR SHALL REMOVE ALL EROSION AND SEDIMENT CONTROL SYSTEMS STILL REMAINING PER THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR*

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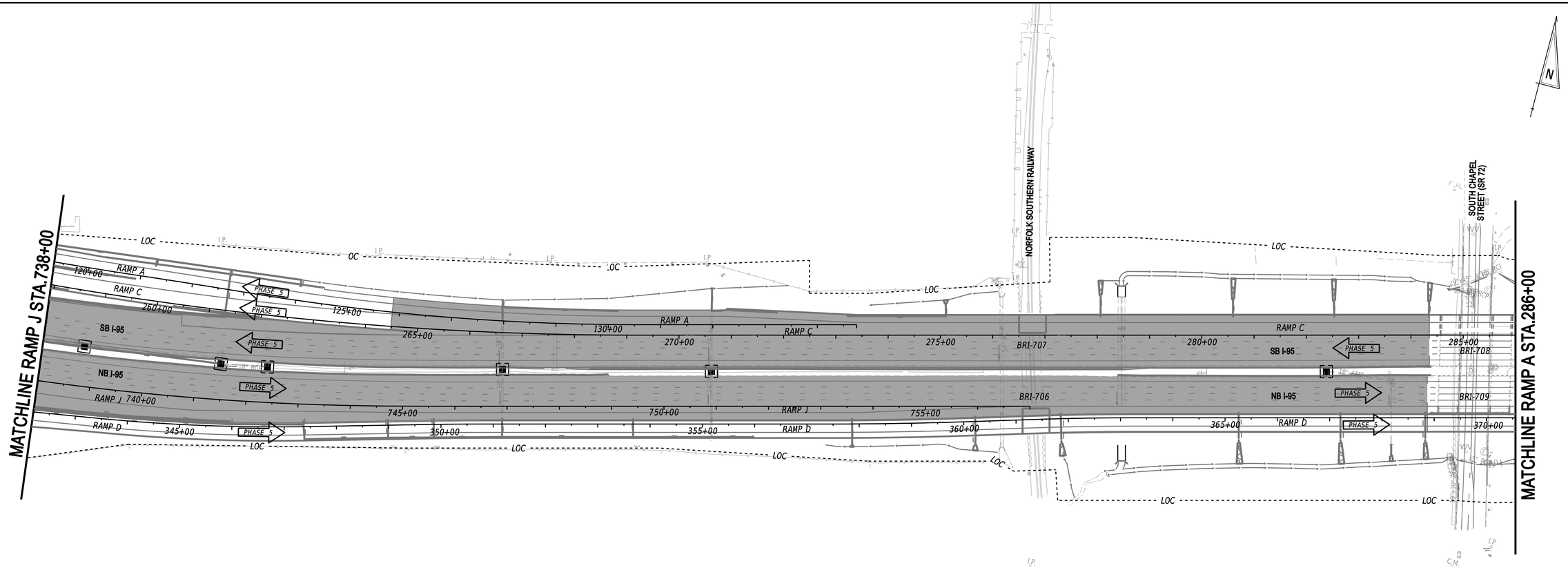
ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 5	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 232
					CHECKED BY: S. PENOZA		



PHASE 5

STAGE 1: (OPEN RAMP C)

1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP C*
2. *OPEN RAMP D TO TRAFFIC AND CLOSE EXISTING RAMP D*
3. *PLACE PHASE 5 EROSION AND SEDIMENT CONTROLS AS SHOWN*
4. *CLEAR AND GRUBB WITHIN PHASE 5 LIMITS*

STAGE 2: (RAMP H)

1. *REMOVE EXISTING RAMP D PAVEMENT AND CONSTRUCT DRAINAGE FACILITIES*
2. *GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
3. *POUR PCC PAVEMENT FOR RAMP H*
4. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
5. *PLACE HOTMIX TIE IN PATCHING*
6. *PLACE REQUIRED SIGNING AND STRIPING*
7. *OPEN RAMP H AND REMOVE DETOUR SIGNING*

STAGE 3: (I-95)

1. *MILL EXISTING HOTMIX PAVEMENT & OVERLAY WITH 2"OF TYPE C BITUMINOUS CONCRETE THROUGH THE LIMITS OF I-95 AND PLACE FINAL PERMANENT PAVEMENT MARKING*
2. *ALL DISTURBED AREAS SHALL BE GRADED TO DRAIN PROPERLY. THE CONTRACTOR SHALL PLACE TOPSOIL, PERMANENT SEEDING, AND MULCH BLANKET ON ALL AREAS IN FINAL CONDITIONS OR DIRECTED BY THE ENGINEER*
3. *THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF THE FINAL SIGNAGE WITH STATE FORCES, WHERE APPLICABLE. THE CONTRACTOR SHALL NOT REMOVE ANY TEMPORARY SIGNAGE UNLESS APPROVED BY THE ENGINEER IN THE FIELD*
4. *THE CONTRACTOR SHALL REMOVE ALL EROSION AND SEDIMENT CONTROL SYSTEMS STILL REMAINING PER THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR*

STAGE 4: (SR896)

1. *MILL EXISTING HOTMIX PAVEMENT & OVERLAY WITH 2" OF TYPE C BITUMINOUS CONCRETE THROUGH THE LIMITS OF SR896 AND PLACE FINAL PERMANENT PAVEMENT MARKING*
2. *ALL DISTURBED AREAS SHALL BE GRADED TO DRAIN PROPERLY. THE CONTRACTOR SHALL PLACE TOPSOIL, PERMANENT SEEDING, AND MULCH BLANKET ON ALL AREAS IN FINAL CONDITIONS OR DIRECTED BY THE ENGINEER*
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4. *THE CONTRACTOR SHALL REMOVE ALL EROSION AND SEDIMENT CONTROL SYSTEMS STILL REMAINING PER THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR*

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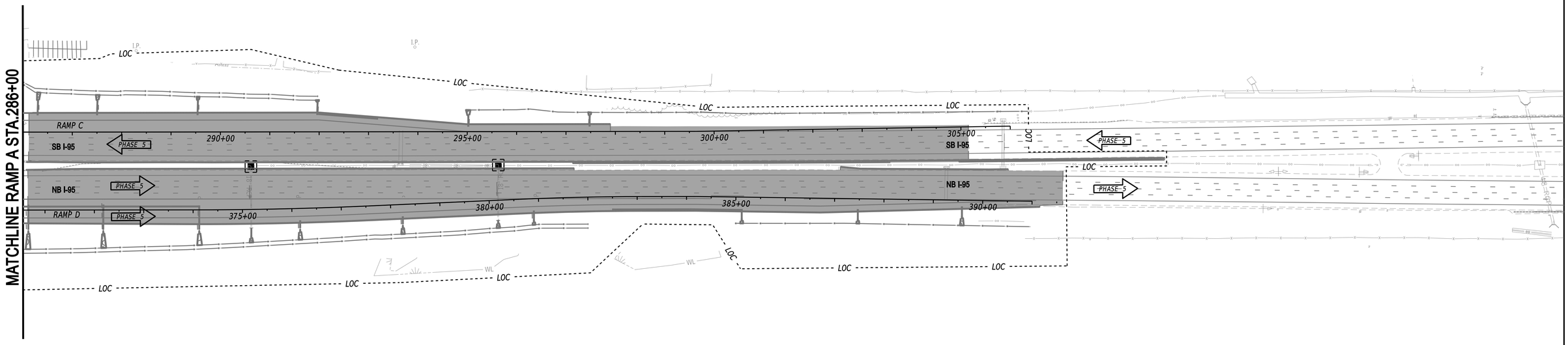
ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 5	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 233
					CHECKED BY: S. PENOZA		



PHASE 5

STAGE 1: (OPEN RAMP C)

1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP C*
2. *OPEN RAMP D TO TRAFFIC AND CLOSE EXISTING RAMP D*
3. *PLACE PHASE 5 EROSION AND SEDIMENT CONTROLS AS SHOWN*
4. *CLEAR AND GRUBB WITHIN PHASE 5 LIMITS*

STAGE 2: (RAMP H)

1. *REMOVE EXISTING RAMP D PAVEMENT AND CONSTRUCT DRAINAGE FACILITIES*
2. *GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
3. *POUR PCC PAVEMENT FOR RAMP H*
4. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
5. *PLACE HOTMIX TIE IN PATCHING*
6. *PLACE REQUIRED SIGNING AND STRIPING*
7. *OPEN RAMP H AND REMOVE DETOUR SIGNING*

STAGE 3: (I-95)

1. *MILL EXISTING HOTMIX PAVEMENT & OVERLAY WITH 2"OF TYPE C BITUMINOUS CONCRETE THROUGH THE LIMITS OF I-95 AND PLACE FINAL PERMANENT PAVEMENT MARKING*
2. *ALL DISTURBED AREAS SHALL BE GRADED TO DRAIN PROPERLY. THE CONTRACTOR SHALL PLACE TOPSOIL, PERMANENT SEEDING, AND MULCH BLANKET ON ALL AREAS IN FINAL CONDITIONS OR DIRECTED BY THE ENGINEER*
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4. *THE CONTRACTOR SHALL REMOVE ALL EROSION AND SEDIMENT CONTROL SYSTEMS STILL REMAINING PER THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR*

STAGE 4: (SR896)

1. *MILL EXISTING HOTMIX PAVEMENT & OVERLAY WITH 2" OF TYPE C BITUMINOUS CONCRETE THROUGH THE LIMITS OF SR896 AND PLACE FINAL PERMANENT PAVEMENT MARKING*
2. *ALL DISTURBED AREAS SHALL BE GRADED TO DRAIN PROPERLY. THE CONTRACTOR SHALL PLACE TOPSOIL, PERMANENT SEEDING, AND MULCH BLANKET ON ALL AREAS IN FINAL CONDITIONS OR DIRECTED BY THE ENGINEER*
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ADDENDA / REVISIONS		SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT T201609002	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 5	SECTION CEI
				COUNTY NEW CASTLE	DESIGNED BY: K. SMAGALA		SHEET NO. 234
					CHECKED BY: S. PENOZA		

PHASE 5

STAGE 1: (OPEN RAMP C)

1. *PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP C*
2. *OPEN RAMP D TO TRAFFIC AND CLOSE EXISTING RAMP D*
3. *PLACE PHASE 5 EROSION AND SEDIMENT CONTROLS AS SHOWN*
4. *CLEAR AND GRUBB WITHIN PHASE 5 LIMITS*

STAGE 2: (RAMP H)

1. *REMOVE EXISTING RAMP D PAVEMENT AND CONSTRUCT DRAINAGE FACILITIES*
2. *GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT*
3. *POUR PCC PAVEMENT FOR RAMP H*
4. *CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL*
5. *PLACE HOTMIX TIE IN PATCHING*
6. *PLACE REQUIRED SIGNING AND STRIPING*
7. *OPEN RAMP H AND REMOVE DETOUR SIGNING*

STAGE 3: (I-95)

1. *MILL EXISTING HOTMIX PAVEMENT & OVERLAY WITH 2"OF TYPE C BITUMINOUS CONCRETE THROUGH THE LIMITS OF I-95 AND PLACE FINAL PERMANENT PAVEMENT MARKING*
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STAGE 4: (SR896)

1. *MILL EXISTING HOTMIX PAVEMENT & OVERLAY WITH 2" OF TYPE C BITUMINOUS CONCRETE THROUGH THE LIMITS OF SR896 AND PLACE FINAL PERMANENT PAVEMENT MARKING*
2. *ALL DISTURBED AREAS SHALL BE GRADED TO DRAIN PROPERLY. THE CONTRACTOR SHALL PLACE TOPSOIL, PERMANENT SEEDING, AND MULCH BLANKET ON ALL AREAS IN FINAL CONDITIONS OR DIRECTED BY THE ENGINEER*
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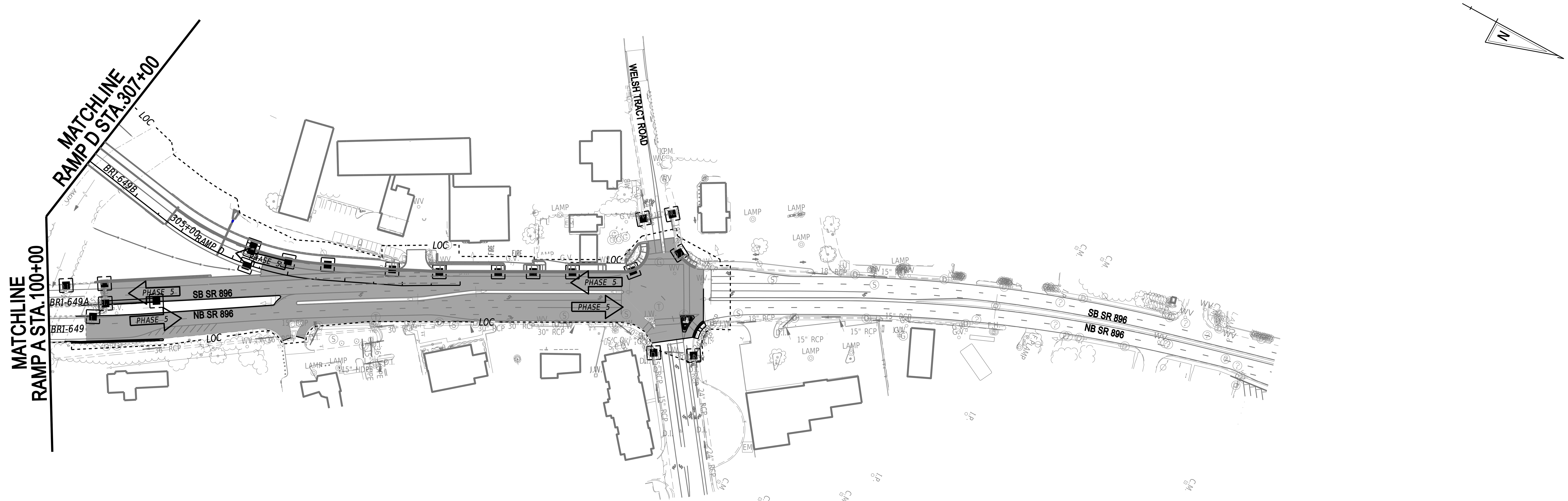
ADDENDA / REVISIONS	SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT	BRIDGE NO.	N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 5	SECTION
			T201609002	DESIGNED BY:	K. SMAGALA		CEI
			COUNTY				SHEET NO.
			NEW CASTLE	CHECKED BY:	S. PENOZA		235



PHASE 5

STAGE 1: (OPEN RAMP C)
1. PLACE VARIABLE MESSAGE SIGNS SEVEN (7) CALENDAR DAYS IN ADVANCE OF OPENING RAMP C
2. OPEN RAMP D TO TRAFFIC AND CLOSE EXISTING RAMP D
3. PLACE PHASE 5 EROSION AND SEDIMENT CONTROLS AS SHOWN
4. CLEAR AND GRUBB WITHIN PHASE 5 LIMITS

STAGE 2: (RAMP H)
1. REMOVE EXISTING RAMP D PAVEMENT AND CONSTRUCT DRAINAGE FACILITIES
2. GRADE PAVEMENT SECTION AND PLACE GABC TO PREPARE FOR PCC PAVEMENT
3. POUR PCC PAVEMENT FOR RAMP H
4. CONSTRUCT ROADWAY LIGHTING SYSTEM, SIGN FOUNDATIONS AND GUARDRAIL
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7. OPEN RAMP H AND REMOVE DETOUR SIGNING

STAGE 3: (I-95)
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STAGE 4: (SR896)
1. MILL EXISTING HOTMIX PAVEMENT & OVERLAY WITH 2" OF TYPE C BITUMINOUS CONCRETE THROUGH THE LIMITS OF SR896 AND PLACE FINAL PERMANENT PAVEMENT MARKING
2. ALL DISTURBED AREAS SHALL BE GRADED TO DRAIN PROPERLY. THE CONTRACTOR SHALL PLACE TOPSOIL, PERMANENT SEEDING, AND MULCH BLANKET ON ALL AREAS IN FINAL CONDITIONS OR DIRECTED BY THE ENGINEER
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4. THE CONTRACTOR SHALL REMOVE ALL EROSION AND SEDIMENT CONTROL SYSTEMS STILL REMAINING PER THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR

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ADDENDA / REVISIONS	SCALE 0 100 200 300 FEET	I-95 AND SR 896 INTERCHANGE	CONTRACT	BRIDGE NO. N/A	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN - PHASE 5	SECTION
			T201609002	DESIGNED BY: K. SMAGALA		CEI
			COUNTY			SHEET NO.
			NEW CASTLE	CHECKED BY: S. PENOZA		236