

“Whitson Bridge Replacement over North River – Tuscaloosa County - AASHTO Meets Precast”

Tuscaloosa Branch of ASCE

Thursday, October 29, 2020

Craig P. Williams, P.E., M. ASCE – Burk-Kleinpeter, Inc.

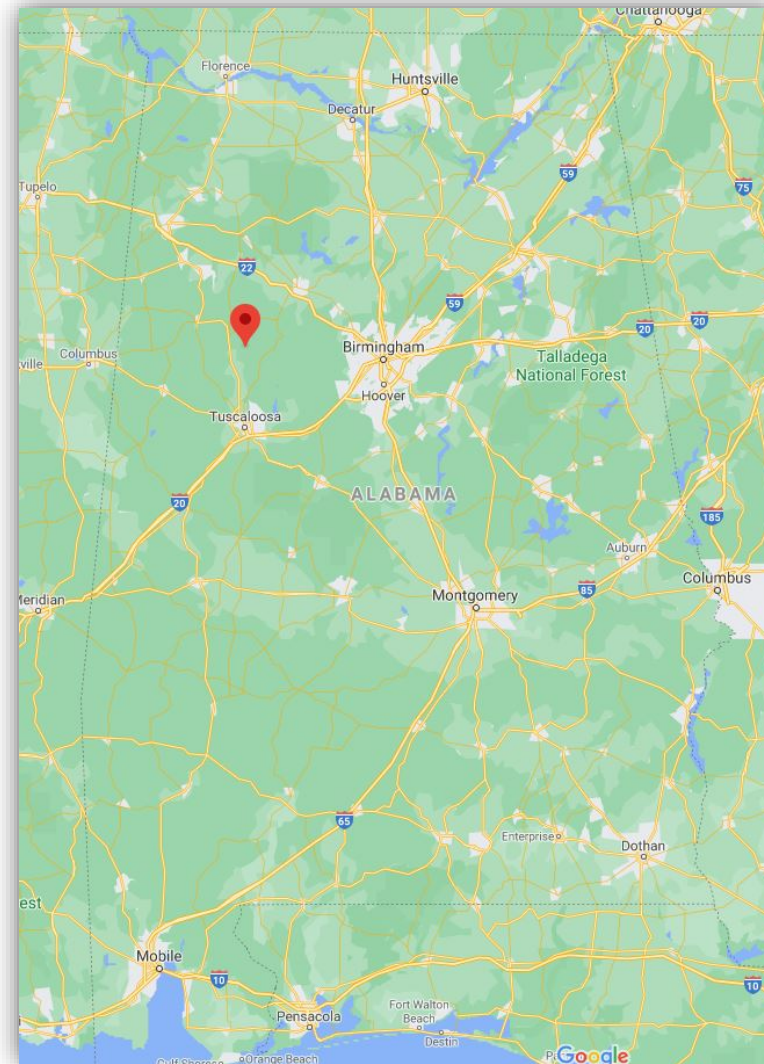
Mike Henderson – Tuscaloosa County Public Works





Whitson Bridge Replacement – AASHTO Meets Precast

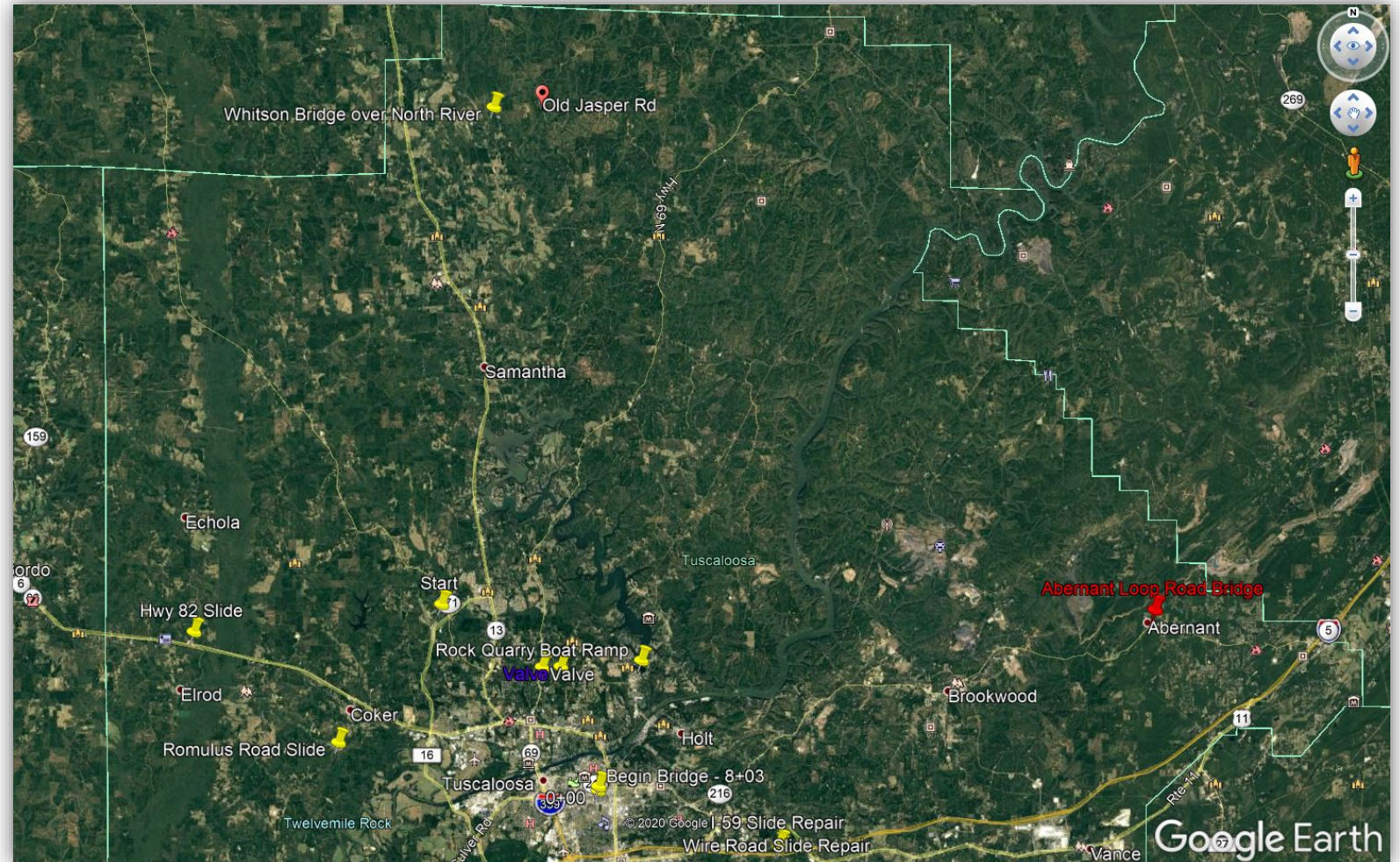
- **History**
 - **Location**
 - **Dispute**
 - **Truss Bridge Collapse – 1989**
 - **Supreme Court Ruling**
 - **Glued-Laminated Timber Bridge**
 - **Destruction by Fire**
- **Design**
 - **Geotechnical**
 - **AASHTO**
 - **Precast**
 - **Tuscaloosa County Precast Yard**





Whitson Bridge Replacement – AASHTO Meets Precast

- **Bid Letting**
 - **Award of Contract**
- **Construction**
 - **Foundations**
 - **Drilled Shafts**
 - **Bent 3 & 4 Excavation**
 - **Bent 3 & 4 Construction**
 - **Substructure**
 - **Bent 3 & 4 Step Caps**
 - **Girder Erection**
 - **Superstructure**
 - **Deck Pans**
 - **Superstructure Steel**
 - **Superstructure Concrete**
 - **Precast**
 - **HP 12 x 53**
 - **Precast Caps**
 - **Precast Deck Sections**
 - **Precast Barrier Rails**
- **Completion**





History

■ History

■ Location

- **Approximately 24 miles north of Tuscaloosa on Old Jasper Road.**
- **3 miles east of US-43 / SR-13**
- **Whitson Bridge is located over North River**
- **Lake Tuscaloosa was created by damming North River. It was constructed by Thornton Jones to provide water for Tuscaloosa residents and for industrial use as well. It was completed in 1970.**





History

- **History**
 - **Dispute**
 - **Between Taylor Henry and J.H. Willingham over Gertrude Lunceford**





BKI

History

- **Dispute**
 - **Between Taylor Henry and J.H. Willingham over Gertrude Lunceford**
 - **Taylor Henry was killed on December 18, 1920, at the site of the steel truss of Whitson Bridge.**





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History

- **Gertrude (Lunceford) Henry**
 - **(1900-2000)**
 - **She was born in the Samantha area of Tuscaloosa County**





History

- **Taylor Edwin Henry**
 - **(1899-1980)**
 - Mr. Henry was a Navy veteran in World War I.
 - After Henry was killed, Gertrude and Taylor moved back to Cleveland, Tennessee, where he was from.
 - He was never charged with the death of Henry. It was said to have been justifiable.
 - Taylor and Gertrude are both buried in Cleveland, Tennessee.





History – Truss Bridge Collapse

- **Truss Bridge Collapse**
 - **Friday, May 12, 1989**
 - **The truss buckled due to the weight of a loaded tractor-trailer rig after the rig attempted to cross the structure, which had a 10-ton posted weight limit.**





Truss Bridge Collapse

Supreme Court Ruling

- Tuscaloosa County sued the trailer's owner, Jim Thomas Forestry Consultants, Inc. of Selma and won \$100,000 in October 1991. The county appealed for more money and sought an opinion from the Alabama Supreme Court.
- From a legal standpoint, county attorneys said the landmark case cleared the way for counties to see actual replacement cost rather than the much lesser market value. Thomas Forestry attorneys estimated the value of the Whitson Bridge at \$15,000.
- The county got \$115,000, including interest, from the suit as well as a \$60,000 grant from the U.S. Forestry Service to build a wooden bridge there.

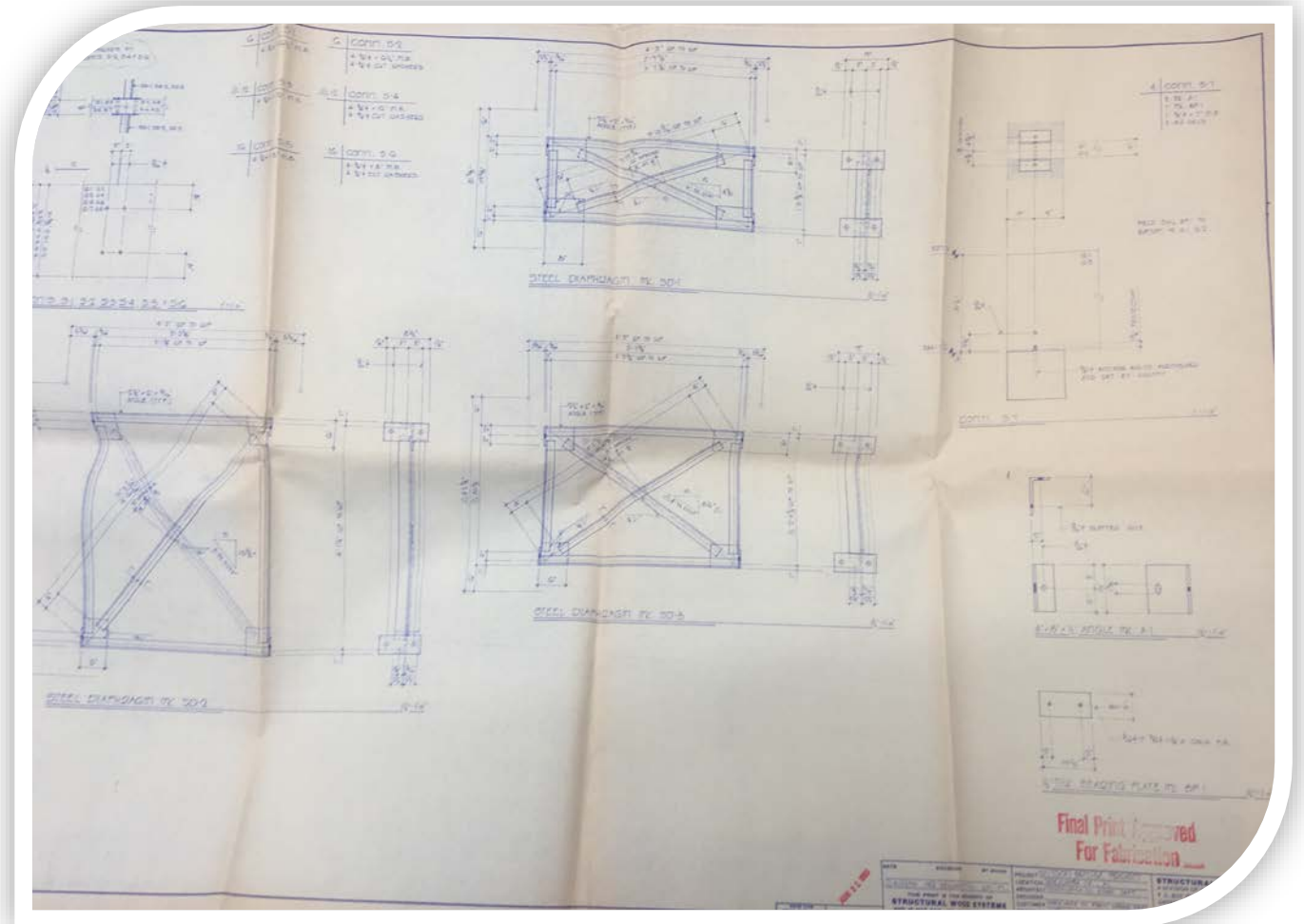




Whitson Bridge – Glued-Laminated Bridge

Glued-Laminated Bridge

- County engineers paired up with the University of Alabama to design the structure, as well as the county's first new wooden bridge on Old Fayette Road in October 1992. The Old Fayette Bridge was the first of its kind in the United States and possibly the world at the time, according to designer Dr. Mike Triche. Whitson Bridge was the county's second wooden bridge and Alabama's 10th or 11th one at the time.

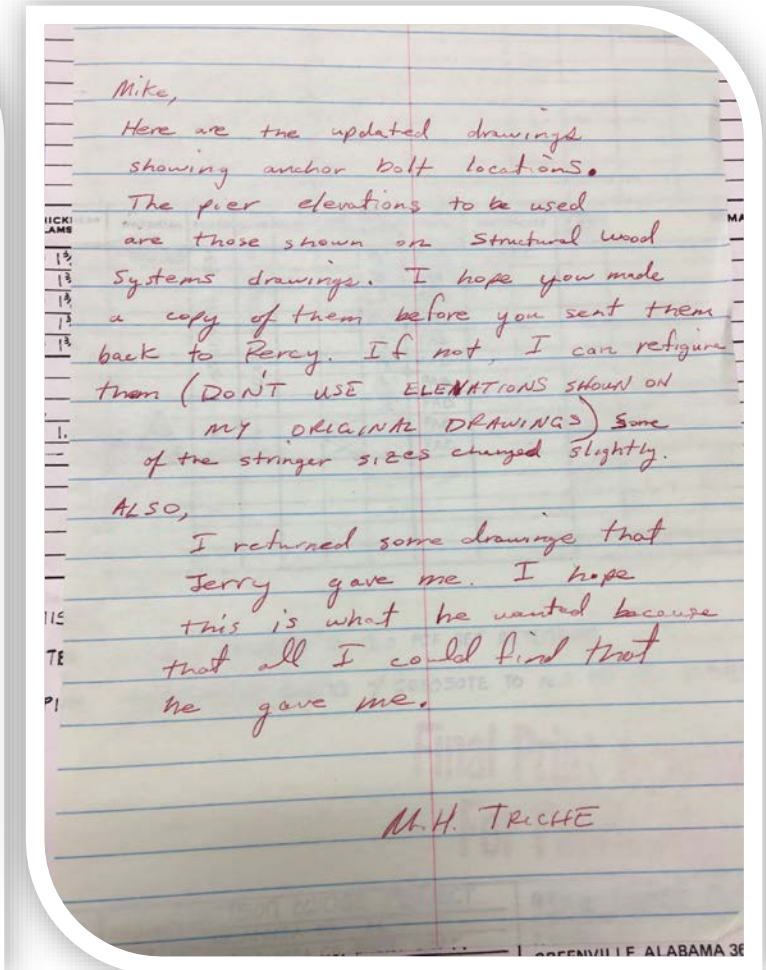
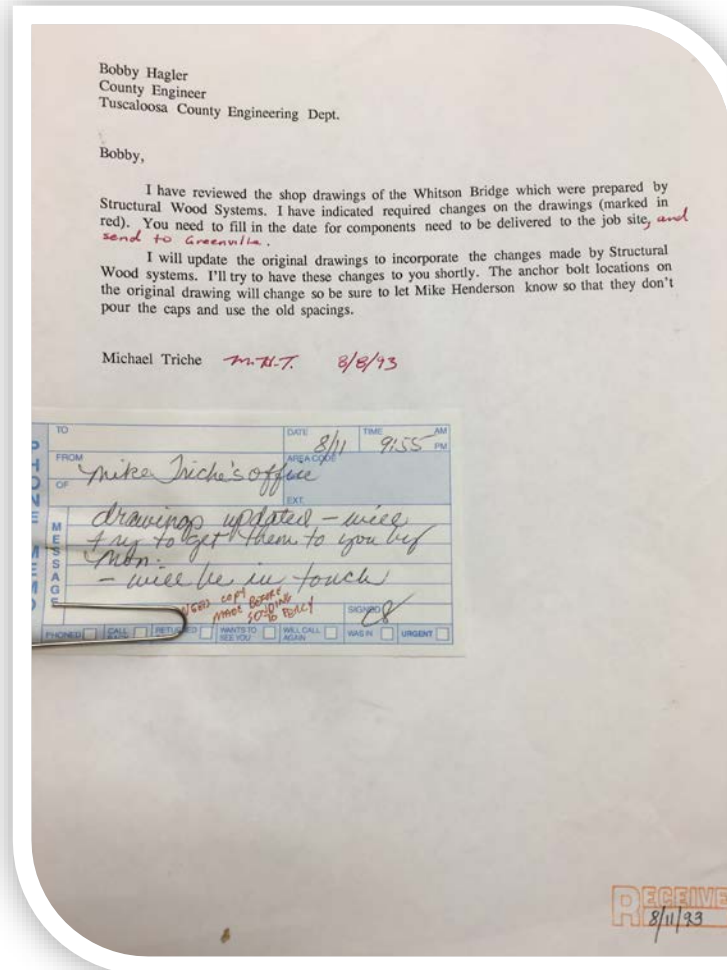




Whitson Bridge – Glued-Laminated Bridge

Glued-Laminated Bridge

- **Dr. Michael Triche was an associate professor of civil and environmental engineering at The University of Alabama. He grew up in Baton Rouge, La., and received his bachelor's degree in agricultural engineering from LSU and went on to Purdue University for a master's degree in agricultural engineering and a Ph.D. in civil engineering.**





Whitson Bridge – Glued-Laminated Bridge

Glued-Laminated Bridge

- Picture shows the Glued-Laminated superstructure with rich creosote treatment.





Whitson Bridge – Glued-Laminated Bridge

Glued-Laminated Bridge

- Picture shows the Elevation view of the Wooden Bridge over North River





Whitson Bridge – Glued-Laminated Bridge

Glued-Laminated Bridge

- Picture shows the Old Rock Pier that was kept to support the glued-laminated bridge





Whitson Bridge – Glued-Laminated Bridge

Glued-Laminated Bridge

- Picture shows the glued-laminated bridge along centerline.





Whitson Bridge – Destroyed by fire

Destroyed by fire

- **Wooden bridge burned in January 2017 when a group of people partying in the area threw a dry Christmas tree onto a bonfire.**

Whitson bridge in the Northern part of Tuscaloosa County, was the longest "simple span" timber structure in the United states. Simple span, simply means that it crossed the river without any supports.

Whitson Bridge was destroyed by fire around 12 midnight Saturday night and it's believed that a group of people started a small brush fire that engulfed the bridge accidentally. The Tuscaloosa County Sheriff's Office is still investigating according to the **Tuscaloosa News**. The Whitson bridge spans North River connecting Old Jasper Road and Willingham Road. Whitson Bridge was 102 feet at its longest span and was constructed in 1992.



Whitson Bridge – Destroyed by fire

Destroyed by fire

- **Wooden bridge burned in January 2017 when a group of people partying in the area threw a dry Christmas tree onto a bonfire.**

Posted Jan 15, 2017 at 9:46 AM

Updated Jan 15, 2017 at 7:53 PM



Authorities are investigating the cause of a fire that destroyed a bridge in north Tuscaloosa County early Sunday.

Firefighters were called to Whitson Bridge around midnight, said Tuscaloosa County Sheriff Ron Abernathy. The bridge crossed North River at Old Jasper Road and Willingham Road.

The bridge was fully engulfed in flames when deputies arrived, Abernathy said.

The Samantha Volunteer Fire Department, Tuscaloosa County Road and Bridge and Tuscaloosa County Emergency Management Agency responded. Sheriff's deputies are investigating the cause of the fire, which started under the bridge.

Reach Stephanie Taylor at stephanie.taylor@tuscaloosaneews.com or 205-722-0210.



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Whitson Bridge – Destroyed by fire





Whitson Bridge – Destroyed by fire

Destroyed by fire

- Picture along the centerline of the bridge starting to burn.





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Whitson Bridge – Destroyed by fire

Destroyed by fire

- **Picture looking at the side of the bridge starting to burn.**
- **Wingwall shown in bottom left corner**





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Whitson Bridge – Destroyed by fire

Destroyed by fire

- Picture along the centerline





BKI

Whitson Bridge – Destroyed by fire





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Whitson Bridge – Destroyed by fire

Destroyed by fire

- Picture taken on the day after





Whitson Bridge – Destroyed by fire

Destroyed by fire

- **Aerial View
after the fire**





Whitson Bridge – Rising from the Ashes!

BKI was selected by Tuscaloosa County for design of the Whitson Bridge and approaches over North River on Old Jasper Road.

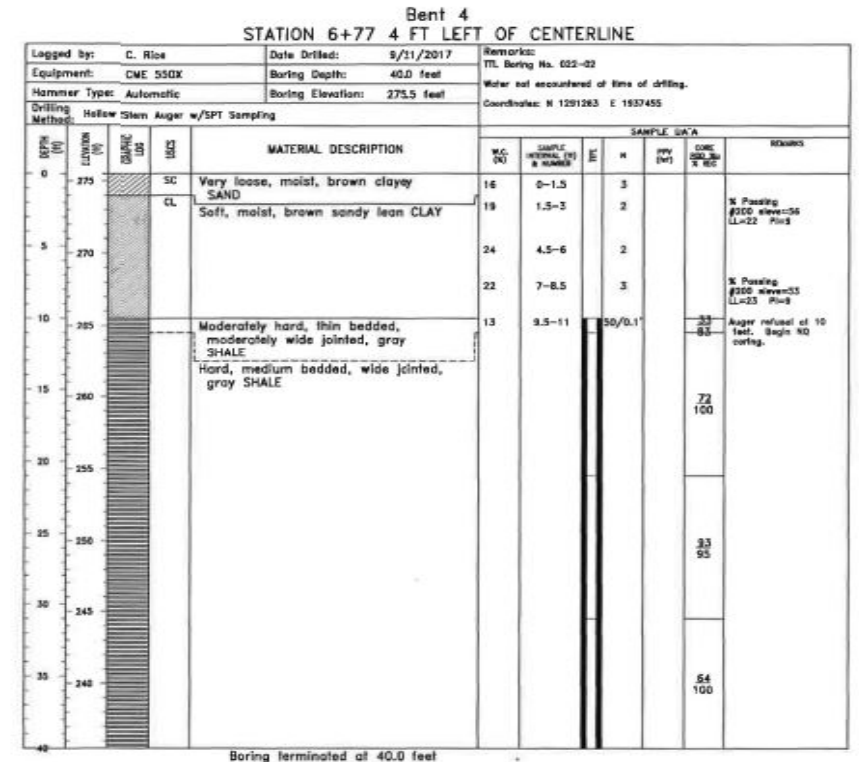
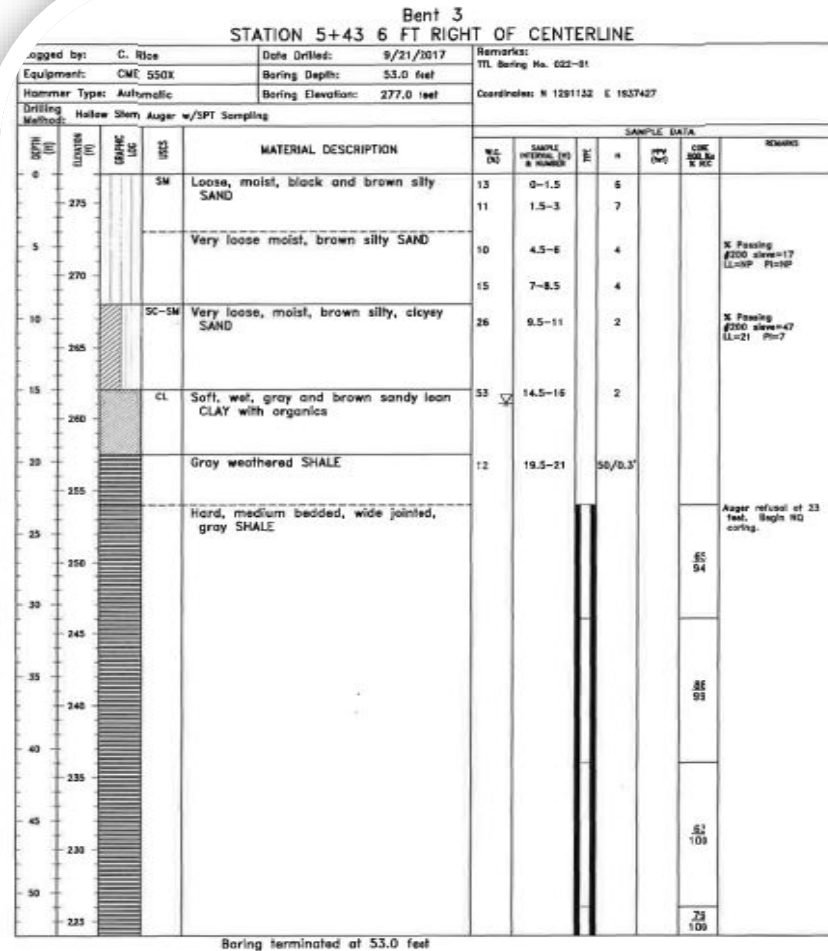
The total proposed bridge length was 290' and consists of 5 – 34' precast spans and 1 – 120' AASHTO girder span. The contract was let for the construction of the AASTHO girder span and adjacent bents. County forces would construct the precast spans.





Design - Geotechnical

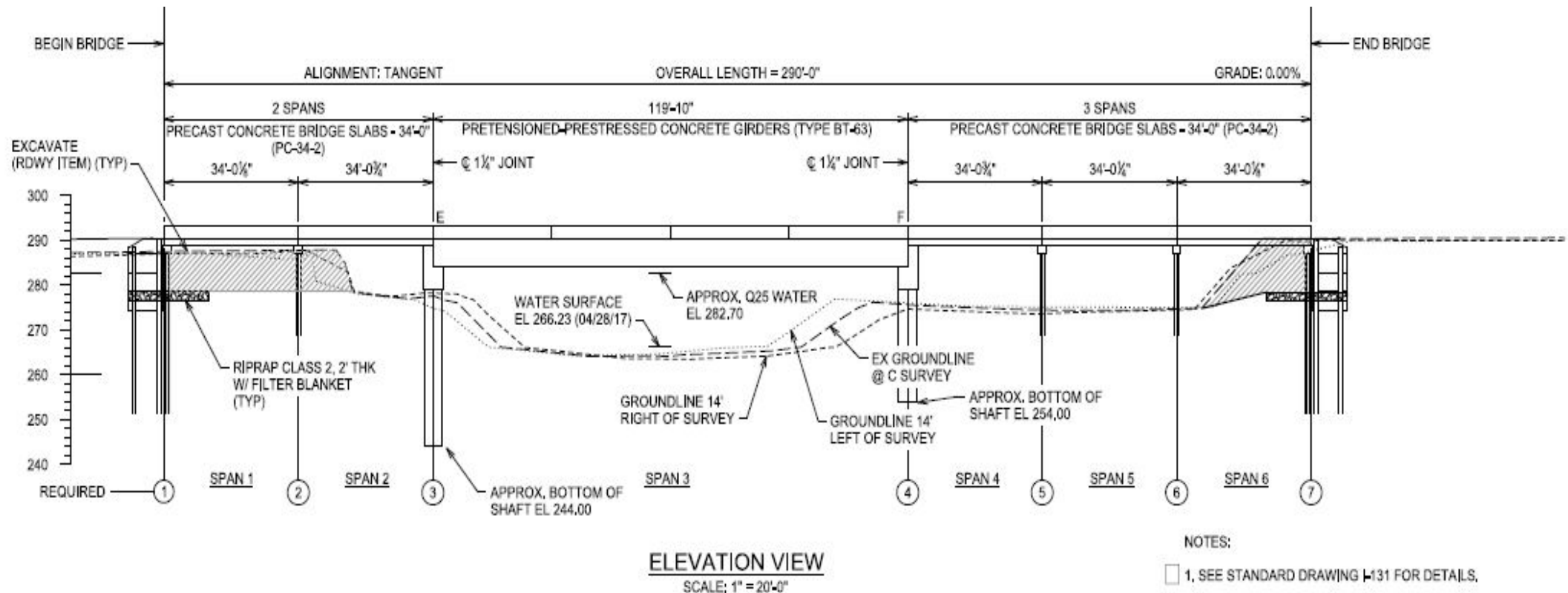
- TTL, Inc. performed the geotechnical work.
- Boring logs from Bent 3 and Bent 4 locations





Design - AASHTO

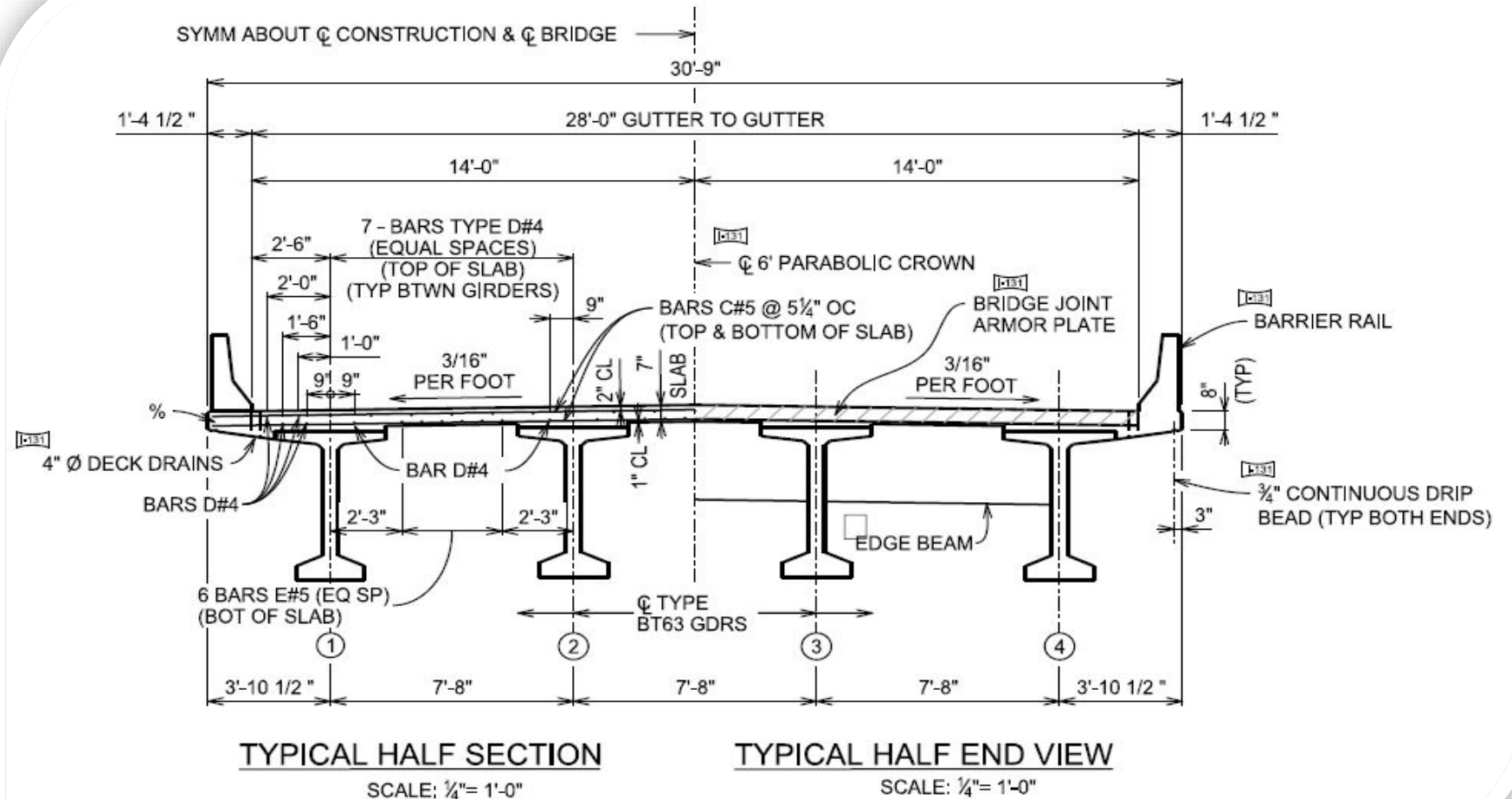
- Main Channel - Span 3 – 120' – BT-63 Girders – 5' Diameter Drilled Shafts





Design - AASHTO

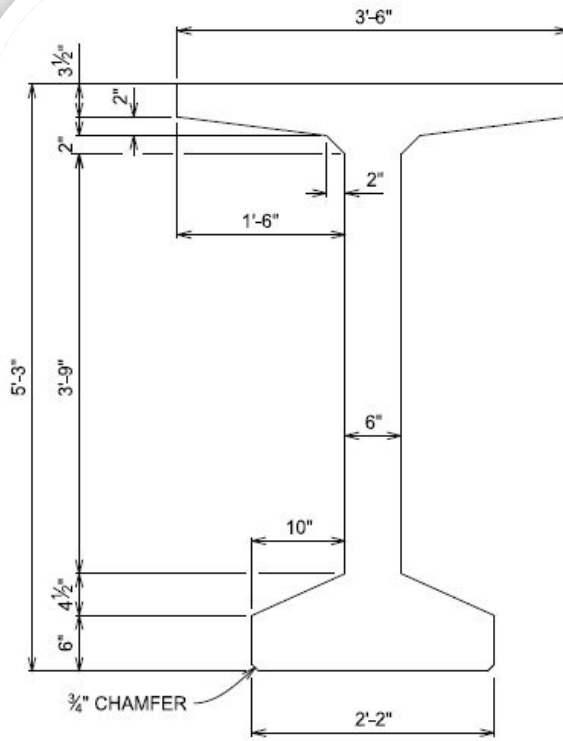
- 28'-0" Gutter to Gutter
- 10' Lane Widths
 - 4' shoulders



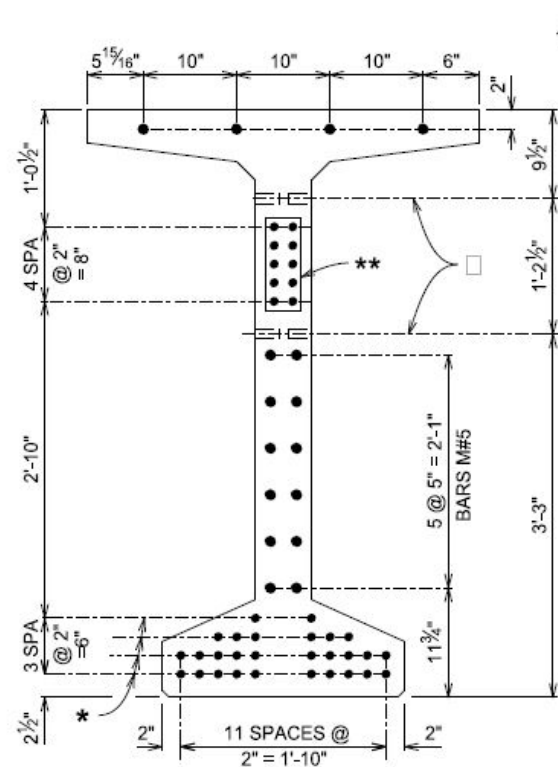


Design - AASHTO

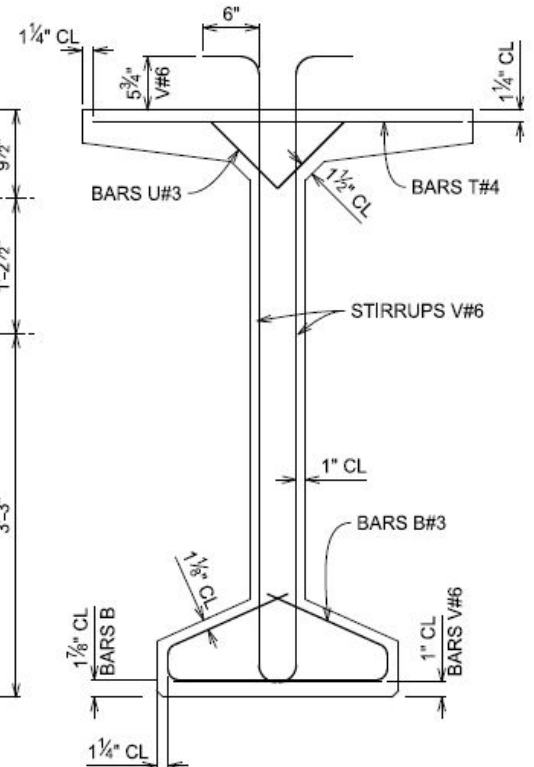
- BT-63 Girders
- 63" Depth or 5'-3" Depth



TYPE BT-63 GIRDER
SCALE: 1" = 1'-0"



PRESTRESSING STRAND PATTERN



GIRDER REINFORCEMENT

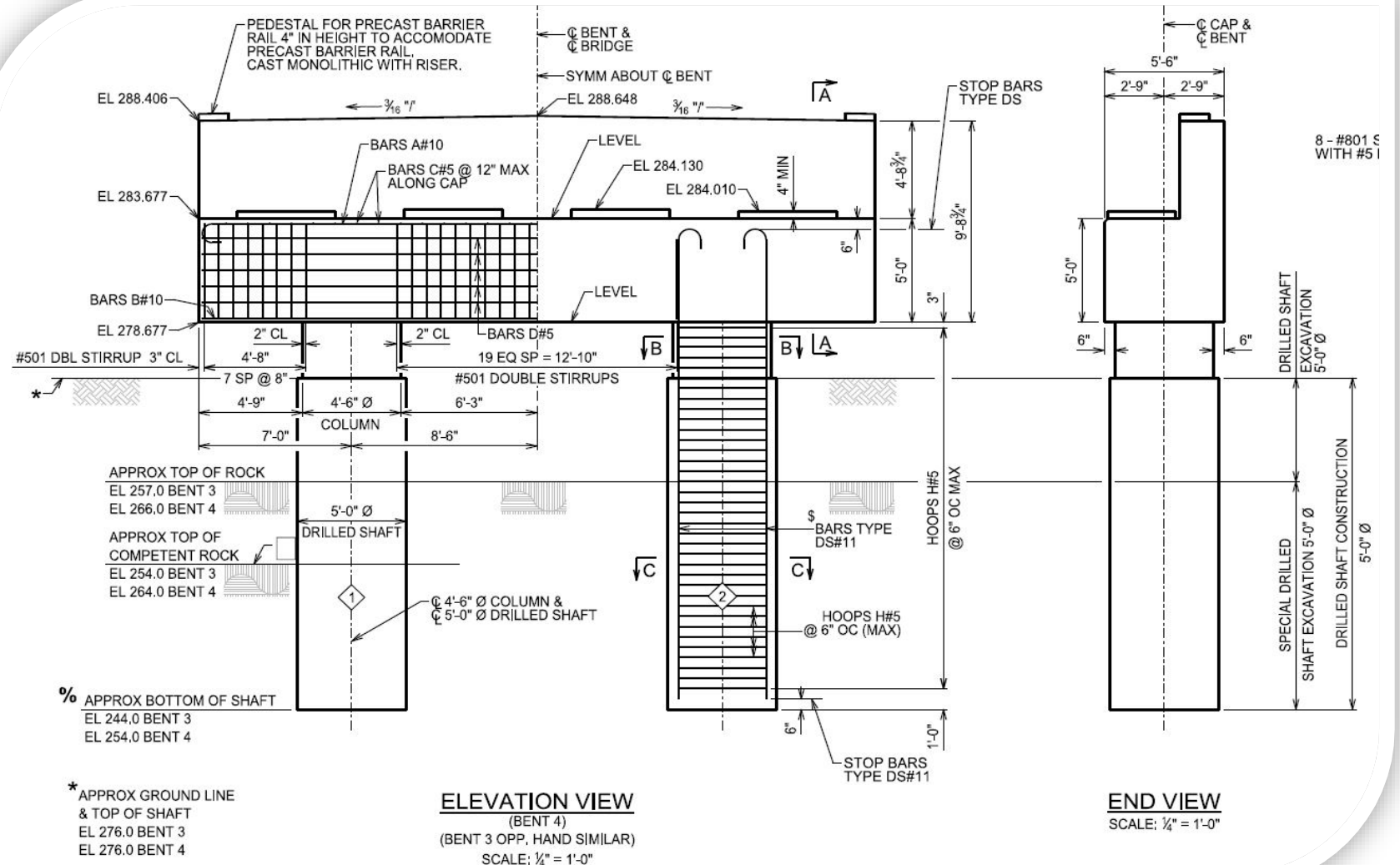
SECTION A-A
SCALE: 1" = 1'-0"



BKI

Design - AASHTO

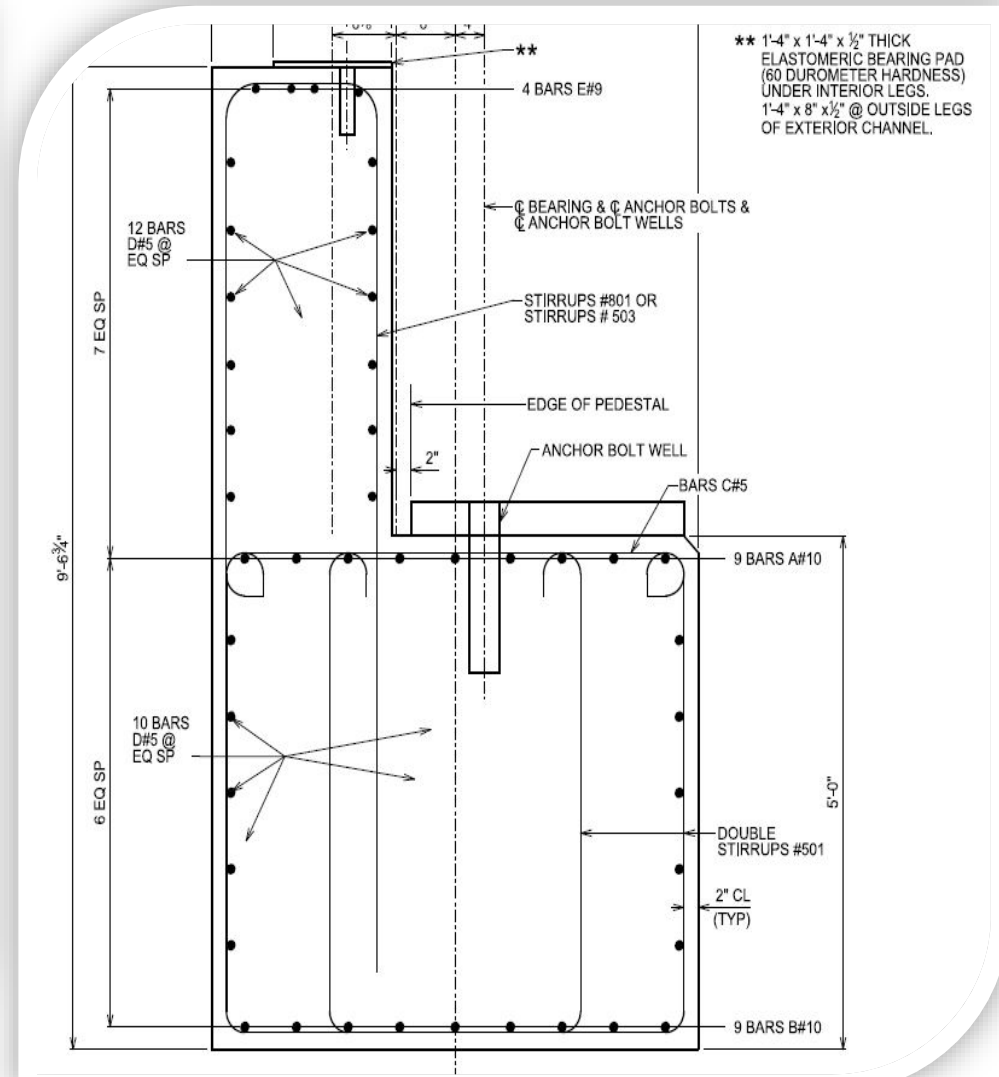
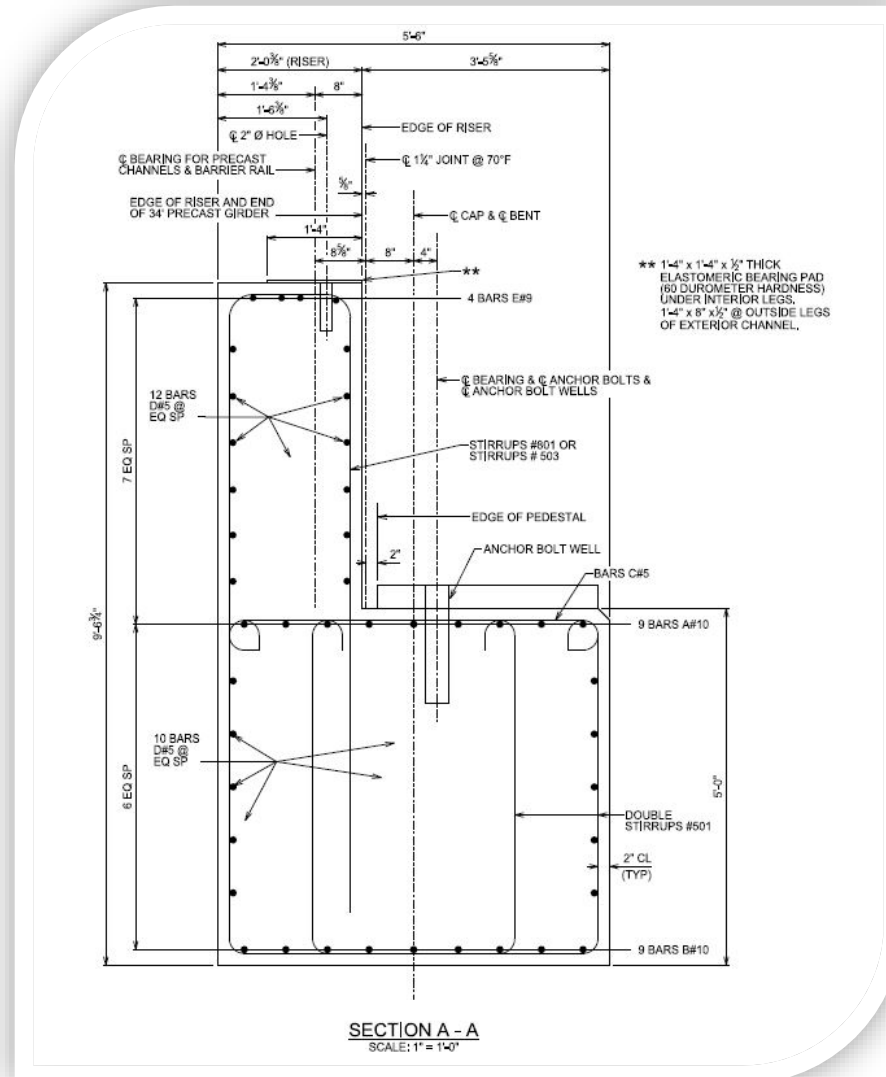
- 5'-0" Diameter Drilled Shafts
- Bent 3 Proposed Shaft Length = 32 linear feet
- Bent 4 Proposed Shaft Length = 22 linear feet





Design - AASHTO

- Step Cap
- 9'-6 3/4" – Precast side
- 5'-0" – AASHTO Side
- 5'-6" Wide





Design - AASHTO

ESTIMATED QUANTITIES

<u>QUANTITY</u>	<u>UNIT</u>	<u>ITEM</u>	<u>DESCRIPTION</u>
1	LUMP SUM	600A-000	MOBILIZATION
34700	POUND	502A-001	STEEL REINFORCEMENT (GRADE 60)
1	LUMP SUM	502B-000	STEEL REINFORCEMENT FOR BRIDGE SUPERSTRUCTURE, STA 4+83.00 APP 28400 LBS
58	LINEAR FOOT	506A-003	DRILLED SHAFT EXCAVATION, 5'-0" DIAMETER
50	LINEAR FOOT	506B-005	SPECIAL DRILLED SHAFT EXCAVATION, 5'-0" DIAMETER
108	LINEAR FOOT	506C-044	DRILLED SHAFT CONSTRUCTION, 5'-0" DIAMETER, CLASS DS1 CONCRETE
1170	POUND	508A-000	STRUCTURAL STEEL
\$ 94	CUBIC YARD	510A-007	BRIDGE SUBSTRUCTURE CONCRETE
1	LUMP SUM	510C-051	BRIDGE CONCRETE SUPERSTRUCTURE, STA 4+83.00 APP 120 CY
320	SQUARE YARD	510E-000	GROOVING CONCRETE BRIDGE DECKS
8	EACH	511A-053	ELASTOMERIC BEARING TYPE 2 (MARK B4)
477	LINEAR FOOT	513B-019	PRETENSIONED-PRESTRESSED CONCRETE GIRDERS, TYPE BT-63 (SPECIALTY ITEM)
200	TON	610C-001	LOOSE RIPRAP, CLASS 2
300	SQUARE YARD	610D-003	FILTER BLANKET, GEOTEXTILE
1	LUMP SUM	680A-001	GEOMETRIC CONTROLS
1	LUMP SUM	698A-000	CONSTRUCTION FUEL (MAXIMUM BID LIMITED TO \$ 24000)

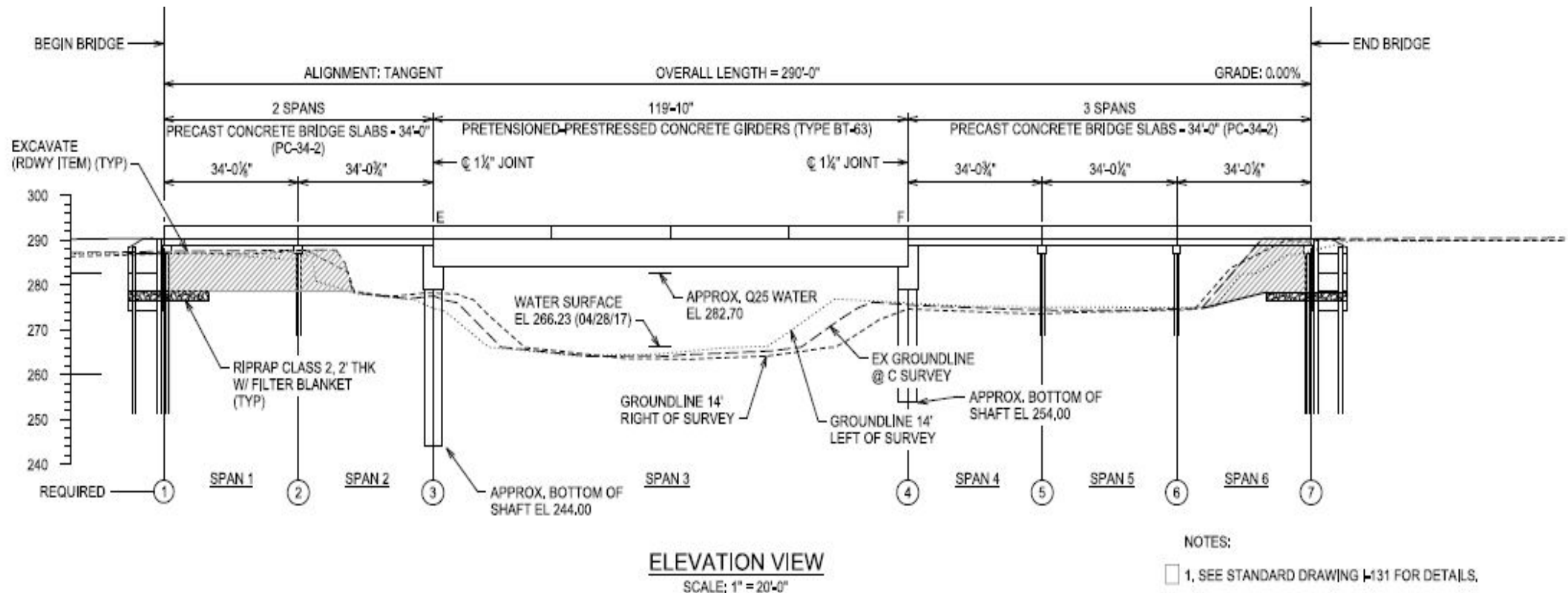
\$ BRIDGE SUBSTRUCTURE CONCRETE SHALL HAVE A 28-DAY MINIMUM
COMPRESSIVE STRENGTH $f_c = 4000$ psi

- Estimated Quantities



Design - Precast

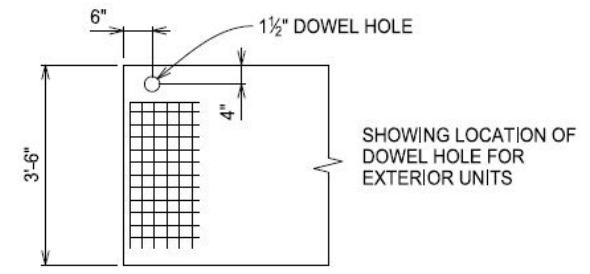
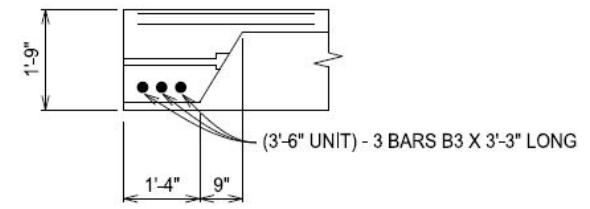
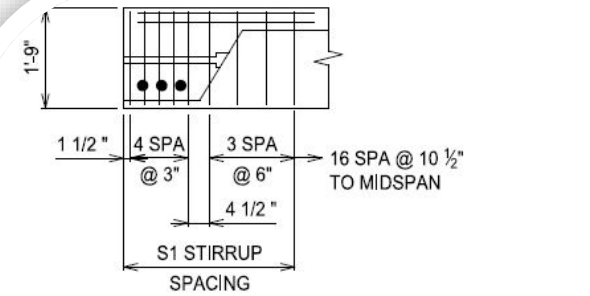
- Precast Spans – Spans 1,2,4,5,& 6 - 34' Precast Bridge Sections – HP 12x53 Pile Foundation





Design - Precast

Precast Channel Modifications to 34' Spans



* PRECAST CHANNEL MODIFICATIONS TO 34' SPANS

SCALE: N.T.S.

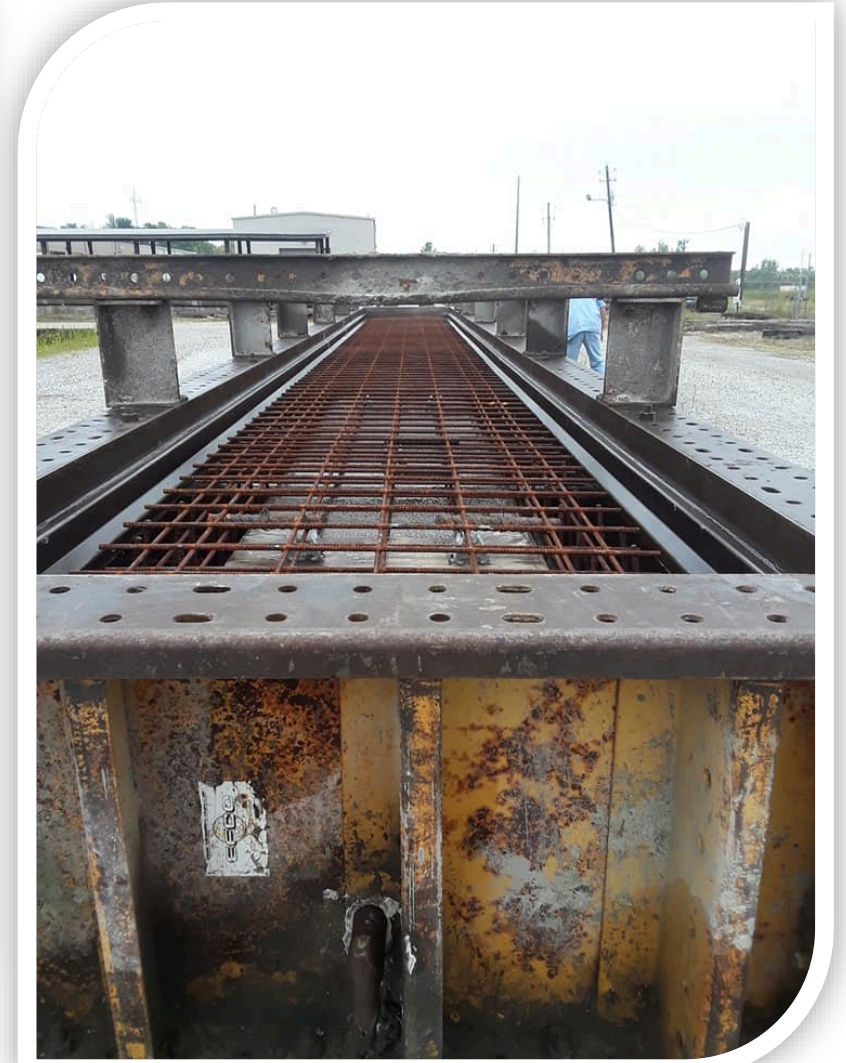
NOTES:

1. THIS SHEET IS BASED ON STD. DRAWING PC-34-2. ALL DETAILS EXCEPT THOSE SHOWN SHALL REMAIN THE SAME,
- * 2. END VIEWS SHOW MODIFICATIONS TO PRECAST 34'-0" CHANNEL UNITS @ PRECAST UNITS FOR SPAN NO. 2 @ BENT NO. 3 AND SPAN NO. 4 @ BENT NO. 4.
3. DETAILS FOR ALL OTHER UNITS TO REMAIN.



Precast – Tuscaloosa County Precast Yard

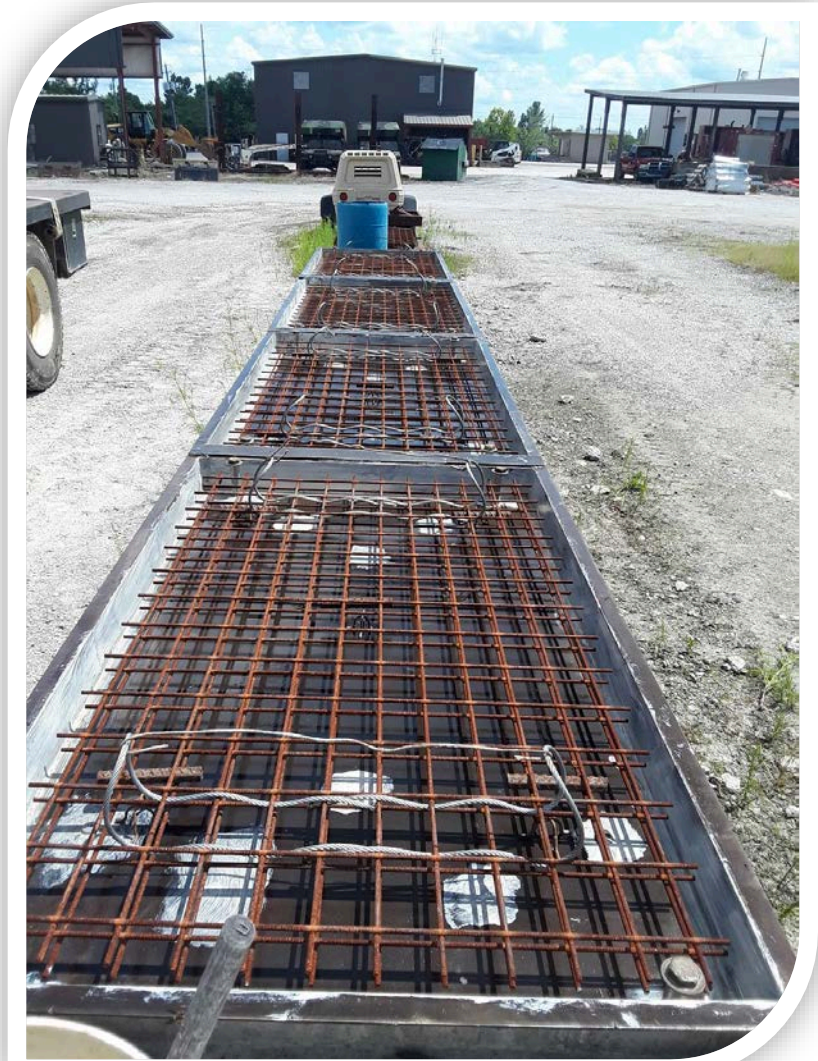
- In 1989, there were 320 bridges in Tuscaloosa County, of which 248 structures were in need of replacement.
- In the same year, Tuscaloosa County purchased the forms to begin pouring precast bridge components.





Precast – Tuscaloosa County Precast Yard

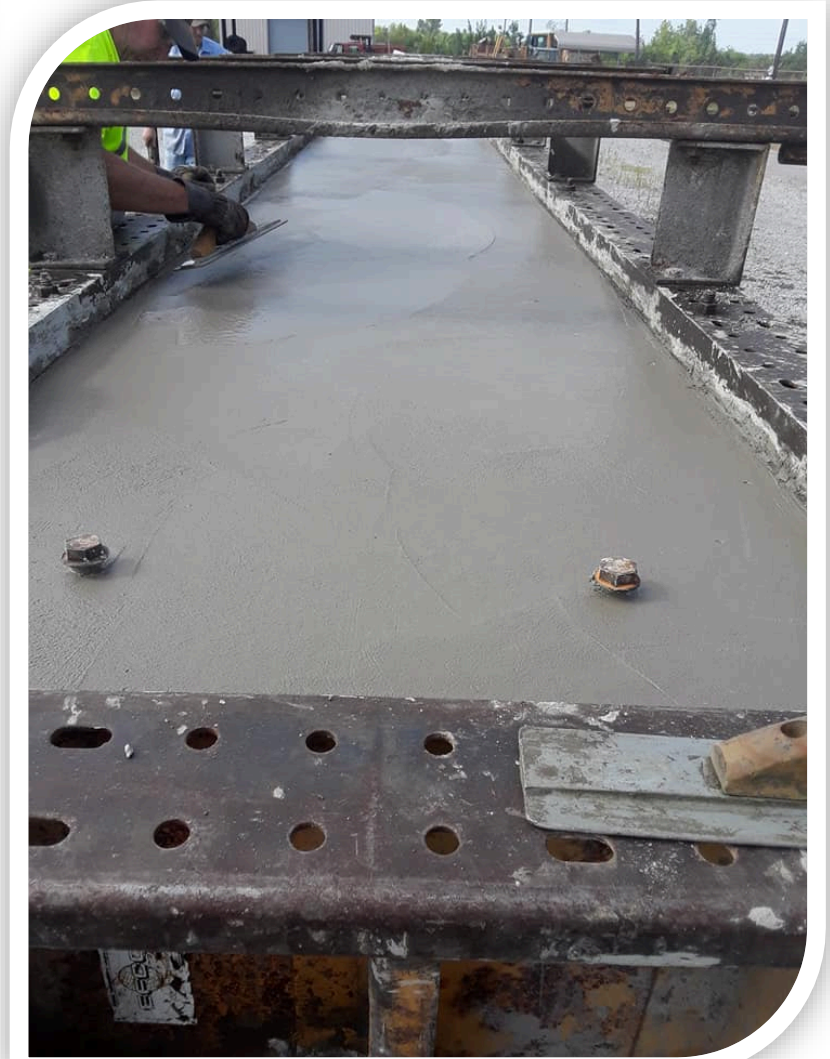
- The first precast bridge constructed by county forces using components cast by the county was completed in 1990 - a two-span bridge on Slayton Road.
- Now, in 2020 there are 217 bridges in Tuscaloosa County, of which 8 structures are in need of replacement.





Precast – Tuscaloosa County Precast Yard

- Tuscaloosa County has constructed 132 precast bridges, most on the county road system, a few for the Cities of Tuscaloosa and Northport, and one for Pickens County.





Bid Letting

■ Pre-Bid Conference

- Bridge replacement project on Old Jasper Road over North River in Tuscaloosa County. The total proposed bridge length is 290' and consists of 5 – 34' precast spans and 1 – 120' AASHTO girder span. This contract will ONLY be for the construction of the AASTHO girder span and adjacent bents. County forces will construct the precast spans.
- The project time for construction is 80 working days. The work is to commence within 15 days after the Date of Contract. The contractor must submit a project schedule at the pre-construction conference.
- A NPDES Permit is required for this project and will be obtained by Tuscaloosa County. Tuscaloosa County forces will be responsible for erosion control on this project. The contractor shall use care during placement of the Class II riprap and filter blanket as shown on sheet 10 of 10.



Bid Letting

Best Management Practices

- Hindsight for Mandatory Pre-Bid Conference
- Only two contractors and a subcontractor were present
- Only one bid was submitted
- \$937,980.00

The following items shall be constructed in accordance with the 2018 Alabama Department of Transportation Standard Specifications for Highway Construction, except as modified in this contract:								FAYETTE	
ITEM NO.	APPROX. QTY.	UNIT	ITEM DESCRIPTION	UNIT PRICE	AMOUNT	% Difference	JENKINS CEMETERY	Based on 2/23/18	
							Same Contractor	Jenkins Cemety	
								Revised Price	
1	1	Lump Sum	Mobilization and Demobilization (ALDOT 600-A)	\$66,000.00	\$66,000.00	7.17%	\$ 48,521.37	\$ 66,000.00	
2	34700	Pound	Steel Reinforcement (Grade 60) (ALDOT 502-A)	\$2.00	\$69,400.00	67%	\$ 1.20	\$ 41,640.00	
3	1	Lump Sum	Steel Reinforcement for Bridge Superstructure, STA 4+83.00 APP 28400 lbs (ALDOT 502-B)	\$60,445.00	\$60,445.00	79%	\$ 1.19	\$ 33,796.00	
4	58	Linear Foot	Drilled Shaft Excavation, 5'-0" Diameter (ALDOT 506-A)	\$900.00	\$52,200.00	57%	\$ 575.00	\$ 33,350.00	
5	50	Linear Foot	Special Drilled Shaft Excavation, 5'-0" Diameter (ALDOT 506-B)	\$1,700.00	\$85,000.00	17%	\$ 1,450.00	\$ 72,500.00	
6	108	Linear Foot	Drilled Shaft Construction, 5'-0" Diameter, Class DS1 Concrete (ALDOT 506-C)	\$1,100.00	\$118,800.00	108%	\$ 530.00	\$ 57,240.00	
7	1170	Pound	Structural Steel (ALDOT 508-A)	\$10.00	\$11,700.00	67%	\$ 6.00	\$ 7,020.00	
8	94	Cubic Yard	Bridge Substructure Concrete (ALDOT 510-A)	\$850.00	\$79,900.00	0%	\$ 850.00	\$ 79,900.00	
9	1	Lump Sum	Bridge Concrete Superstructure, STA 4+83.00 APP 120 CY (ALDOT 510-C)	\$103,075.00	\$103,075.00	-18%	\$ 1,041.67	\$ 103,075.00	
10	320	Square Yard	Grooving Concrete Bridge Decks (ALDOT 510-E)	\$14.00	\$4,480.00	16%	\$ 12.11	\$ 3,875.20	
11	8	Each	Elastomeric Bearing Type 2 (Mark B4) (ALDOT 511-A)	\$750.00	\$6,000.00	7.14%	\$ 700.00	\$ 5,600.00	
12	477	Linear Foot	Pretensioned-Prestressed Concrete Girders, Type BT-63 (Specialty Item) (ALDOT 513-B)	\$500.00	\$238,500.00	72.41%	\$ 290.00	\$ 138,330.00	
13	200	Ton	Loose Riprap, Class 2 (ALDOT 610-C)	\$65.00	\$13,000.00	63%	\$ 40.00	\$ 8,000.00	
14	300	Square Yard	Filter Blanket, Geotextile (ALDOT 610-D)	\$5.00	\$1,500.00	0%	\$ 5.00	\$ 1,500.00	
15	1	Lump Sum	Geometric Controls (ALDOT 680-A)	\$10,000.00	\$10,000.00	1.09%	\$ 28,000.00	\$ 10,000.00	
TOTAL BASE BID					\$920,000.00				
ALTERNATE NO. 1									
ITEM NO.	APPROX. QTY	UNIT	ITEM DESCRIPTION	UNIT PRICE	AMOUNT				
16	58.0	Linear Foot	Permanent Drilled Shaft Casing, 5'-0" Diameter (ALDOT 506-F)	\$310.00	\$17,980.00	-23%	\$ 400.00	\$ 54,000.00	
TOTAL ALTERNATE NO. 1					\$17,980.00				
TOTAL BASE BID + ALTERNATE NO. 1					\$937,980.00				



Bid Letting

- Best Management Practices
 - Tried to negotiate with the only bidder
 - County Engineer and the Commission made the decision to re-bid the project.
 - Electronic Drawings and Specifications were sent out to prior bridge contractors that we had worked with over the years
 - Pre-bid was not mandatory
 - \$734,532.18 was the lowest bidder price



Bid Letting

BID TABULATION TUSCALOOSA COUNTY BRIDGE REPLACEMENT ON OLD JASPER ROAD OVER NORTH RIVER <u>BIDS RECEIVED MARCH 6, 2019 @ 9:00 a.m.</u> BID SCHEDULE	Riley Bridge Company, Inc. P.O. Box 716 Russellville, AL 35653 AL LIC #14281 Travelers Casualty and Surety Company of America	Contractor #2	Contractor #3	Contractor #4
	BASE BID ITEMS			

ITEM	ITEM DESCRIPTION	APPROX. QTY.	UNIT	UNIT PRICE		UNIT PRICE		UNIT PRICE		UNIT PRICE	
				AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT		
600A-000	Mobilization	1	Lump Sum	\$180,000.00	\$180,000.00	\$163,836.60	\$163,836.60	\$108,000.00	\$108,000.00	\$45,962.00	\$45,962.00
502A-001	Steel Reinforcement (Grade 60)	34700	Pound	\$0.95	\$32,965.00	\$1.00	\$34,700.00	\$1.20	\$41,640.00	\$1.50	\$52,050.00
502B-000	Steel Reinforcement for Bridge Superstructure, STA 4+83.00 APP 28400 lbs	1	Lump Sum	\$26,890.00	\$26,890.00	\$28,400.00	\$28,400.00	\$42,600.00	\$42,600.00	\$42,600.00	\$42,600.00
506A-003	Drilled Shaft Excavation, 5'-0" Diameter	58	Linear Foot	\$1,041.40	\$60,401.20	\$875.00	\$50,750.00	\$960.00	\$55,680.00	\$1,181.00	\$68,498.00
506B-005	Special Drilled Shaft Excavation, 5'-0" Diameter	50	Linear Foot	\$1,080.00	\$54,000.00	\$875.00	\$43,750.00	\$960.00	\$48,000.00	\$1,181.00	\$59,050.00
506C-044	Drilled Shaft Construction, 5'-0" Diameter, Class DS1 Concrete	108	Linear Foot	\$133.71	\$14,440.68	\$130.00	\$14,040.00	\$142.80	\$15,422.40	\$425.00	\$45,900.00
508A-000	Structural Steel	1170	Pound	\$3.50	\$4,095.00	\$5.00	\$5,850.00	\$2.85	\$3,334.50	\$10.00	\$11,700.00
510A-007	Bridge Substructure Concrete	94	Cubic Yard	\$480.00	\$45,120.00	\$900.00	\$84,600.00	\$575.00	\$54,050.00	\$935.00	\$87,890.00
510C-051	Bridge Concrete Superstructure, STA 4+83.00 APP 120 CY	1	Lump Sum	\$63,000.00	\$63,000.00	\$96,000.00	\$96,000.00	\$78,000.00	\$78,000.00	\$120,000.00	\$120,000.00
510E-000	Grooving Concrete Bridge Decks	320	Square Yard	\$12.29	\$3,932.80	\$12.50	\$4,000.00	\$13.68	\$4,377.60	\$10.00	\$3,200.00
511A-053	Elastomeric Bearing Type 2 (Mark B4)	8	Each	\$458.51	\$3,668.08	\$1,500.00	\$12,000.00	\$525.00	\$4,200.00	\$750.00	\$6,000.00
513B-019	Pretensioned-Prestressed Concrete Girders, Type BT-63 (Specialty Item)	477	Linear Foot	\$419.56	\$200,130.12	\$270.00	\$128,790.00	\$590.00	\$281,430.00	\$450.00	\$214,650.00
610C-001	Loose Riprap, Class 2	200	Ton	\$52.75	\$10,550.00	\$60.00	\$12,000.00	\$45.00	\$9,000.00	\$75.00	\$15,000.00
610D-003	Filter Blanket, Geotextile	300	Square Yard	\$3.00	\$900.00	\$6.00	\$1,800.00	\$2.50	\$750.00	\$5.00	\$1,500.00
680A-001	Geometric Controls	1	Lump Sum	\$10,000.00	\$10,000.00	\$46,000.00	\$46,000.00	\$5,000.00	\$5,000.00	\$10,000.00	\$10,000.00
689A-000	Construction Fuel (Maximum bid limited to \$24000)	1	Lump Sum	\$1.00	\$1.00	\$100.00	\$100.00	\$0.00	\$0.00	\$24,000.00	\$24,000.00
TOTAL BASE BID:					\$710,093.88		\$726,616.60		\$751,484.50		\$808,000.00

ALTERNATE BID ITEMS											
ITEM	ITEM DESCRIPTION	APPROX. QTY.	UNIT	UNIT PRICE		UNIT PRICE		UNIT PRICE		UNIT PRICE	
				AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT		
506F-006	Permanent Drilled Shaft Casing, 5'-0" Diameter	58	Linear Foot	\$421.35	\$24,438.30	\$405.00	\$23,490.00	\$410.00	\$23,780.00	\$416.00	\$24,128.00
TOTAL ALTERNATE BID:					\$24,438.30		\$23,490.00		\$23,780.00		\$24,128.00
TOTAL BASE BID + ALTERNATE BID:					\$734,532.18		\$750,106.60		\$775,264.50		\$832,128.00



Award of Contract

- The bids were opened on March 6, 2019, and the contract was awarded to Riley Bridge Company, Inc. of Russellville, AL.
- They submitted a base bid of \$710,093.88 and an alternate no. 1 bid of \$24,438.30 for a total project bid of \$734,532.18.
- The project time for construction is 80 working days. The contract was awarded on March 6, 2019.





BKI

Construction - Foundations

- **Drilled Shaft Excavation – Bent 3**
- **5'-0" Diameter Shafts**





BKI

Construction - Foundations

- **Drilled Shaft Excavation – Bent 3**
- **5'-0" Diameter Shafts**

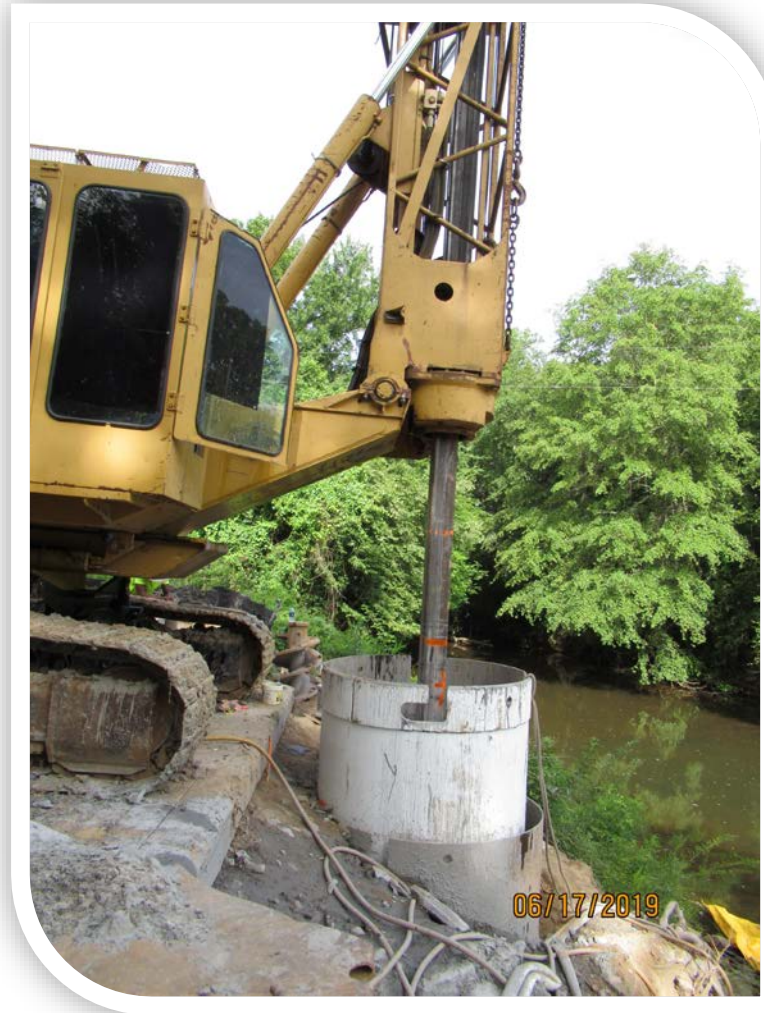




BKI

Construction - Foundations

- **Drilled Shaft Excavation – Bent 3**
- **5'-0" Diameter Shafts**





Construction - Foundations

- **Drilled Shaft Excavation – Bent 3**
- **5'-0" Diameter Shafts**





Construction - Foundations

- **Drilled Shaft Excavation – Bent 3**
- **5'-0" Diameter Shafts**





Construction - Foundations

- **Drilled Shaft Excavation – Bent 4**
- **5'-0" Diameter Shafts**





BKI

Construction

- **Drilled Shaft Excavation-**
- **Bent 4**





Construction - Foundations

- **Drilled Shaft Construction – Bent 4**
- **5'-0" Diameter Shafts**





Construction - Substructure

- **Bent 3 Slope**
- **Step Cap – Bent 3**





Construction - Substructure

- Bent 3 Forms

- Step Cap – Bent 3





Construction - Substructure

- Bent 3 Forms
- Step Cap – Bent 3





Construction - Substructure

- **Bent 3 Forms**

- **Step Cap –
Bent 3**





Construction - Substructure

- Bent 4 Forms
- Step Cap – Bent 4





Construction - Substructure

- Bent 4 Forms
- Step Cap & Slope – Bent 4





Construction - Substructure

- **Bent 4 - Step Cap**





Construction – Superstructure

- **Crane Preparation for Girder Erection**





Construction – Superstructure

- BT-63
Girder
Delivery





Construction – Superstructure

- BT-63
Girder
Erection





Construction – Superstructure

BT-63 Girder Erection





- **BT-63
Girder
Erection**



Construction – Superstructure



Construction – Superstructure

- BT-63
Girder
Erection





Construction – Superstructure

- Stay-in place metal decking





Construction - Superstructure

- **BT-63 Girders and Deck Pans**





Construction – Superstructure

- Stay-in place metal decking
- Overhang Jacks

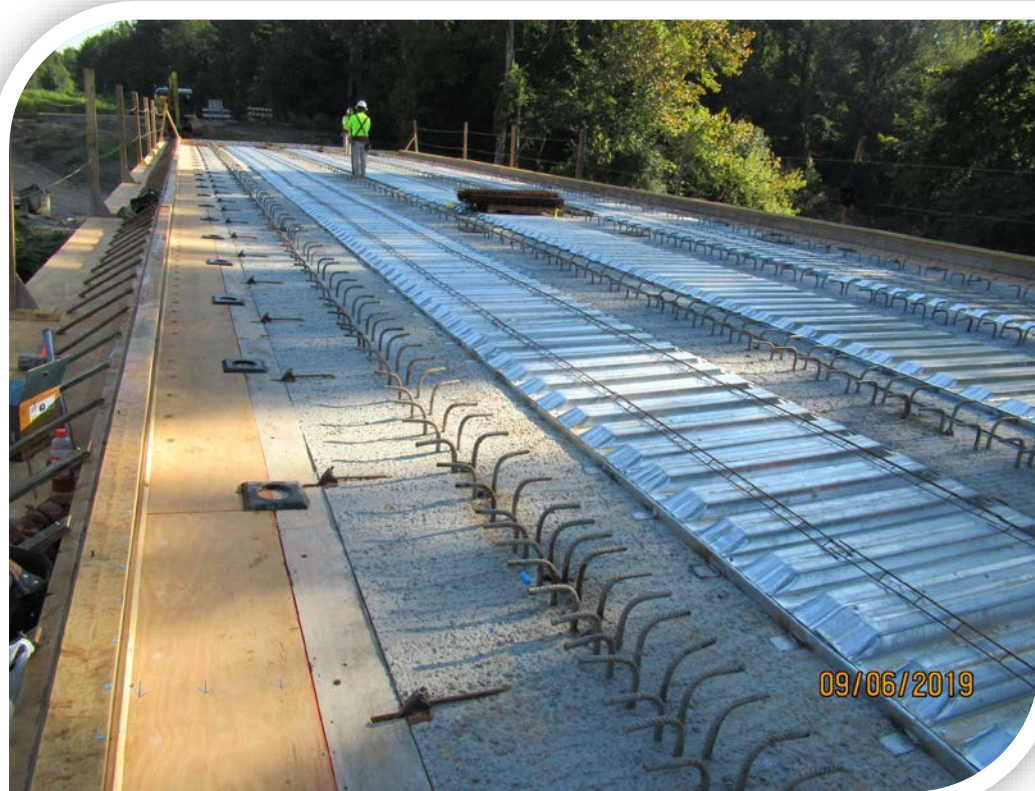




Construction – Superstructure

- Deck prep for Steel Reinforcement

- Superstructure Steel





Construction – Superstructure

- Placement of Concrete Superstructure

- Screed





Construction – Superstructure

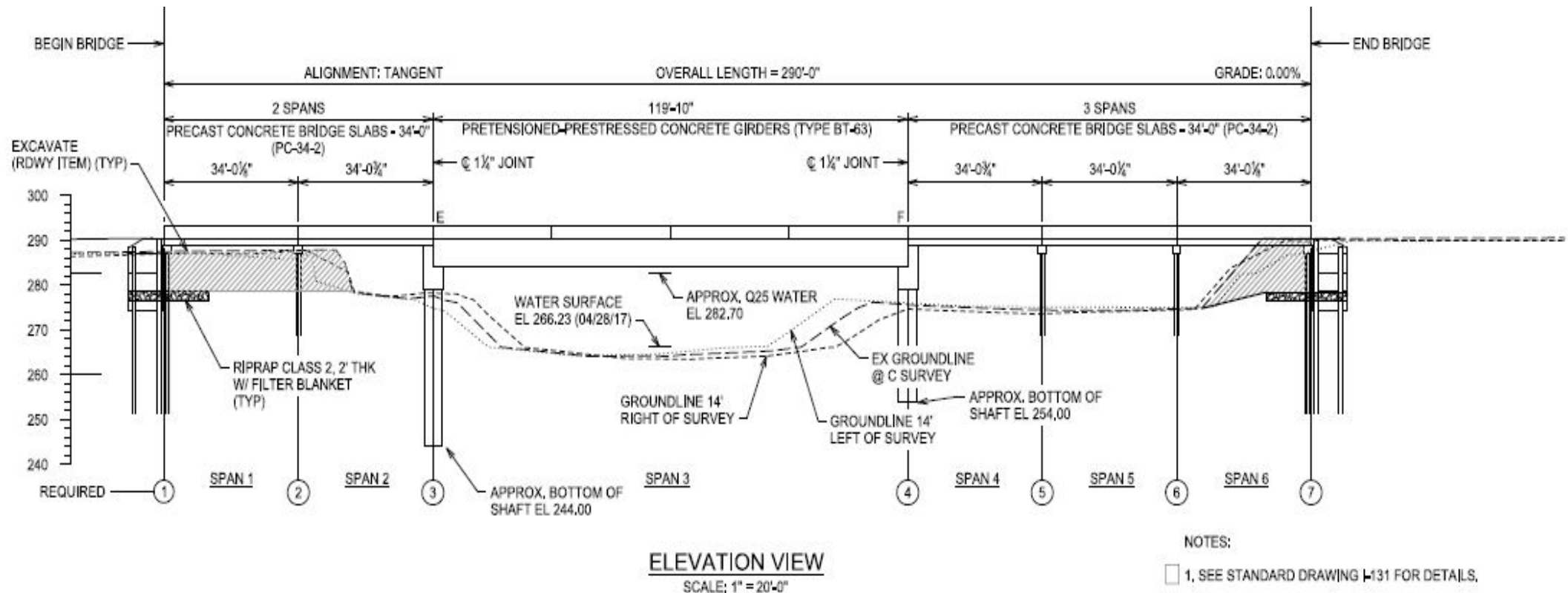
Placement of Concrete Superstructure





Construction - Precast

- Precast Spans – Spans 1,2,4,5,& 6 - 34' Precast Bridge Sections – HP 12x53 Pile Foundation





BKI

Construction – Precast

- **HP 12x53
Piles and
Precast
Bent Cap**





Construction – Precast

- **Tuscaloosa County Bridge Crew working on Pile Encasements**





Construction – Precast

- **Tuscaloosa County Bridge Crew setting Exterior Precast Deck Sections**





BKI

Construction – Precast

- **Tuscaloosa County Bridge Crew setting Precast Barrier Rail Sections**





Construction – Precast

- **Tuscaloosa County Bridge Crew setting Precast Barrier Rail Sections**





Construction – Precast

- **AASHTO Transition to Precast**





Construction – Precast

- **AASHTO Transition to Precast**





BKI

Completion





BKI

Completion





BKI

Completion





BKI

Completion





BKI

Completion





Completion

- **Quote from District One Commissioner Stan Acker**
 - **"As the District One County Commissioner, I had to balance the need to replace the burned wooden bridge with a safe and modern concrete and steel bridge for the residents of this rural area, while staying within a budget the County could justify. This required significant cooperation with our County Engineer's office and our consulting firm to develop a rather unique solution for the bridge design. Then we had to find the right contractor for the portion done externally and tie it all together. It was just about the best example of good teamwork I have seen and the end result is a fantastic bridge that will be there long after everyone involved is gone. And, it was done on time and within budget and the residents of the area no longer have a long detour."**



Completion

- **Quote from Commission Chairman – Judge Rob Robertson**
 - **"The Tuscaloosa County Commission is very happy with the outcome of this project. The close collaboration between public and private engineering talent resulted in an innovative, durable, and cost-effective bridge solution that will serve our community well for years to come."**



Questions ???



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