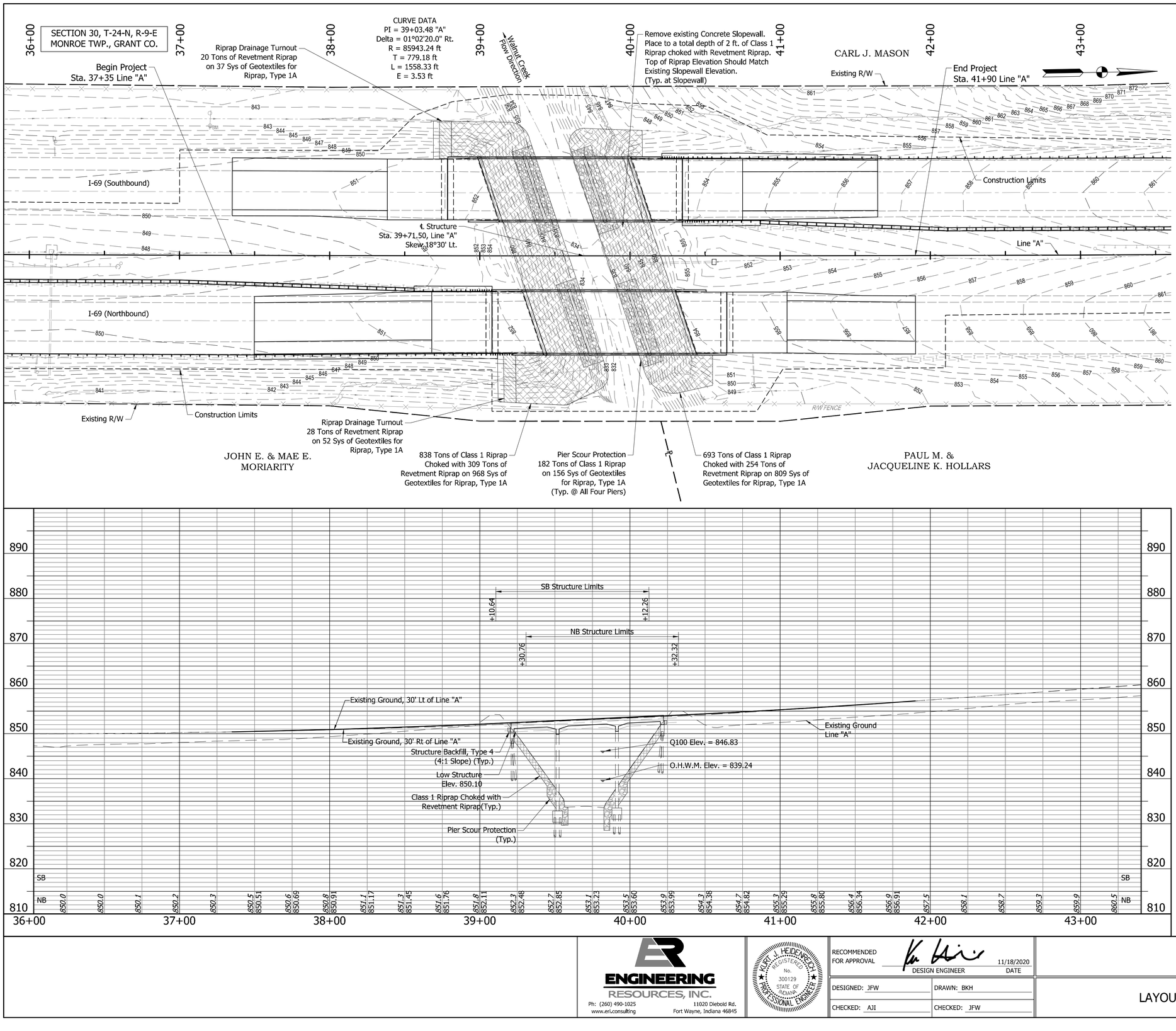

EXISTING STRUCTURE

The existing structure (I69-259-04762) is a three span reinforced concrete slab bridge built in 1963 with spans of 30'-3", 39'-6", and 30'-3" and 39'-6" clear roadway. Existing superstructure to be removed.

HYDRAULIC SCOUR DATA

Q100 Discharge	=	3200	cfs
Q100 Elev.	=	846.83	ft
Velocity at Q100	=	8.39	ft/s
Scour Depth (Contraction)	=	17.03	ft
Scour Depth (Total)	=	21.53	ft
Low Scour Elev.	=	814.21	ft

EARTHWORK TABULATION

Fill + 25%	625	cys
Common Excavation	2,240	cys
Wet Excavation	485	cys
Surplus Structure Backfill Excavation	675	cys
Waste	1,655	cys

Note: Temporary Runaround Earthwork Quantities are not Reflected in Earthwork Tabulation.

CONTINUOUS VARIABLE DEPTH
REINFORCED CONCRETE SLAB BRIDGE
3 SPANS: 30'-3", 39'-6", 30'-3"
40'-6" CLEAR ROADWAY WIDTH, 18°30' SKEW LT.
I-69 OVER WALNUT CREEK
GRANT COUNTY

ENGINEERING RESOURCES, INC.
Ph: (260) 490-1025
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11020 Diebold Rd.
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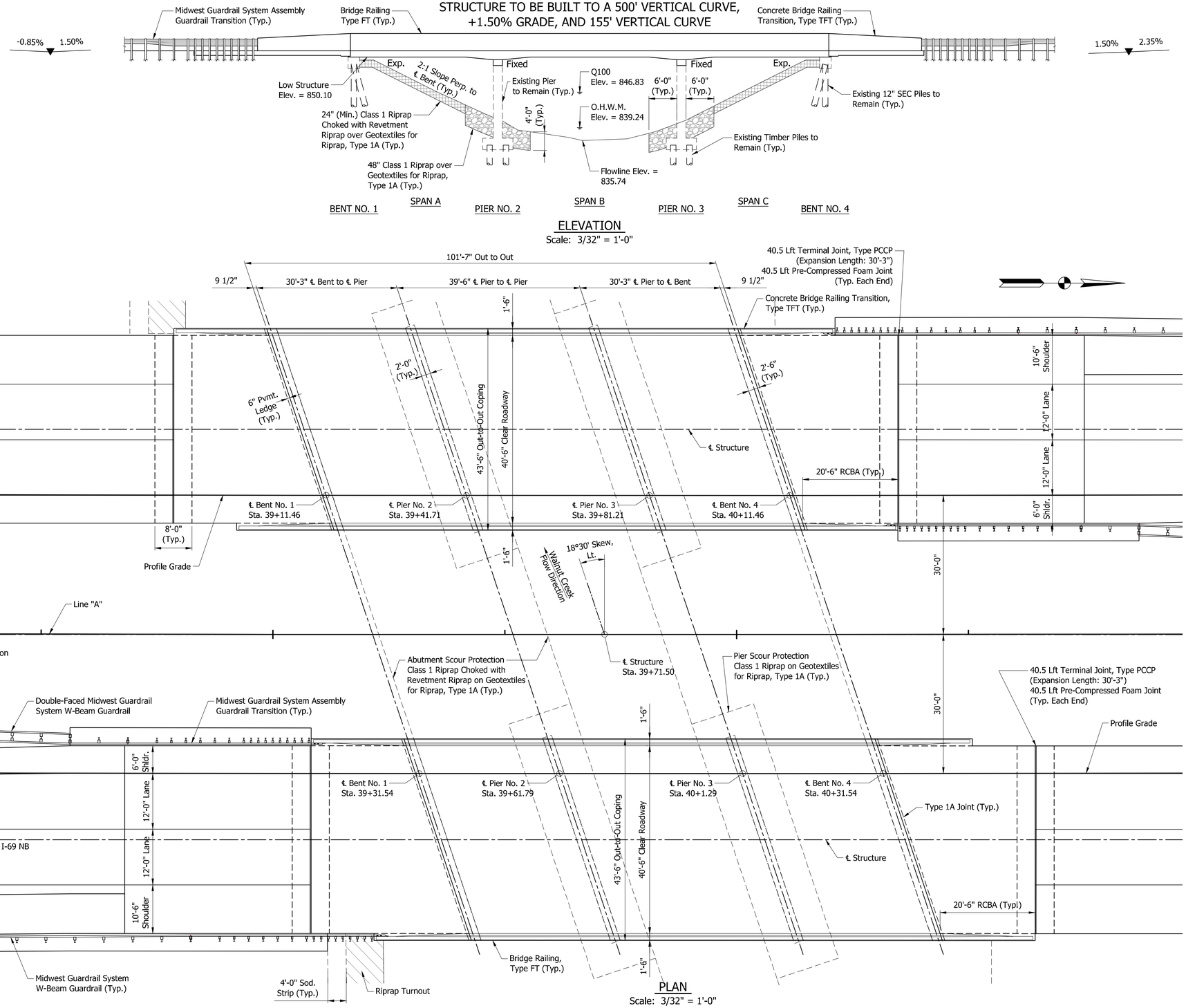
KURT J. HEIDENREICH
REGISTERED
No. 300129
STATE OF INDIANA
PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL — DESIGN ENGINEER — 11/18/2020 DATE

DESIGNED: JFW | DRAWN: BKH
CHECKED: AJI | CHECKED: JFW

LAYOUT

HORIZONTAL SCALE	BRIDGE FILE
1" = 30'	I69-259-04762 CNB & CSB
VERTICAL SCALE	DESIGNATION
1" = 10'	1500770 & 1500771
	SHEETS
	23 of 54
CONTRACT	PROJECT
B-39898	1500770 & 1500771



GENERAL NOTES

Plans for the existing structure are on file at the Central Office of the Indiana Department of Transportation under bridge file I69-259-04762.

The boundaries of all removal areas shall be saw cut. All saw cuts shall be a minimum of 1" vertical and horizontal surface.

Where new work is to be fitted to old work, the Contractor shall verify all dimensions and conditions in the field and report any errors or discrepancies to the Engineer and assume responsibility for the correctness and the fit of the new part to the existing.

Chamfer exposed concrete edges 1" unless otherwise noted.

Surface seal shall be applied to the Concrete Bridge Railing, Concrete Copings, Concrete Bridge Rail Transitions, and Reinforced Concrete Bridge Approaches. In lieu of concrete surface sealing, an alternate mix design with silica fume or ground granulated blast furnace slag may be used.

DESIGN DATA

LIVE LOAD
Original structure designed for HS-20-44 loading, in accordance with the 1952 AASHO Specifications.

Superstructure replacement designed for HL-93 loading, in accordance with the AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017, and its subsequent interims.

DEAD LOAD
Original structure designed for 35 psf future wearing surface.

Superstructure replacement designed for 35 psf future wearing surface.

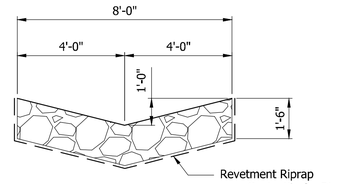
DESIGN STRENGTH

CONCRETE

Class C	f'c = 4,000 psi
Class B	f'c = 3,000 psi
Class A	f'c = 3,500 psi

REINFORCING STEEL

Grade 60	f'y = 60,000 psi



RIPRAP TURNOUT TYPICAL SECTION
Scale: 3/8" = 1'-0"

CONTINUOUS VARIABLE DEPTH
REINFORCED CONCRETE SLAB BRIDGE
3 SPANS: 30'-3", 39'-6", 30'-3"
40'-6" CLEAR ROADWAY WIDTH, 18°30' SKEW LT.
I-69 OVER WALNUT CREEK
GRANT COUNTY

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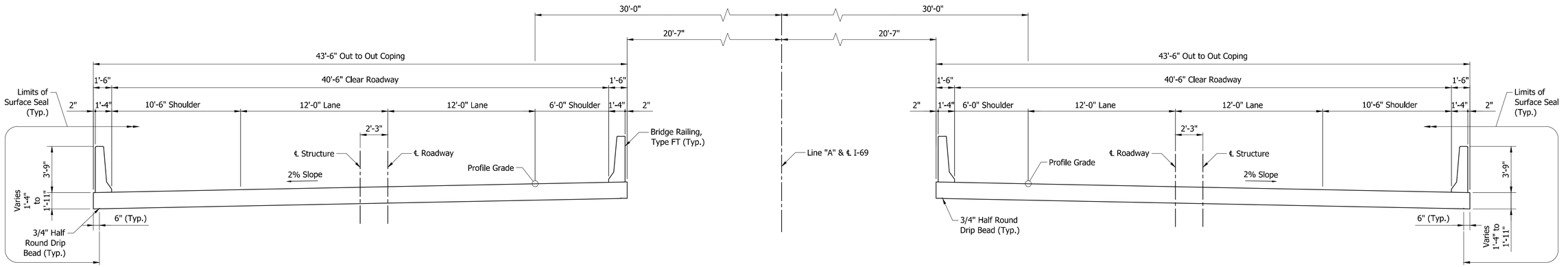
DESIGNED: JFW | DRAWN: BKH | CHECKED: AJI | CHECKED: AJI

GENERAL PLAN

SCALE	BRIDGE FILE
AS NOTED	I69-259-04762 CNB & CSB
	DESIGNATION
	1500770 & 1500771
	SHEETS
	24 of 54
CONTRACT	PROJECT
B-39898	1500770 & 1500771



PROPOSED SECTION - SB
Scale: 1/4" = 1'-0"

PROPOSED SECTION - NB
Scale: 1/4" = 1'-0"

CONTINUOUS VARIABLE DEPTH
REINFORCED CONCRETE SLAB BRIDGE
3 SPANS: 30'-3", 39'-6", 30'-3"
40'-6" CLEAR ROADWAY WIDTH, 18°30' SKEW LT.
I-69 OVER WALNUT CREEK
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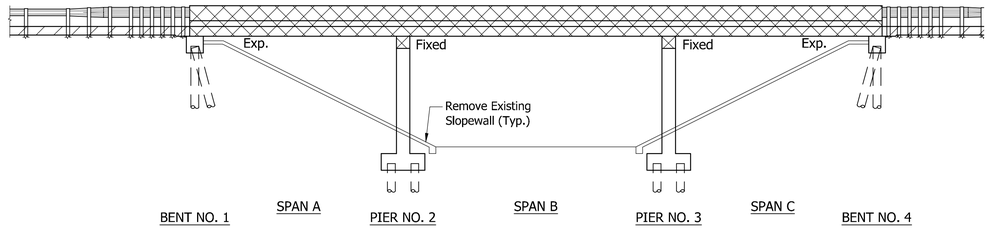
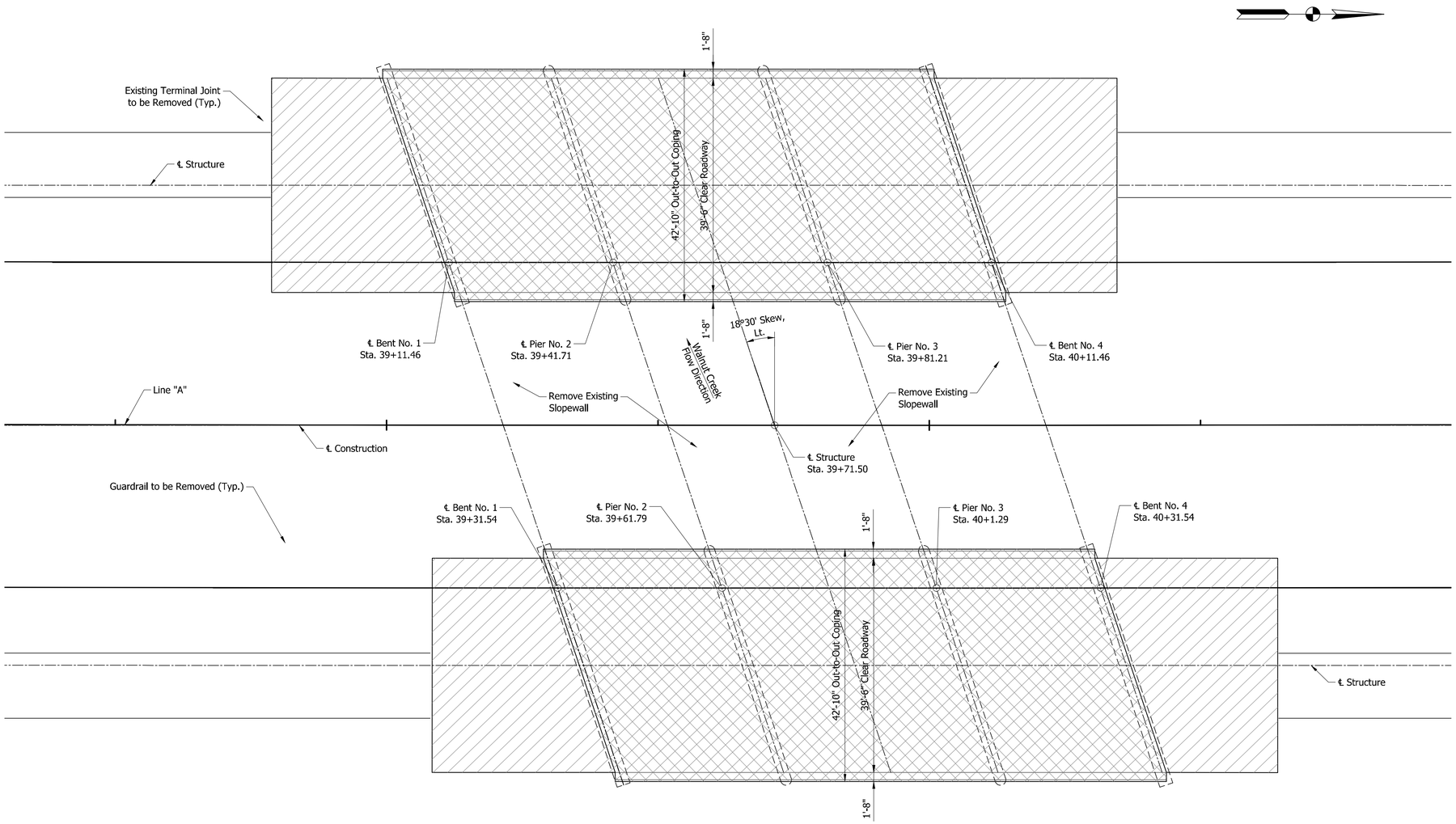
GENERAL PLAN

SCALE	BRIDGE FILE
AS NOTED	I69-259-04762 CNB & CSB
	DESIGNATION
	1500770 & 1500771
	SHEETS
	25 of 54
CONTRACT	PROJECT
B-39898	1500770 & 1500771

STRUCTURE IS BUILT TO A 800' VERTICAL CURVE



ELEVATION
Scale: 3/32" = 1'-0"



PLAN
Scale: 3/32" = 1'-0"

LEGEND

- Present Structure, Remove Portions
- Pavement, Removal

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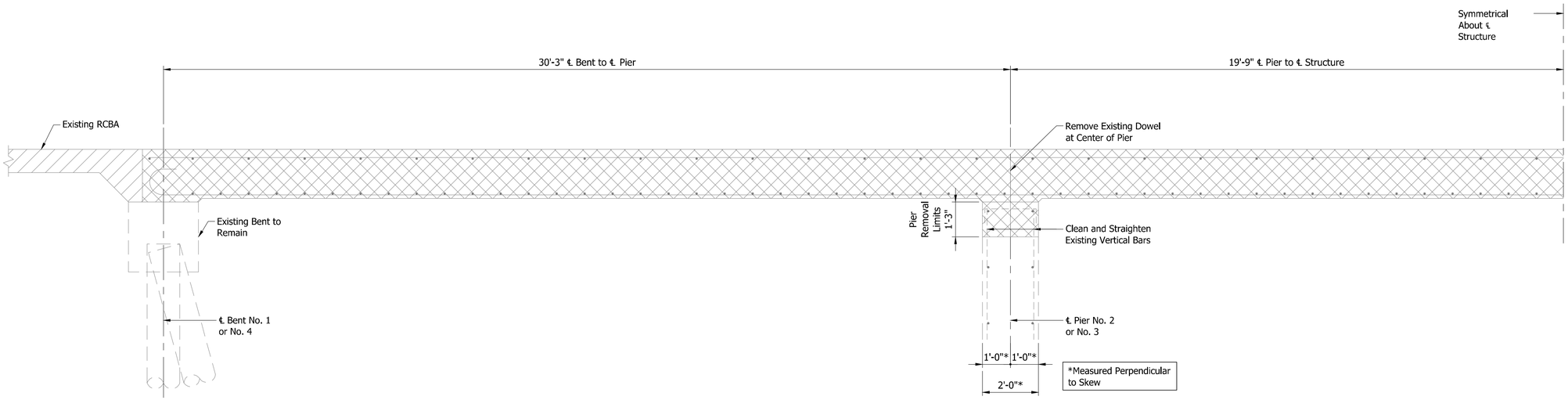
KARL J. HEDENESS — REGISTERED — No. 300129 — STATE OF INDIANA — PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL — DESIGN ENGINEER — 11/18/2020 DATE

DESIGNED: JFW | DRAWN: BKH | CHECKED: AJI | CHECKED: AJI

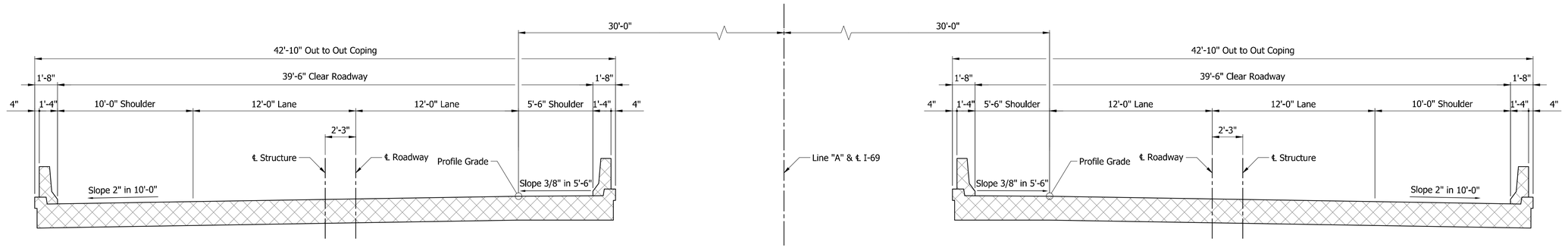
DEMOLITION PLAN

SCALE	BRIDGE FILE
AS NOTED	I69-259-04762 CNB & CSB
	DESIGNATION
	1500770 & 1500771
	SHEETS
	26 of 54
CONTRACT	PROJECT
B-39898	1500770 & 1500771



EXISTING HALF LONGITIUDINAL SECTION

Scale: 1/2" = 1'-0"



EXISTING SECTION - SB

Scale: 1/4" = 1'-0"

EXISTING SECTION - NB

Scale: 1/4" = 1'-0"

LEGEND

Present Structure, Remove Portions

Pavement, Removal

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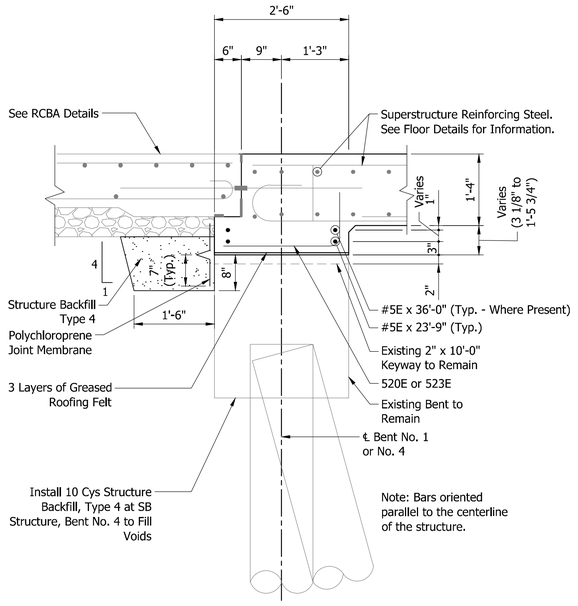
DESIGNED: JFW | DRAWN: BKH

CHECKED: AJI | CHECKED: AJI

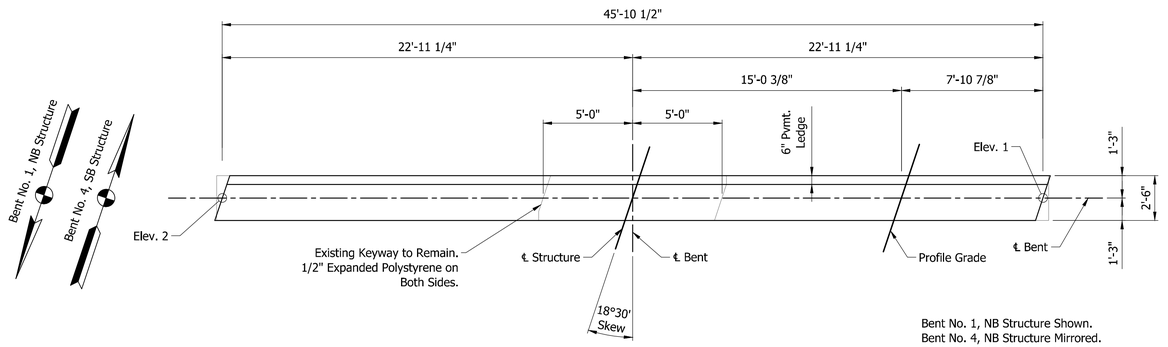
DEMOLITION PLAN

SCALE	BRIDGE FILE
AS NOTED	I69-259-04762 CNB & CSB
	DESIGNATION
	1500770 & 1500771
	SHEETS
	27 of 54
CONTRACT	PROJECT
B-39898	1500770 & 1500771

BENT ELEVATIONS				
Bent	Top of Bent	P.G. Elev.	Elev. 1	Elev. 2
NB - No. 1	850.32	852.58	852.69	852.04
NB - No. 4	851.85	854.08	854.19	853.56
SB - No. 1	849.78	852.27	852.46	851.37
SB - No. 4	851.14	853.77	853.96	852.87

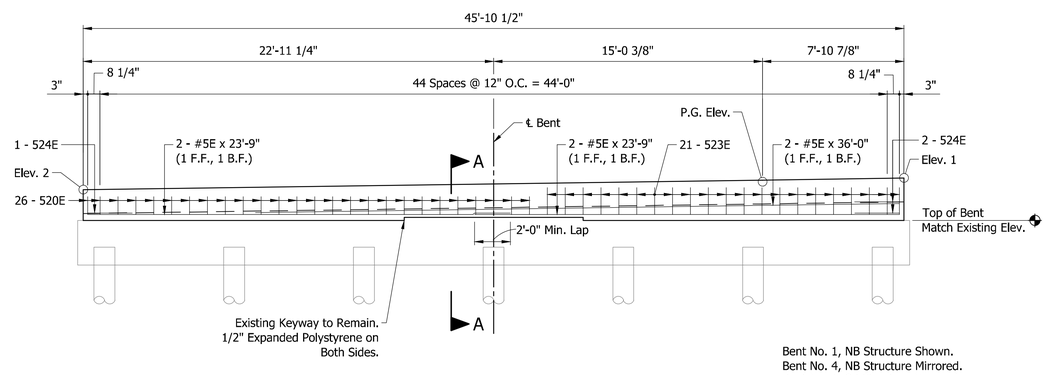


SECTION A-A
Scale: 3/4" = 1'-0"



Bent No. 1, NB Structure Shown.
Bent No. 4, NB Structure Mirrored.
Bent No. 1, SB Structure Mirrored.
Bent No. 4, SB Structure Similar.

TYPICAL BENT PLAN
Scale: 1/4" = 1'-0"

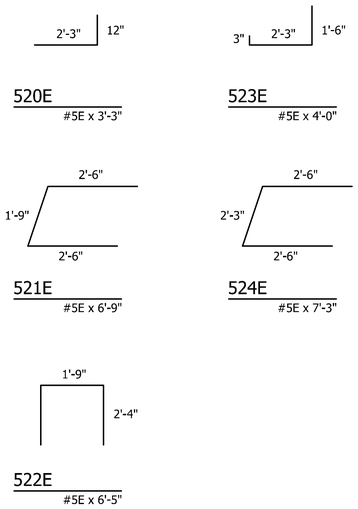


Bent No. 1, NB Structure Shown.
Bent No. 4, NB Structure Mirrored.
Bent No. 1, SB Structure Mirrored.
Bent No. 4, SB Structure Similar.

TYPICAL BENT ELEVATION
Scale: 1/4" = 1'-0"

BILL OF MATERIALS			
END BENTS			
for ONE BRIDGE			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
520E	52	3'-3"	
523E	42	4'-0"	
524E	6	7'-3"	
#5E	4	36'-0"	
#5E	8	23'-9"	
Total #5 Epoxy Coated Reinf. Bars			745#
Total Epoxy Coated Reinf. Bars			745#
MISCELLANEOUS			
Concrete, Class C, Superstructure*			5.8 CYS
MISCELLANEOUS			
NB - Structure Backfill, Type 4			14 CYS
SB - Structure Backfill, Type 4			24 CYS

* Concrete Quantity Shown for Information Only. Volume is Included in the Quantity Shown on the Floor Details.



BAR BENDING DETAILS
Not To Scale

NOTES

All reinforcing bars shall be epoxy-coated.

For Reinforcing Bar Notes, see Standard Drawing E 703-BRST-01.

For additional information, see Floor Details & RCBA Details.

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KARL J. HEDENSKOG REGISTERED No. 300129 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL — DESIGN ENGINEER — 11/18/2020 DATE

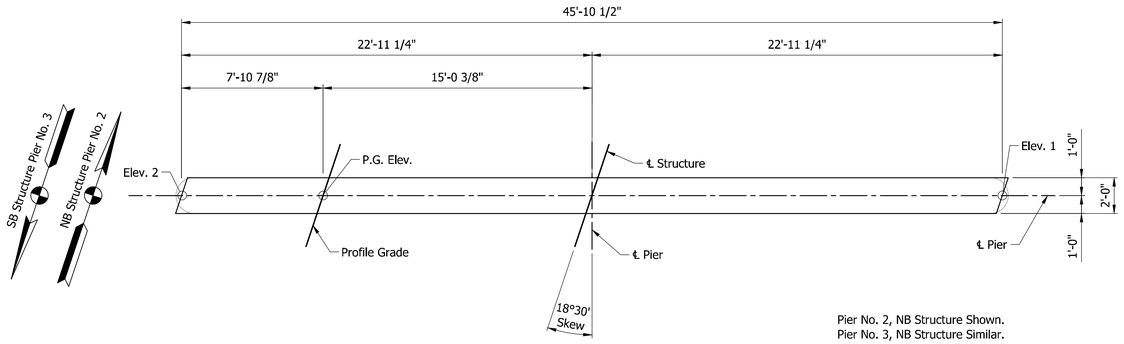
DESIGNED: JFW
DRAWN: JFW
CHECKED: TRL
CHECKED: TRL

SUBSTRUCTURE DETAILS
END BENTS

SCALE	BRIDGE FILE
AS NOTED	I69-259-04762 CNB & CSB
	DESIGNATION
	1500770 & 1500771
	SHEETS
	28 of 54
CONTRACT	PROJECT
B-39898	1500770 & 1500771

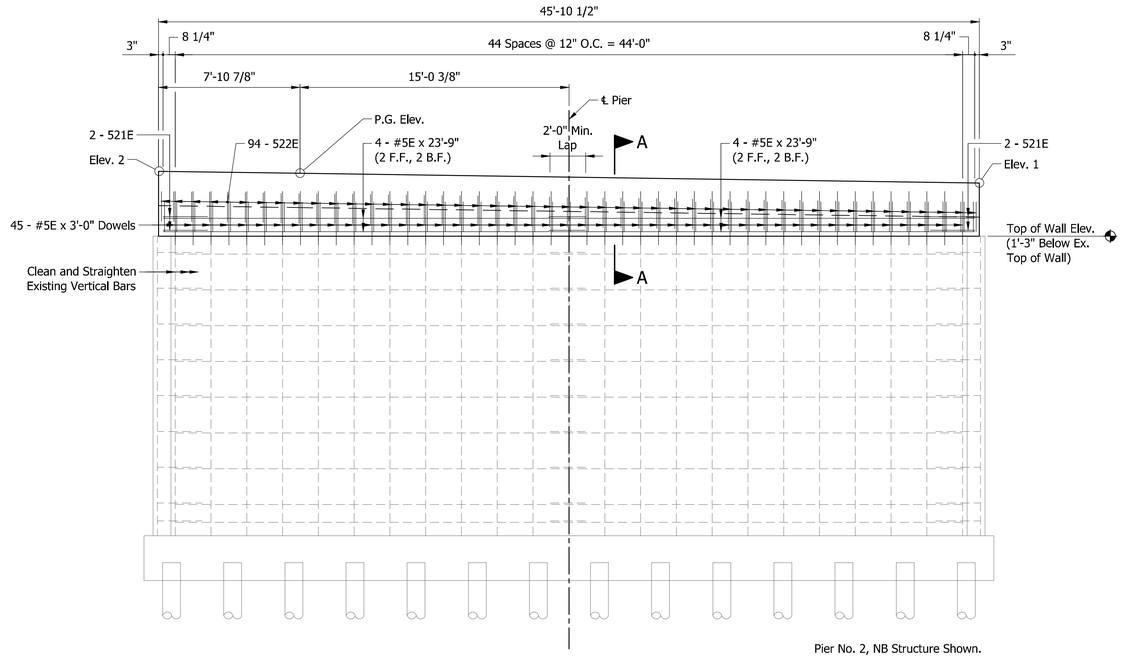
PIER ELEVATIONS

Pier	Top of Wall Elev.	P.G. Elev.	Elev. 1	Elev. 2
NB - No. 2	849.52	853.03	852.49	853.14
NB - No. 3	850.10	853.62	853.09	853.74
SB - No. 2	848.88	852.72	851.82	852.91
SB - No. 3	849.46	853.31	852.41	853.50



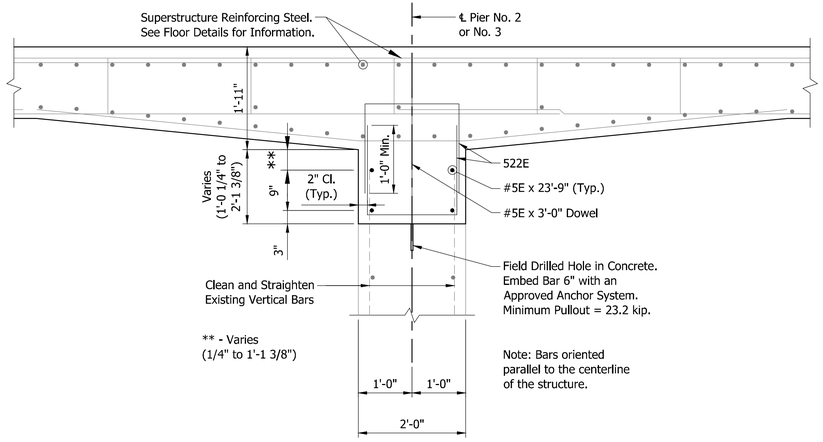
Pier No. 2, NB Structure Shown.
Pier No. 3, NB Structure Similar.
Piers No. 2 & No. 3, SB Structure Mirrored.

TYPICAL PIER PLAN
Scale: 1/4" = 1'-0"



Pier No. 2, NB Structure Shown.
Pier No. 3, NB Structure Similar.
Piers No. 2 & No. 3, SB Structure Mirrored.

TYPICAL PIER ELEVATION
Scale: 1/4" = 1'-0"



SECTION A-A
Scale: 3/4" = 1'-0"

BILL OF MATERIALS

PIERS

for ONE BRIDGE

MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
521E	8	6'-9"	
522E	188	6'-5"	
#5E	16	23'-9"	
#5E	90	3'-0"	
Total #5 Epoxy Coated Reinf. Bars			1,992#
Total Epoxy Coated Reinf. Bars			1,992#

MISCELLANEOUS

Concrete, Class C, Superstructure*	10.8 CYS

MISCELLANEOUS

Field Drilled Hole in Concrete	90 EA

* Concrete Quantity Shown for Information Only. Volume is Included in the Quantity Shown on the Floor Details.

NOTES

All reinforcing bars shall be epoxy-coated.

For Reinforcing Bar Notes, see Standard Drawing E 703-BRST-01.

See Sheet 28 for Bar Bend Details.

For additional information, see Floor Details.

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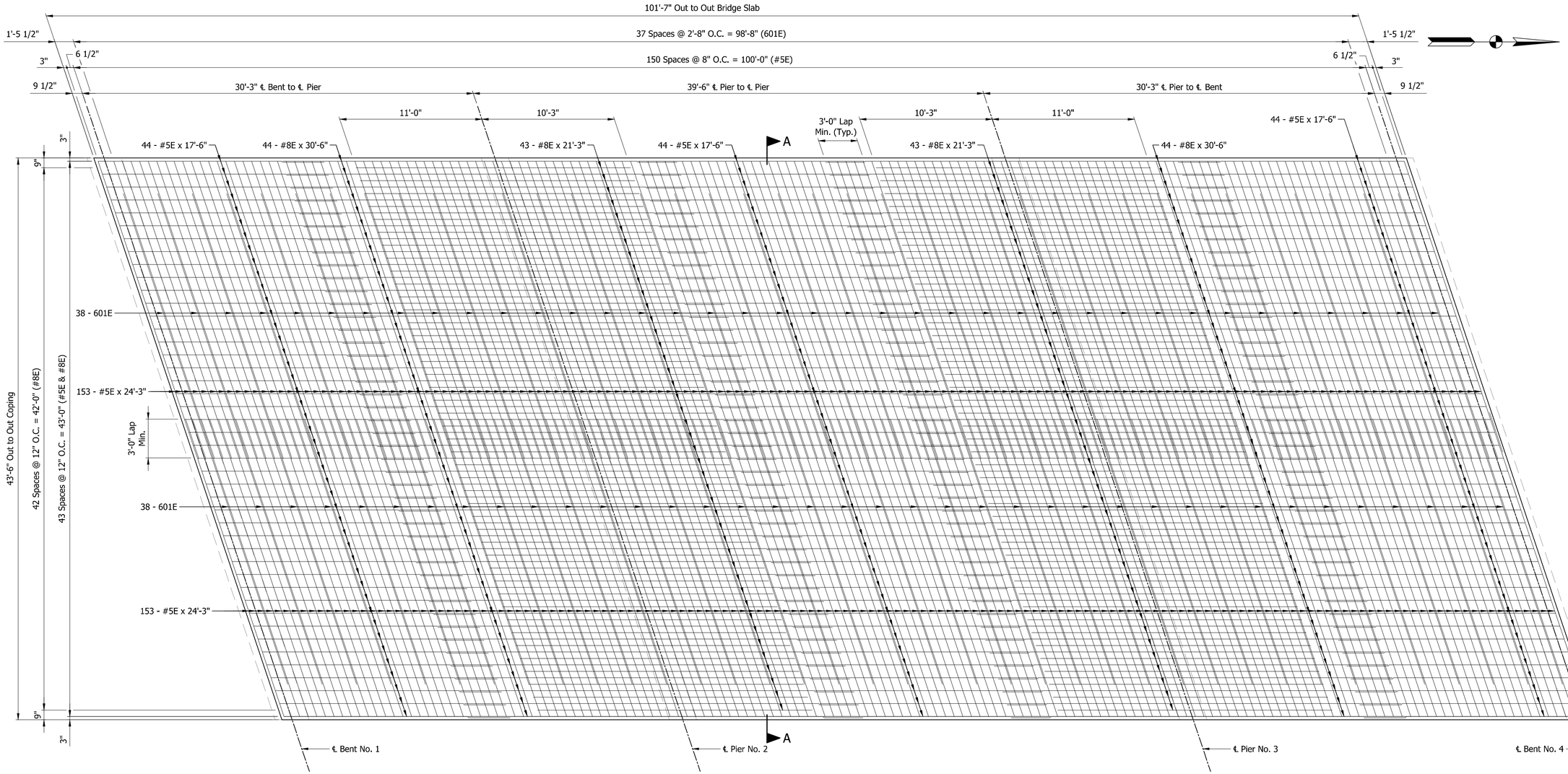
SUBSTRUCTURE DETAILS
PIERS

SCALE	BRIDGE FILE
AS NOTED	I69-259-04762 CNB & CSB
	DESIGNATION
	1500770 & 1500771
	SHEETS
	29 of 54
CONTRACT	PROJECT
B-39898	1500770 & 1500771



TOP STEEL REINFORCING

Scale: 1/4" = 1'-0"

NOTES

For Reinforcing Bar Notes, see Standard Drawing E 703-BRST-01.

All reinforcing bars in the superstructure shall be epoxy-coated.

For Bar Bend Details and Section A-A, see Sheet 32.

Superstructure shall be surface sealed.

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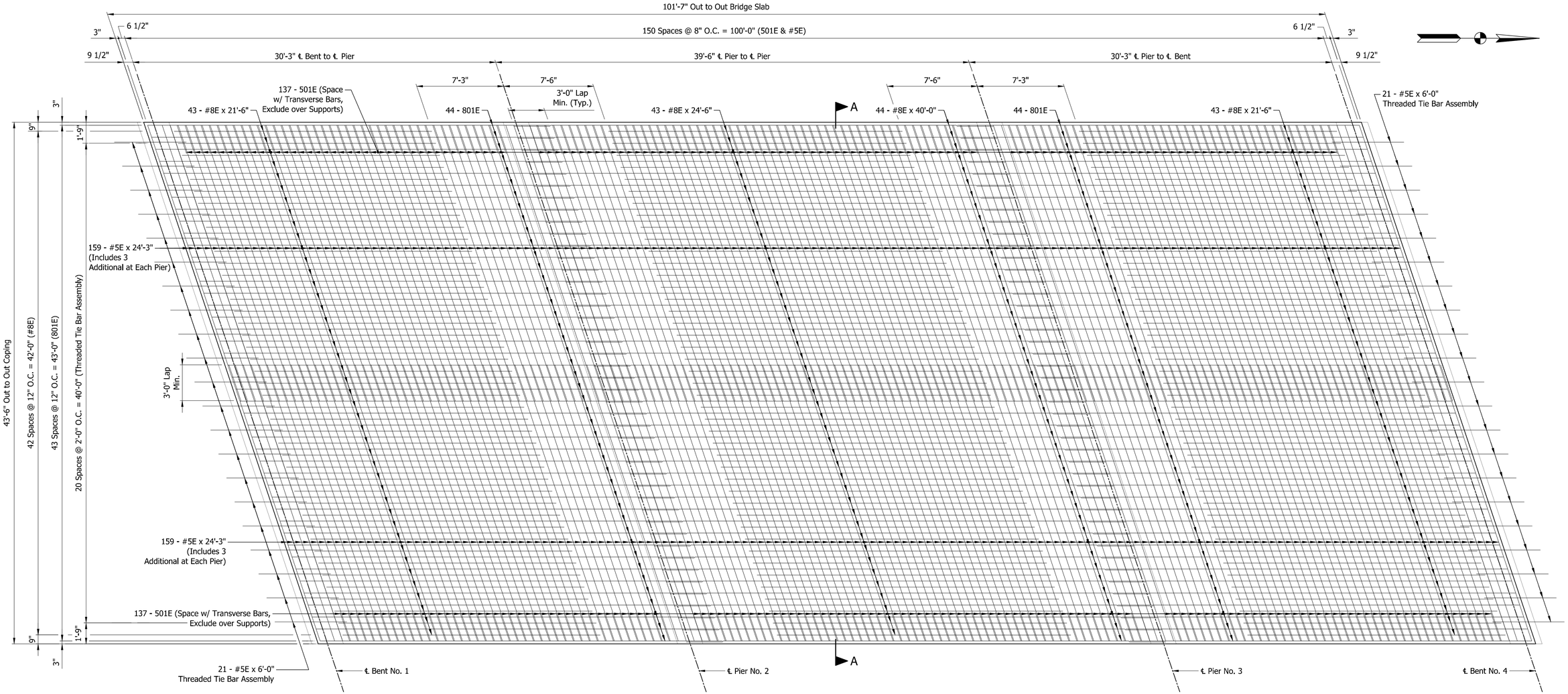
DESIGNED: JFW | DRAWN: RJA

CHECKED: AJI | CHECKED: JFW

FLOOR DETAILS

SCALE	BRIDGE FILE
1/4" = 1'-0"	I69-259-04762 CNB & CSB
	DESIGNATION
	1500770 & 1500771
	SHEETS
	30 of 54
CONTRACT	PROJECT
B-39898	1500770 & 1500771



BOTTOM STEEL REINFORCING

Scale: 1/4" = 1'-0"

NOTES

For Reinforcing Bar Notes, see Standard Drawing E 703-BRST-01.

All reinforcing bars in the superstructure shall be epoxy-coated.

For Bar Bend Details and Section A-A, see Sheet 32.

Superstructure shall be surface sealed.

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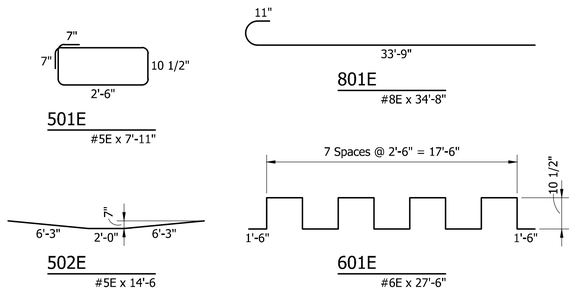
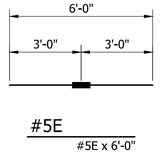
FLOOR DETAILS

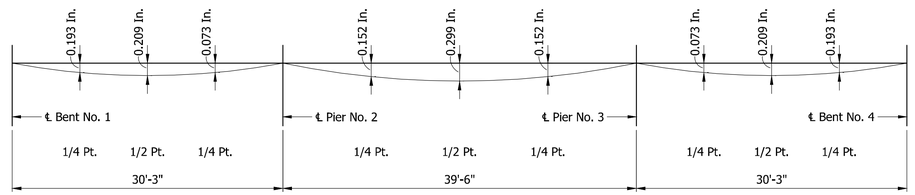
SCALE	BRIDGE FILE
1/4" = 1'-0"	I69-259-04762 CNB & CSB
	DESIGNATION
	1500770 & 1500771
	SHEETS
	31 of 54
CONTRACT	PROJECT
B-39898	1500770 & 1500771



BAR BENDING DETAILS
Not To Scale



THREADED TIE BAR ASSEMBLY, EPOXY COATED
Not To Scale



DEADLOAD DEFLECTION DIAGRAM
Not To Scale

BILL OF MATERIALS
SUPERSTRUCTURE
for ONE BRIDGE

MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
801E	88	34'-8"	
#8E	44	40'-0"	
#8E	88	30'-6"	
#8E	43	24'-6"	
#8E	86	21'-6"	
#8E	86	21'-3"	
Total #8 Epoxy Coated Reinf. Bars			32,640#
601E	76	27'-6"	
Total #6 Epoxy Coated Reinf. Bars			3,139#
501E	274	7'-11"	
502E	88	14'-6"	
#5E	624	24'-3"	
#5E	132	17'-6"	
Total #5 Epoxy Coated Reinf. Bars			21,785#
Total Epoxy Coated Reinf. Bars			57,564#

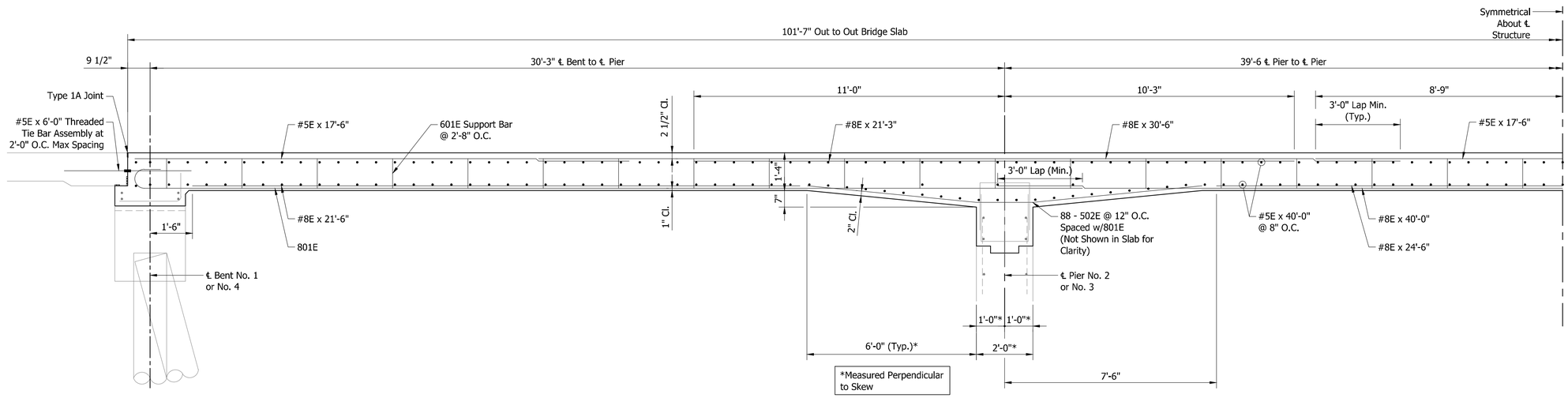
CONCRETE

Concrete, Class C, Superstructure*	249.9 CYS

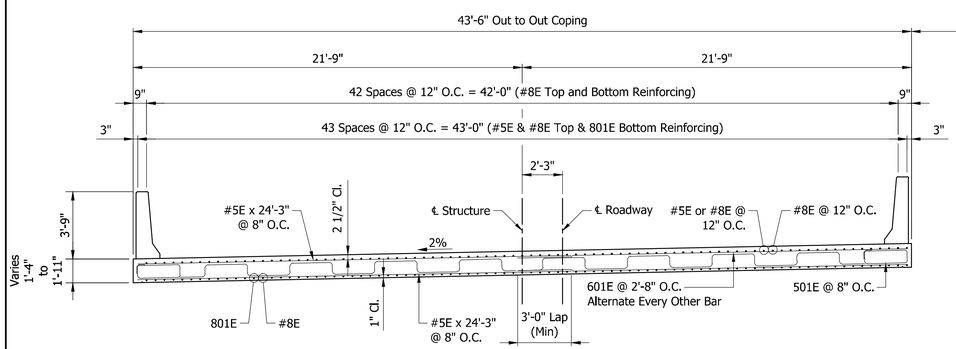
MISCELLANEOUS

Threaded Tie Bar Assembly, Epoxy Coated, #5E	42 EA
Surface Seal**	4,607 SFT

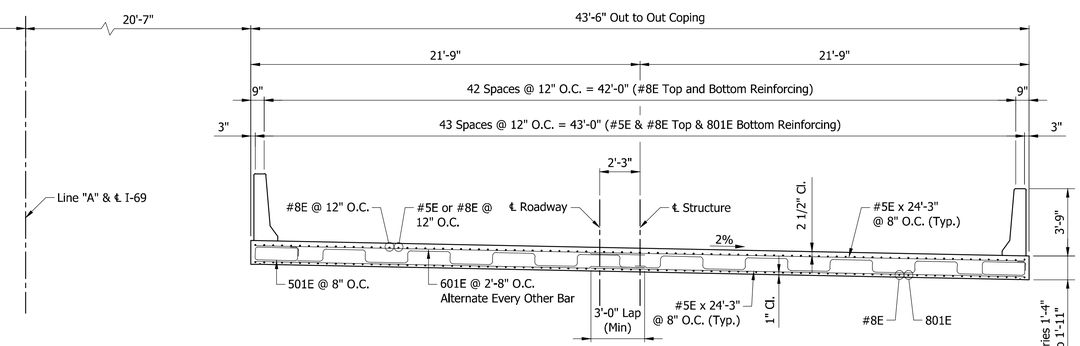
* - Includes Bent & Pier Volumes.
** - Shown for Information Only. Paid for as LSUM.



HALF LONGITIUDINAL SECTION
Scale: 1/2" = 1'-0"



PROPOSED SECTION - SB



SECTION A-A
Scale: 1/4" = 1'-0"

PROPOSED SECTION - NB

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DESIGNED: JFW DRAWN: RJA
CHECKED: AJI CHECKED: JFW

FLOOR DETAILS

SCALE	BRIDGE FILE
AS NOTED	I69-259-04762 CNB & CSB
	DESIGNATION
	1500770 & 1500771
	SHEETS
	32 of 54
CONTRACT	PROJECT
B-39898	1500770 & 1500771