

PROJECT	DESIGNATION
1593276	1593276
CONTRACT	BRIDGE FILE
B-42017	(421) 39-12-01792C

STRUCTURE INFORMATION				
STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
(421) 39-12-01792C	Steel Truss Bridge with Prestressed Concrete Box Beam End Spans	3 Spans: 30'-8½", 125'-0", 30'-8½" Skew: Square	South Fork Wildcat Creek	Sta. 43+50.00 Line "A"

INDIANA DEPARTMENT OF TRANSPORTATION



BRIDGE REHABILITATION PLANS

FOR SPANS OVER 20 FEET

ROUTE: US 421 AT: RP 126+82

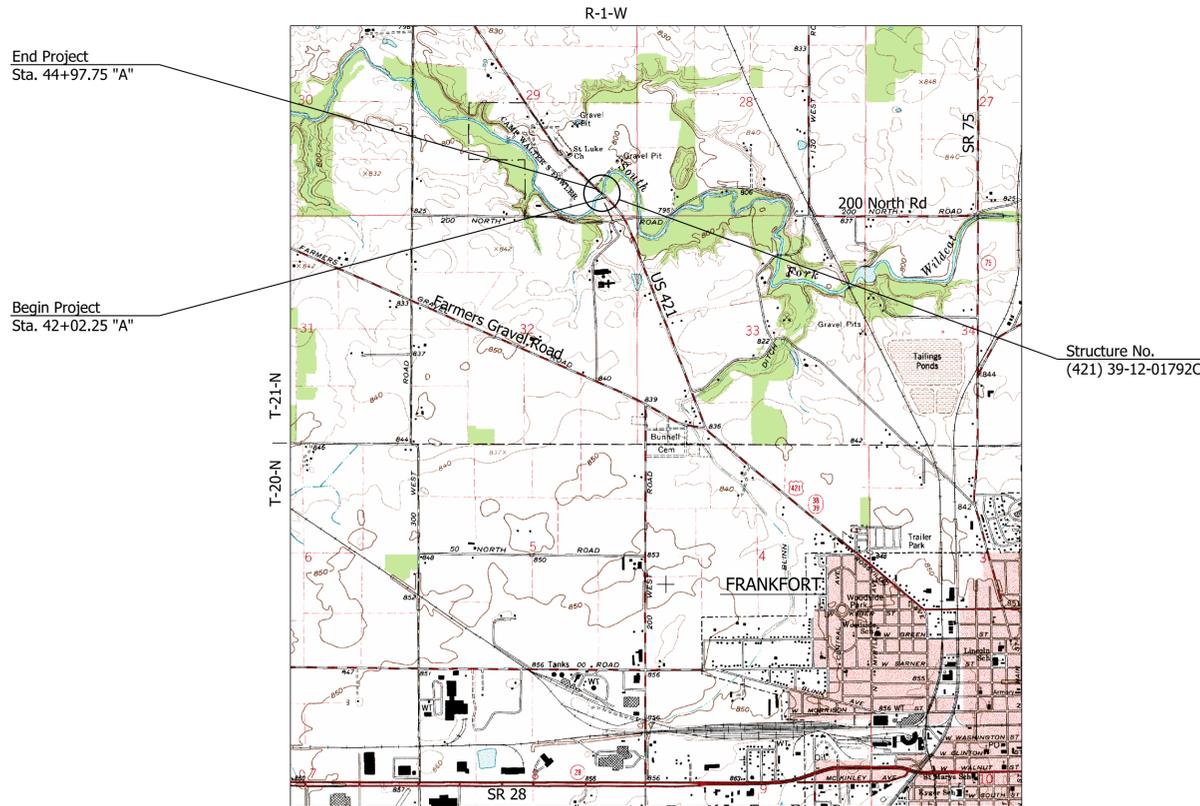
PROJECT NO. 1593276 P.E.

NO ADDITIONAL RIGHT-OF-WAY
REQUIRED FOR THIS PROJECT

R/W

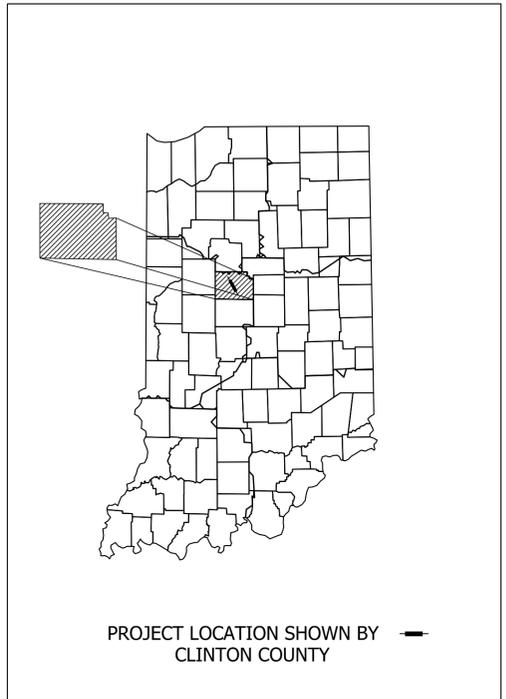
1593276 CONST.

Bridge Deck and End Spans Replacement on US 421 over South Fork Wildcat Creek, located 2.24 Miles south of SR 38, in Section 29, T-21-N, R-1-W, Union Township, Clinton County, Indiana



TRAFFIC DATA		
A.A.D.T. (2020)		4,425 V.P.D.
A.A.D.T. (2040)		6,298 V.P.D.
D.H.V.		567 V.P.H.
DIRECTIONAL DISTRIBUTION		50/50 %
TRUCKS		12 % A.A.D.T. 9 % D.H.V.

DESIGN DATA	
DESIGN SPEED	55 M.P.H.
PROJECT DESIGN CRITERIA	3R (NON-FREEWAY)
FUNCTIONAL CLASSIFICATION	MINOR ARTERIAL
RURAL/URBAN	RURAL
TERRAIN	LEVEL
ACCESS CONTROL	NONE



LATITUDE: 40° 18' 59" N LONGITUDE: 86° 32' 48" W

BRIDGE LENGTH:	0.037	MI.
ROADWAY LENGTH:	0.020	MI.
TOTAL LENGTH:	0.057	MI.
MAX. GRADE:	0.0	%



gai consultants

Indianapolis: 201 North Illinois Street, Suite 1700, Indianapolis, IN 46204
Fishers: 9998 Crosspoint Boulevard, Suite 110, Indianapolis, IN 46256

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2020
TO BE USED WITH THESE PLANS.

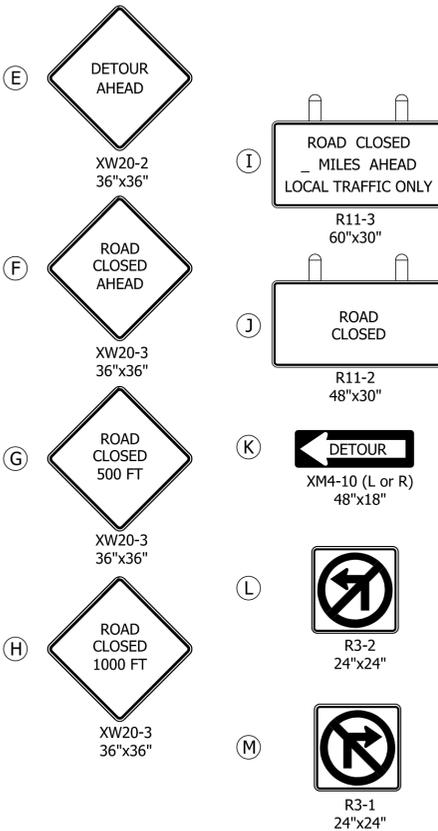
PLANS PREPARED BY:	GAI Consultants, Inc.	(317) 436-9150 PHONE NUMBER
CERTIFIED BY:		DATE
APPROVED FOR LETTING:	INDIANA DEPARTMENT OF TRANSPORTATION	DATE

BRIDGE FILE	(421) 39-12-01792 C
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Plot: 2/14/2020 10:30:39 AM By: thornstam Pen: Transportation.tbl

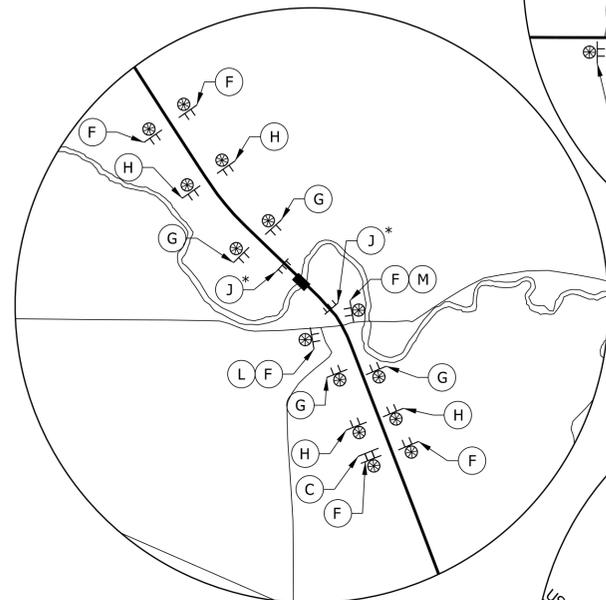
SIGN LEGEND:

- (A) Advance Turn Detour Route Marker Assembly
Detour (XM4-8)
Cardinal Direction (North, M3-1(S)) or (South, M3-3(S))
US Route (421) (M1-4)
Advance Turn Arrow (M5-1 or M5-2) (L or R)
- (B) Directional Detour Route Marker Assembly
Detour (XM4-8)
Cardinal Direction (North, M3-1(S)) or (South, M3-3(S))
US Route (421) (M1-4)
Directional Arrow (M6-1 or M6-2) (L or R)
- (C) Confirming Detour Route Marker Assembly
Detour (XM4-8)
Cardinal Direction (North, M3-1(S)) or (South, M3-3(S))
US Route (421) (M1-4)
Directional Arrow (M6-3)
- (D) End Detour Route Marker Assembly
End Detour (XM4-8a)
Cardinal Direction (North, M3-1(S)) or (South, M3-3(S))
US Route (421) (M1-4)

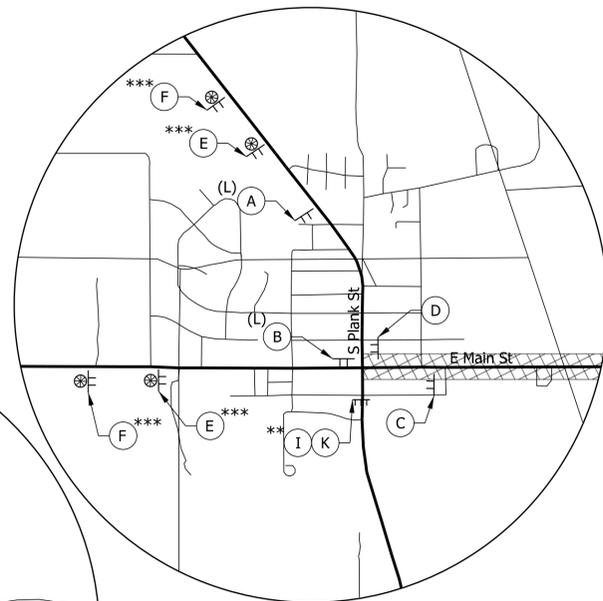


LEGEND

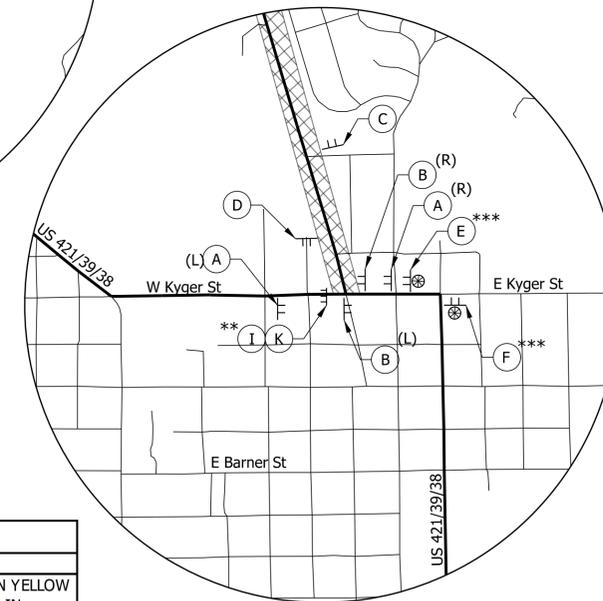
- ▨ Detour Route
- ⊥ Construction Sign
- ⊙ Low Intensity Construction Warning Light, Type A
- ⊥ Type III Barricade
- Closure Area
- * 24 Lft. of Type III-A Barricade
- ** 16 Lft. of Type III-B Barricade
- *** With US 421 Placard
Cardinal Direction (North, M3-1(S)) or (South, M3-3(S))
US Route (421) (M1-4)
- **** With SR 38 Placard
Cardinal Direction (East, M3-2(S)) or (West, M3-4(S))
SR Route (38) (M1-4)



DETAIL 'B'
Not to Scale



DETAIL 'C'
Not to Scale



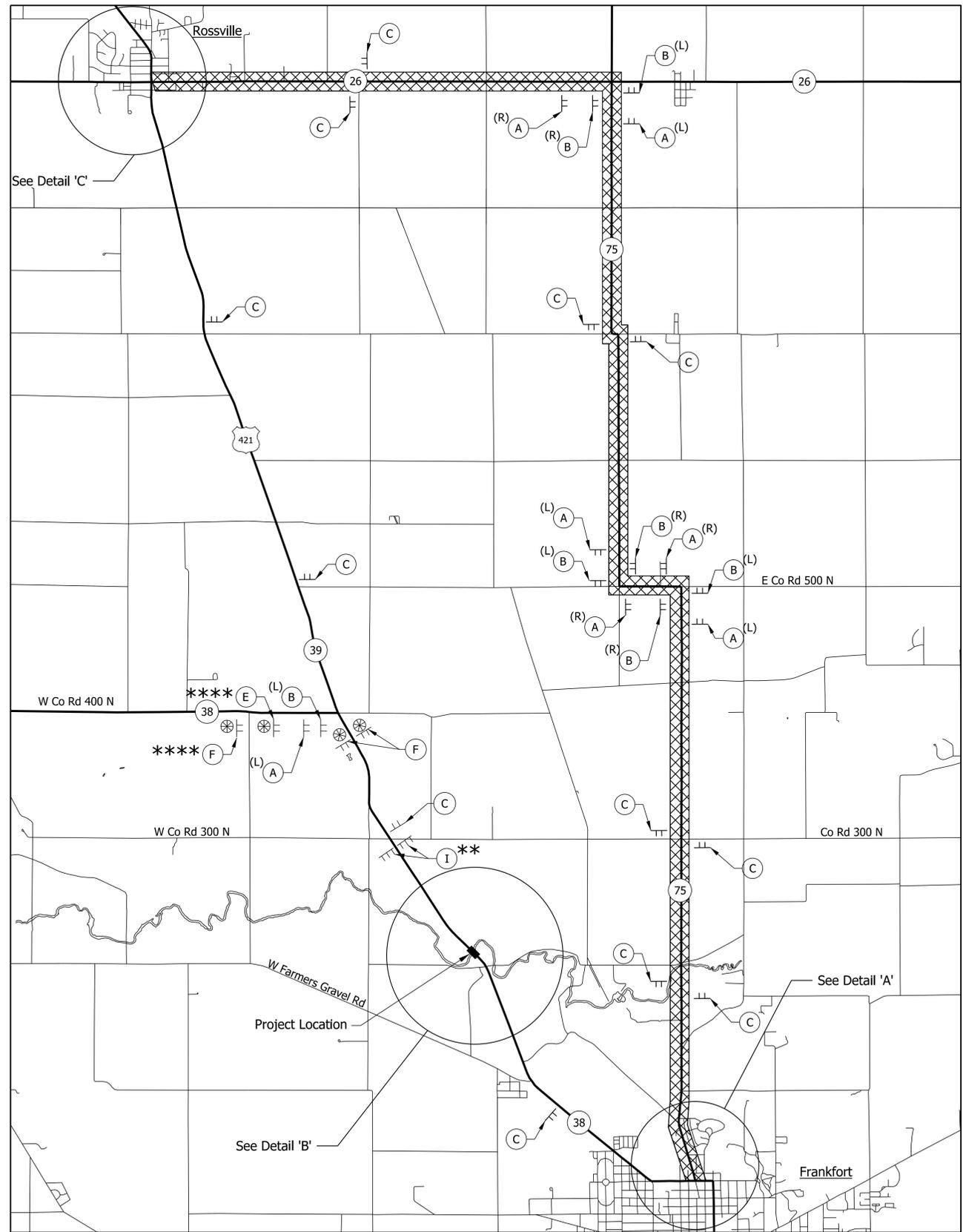
DETAIL 'A'
Not to Scale

NOTES:

- Refer to INDOT Standard Drawing E 801-TCDT-01 for placement of signs and devices in a rural detour and E 801-TCDT-04 for Detour Route Marker Assembly Details.
- Two - "Route Number Closed On or After ___" Signs (XG20-5) to be placed as directed by the engineer prior to construction.
- Upon completion of the project restripe the double yellow centerline and solid white edge lines.
- Install R11-2 Road Closure sign assemblies on Type III-A barricades. Install R11-3 Road Closure sign assemblies on Type III-B barricades.
- Conduct flagging during paving operations in accordance with E 801-TCTC-05.

PAVEMENT MARKINGS TABLE			
LOCATION	LINE, MULTI-COMPONENT		
	SOLID YELLOW 4 IN.	SOLID WHITE 4 IN.	BROKEN YELLOW 4 IN.
UNIT	LFT	LFT	LFT
TOTALS	390	780	100

MAINTENANCE OF TRAFFIC QUANTITIES		
ITEM	UNITS	QUANTITY
		TOTAL
CONSTRUCTION SIGN, A	EACH	21
CONSTRUCTION SIGN, B	EACH	10
ROAD CLOSURE SIGN ASSEMBLY	EACH	5
DETOUR ROUTE MARKER ASSEMBLY	EACH	35
BARRICADE, III-A	LFT	48
BARRICADE, III-B	LFT	36



DETOUR PLAN
SCALE: 1" = 5,000'

Plot: 2/14/2020 10:30:57 AM By: thornham Pen: Transportation.tbl

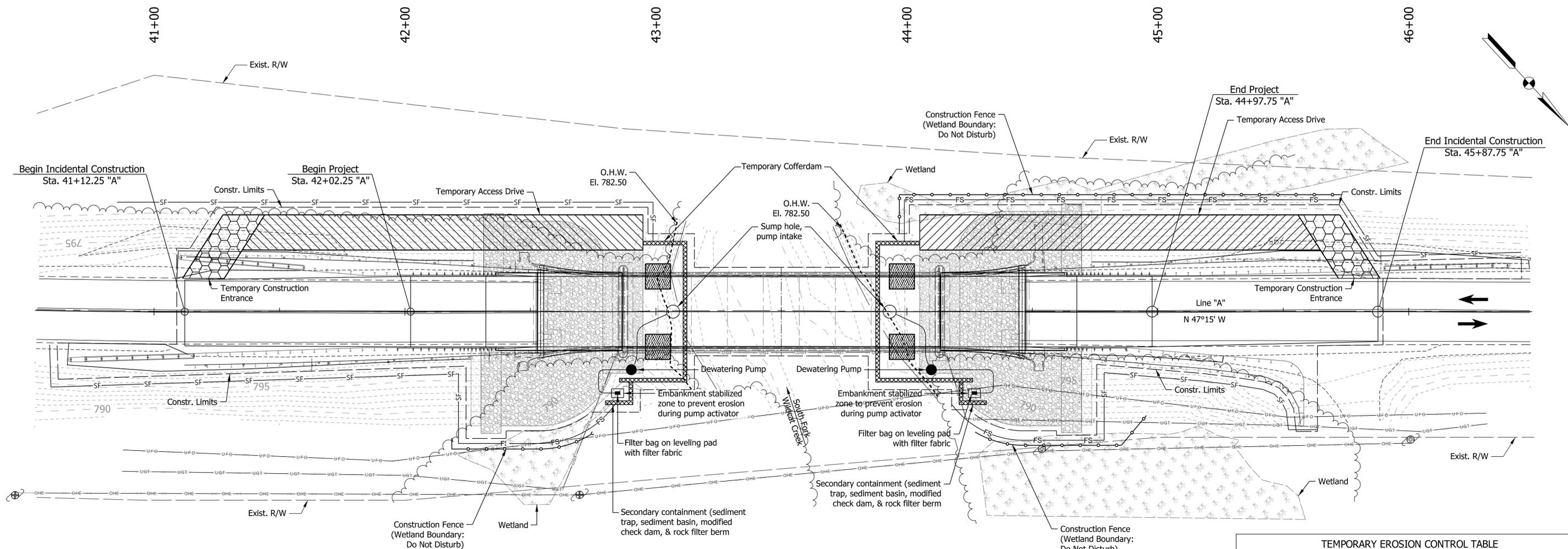


RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: NRT	DRAWN: TMT	
CHECKED: KMP	CHECKED: NRT	

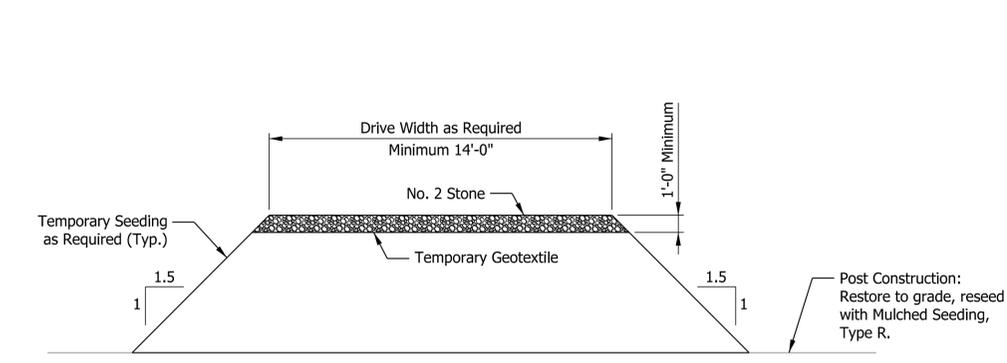
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MAINTENANCE OF TRAFFIC

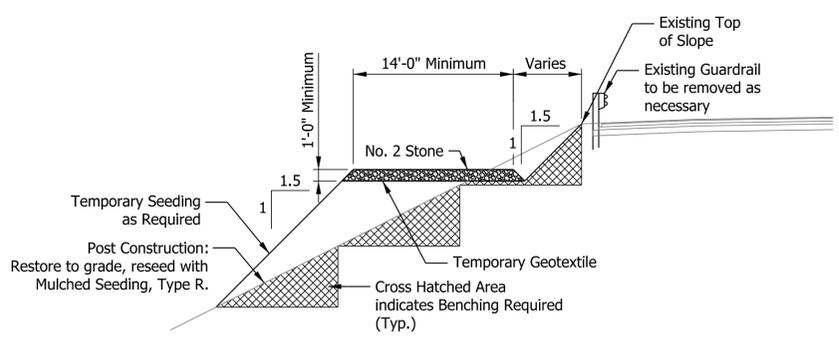
SCALE AS NOTED	BRIDGE FILE (421)39-12-01792 C
	DESIGNATION 1593276
	SHEETS 3 of 30
CONTRACT B-42017	PROJECT 1593276



PLAN
Scale: 1" = 20'-0"



TYPICAL SECTION - TEMPORARY ACCESS DRIVE
No Scale



TYPICAL SECTION - TEMPORARY ACCESS DRIVE ADJACENT TO ROADWAY
No Scale

TEMPORARY EROSION CONTROL TABLE								
STATION	LOCATION		TEMPORARY SILT FENCE	FILTER SOCK	TEMPORARY SEEDING	TEMPORARY MULCHING	FERTILIZER	REMARKS
	LEFT	RIGHT						
40+50		X	225					
41+00	X	X	230					
42+50		X		55				
44+00	X			191				
44+25		X		70				
44+75		X	125					
45+75	X		85					
TOTAL			665	316	45	0.75	0.15	

NOTES

- Provide silt fence around the perimeter of construction and temporary staging areas.
- Provide Filter Sock at perimeter of bridge embankment construction adjacent to channel.
- Construct Stable Construction Entrances (Est. Qty. = 100 Tons of No. 2 Stone, 235 SYS Temporary Geotextile).
- Provide concrete washouts as required.
- No Causeways are permitted in the channel.
- For additional information regarding access roads, see Special Provisions.
- The construction access details show on this sheet were developed for permitting. If alternate methods are approved by the Engineer, the contractor shall be responsible for any modifications to design, details, permits, and any associated costs.
- Temporary Cofferdam shall be sheet pile or other method. Materials and shape vary depending on needs and availability. Cofferdam shall be 2' minimum high and extend 1' above the ordinary high water elevation.
- Construction fence to be placed adjacent to wetlands at perimeter of construction (See special provisions) Est. Qty. 300 Lft.

LEGEND	
	SILT FENCE
	FILTER SOCK
	CONSTRUCTION FENCE
	ANTICIPATED LOCATION OF TEMPORARY SUPPORTS FOR JACKING AND SUPPORTING TRUSS.
	TEMPORARY ACCESS DRIVE
	TEMPORARY CONSTRUCTION ENTRANCE



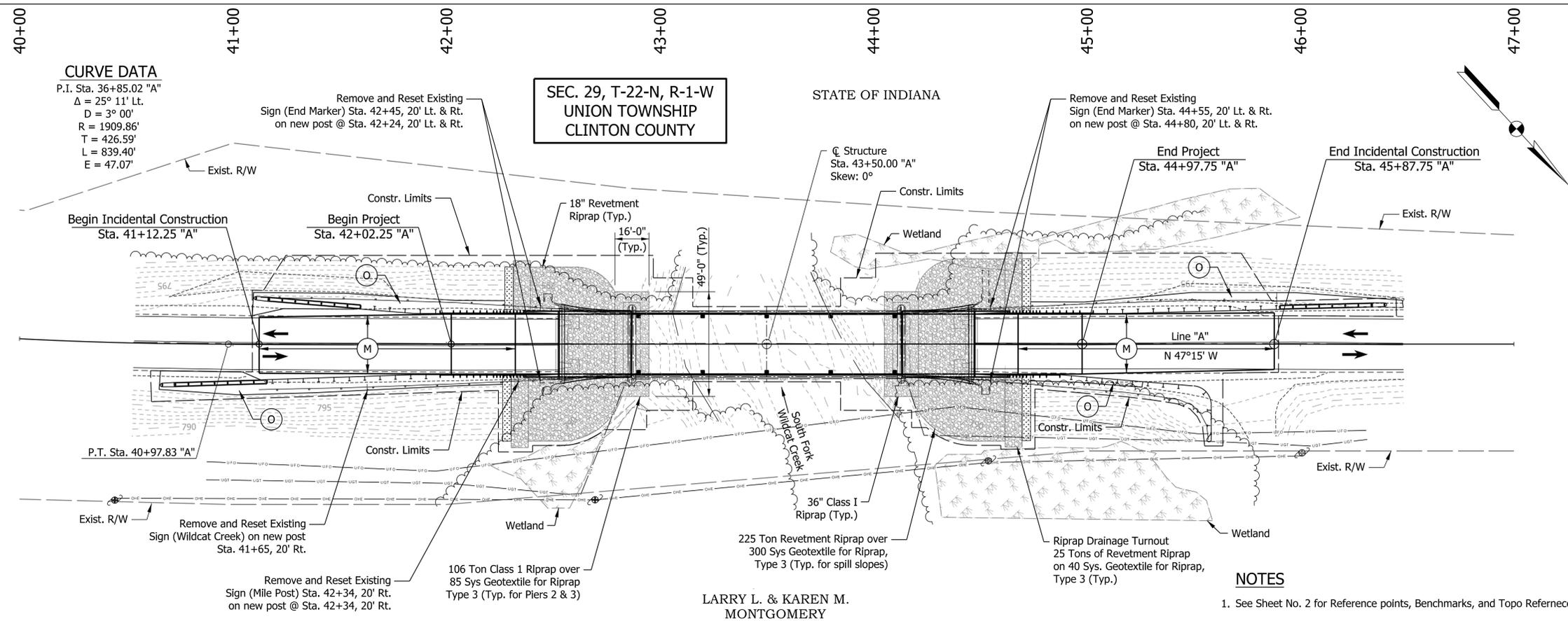
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: NRT	DRAWN: TMT	
CHECKED: KMP	CHECKED: KMP	

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EROSION CONTROL PLAN

SCALE AS NOTED	BRIDGE FILE (421)39-12-01792 C
	DESIGNATION 1593276
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Plot: 2/14/2020 10:31:16 AM By: thornstam Pen: Transportation.tbl



EXISTING STRUCTURES
 The present structure is a steel thru truss with concrete cast-in-place girder end spans. It was built in 1941 with a 28'-0" clear roadway. The structure was rehabilitated in 1974 and 1985. The concrete end span superstructures are to be removed along with the concrete deck of the steel truss span.

EARTHWORK SUMMARY

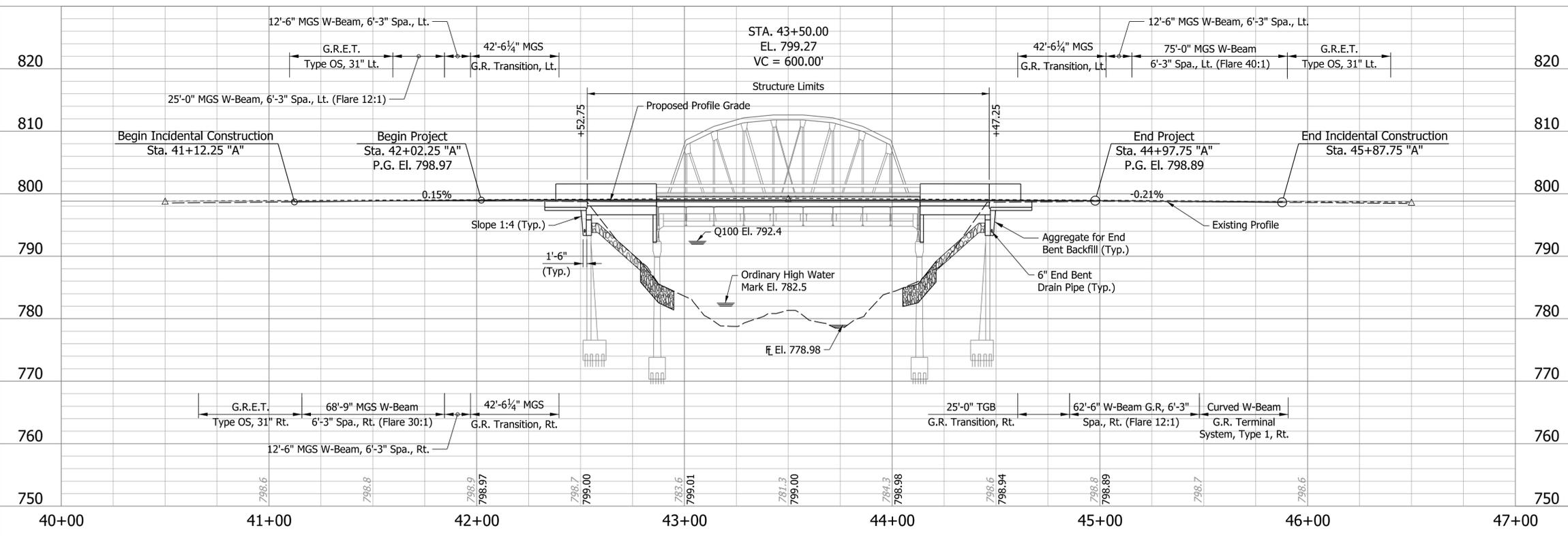
Common Excavation	170 Cys.
Excavation Foundation, Unclassified	20 Cys.
* Mulched Seeding	1000 Sys.

* Undistributed Estimated Quantity to be placed as directed by the Engineer

HYDRAULIC SCOUR DATA

Drainage Area =	76.0 sq.mi.
Design Discharge, Q ₁₀₀ =	9,050.0 cfs
Q ₁₀₀ Elevation =	792.4 ft.
Max. Velocity at Q ₁₀₀ =	7.11 ft/sec
Avg. Velocity at Q ₁₀₀ =	6.09 ft/sec
Scour Depth (Contraction) =	12.98 ft.
Scour Depth (Total) =	19.80 ft.
Low Scour Elevation =	759.18 ft.

- NOTES**
- See Sheet No. 2 for Reference points, Benchmarks, and Topo Referenes.
 - Install new Delinators on new sign post at all 4 quadrants at 25' spacing. 3 Each quadrant. (12 Total)
 - All slope treatment to be Mulched Seeding, R



STEEL TRUSS BRIDGE WITH PRESTRESSED CONCRETE BOX BEAM END SPANS
 3 SPANS: 31'-8½", 125'-0" & 31'-8½"
 SKEW: SQUARE; 28'-0" CLEAR ROADWAY
 US 421 OVER SOUTH FORK WILDCAT CREEK
 CLINTON COUNTY

Plot: 2/14/2020 10:31:23 AM By: thomasm Pen: Transportation.tbl

LEGEND

(M) See Sheet 7 for details

(O) See Sheet 7 for details

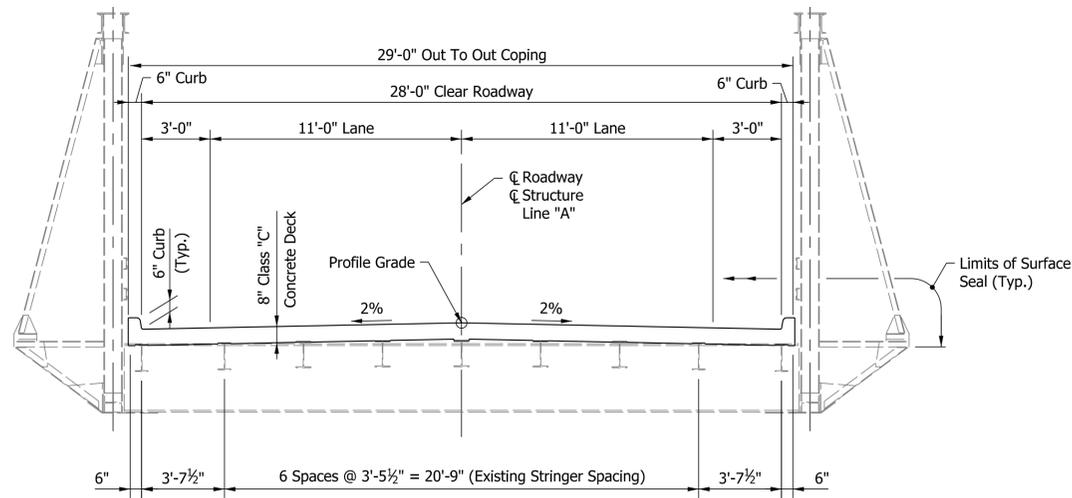


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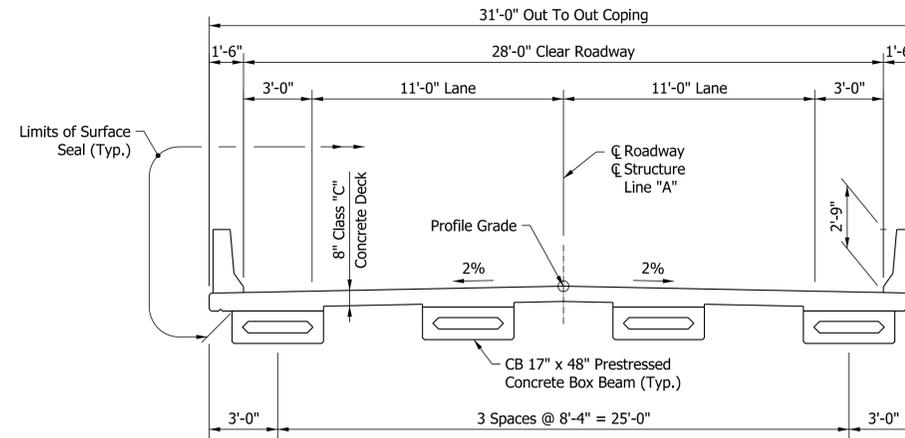
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LAYOUT

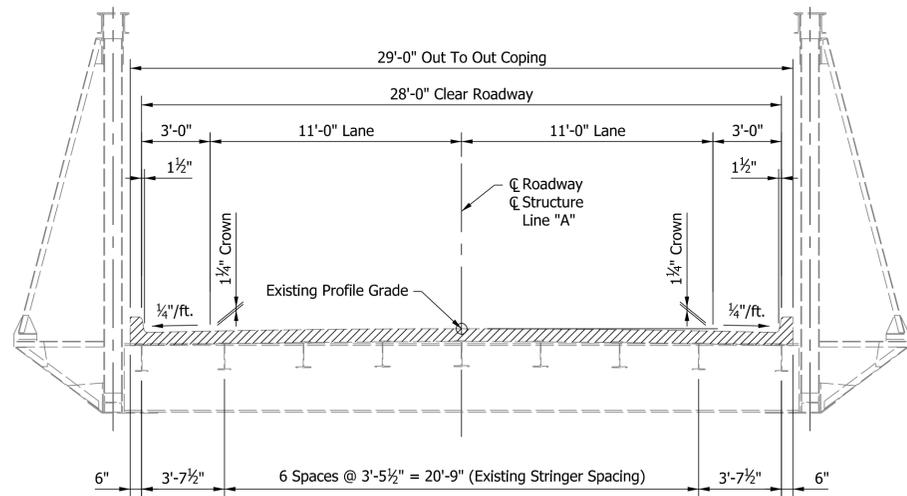
HORIZONTAL SCALE	BRIDGE FILE
1"=30'-0", U.N.	(421) 39-12-01792 C
VERTICAL SCALE	DESIGNATION
1"=10'-0", U.N.	1593276
SHEETS	
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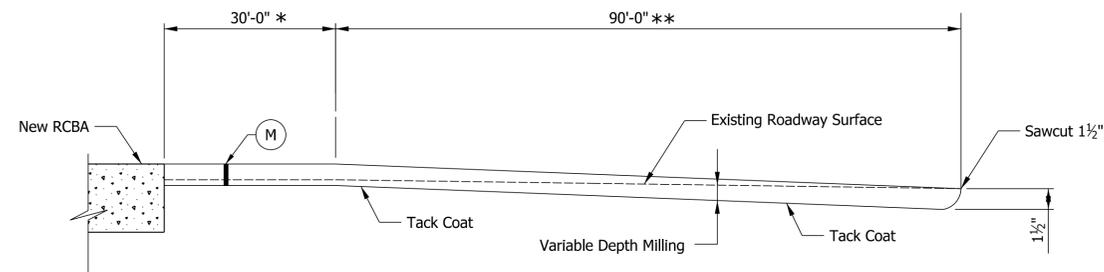
TYPICAL PROPOSED SECTION
SPAN "B"
 Scale: 1/4" = 1'-0"



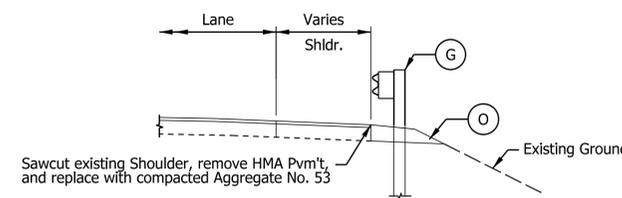
TYPICAL PROPOSED SECTION
SPANS "A" & "C"
 Scale: 1/4" = 1'-0"



TYPICAL REMOVAL SECTION
SPAN "B"
 Scale: 1/4" = 1'-0"



* - Wedge to be a continuation of bridge profile.
 ** - Incidental Construction.
HMA WEDGE AND LEVEL DETAIL
 Not to Scale



GUARDRAIL SECTION
 Applicable where new guardrail posts fall within existing shoulder footprint

GENERAL NOTES

Reinforcing steel cover shall be 2 1/2" in top and 1" minimum in bottom of floor slab, and 2" in all other parts, unless noted otherwise.

Plans for the existing structure are on file in the central office of the Indiana Department of Transportation as bridge file (421)39-12-01792, (421)39-12-01792 A, and (421)39-12-01792 B and are available upon request.

Where new work is to be fitted to old work, the contractor shall check all dimensions and conditions in the field, report any errors or discrepancies to the engineer and assume responsibility for their correctness and the fit of the new part to the old.

DESIGN DATA

New Superstructure and deck designed for HL-93 loading in accordance with AASHTO LRFD Bridge Design Specifications Eighth Edition and interims through 2019.

DEAD LOAD

Actual weight plus 35 psf (composite) for future wearing surface and 15 (non-composite) for permanent metal deck forms (New Spans Only).

FLOOR SLAB

Designed with a 7 1/2" structural depth plus a 1/2" sacrificial wearing surface.

DESIGN STRESSES

CONCRETE

Class "A" Concrete: f'c = 3,500 psi
 Class "C" Concrete: f'c = 4,000 psi

REINFORCING STEEL

Grade 60 Fy = 60,000 psi

CONSTRUCTION LOADING

The exterior beam has been checked for strength, deflection, and overturning using the construction loads shown below. Cantilever overhang brackets were assumed for support of the deck overhang past the edge of the exterior beam. Finishing machine was assumed to be supported 6 in. outside the vertical coping form. The top overhang brackets were assumed to be located 6 in. past the edge of the vertical coping form. The bottom of overhang brackets were assumed to be braced against the Box Beam Superstructure (New Spans Only).

DECK FALSEWORK LOADS

Designed for 15 lb/ft2 for permanent metal stay-in-place deck forms, removable deck forms, and 2-ft exterior walkways (New Spans Only).

CONSTRUCTION LIVE LOAD

Designed for 20 lb/ft2 extending 2 ft past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 in. outside the face of coping over a 30-ft length of the deck centered with the finishing machine (New Spans Only).

FINISHING MACHINE LOAD

4500 lb distributed over 10 ft along the coping (New Spans Only).

WIND LOAD

Designed for 70 mph horizontal wind loading in accordance with LRFD 3.8.1 (New Spans Only).

STEEL TRUSS BRIDGE WITH PRESTRESSED CONCRETE BOX BEAM END SPANS
 3 SPANS: 31'-8 1/2", 125'-0" & 31'-8 1/2"
 SKEW: SQUARE; 28'-0" CLEAR ROADWAY
 US 421 OVER SOUTH FORK WILDCAT CREEK
 CLINTON COUNTY

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LEGEND

- (G) MGS Guardrail
- (M) Transition Milling and 165#/Sys. QC/QA-HMA, 3, 64, Surface, 9.5 mm
- (O) Compacted Aggregate No. 53 for Shoulders

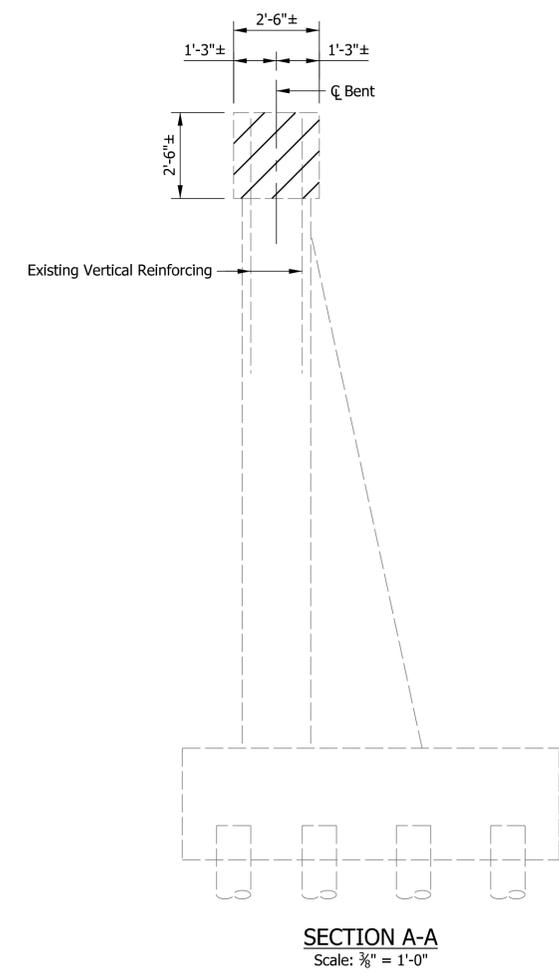
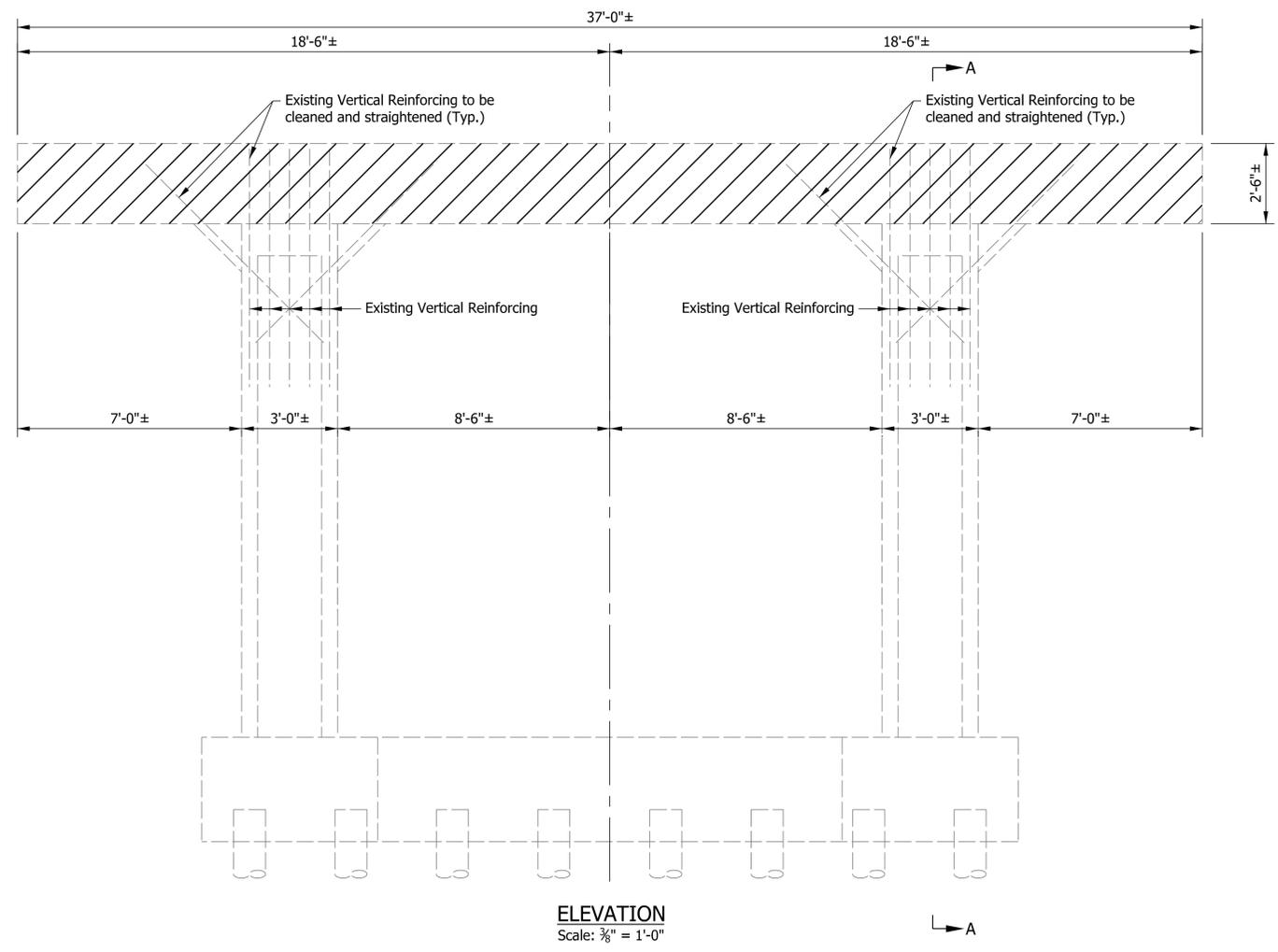
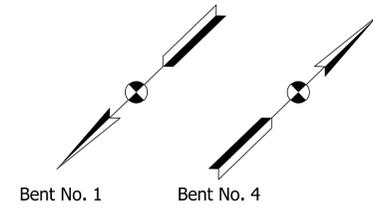
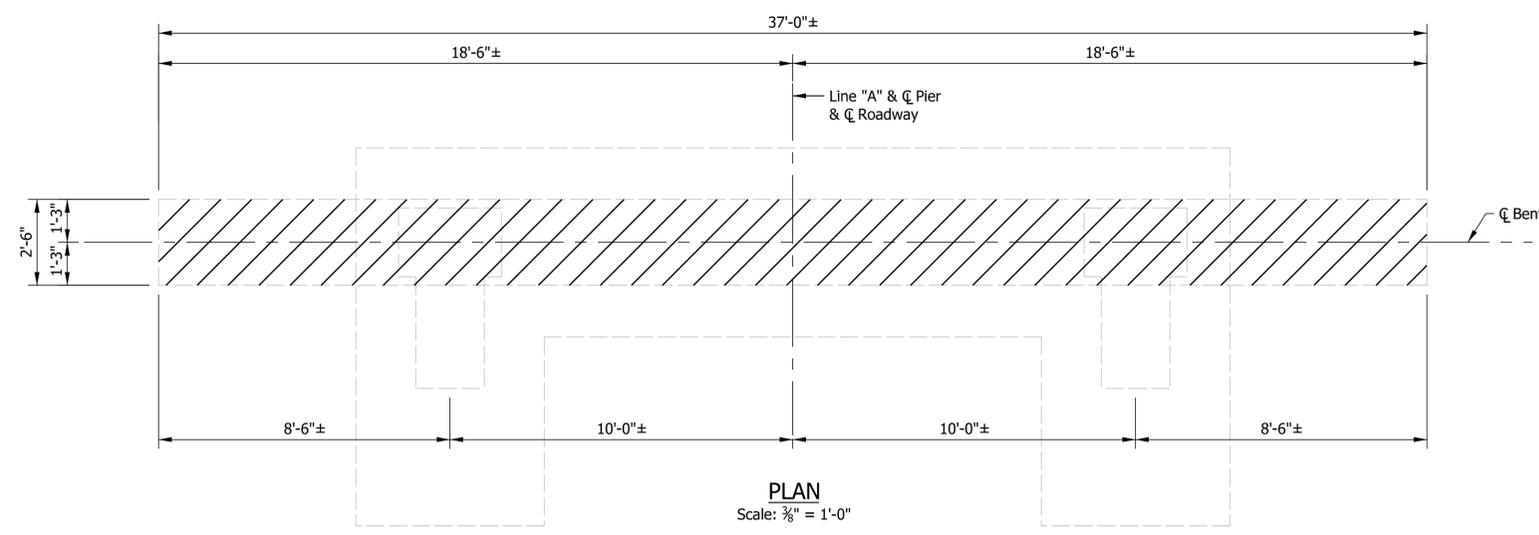


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GENERAL PLAN

SCALE	BRIDGE FILE
AS NOTED	(421)39-12-01792 C
	DESIGNATION
	1593276
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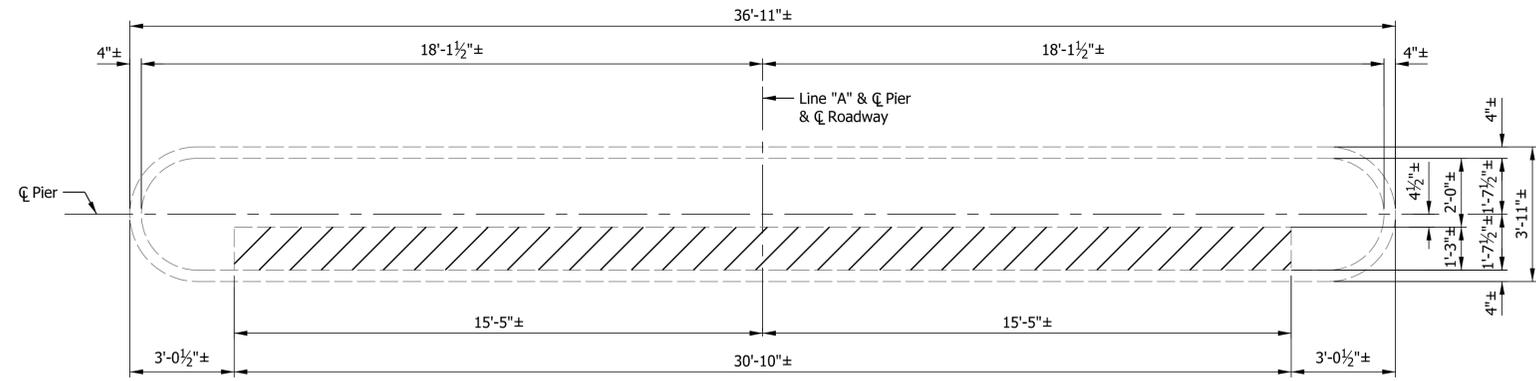


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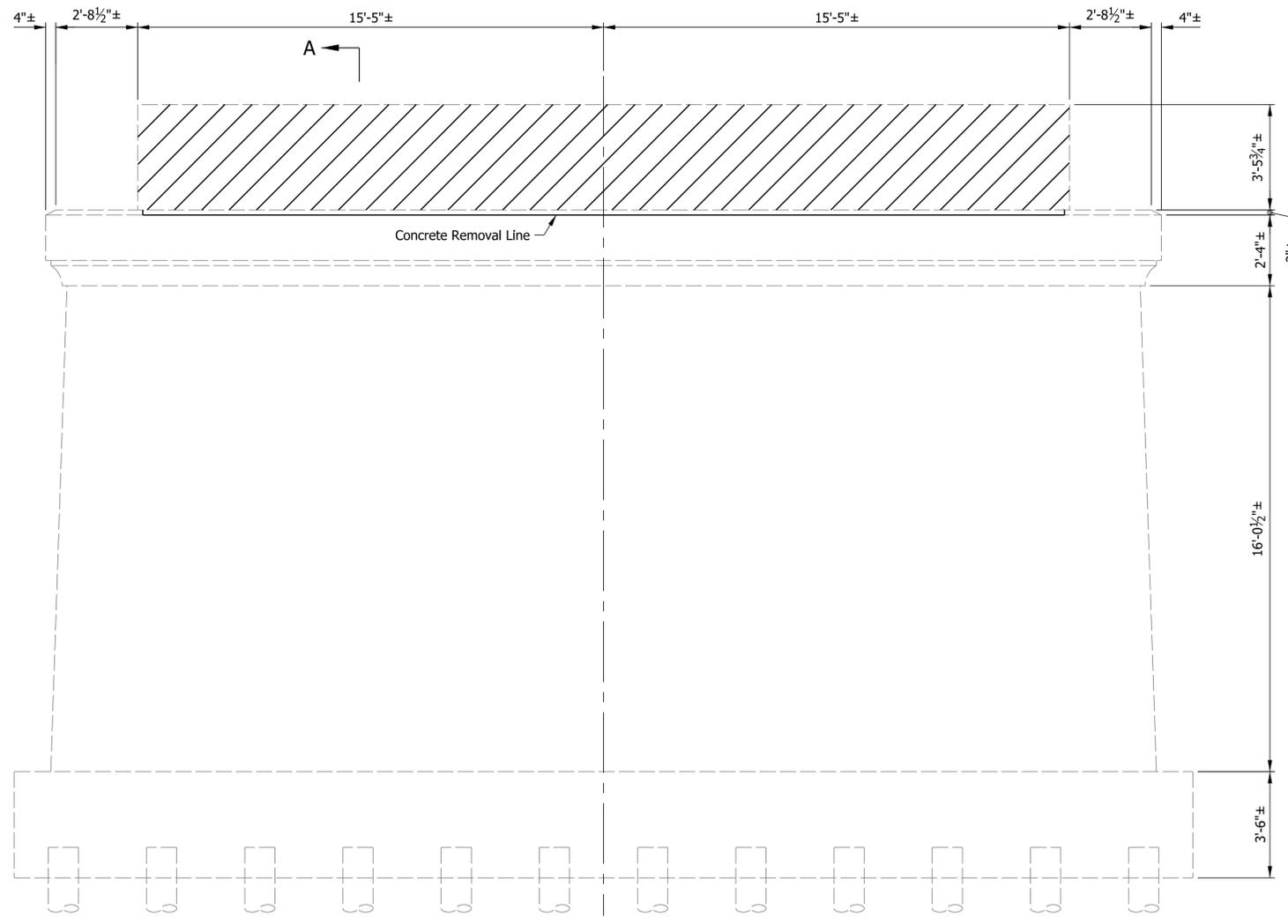
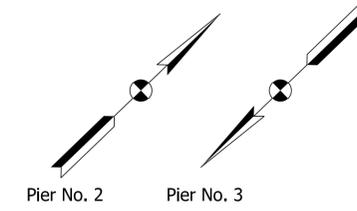
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BENTS NO. 1 & NO. 4
REMOVAL DETAILS

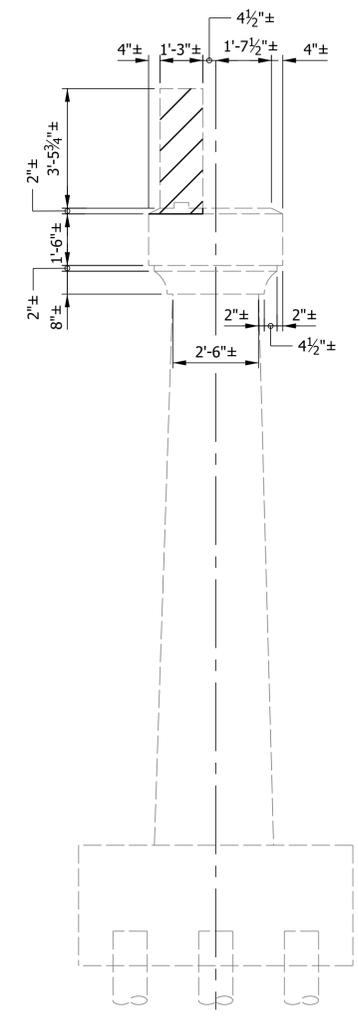
SCALE AS NOTED	BRIDGE FILE (421)39-12-01792 C
	DESIGNATION 1593276
	SHEETS 8 of 30
CONTRACT B-42017	PROJECT 1593276



PLAN
Scale: 3/8" = 1'-0"



ELEVATION
Scale: 3/8" = 1'-0"



SECTION A-A
Scale: 3/8" = 1'-0"

Plot: 2/14/2020 10:31:31 AM By: thornstam Pen: Transportation.tbl

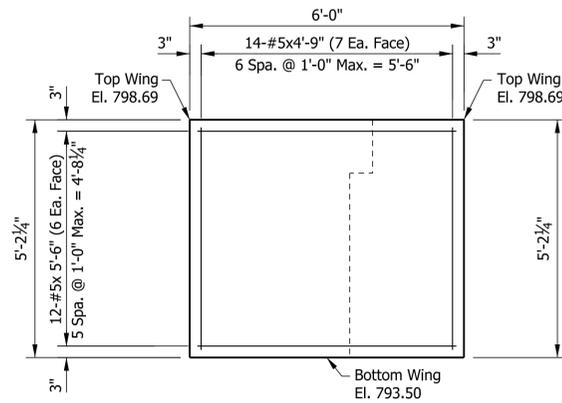


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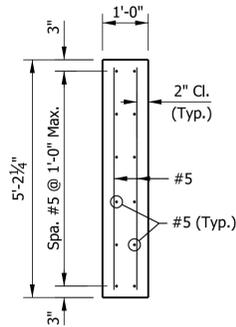
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PIERS NO. 2 & NO. 3
REMOVAL DETAILS

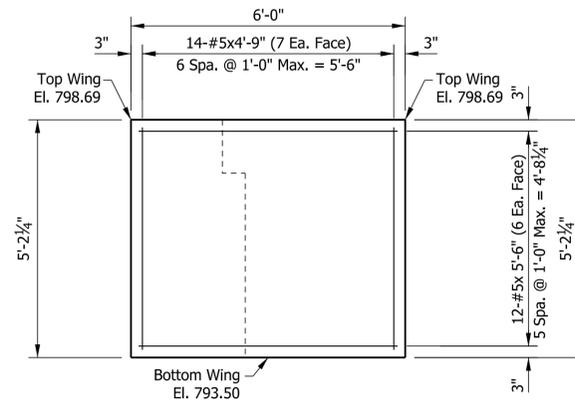
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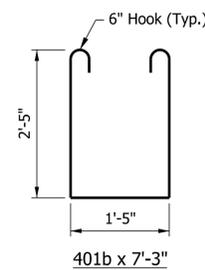
ELEVATION @ WING "B"
Scale: 1/2" = 1'-0"



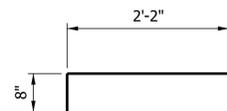
TYPICAL WINGWALL SECTION
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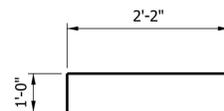
ELEVATION @ WING "A"
Scale: 1/2" = 1'-0"



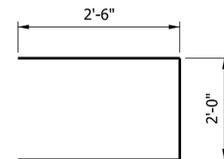
401b x 7'-3"



402b x 3'-6"



403b x 4'-2"



404b x 7'-0"

NOTES

- Where new work is fitted to old work, the Contractor shall check all dimensions and conditions in the field, report all errors or discrepancies to the Engineer and assume responsibility for their correctness and the fit of the new part to the old.
- For Reinforcing Bar Notes, see Std. Dwg. E 703-BRST-01.
- All reinforcing bars shall be Epoxy Coated.
- Epoxy coat existing reinforcing that is incorporated into new concrete.
- Surface Seal all exposed surfaces of wings.

BILL OF MATERIALS			
ABUTMENT NO. 1			
EPOXY COATED REINFORCING STEEL			
Size & Mark	Number of Bars	Length (Ft. - In.)	Weight (Lbs.)
#8	12	30'-9"	
TOTAL #8 BARS			985
#7	6	30'-9"	
TOTAL #7 BARS			377
#5	24	5'-6"	
#5	28	4'-9"	
TOTAL #5 BARS			276
401b	66	7'-3"	
402b	33	3'-6"	
403b	14	4'-2"	
404b	6	7'-0"	
TOTAL #4 BARS			464
TOTAL EPOXY COATED REINF.			2,103
CONCRETE			
CLASS "A" IN SUBSTRUCTURE			10.7 CYS
MISCELLANEOUS			
AGG. FOR END BENT BACKFILL			10 CYS
GEOTEXTILE FOR UNDERDRAIN TYPE 3			30 SYS
PIPE, END BENT DRAIN, 6 IN.			51 LFT

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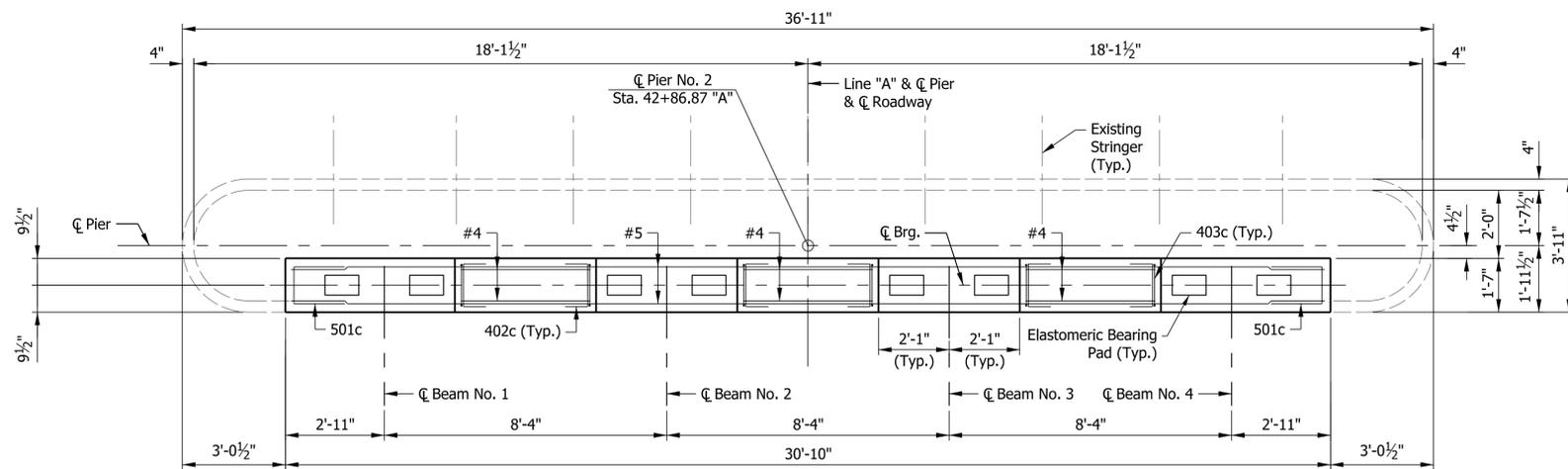


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CHECKED: TDJ	CHECKED: KMP	

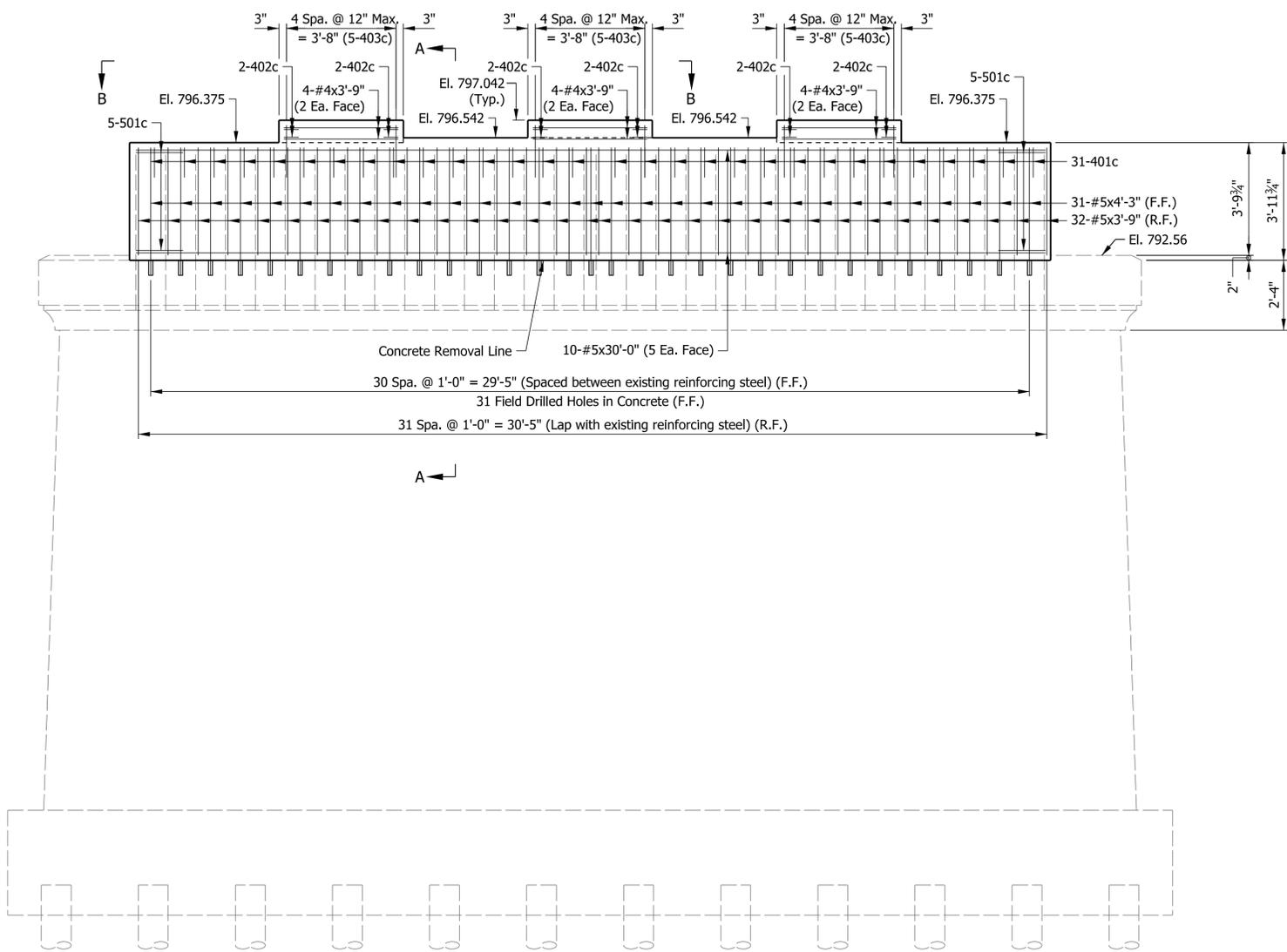
INDIANA
DEPARTMENT OF TRANSPORTATION

ABUTMENT NO. 1 DETAILS

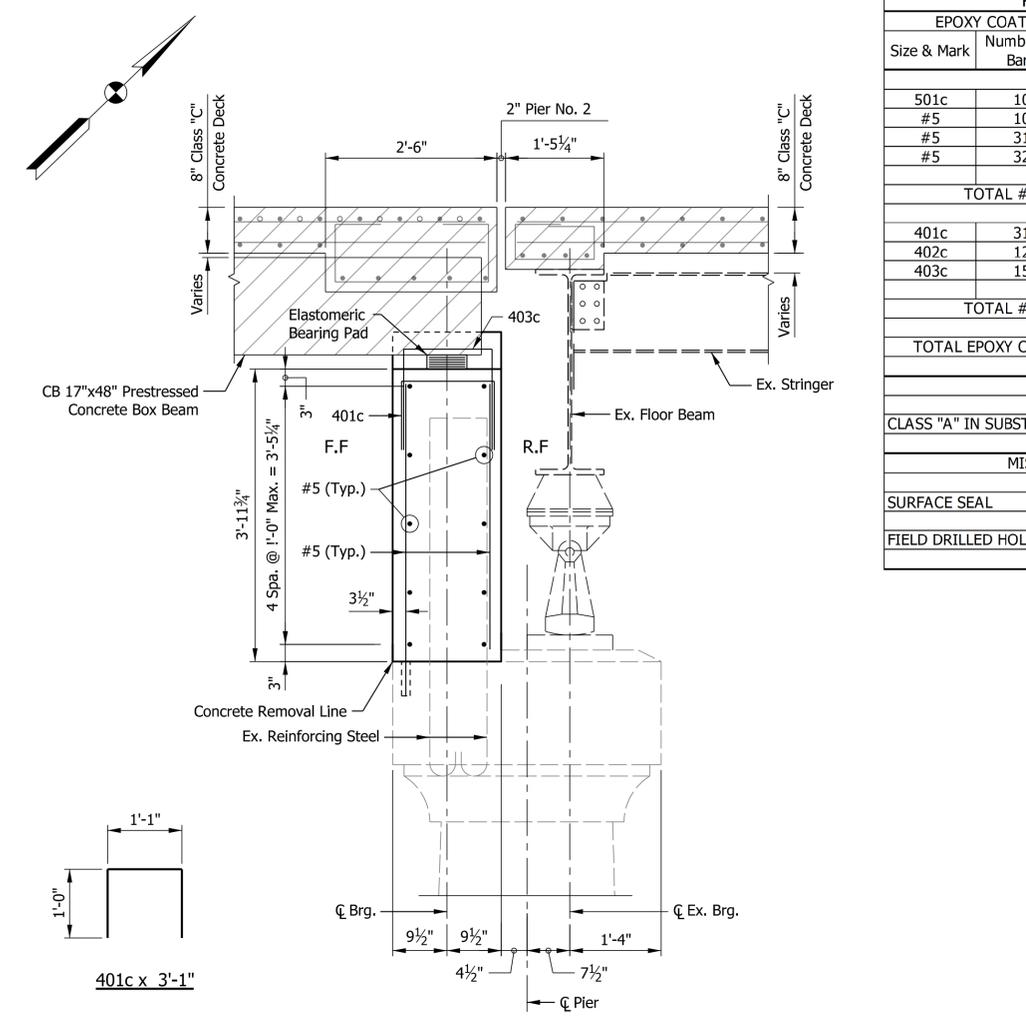
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	SHEETS 11 of 30
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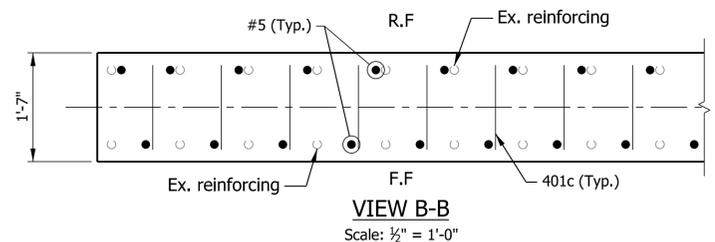
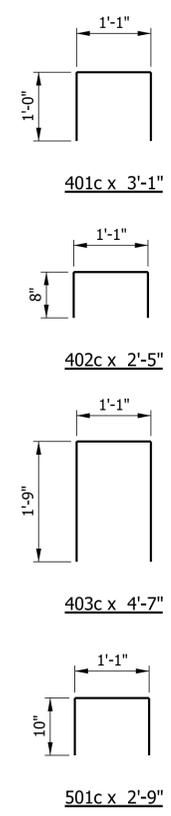
PLAN @ PIER NO. 2
Scale: 3/8" = 1'-0"



ELEVATION @ PIER NO. 2
Scale: 3/8" = 1'-0"



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



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

NOTES

- Where new work is fitted to old work, the Contractor shall check all dimensions and conditions in the field, report all errors or discrepancies to the Engineer and assume responsibility for their correctness and the fit of the new part to the old.
- Intentionally Roughen Existing Concrete 1/4" where it meets new concrete.
- For Reinforcing Bar Notes, see Standard Drawing E703-BRST-01.
- All reinforcing steel to be epoxy coated.
- Field drilled holes in concrete shall extend to a depth required to embed a #5 bar 6" minimum with an approved anchor system having a minimum pullout equal to 18,600 Lbs. Existing Pier Cap Reinforcing shall not be cut during installation of anchors.
- For Elastomeric Bearing Pad Details, see sheet 21.
- Surface Seal the top and vertical surfaces of pier cap.
- Install embedded galvanize anodes (EGA) on alternating reinforcing bars at interface of new concrete to old in new beam seat construction. Install EGAs on exposed reinforcing within locations of pier patches as directed by the engineer.

BILL OF MATERIALS PIER NO. 2			
EPOXY COATED REINFORCING STEEL			
Size & Mark	Number of Bars	Length (Ft. - In.)	Weight (Lbs.)
501c	10	2'-9"	
#5	10	30'-6"	
#5	31	4'-3"	
#5	32	3'-9"	
TOTAL #5 BARS			609
401c	31	3'-1"	
402c	12	2'-5"	
403c	15	4'-7"	
TOTAL #4 BARS			129
TOTAL EPOXY COATED REINF.			739
CONCRETE			
CLASS "A" IN SUBSTRUCTURE			7.9 CYS
MISCELLANEOUS			
SURFACE SEAL			255 SFT
FIELD DRILLED HOLES IN CONCRETE			31 EACH

Plot: 2/14/2020 10:31:41 AM By: thomstam Pen: Transportation.tbl

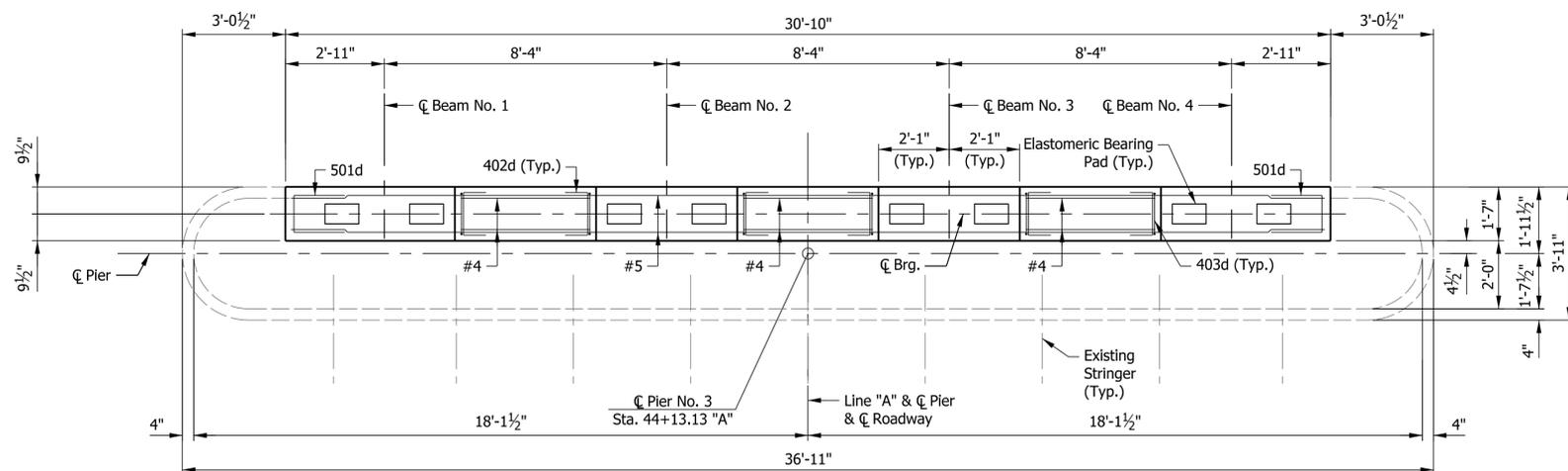


RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: NRT	DRAWN: TMT	
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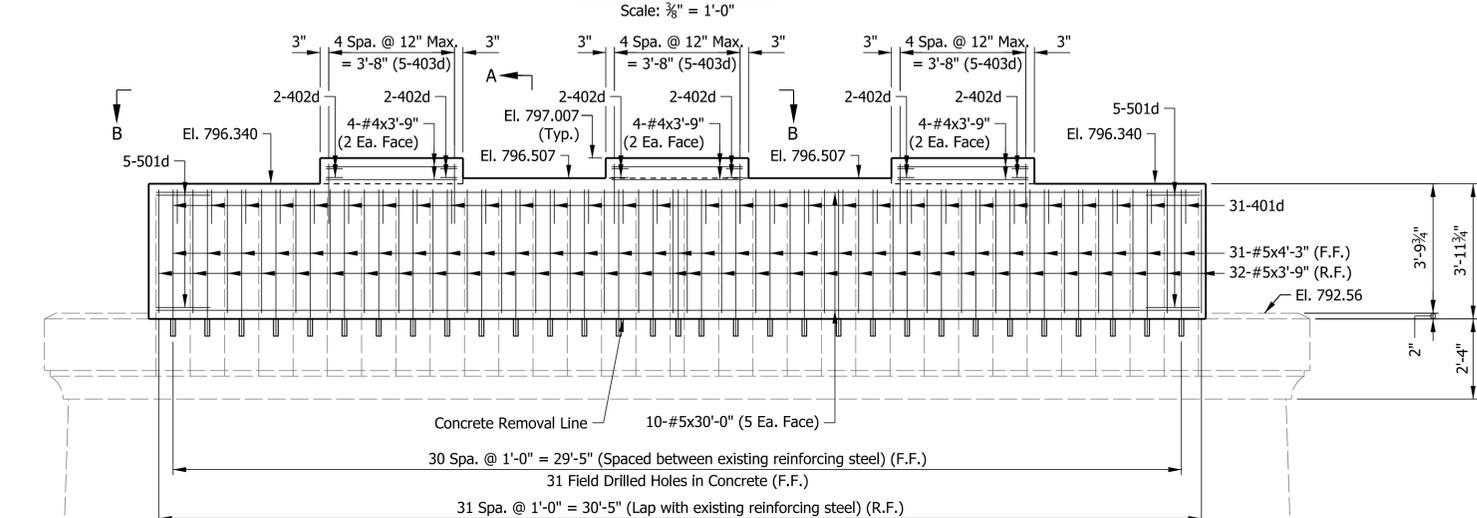
INDIANA
DEPARTMENT OF TRANSPORTATION

PIER NO. 2 DETAILS

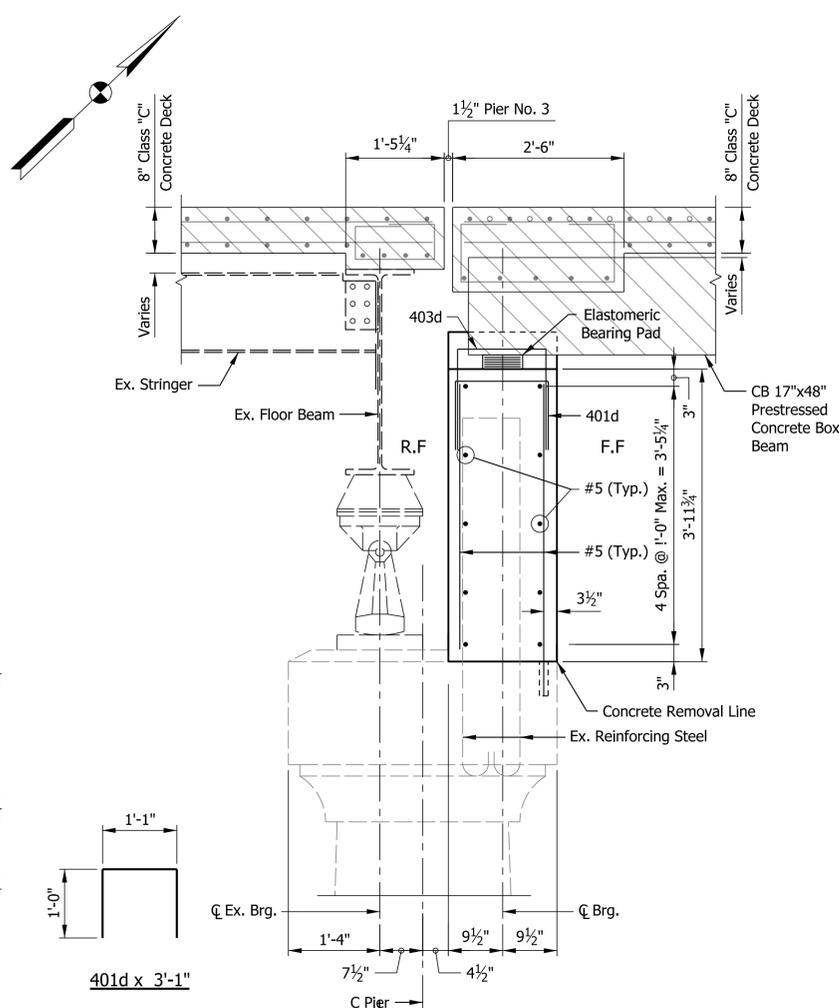
SCALE AS NOTED	BRIDGE FILE (421)39-12-01792 C
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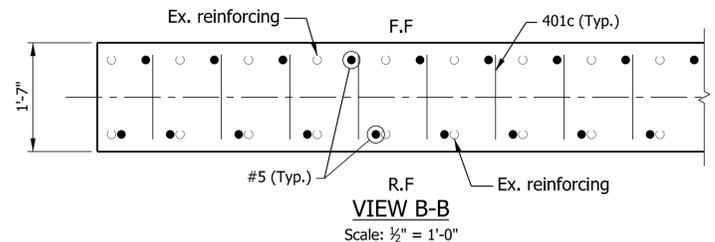
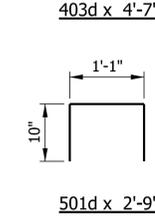
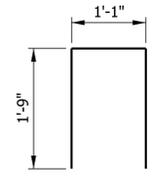
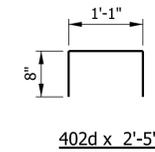
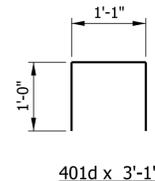
PLAN @ PIER NO. 3
Scale: 3/8" = 1'-0"



ELEVATION @ PIER NO. 3
Scale: 3/8" = 1'-0"



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



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

BILL OF MATERIALS PIER NO. 3			
EPOXY COATED REINFORCING STEEL			
Size & Mark	Number of Bars	Length (Ft. - In.)	Weight (Lbs.)
501d	10	2'-9"	
#5	10	30'-6"	
#5	31	4'-3"	
#5	32	3'-9"	
TOTAL #5 BARS			609
401d	31	3'-1"	
402d	12	2'-5"	
403d	15	4'-7"	
TOTAL #4 BARS			129
TOTAL EPOXY COATED REINF.			739
CONCRETE			
CLASS "A" IN SUBSTRUCTURE			7.8 CYS
MISCELLANEOUS			
SURFACE SEAL			255 SFT
FIELD DRILLED HOLES IN CONCRETE			31 EACH

NOTES

- Where new work is fitted to old work, the Contractor shall check all dimensions and conditions in the field, report all errors or discrepancies to the Engineer and assume responsibility for their correctness and the fit of the new part to the old.
- Intentionally Roughen Existing Concrete 1/4" where it meets new concrete.
- For Reinforcing Bar Notes, see Standard Drawing E703-BRST-01.
- All reinforcing steel to be epoxy coated.
- Field drilled holes in concrete shall extend to a depth required to embed a #5 bar 6" minimum with an approved anchor system having a minimum pullout equal to 18,600 Lbs. Existing Pier Cap Reinforcing shall not be cut during installation of anchors.
- For Elastomeric Bearing Pad Details, see sheet 21.
- Surface Seal the top and vertical surfaces of pier cap.
- Install embedded galvanize anodes (EGA) on alternating reinforcing bars at interface of new concrete to old in new beam seat construction. Install EGAs on exposed reinforcing within locations of pier patches as directed by the engineer.

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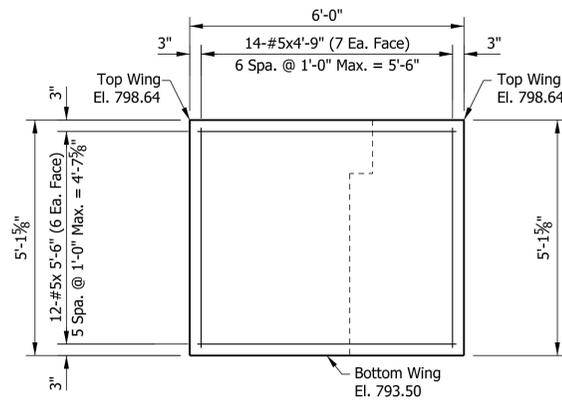


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DESIGNED: NRT	DRAWN: TMT	
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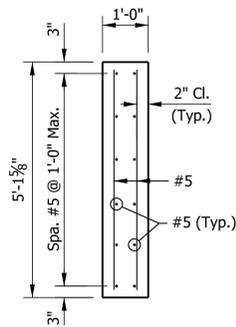
INDIANA
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PIER NO. 3 DETAILS

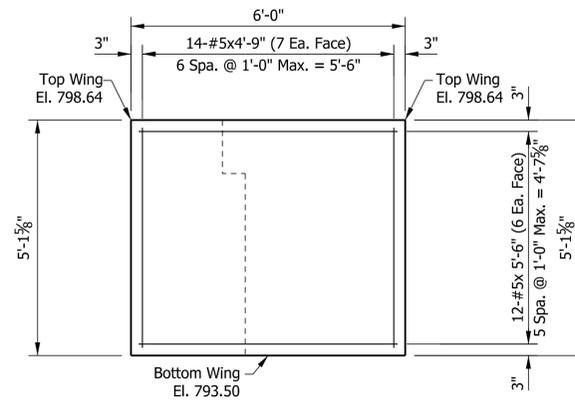
SCALE AS NOTED	BRIDGE FILE (421)39-12-01792 C
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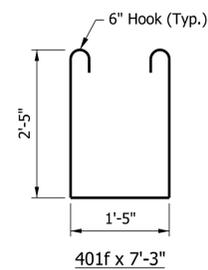
ELEVATION @ WING "D"
Scale: 1/2" = 1'-0"



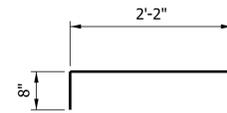
TYPICAL WINGWALL SECTION
Scale: 1/2" = 1'-0"



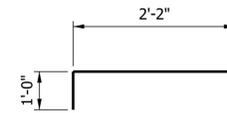
ELEVATION @ WING "C"
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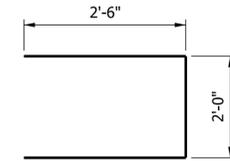
401f x 7'-3"



402f x 3'-6"



403f x 4'-2"



404f x 7'-0"

NOTES

- Where new work is fitted to old work, the Contractor shall check all dimensions and conditions in the field, report all errors or discrepancies to the Engineer and assume responsibility for their correctness and the fit of the new part to the old.
- For Reinforcing Bar Notes, see Std. Dwg. E 703-BRST-01.
- All reinforcing bars shall be Epoxy Coated.
- Epoxy coat existing reinforcing that is incorporated into new concrete.
- Surface Seal all exposed surfaces of wings.

BILL OF MATERIALS ABUTMENT NO. 4			
EPOXY COATED REINFORCING STEEL			
Size & Mark	Number of Bars	Length (Ft. - In.)	Weight (Lbs.)
#8	12	30'-9"	
TOTAL #8 BARS			985
#7	6	30'-9"	
TOTAL #7 BARS			377
#5	24	5'-6"	
#5	28	4'-9"	
TOTAL #5 BARS			276
401f	66	7'-3"	
402f	33	3'-6"	
403f	14	4'-2"	
404f	6	7'-0"	
TOTAL #4 BARS			464
TOTAL EPOXY COATED REINF.			2,103
CONCRETE			
CLASS "A" IN SUBSTRUCTURE			10.5 CYS
MISCELLANEOUS			
AGG. FOR END BENT BACKFILL			10 CYS
GEOTEXTILE FOR UNDERDRAIN TYPE 3			30 SYS
PIPE, END BENT DRAIN, 6 IN.			51 LFT

Plot: 2/14/2020 10:31:53 AM By: thornstam Pen: Transportation.tbl

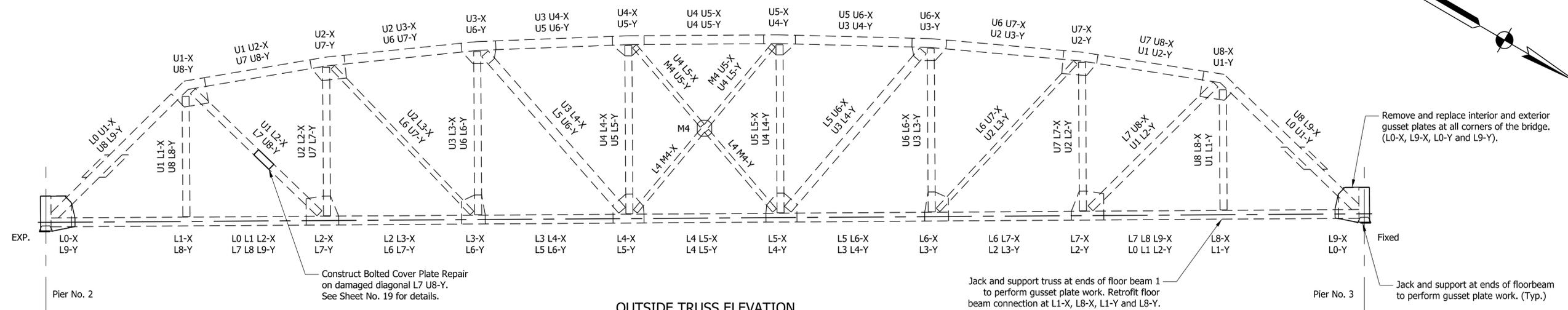
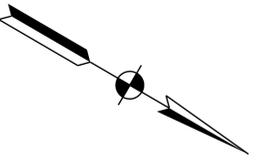


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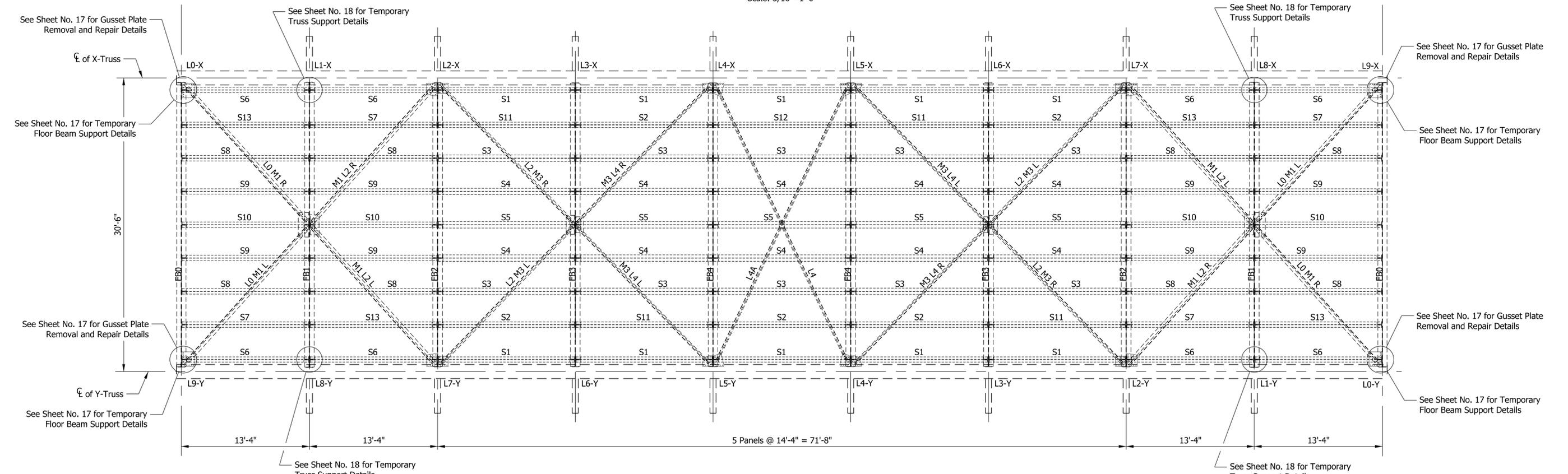
INDIANA
DEPARTMENT OF TRANSPORTATION

ABUTMENT NO. 4 DETAILS

SCALE AS NOTED	BRIDGE FILE (421)39-12-01792 C
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OUTSIDE TRUSS ELEVATION
X-TRUSS - FAR SIDE (DOWNSTREAM SIDE)
Y-TRUSS - NEAR SIDE (UPSTREAM SIDE)
 Scale: 3/16"=1'-0"



PLAN
 Scale: 3/16"=1'-0"

- NOTES**
- For additional Truss details see archived std. superstructure details, drawing std. No. 1532 dated May 26, 1939 and revised Nov. 12, 1940.
 - Replace deteriorated members or portions of members as directed by the Engineer following structural inspection during construction. See Special Provisions.

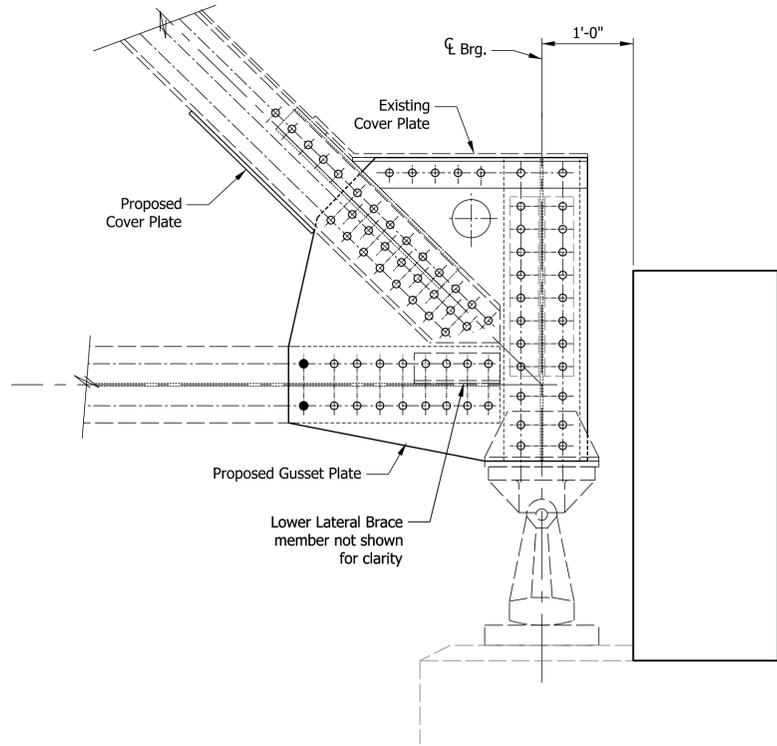
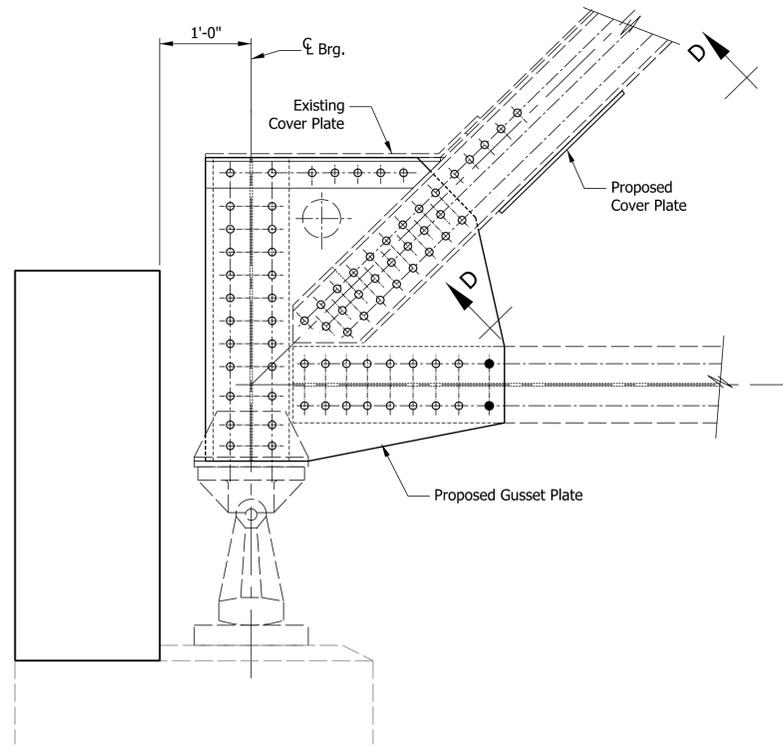
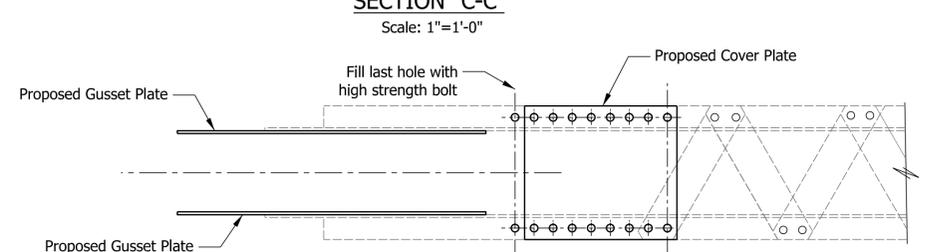
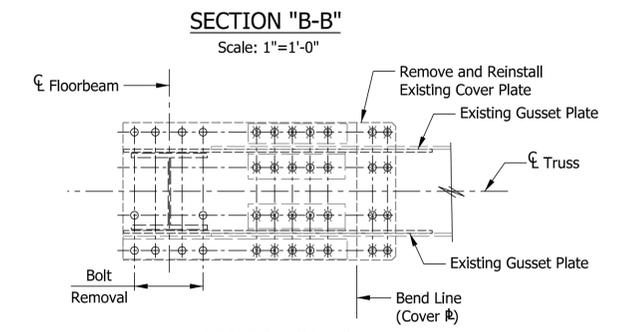
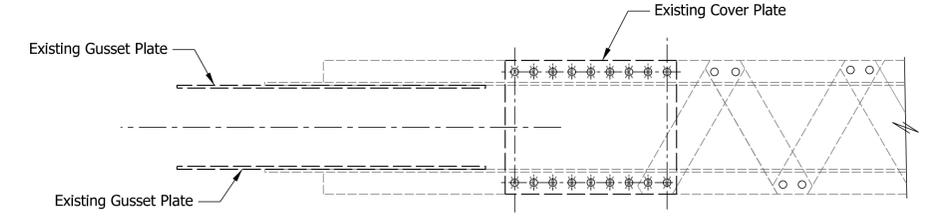
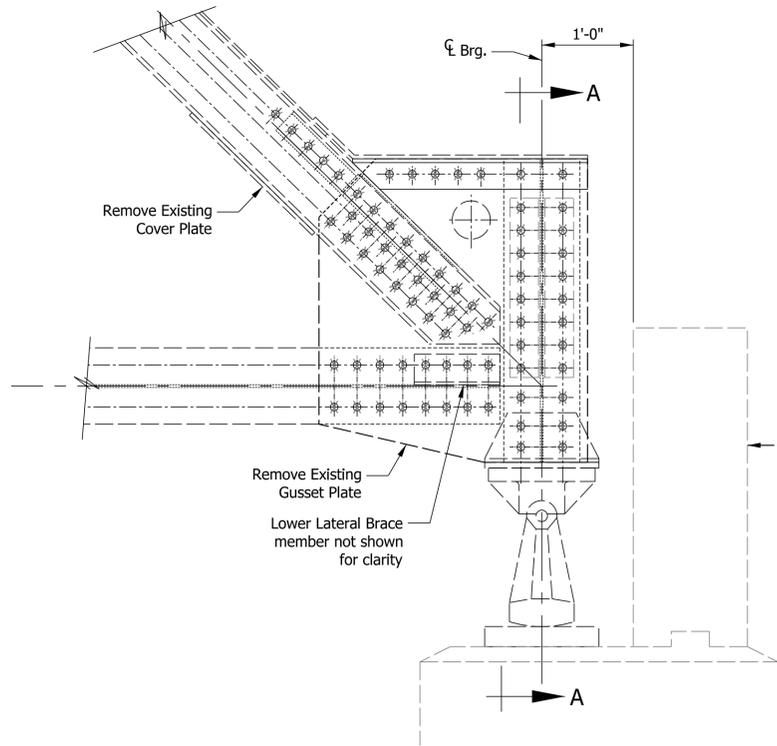
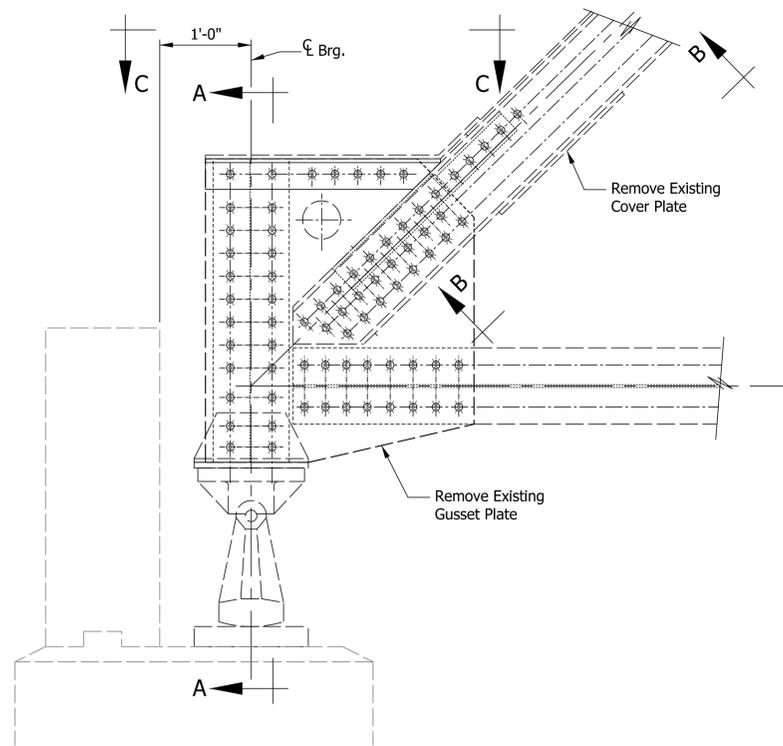
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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
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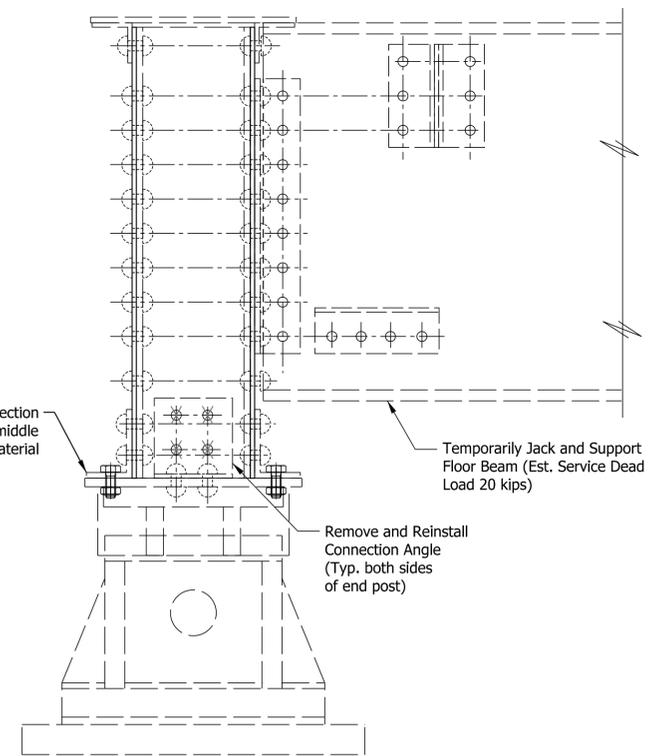
INDIANA DEPARTMENT OF TRANSPORTATION	
STEEL TRUSS DETAILS	

SCALE	BRIDGE FILE
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LEGEND
 ⊗ - Rivet removal
 ● - New field drilled hole

- NOTES:**
- All removed rivets should be replaced with 7/8"Ø round headed bolts. All holes to be 15/16"Ø, unless noted.
 - All new structural steel to be ASTM A709/A709M, Grade 50.
 - Field verify all dimensions.
 - Adequate temporary bracing shall be provided by the contractor as part of the truss repairs, see special provisions.
 - See Sheet No. 18 for Proposed Gusset Plate Details.
 - Members removed but not replaced shall be properly marked and reincorporated into the final connection.



Plot: 2/14/2020 10:32:01 AM By: thomstam Pen: Transportation.tbl

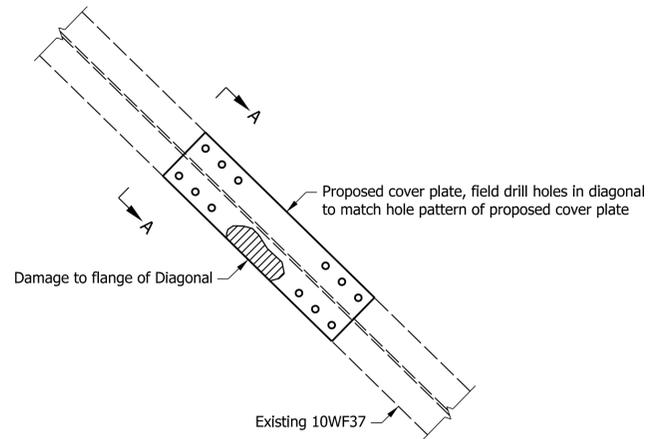


RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
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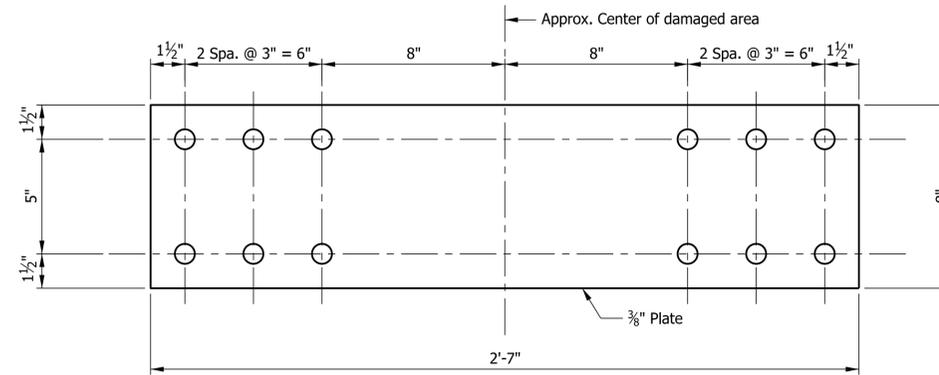
INDIANA
DEPARTMENT OF TRANSPORTATION

GUSSET PLATE REPLACEMENT DETAILS

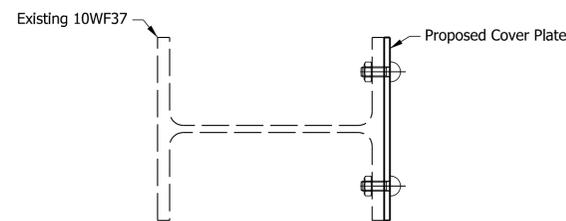
SCALE AS NOTED	BRIDGE FILE (421)39-12-01792 C
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BOLTED COVER PLATE REPAIR (L7 U8-Y)
Scale: 1 1/2" = 1'-0"



PROPOSED COVER PLATE DETAIL
Scale: 3" = 1'-0"



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

NOTES

- All bolts shall be 7/8"Ø round headed bolts. All holes to be 1 5/16"Ø, unless noted.
- All new structural steel to be ASTM A709/A709M, Grade 50.
- Field verify all dimensions.
- Repair or replacement of additional members only required if determined by engineer following a structural inspection during construction. See unique special provisions.

Plot: 2/14/2020 10:32:06 AM By: thornstam Pen: Transportation.tbl

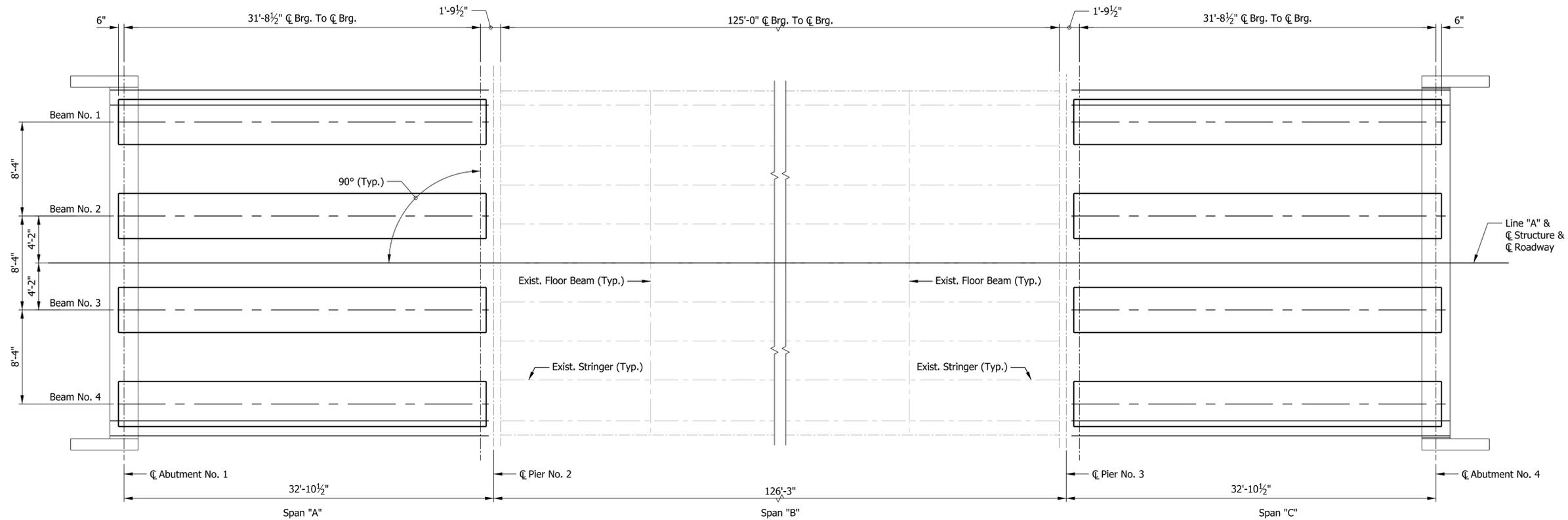


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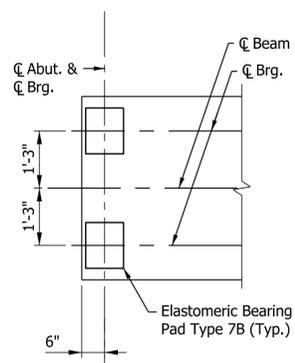
INDIANA
DEPARTMENT OF TRANSPORTATION

COVER PLATE DETAILS

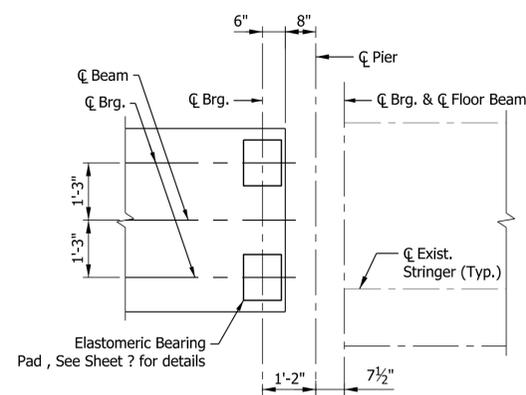
SCALE AS NOTED	BRIDGE FILE (421)39-12-01792 C
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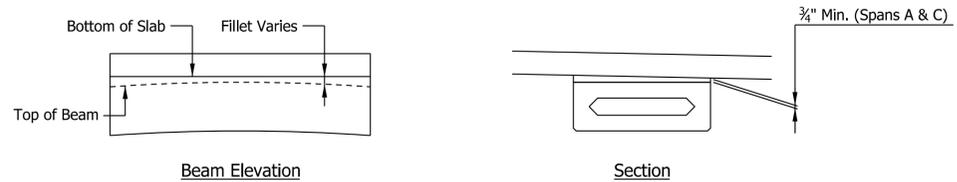
FRAMING PLAN
Scale: 3/16" = 1'-0"



TYPICAL ELASTOMERIC BEARING PAD PLACEMENT AT ABUTMENTS NO. 1 & 4
Scale: 1/2" = 1'-0"



TYPICAL ELASTOMERIC BEARING PAD PLACEMENT AT PIERS NO. 2 & 3
Scale: 1/2" = 1'-0"



BEAM FILLET DETAIL
No Scale

Residual Camber Table	
	Span "A" & "C"
Initial Beam Camber	3/4"
Superimposed Dead Load Deflection	-3/4"
Residual Camber	1/2"

Initial Beam Camber Equals Upward Deflection From Prestressing Force Minus Downward Deflection From Dead Load of the Beam In Inches.

BEAM DESIGN DATA

- Prestressing steel shall be 0.5" diameter uncoated, special low relaxation, seven-wire strand, 270 ksi, with strand area = 0.167 sq.in.
- Initial pull per prestressing strand to be 33.82 kips.
- Concrete strength at release, f'ci = 5,000 psi.
- Concrete strength at 28 days, f'c = 6,000 psi.
- Mild reinforcing steel shall be Grade 60 ksi minimum yield strength.

GENERAL BEAM NOTES

- Beams shall be cast a minimum 30 days prior to pouring the deck.
- Beams are to be lifted and supported at the bearing points during handling, storage, and transportation. Adequate bracing must be provided at all times during storage, transportation and lifting to resist lateral loads.
- Allowance should be made in beam length for elastic shortening and grade.
- For Fabrication Tolerances of Prestressed Beams, see Standard Drawings E 707-BPBF-01 and -04.
- Beams shall be maintained vertically at all times. Suitable restraint shall be provided to prevent the rotation of the beams, particularly the outside beam, from construction load, such as the weight of the concrete deck, finishing machine, forms, etc.
- Top of beams shall be scored transversely at about 3" on center with pointed tool. Maximum depth of scoring should be 1/4".
- The ends of the beams at the End Bents shall be cast so that the end of the beam is vertical when placed in final grade condition.
- Acute angles of box beams shall be chamfered 3" (by Manufacturer).
- Sealer on the outside face of exterior beams to be done by the fabricator in the shop. Do not rub.

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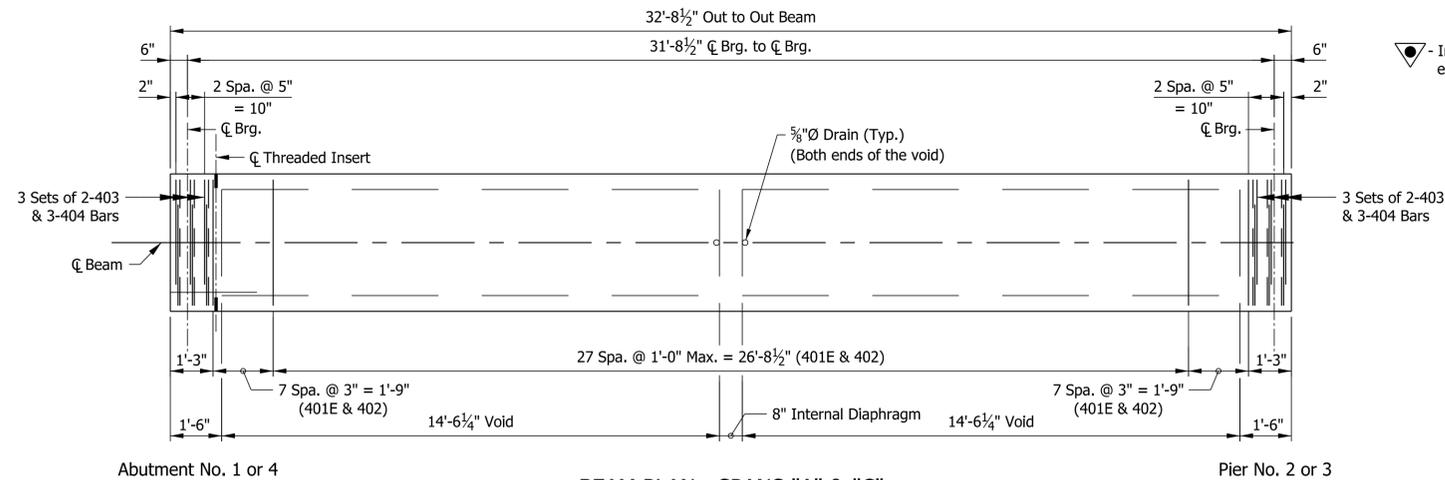


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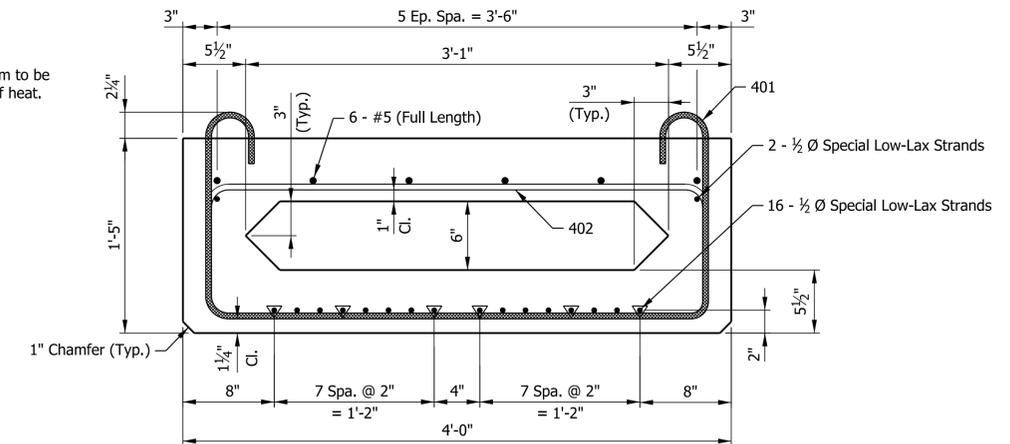
INDIANA
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FRAMING PLAN

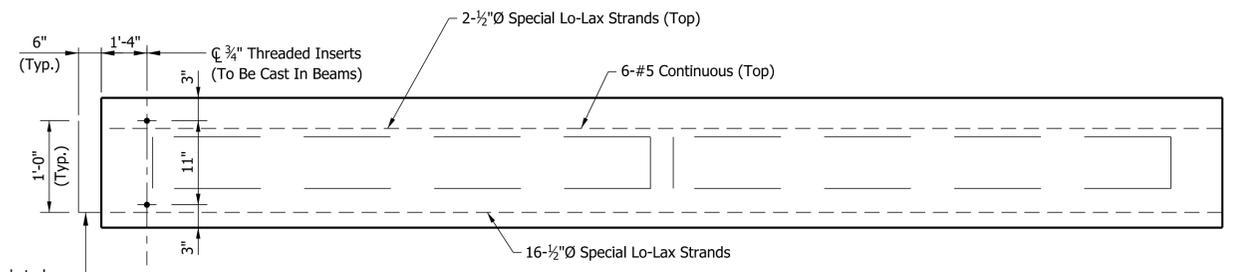
SCALE AS NOTED	BRIDGE FILE (421)39-12-01792 C
	DESIGNATION 1593276
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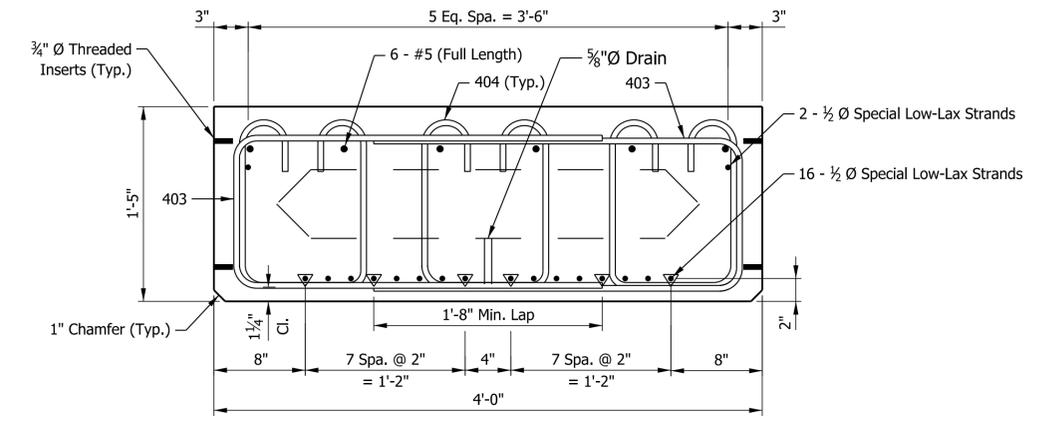
BEAM PLAN - SPANS "A" & "C"
 (Span "A" Shown, Span "C" same by 180° Rotation)
 No Scale



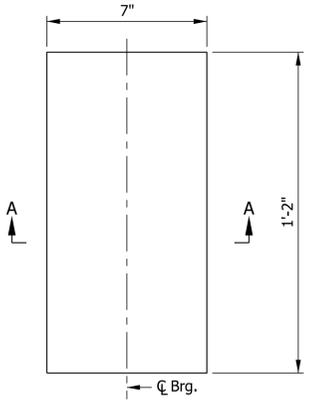
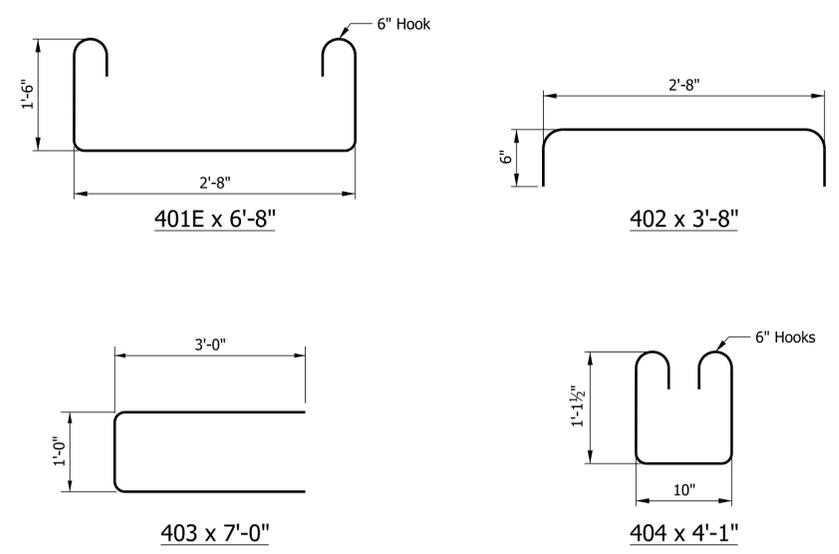
TYPICAL SECTION THRU BOX BEAM
 Scale: 1 1/2" = 1'-0"



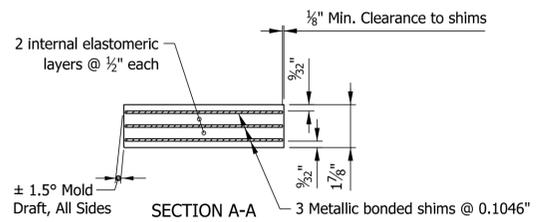
BEAM ELEVATION - SPANS "A" & "C"
 (Span "A" Shown, Span "C" same by 180° Rotation)
 No Scale



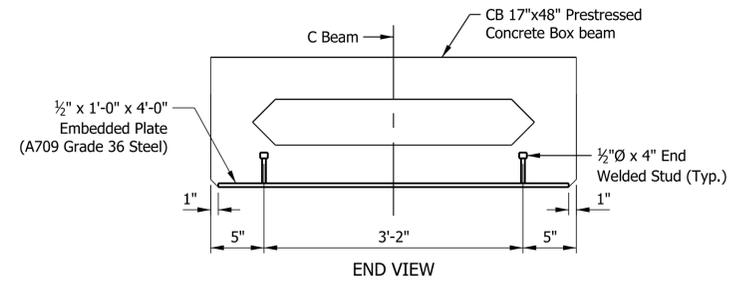
TYPICAL SECTION THRU END OF BOX BEAM
 Scale: 1 1/2" = 1'-0"



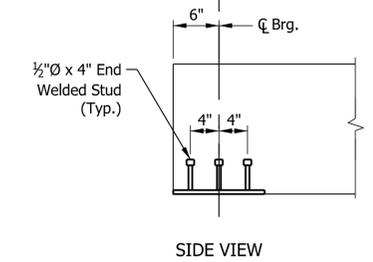
ELASTOMERIC BEARING PAD PLAN



ELASTOMERIC BEARING PAD DETAILS
 Scale: 3" = 1'-0"



END VIEW



EMBEDDED BEARING PLATE DETAILS
 Scale: 1" = 1'-0"

NOTES

1. For General Beam Notes, See Sheet 20.
2. For Framing Plan, See Sheet 20.
3. For Beam Design Data, See Sheet 20.
4. For Reinforcing bar notes, See Standard Drawing E703-BRST-01.
5. Reinforcing bars designated (E) shall be epoxy coated.
6. All mild Reinforcing Steel to be Grade 60.
7. Design Method: AASHTO Method A. Bearing Designed per AASHTO method A with Durometer Hardness 55 (±5).
8. Fabricate the Elastomeric Bearing Pads to the Design and Dimensions shown on the plans.
9. Finish Bearing Surface shall be clean and free of loose material before placing Bearing Pads.
10. Plates and Embedded Bearing Plates shall be Hot Dipped Galvanized in accordance with requirements of A.S.T.M. A123 or A153.

Plot: 2/14/2020 10:32:11 AM By: thomstam Pen: Transportation.tbl

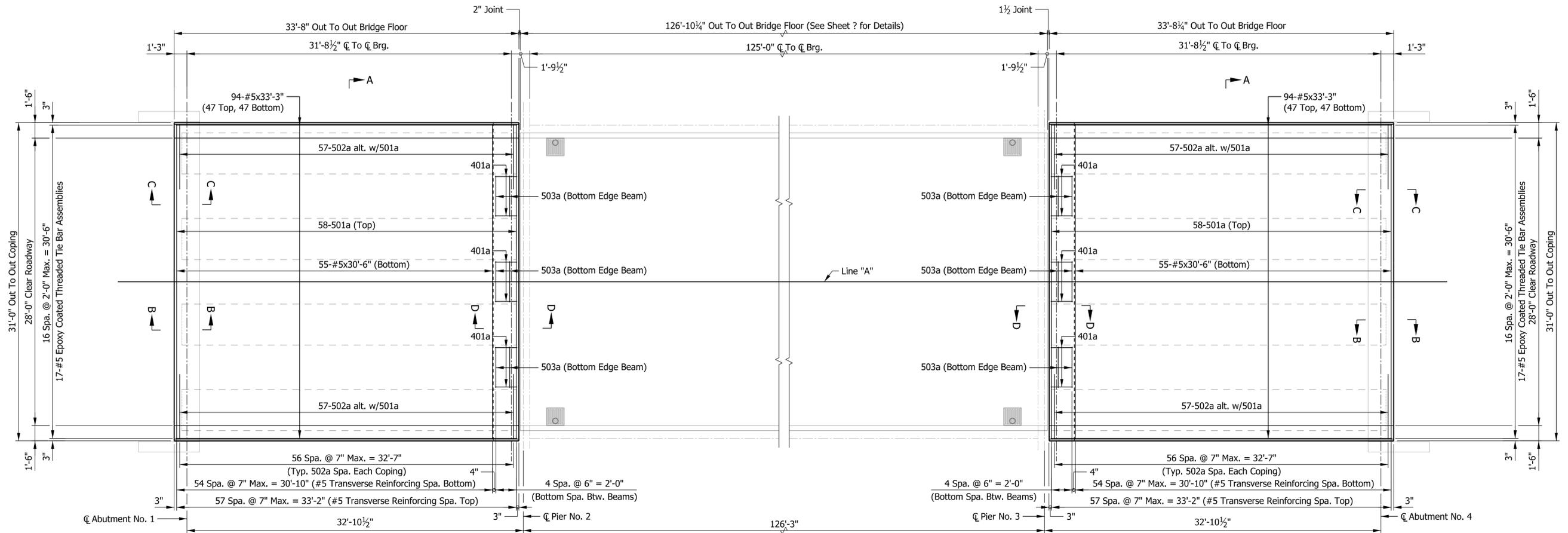


RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: JAS	DRAWN: TMT	
CHECKED: KMP	CHECKED: KMP	

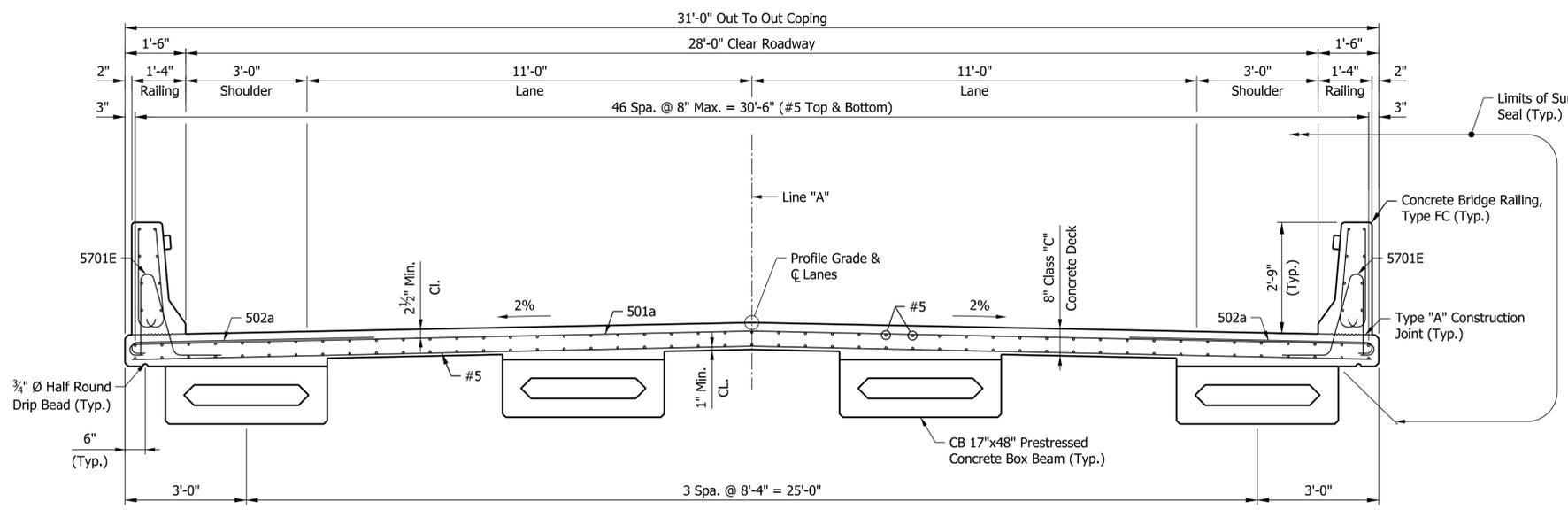
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BEAM DETAILS

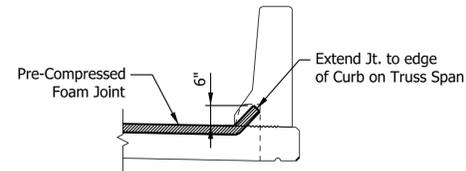
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AS NOTED	(421)39-12-01792 C
	DESIGNATION
	1593276
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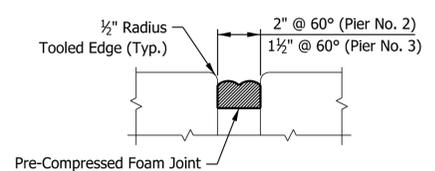
PLAN
Scale: 3/16" = 1'-0"



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



JOINT DETAIL AT RAILING
No Scale



Pre-Compressed Foam Joint
No Scale

NOTES

- All Reinforcing Steel to be Epoxy Coated.
- For Bar Bending Diagrams and Bill of Materials, see sheet 25.
- For Reinforcing Bar Notes and Standard End Hooks, see Standard Drawing E 703-BRST-01.
- The top reinforcing in the deck shall be securely tied down to the deck forms and/or beams to prevent lifting during concrete placement.
- Screed data will be furnished upon request.
- Suitable restraint shall be provided to prevent the rotation of the beams, particularly the outside beam, from construction loads, such as the weight of the concrete deck, finishing machine, forms, etc.
- For Sections B-B and C-C see Sheet No. 24.
- For Sections D-D see Sheet No. 25.
- For section thru railing and additional railing details, see Sheet No. 27.
- For Edge Beam reinforcement details, see Sheet No. 25.
- 5701E bar extending into the railing shall be placed and cast in deck, but billed with railings.
- See Unique special provisions for material and installation of Pre-Compressed Foam Joint.
- Expansion Length Pier No. 2:
Span 1 = 16'-0"
Span 2 = 125'-0"
- Expansion Length Pier No. 3:
Span 2 = 0'-0"
Span 3 = 16'-0"

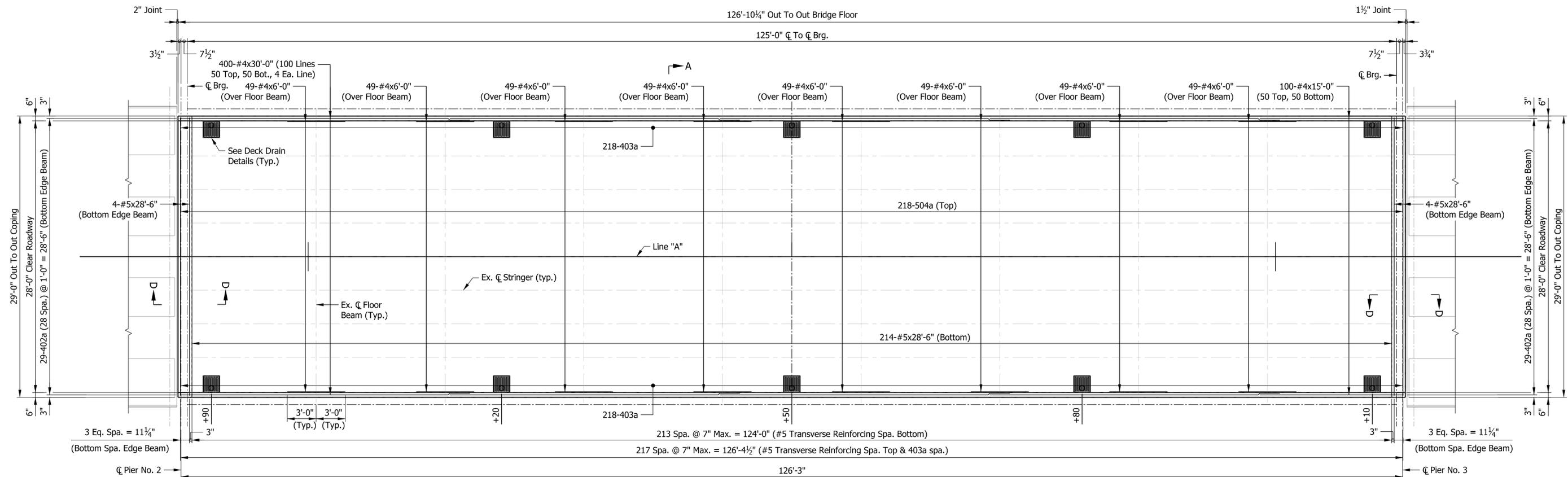
Plot: 2/14/2020 10:32:13 AM By: thornstam Pen: Transportation.tbl



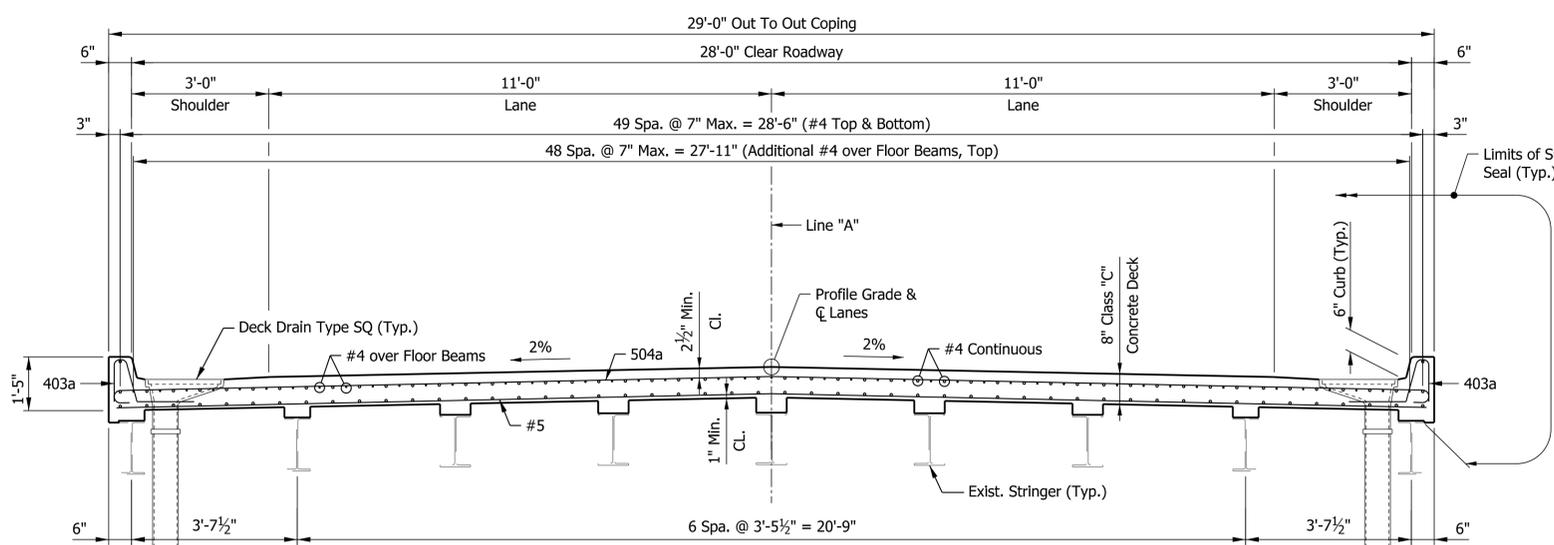
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
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SUPERSTRUCTURE DETAILS	

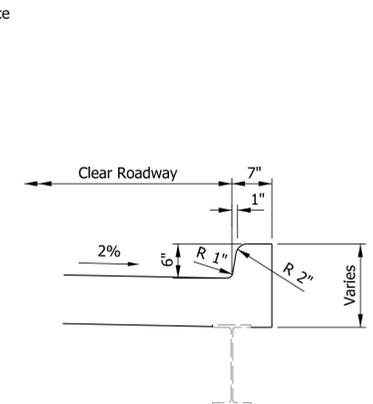
SCALE	BRIDGE FILE
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PLAN
Scale: 3/16" = 1'-0"



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



CURB DETAIL
No Scale

NOTES

1. All Reinforcing Steel to be Epoxy Coated.
2. For Bar Bending Diagrams and Bill of Materials, see sheet 25.
3. For Reinforcing Bar Notes and Standard End Hooks, see Standard Drawing E 703-BRST-01.
4. The top reinforcing in the deck shall be securely tied down to the deck forms and/or beams to prevent lifting during concrete placement.
5. Screed data will be furnished upon request.
6. Suitable restraint shall be provided to prevent the rotation of the beams, particularly the outside beam, from construction loads, such as the weight of the concrete deck, finishing machine, forms, etc.
7. For Sections D-D see Sheet No. 25.
8. For deck drainage and collection system details, see sheet 26.

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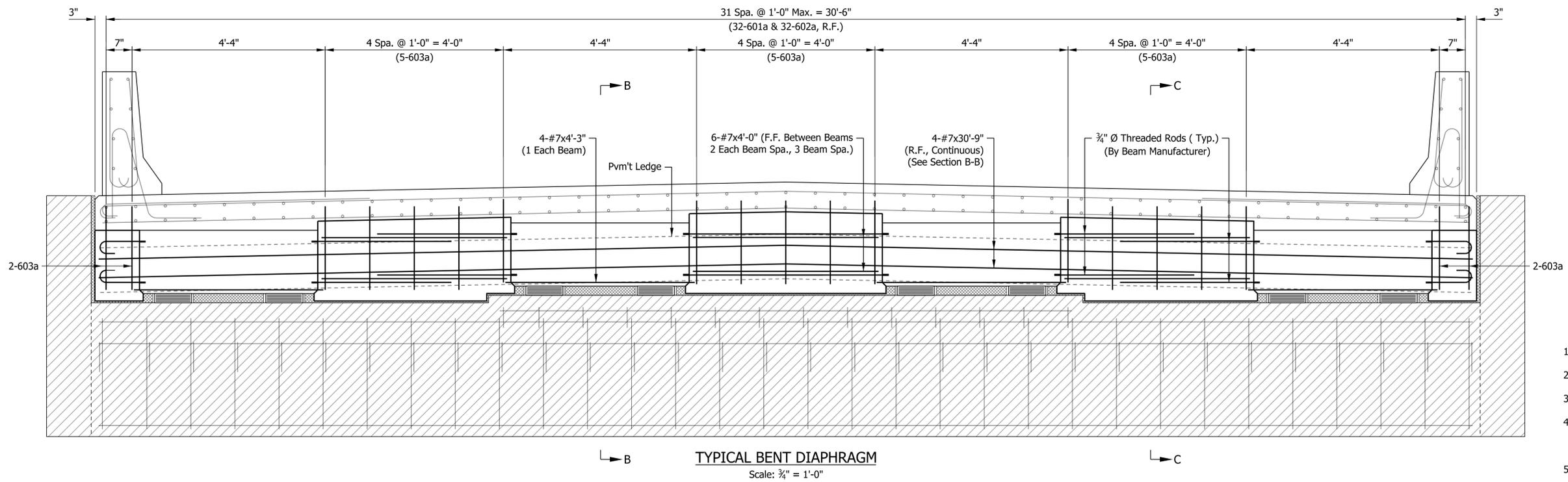
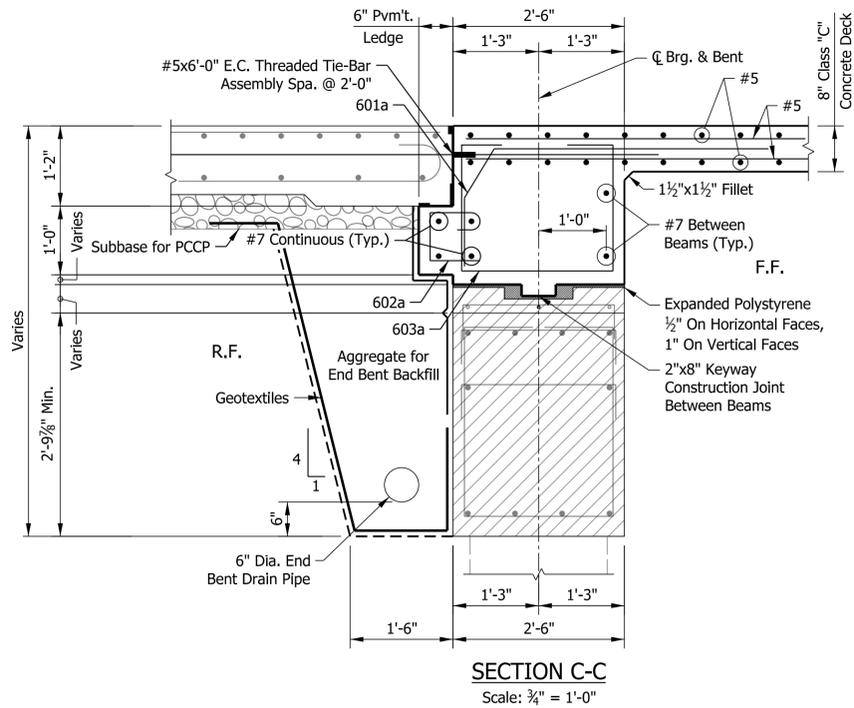
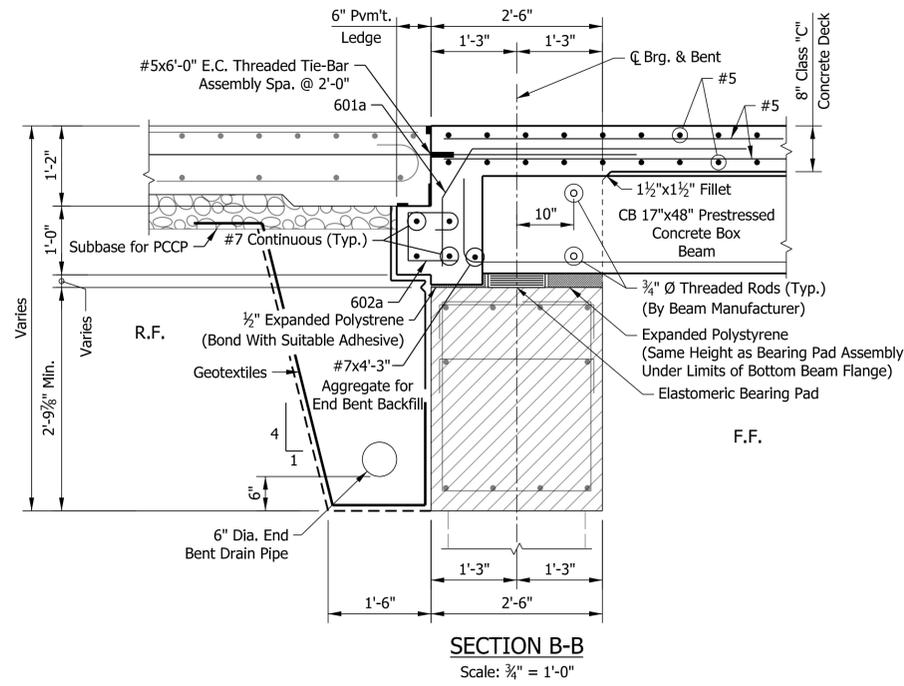


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SUPERSTRUCTURE DETAILS

SCALE AS NOTED	BRIDGE FILE (421)39-12-01792 C
	DESIGNATION 1593276
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NOTES

1. For Reinforcing Bar Notes, see Standard Drawing E703-BRST-01.
2. All reinforcing steel to be epoxy coated.
3. Screed data will be furnished upon request.
4. Suitable restraint shall be provided to prevent the rotation of the beams, particularly the outside beam, from construction loads, such as the weight of the concrete deck, finishing machine, forms, etc.
5. Hatched area to be poured with substructure.
6. For additional details and Bill Of Materials, see Sheet No. 25.
7. For section thru railing and additional railing details, see Sheet No. 27.

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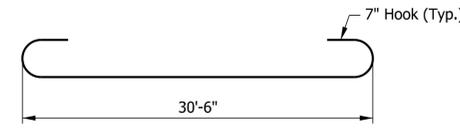
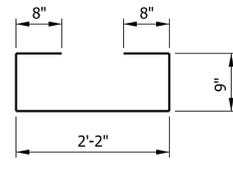
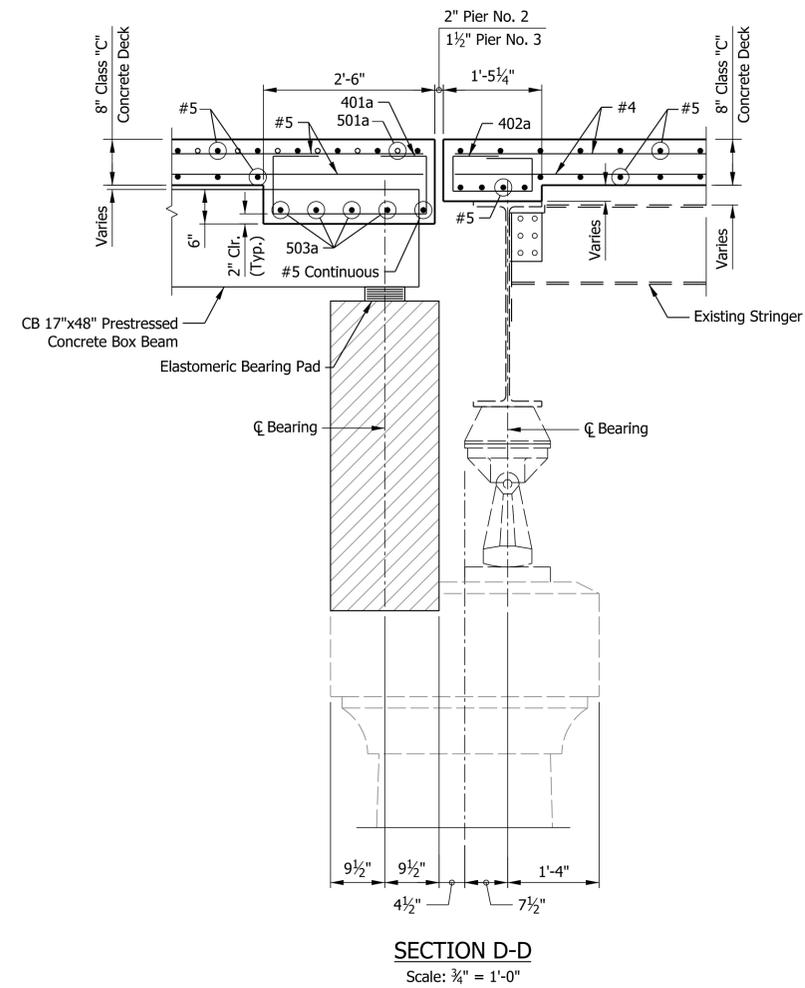


RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: JAS	DRAWN: TMT	
CHECKED: KMP	CHECKED: KMP	

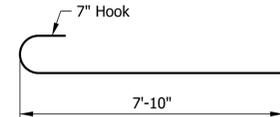
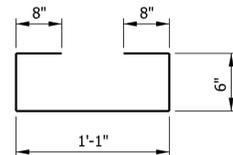
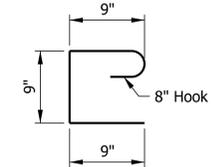
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SUPERSTRUCTURE DETAILS

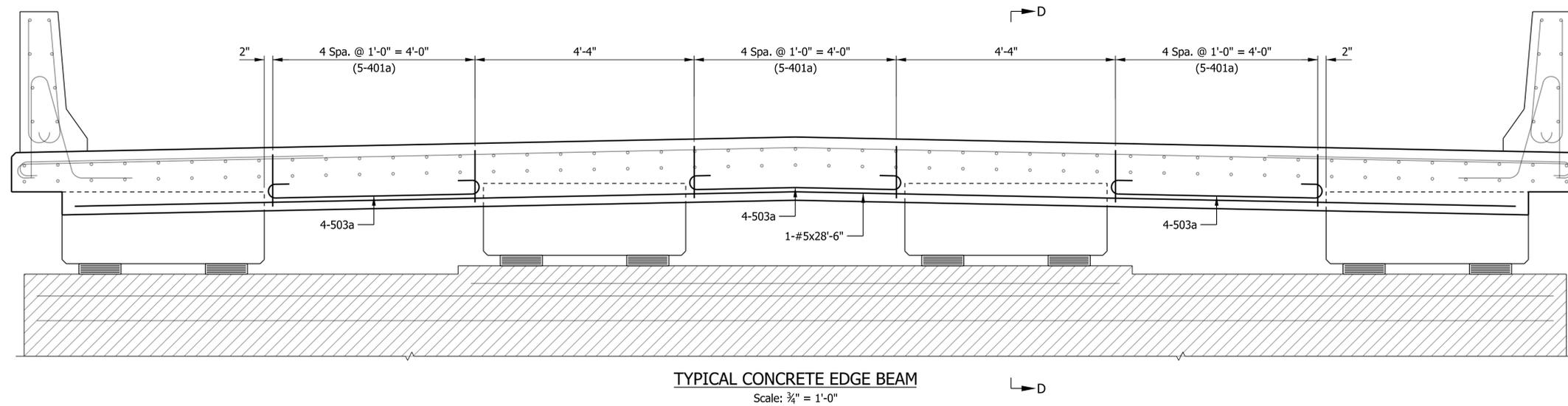
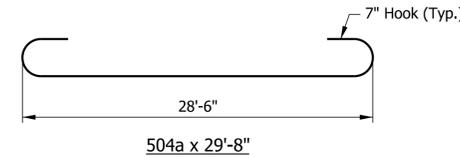
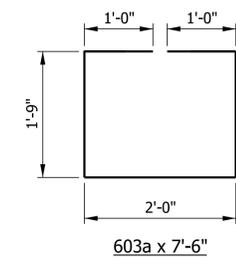
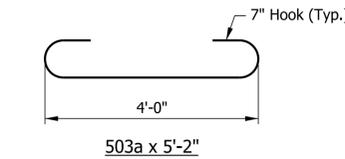
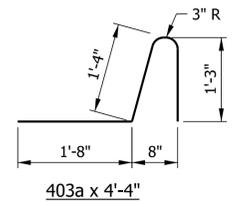
SCALE AS NOTED	BRIDGE FILE (421)39-12-01792 C
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601a x 7'-11"



602a x 2'-11"



BILL OF MATERIALS SUPERSTRUCTURE			
PLAIN REINFORCING STEEL			
Size & Mark	Number of Bars	Length (Ft. - In.)	Weight (Lbs.)
#7	8	30'-9"	
#7	8	4'-3"	
#7	12	4'-0"	
TOTAL #7 BARS			670
601a	64	7'-11"	
602a	64	2'-11"	
603a	38	7'-6"	
TOTAL #6 BARS			1,469
501a	116	31'-8"	
502a	228	8'-5"	
503a	24	5'-2"	
504a	218	29'-8"	
#5	188	33'-3"	
#5	110	30'-6"	
#5	224	28'-6"	
TOTAL #5 BARS			29,385
401a	30	5'-0"	
402a	58	3'-5"	
403a	436	4'-4"	
#4	400	30'-0"	
#4	100	15'-0"	
#4	392	6'-0"	
TOTAL #4 BARS			12,083
TOTAL EPOXY COATED REINF.			41,468
CONCRETE			
CLASS "C" IN SUPERSTRUCTURE			175.4 CYS
MISCELLANEOUS			
SURFACE SEAL			6390 SFT
PRE-COMPRESSED FOAM JOINT			62 LFT
X-STD. ROADWAY DRAIN TYPE SQ WITH GRATE A 192 LBS. EACH			10 EACH
E.C. THREADED TIE-BAR ASSEMBLIES			34 EACH

NOTES

- For Reinforcing Bar Notes, see Standard Drawing E703-BRST-01.
- All reinforcing steel to be epoxy coated.
- Screed data will be furnished upon request.
- Suitable restraint shall be provided to prevent the rotation of the beams, particularly the outside beam, from construction loads, such as the weight of the concrete deck, finishing machine, forms, etc.
- Hatched area to be poured with substructure.
- For section thru railing and additional railing details, see Sheet No. 27.

Plot: 2/14/2020 10:32:21 AM By: thornstam Pen: Transportation.tbl

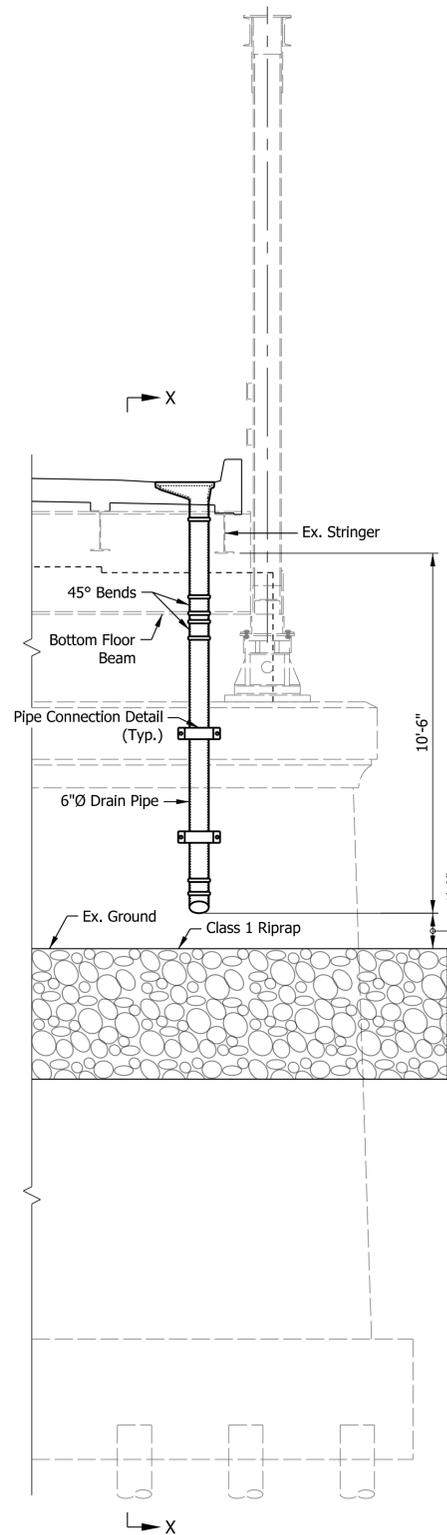


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DESIGNED: JAS	DRAWN: TMT	
CHECKED: TDJ	CHECKED: KMP	

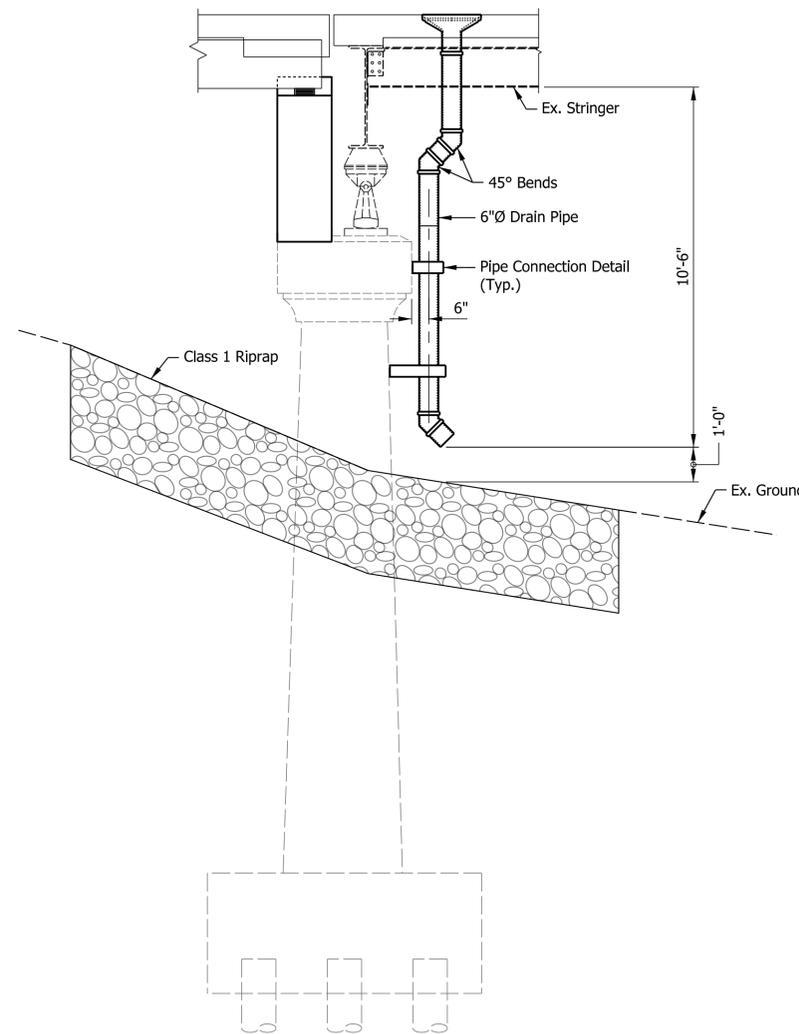
INDIANA
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS

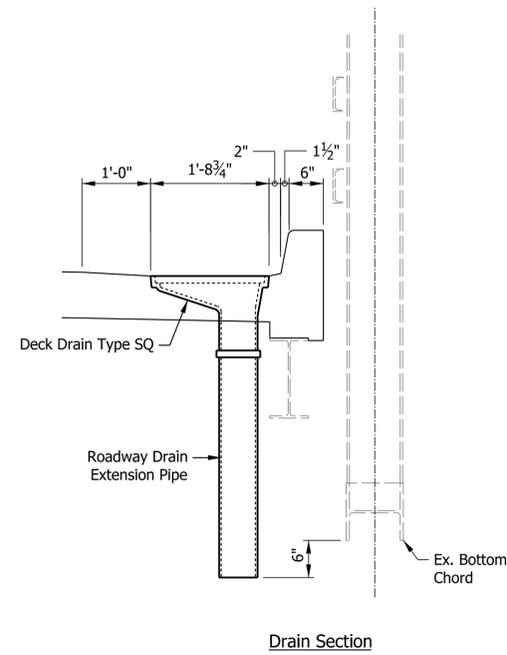
SCALE AS NOTED	BRIDGE FILE (421)39-12-01792 C
	DESIGNATION 1593276
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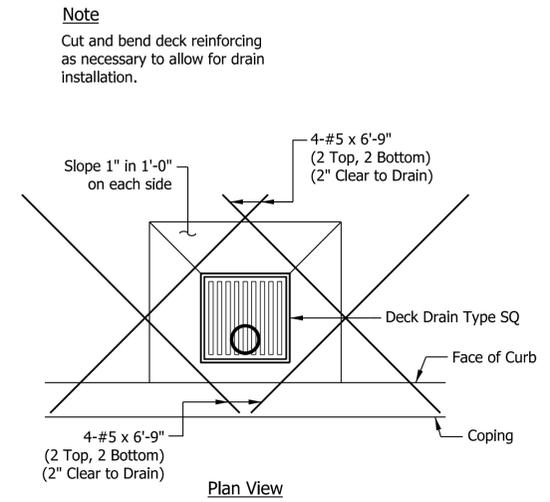
ELEVATION - PIER NO. 2 & 3
Scale: 3/8" = 1'-0"



SECTION X-X
Scale: 3/8" = 1'-0"



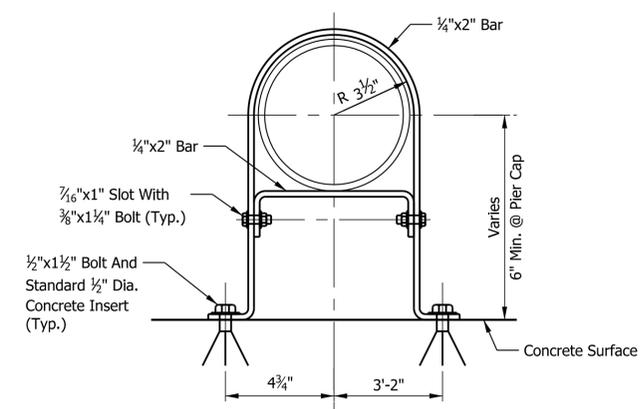
Drain Section



Plan View

Note
Cut and bend deck reinforcing as necessary to allow for drain installation.

DECK DRAIN DETAILS
Scale: 3/4" = 1'-0"



PIPE CONNECTION DETAIL
No Scale

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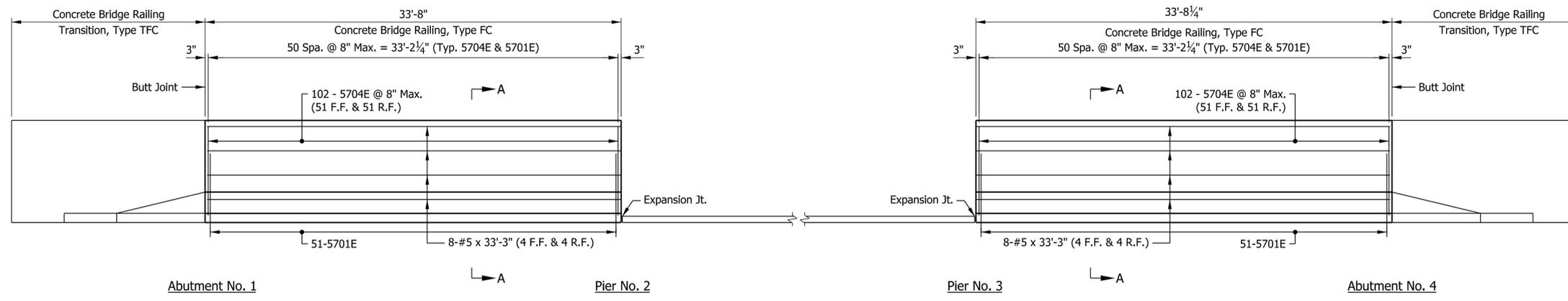
INDIANA
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DRAINAGE DETAILS

SCALE AS NOTED	BRIDGE FILE (421)39-12-01792 C
	DESIGNATION 1593276
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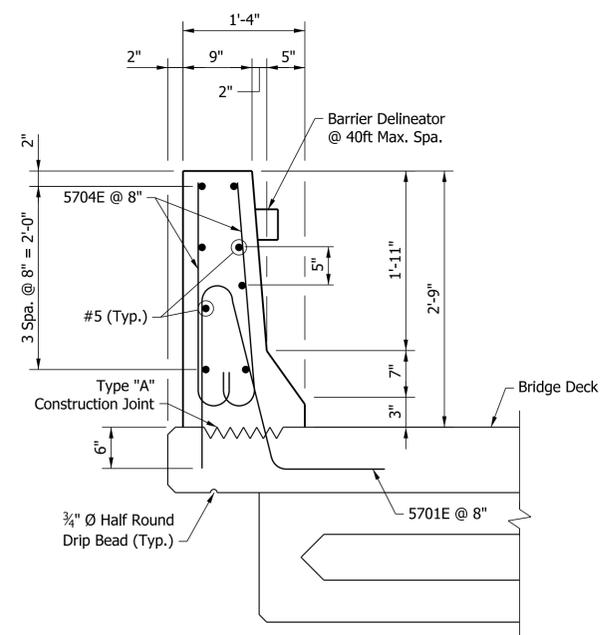
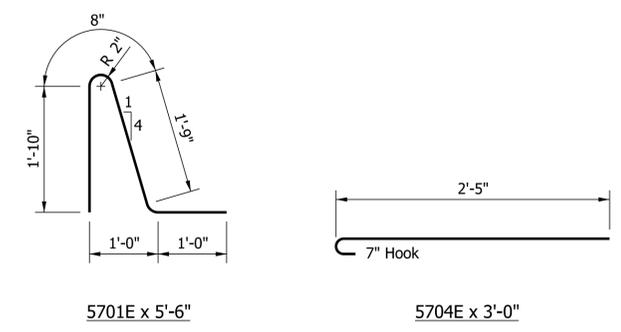
BILL OF MATERIALS			
CONCRETE BRIDGE RAILING			
EPOXY COATED REINFORCING STEEL			
Size & Mark	Number of Bars	Length (Ft. - In.)	Weight (Lbs.)
5701E	102	5'-6"	
5704E	204	3'-0"	
#5	16	33'-3"	
TOTAL #5 BARS			1,778
CONCRETE BRIDGE RAILING TRANSITION, TYPE TFC (2 @ 551)			1102
TOTAL EPOXY COATED REINF.			2,880
CONCRETE			
RAILING, CONCRETE FC			68 LFT
CONCRETE BRIDGE RAILING TRANSITION, TYPE TFC			2 EACH
MISCELLANEOUS			
SURFACE SEAL			700 SFT
BARRIER DELINEATORS			6 EACH

2 REQUIRED



CONCRETE RAILING ELEVATION

South Coping Shown, North Coping Same
No Scale



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

NOTES

- For Bridge Railing, Type FC details, see Std. Dwg. E 706-BRSF-02.
- For TFC Transition details, see Std. Dwg. E 706-TTFC-01 through E 706-TTFC-03.
- All reinforcing bars shall be Epoxy Coated.

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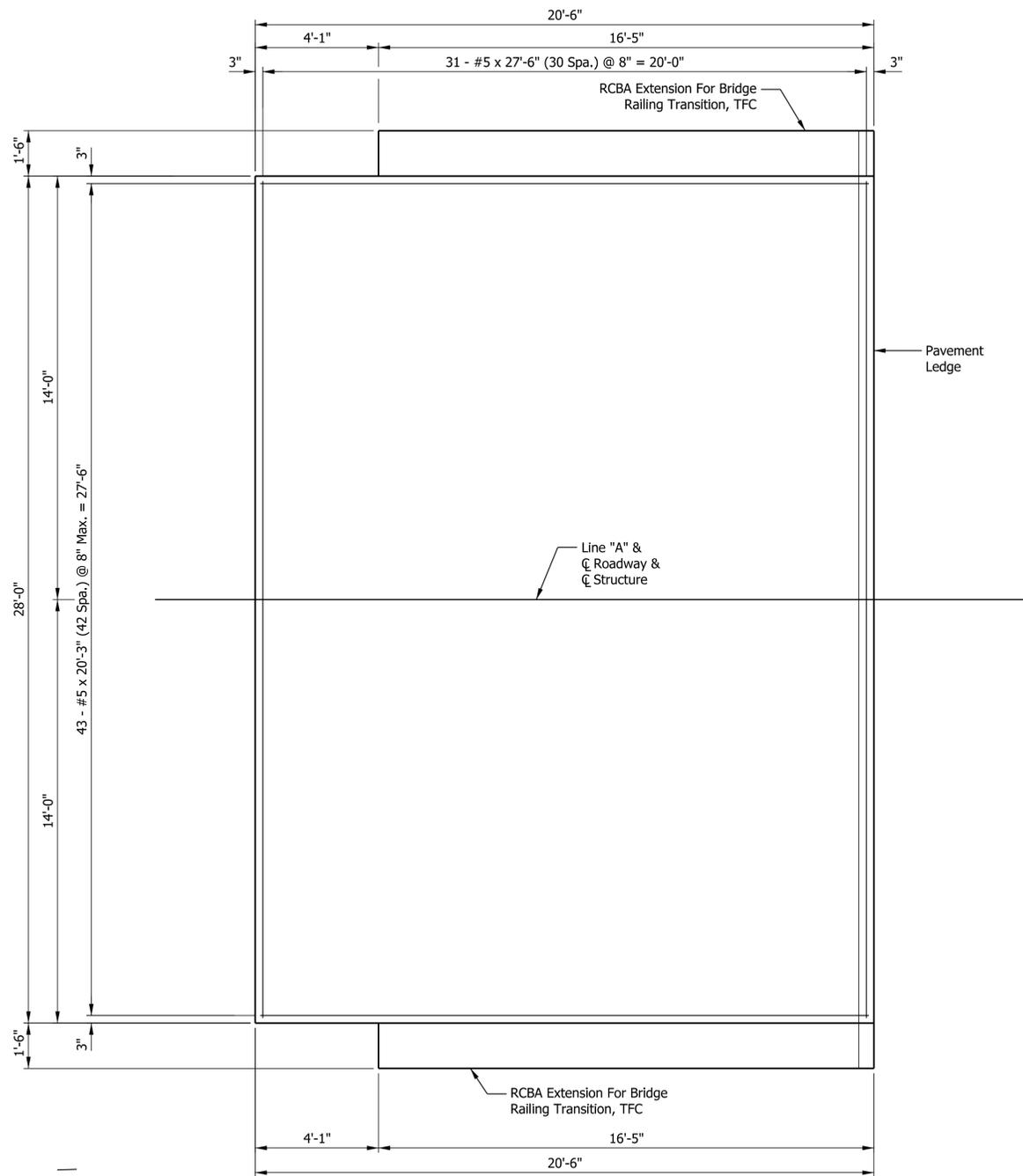
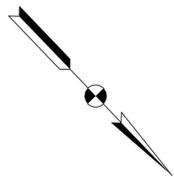


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CHECKED: KMP	CHECKED: JAS	

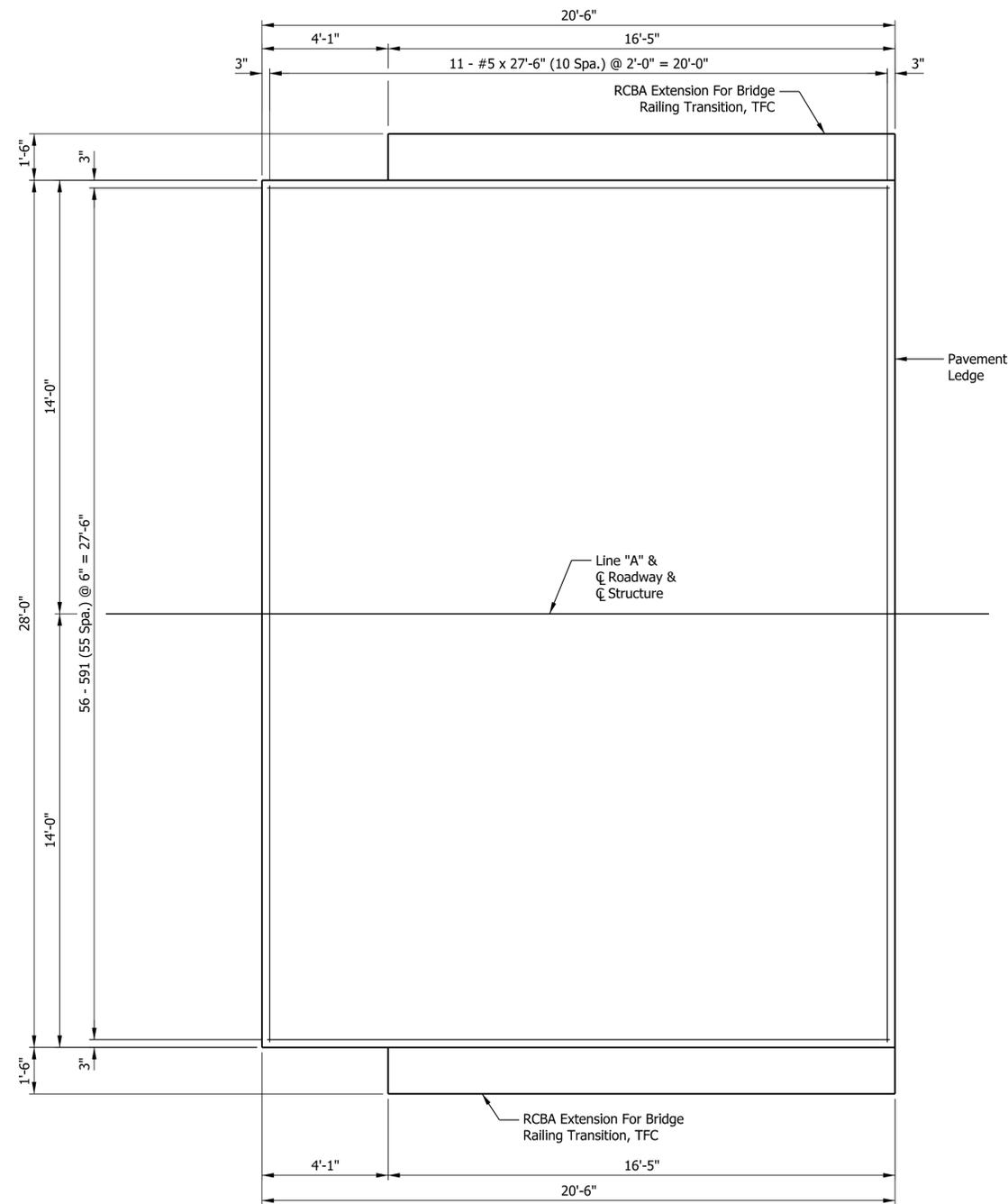
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RAILING DETAILS

SCALE AS NOTED	BRIDGE FILE (421)39-12-01792 C
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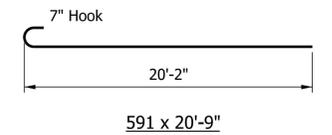
PLAN @ ABUTMENT NO. 1
 Showing Top Reinforcement
 Plan @ Abutment No. 4 Same by 180° Rotation
 Scale: 3/8" = 1'-0"



PLAN @ ABUTMENT NO. 1
 Showing Bottom Reinforcement
 Plan @ Abutment No. 4 Same by 180° Rotation
 Scale: 3/8" = 1'-0"

BILL OF MATERIALS			
R.C. BR. APPR. BENT NO. 1			
EPOXY COATED REINFORCING STEEL			
Size & Mark	Number of Bars	Length (Ft. - In.)	Weight (Lbs.)
#5	56	20'-2"	
#5	42	27'-6"	
#5	43	20'-3"	
TOTAL #5 BARS (RCBA)			3,291
CONCRETE BRIDGE APPROACH EXTENSION (2 @ 269)			538
CONCRETE BRIDGE RAILING TRANSITION, TYPE TFC (2 @ 551)			1102
TOTAL EPOXY COATED REINF.			4,931
CONCRETE			
R.C. BRIDGE APPROACH, 12 IN			69.3 SYS
CONC. BR. RAILING TRANS., TYPE TFC			2 EACH
MISCELLANEOUS			
SURFACE SEAL			595 SFT
SUBBASE FOR PCCP			18 CYS
GEOTEXTILE FOR SUBGRADE TYPE 2B			69.3 SYS

R.C. BR. APPR. BENT NO. 4 SAME



NOTES:

- For reinforcing bar notes, see Standard Drawing E 703-BRST-01.
- For TFC Transition details, see Standard Drawing E 706-TTFC-01 through E 706-TTFC-03.
- For RCBA Extension for Bridge Railing Transition, Type TFC. See Standard Drawing E 609-TBAE-01.
- For Construction Joint Type I-A see Standard Drawing E 609-BRJT-01.
- All reinforcing bars shall be Epoxy-Coated.
- RCBA's and TFC Transitions shall be surface sealed.
- For section through approach and additional details, see Standard Drawings E 609-RCBA-01 thru E 609-RCBA-03.

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DESIGNED: TMT	DRAWN: TMT	
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APPROACH SLAB DETAILS

SCALE AS NOTED	BRIDGE FILE (421)39-12-01792 C
	DESIGNATION 1593276
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CONTRACT B-42017	PROJECT 1593276

SUMMARY OF BRIDGE QUANTITIES

ITEM	CONCRETE			BARRIER, DELINEATOR	RAILING, CONCRETE, FC	CONCRETE BRIDGE RAILING TRANSITION, TFC	REINFORCEMENT			REINF. CONCRETE BRIDGE APPROACH 12 IN.	SUBBASE FOR PCCP	GEOTEXTILE FOR SUBGRADE TYPE 2B	EXCAVATION, FOUNDATION, UNCLASSIFIED	PRECOMPRESSED FOAM JOIN	PATCHING CONCRETE STRUCTURES	EMBEDDED GALVANIC ANODE	FIELD DRILLED HOLES IN CONCRETE	DRILL HOLES	AGGREGATE FOR END BENT BACKFILL	GEOTEXTILE FOR UNDERDRAIN TYPE 3	PIPE, END BENT DRAIN, 6 IN	X-STD. ROADWAY DRAIN TYPE SQ WITH GRATE A 192 LBS. EACH	STRUCTURAL STEEL *	STRUCTURAL STEEL**	CONCRETE BOX BEAM 17 IN. X 48 IN.	SURFACE SEAL*
	CLASS C	CLASS A	CLASS C				REINF. BARS, EPOXY COATED	REINF. BARS	THREADED TIE BAR ASSEMBLY, EPOXY COATED																	
	SUPERSTR.	SUBSTR.	SUBSTR.				LBS	LBS	EACH																	
SUPERSTRUCTURE	175.4						41468		34				62				28				10	1719	1000	262	6390	
BENT No. 1			10.7				2103					10						10		51						
PIER No. 2		7.9					739							100	39	31					30				255	
PIER No. 3		7.8					739							100	39	31					30				255	
BENT No. 4			10.5				2103					10						10		51						
APPROACHES							9862					138.6	36	138.6											1190	
CONCRETE BRIDGE RAILING				8	135	4	5760																		1400	
TOTALS	175.4	15.7	21.2	8	135	4	62774	0	34	138.6	36	138.6	20	62	200	78	62	28	20	60	102	10	1719	1000	262	9490

* Estimated quantity, to be paid for as "LSUM"
** Estimated quantity, work to be constructed at the direction of the Engineer, see Special Provisions

STRUCTURAL STEEL BILL OF MATERIALS

Member	Member Piece	Locations					Total No.	Width (in)	Thickne ss (in)	Height (in)	Weight (lb)	Total Weight (lb)
		L0-X	L0-Y	L9-X	L9-Y	L7U8-Y						
Gusset Plate	Gus PL 39 1/4" x 7/16" x 3' 3 3/4"	2	2	2	2		8	39.25	0.4375	39.75	193.6	1548
Cover Plate	PL 17" x 3/8" x 1' 8"	1	1	1	1		4	17	0.375	20	36.2	145
Cover Plate	PL 8" x 3/8" x 2' 7"					1	1	8	0.375	31	26.4	26
	Total											1719

RIVET REMOVAL SUMMARY

Location	Member Piece	No.
L0-X (SW)	Outside Gusset Plate	75
	Inside Gusset Plate	75
	L0 U1-X Cover Plate	18
	Top Cover Plate	28
	End Post	4
	Subtotal	200
L0-Y (NE)	Outside Gusset Plate	75
	Inside Gusset Plate	75
	L0 U1-Y Cover Plate	18
	Top Cover Plate	28
	End Post	4
	Subtotal	200
L9-X (NW)	Outside Gusset Plate	75
	Inside Gusset Plate	75
	U8 L9-X Cover Plate	18
	Top Cover Plate	28
	End Post	4
	Subtotal	200
L9-Y (SE)	Outside Gusset Plate	75
	Inside Gusset Plate	75
	U8 L9-Y Cover Plate	18
	Top Cover Plate	28
	End Post	4
	Subtotal	200
Total		800

BOLT REMOVAL SUMMARY

Location	Member Piece	No.
L0-X (SW)	Top Cover Plate	10
	Total	10
L0-Y (NE)	Top Cover Plate	10
	Total	10
L9-X (NW)	Top Cover Plate	10
	Total	10
L9-Y (SE)	Top Cover Plate	10
	Total	10
Total		40

DRILL HOLE SUMMARY

Location	Member Piece	No.
L0-X (SW)	L0 L1 L2-X	4
	Total	4
L0-Y (NE)	L0 L1 L2-Y	4
	Total	4
L9-X (NW)	L7 L8 L9-X	4
	Total	4
L9-Y (SE)	L7 L8 L9-Y	4
	Total	4
L7 U8-Y	L7 U8-Y	12
	Total	12
Total		28

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RECOMMENDED FOR APPROVAL _____
DESIGN ENGINEER DATE _____

DESIGNED: NRT DRAWN: TMT
CHECKED: KMP CHECKED: NRT

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BRIDGE SUMMARY

SCALE	BRIDGE FILE
NONE	(421)39-12-01792 C
	DESIGNATION
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