STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
NOBLE 33	COMPOSITE PRESTRESSED CONCRETE SPREAD BOX BEAMS	1 SPAN: 43'-0" SKEW: NONE	CROFT DITCH	12+00.00 LINE "A"

NOBLE COUNTY BOARD OF COMMISSIONERS

GARY LEATHERMAN, PRESIDENT, DISTRICT 2

ANITA HESS, VICE PRESIDENT, DISTRICT 3

GARY TIMMERMAN, COMMISSIONER, DISTRICT 1

ATTEST: DATE: 3-10-25

MICHELLE MAWHORTER, COUNTY AUDITOR
RECOMMENDED FOR APPROVAL

APPROVED:

ZACHARY S. SMITH, P.E.
COUNTY ENGINEER

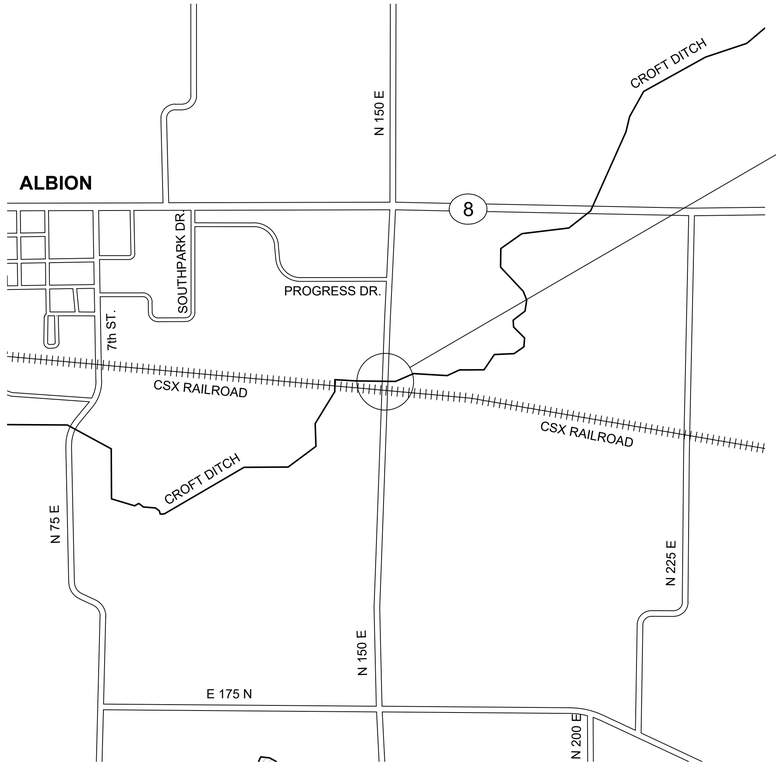
NOBLE COUNTY

BRIDGE PLANS

FOR SPANS OVER 20 FEET

BRIDGE NO. 33
COUNTY ROAD 150 E OVER CROFT DITCH

BRIDGE REPLACEMENT ON CR150E OVER CROFT DITCH,
LOCATED APPROXIMATELY 0.4 MILES SOUTH OF SR 8, 1.5 MILES EAST OF SR 9
IN SECTION 20, TOWNSHIP 34 NORTH, RANGE 10 EAST
JEFFERSON TOWNSHIP, NOBLE COUNTY, INDIANA

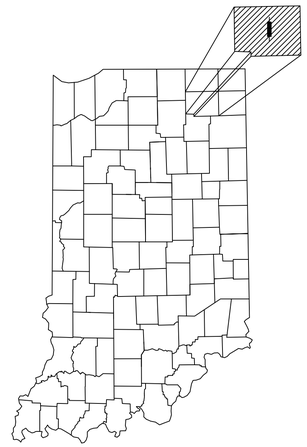


PROJECT LOCATION

LOCATION MAP

JEFFERSON TOWNSHIP
NOBLE COUNTY

TRAFFIC DATA	C.R. 150 EAST
A.A.D.T. 2021	770 V.P.D.
A.A.D.T. 2041 PROJECTED	1240 V.P.D.
D.H.V. 2041	Not Available
DIRECTIONAL DISTRIBUTION	50 / 50 %
TRUCKS	10 % A.A.D.T.
	% D.H.V.
DESIGN DATA	
DESIGN SPEED (POSTED)	45 MPH
PROJECT DESIGN CRITERIA	
FUNCTIONAL CLASSIFICATION	LOCAL
RURAL/URBAN	RURAL
TERRAIN	LEVEL
ACCESS CONTROL	NONE



PROJECT LOCATION SHOWN BY

LATITUDE: 41° 23' 23" N LONGITUDE: 85° 23' 46" W

HUC: 040500011603

BRIDGE LENGTH:	0.01 MI.
ROADWAY LENGTH:	0.03 MI.
PROJECT LENGTH:	0.04 MI.
MAXIMUM GRADE:	0.91 %

SCALE:
1" = 1000'

SKYLER R. P. COOMBS REGISTERED No. 11200658 STATE OF INDIANA PROFESSIONAL ENGINEER

PLANS
PREPARED BY: KURDZIEL BARKER ENGINEERING, INC. 317-214-6720
PHONE NUMBER

CERTIFIED BY: 03/05/2025
SKYLER R.P. COOMBS, P.E. DATE

KURDZIEL BARKER
BRIDGE ENGINEERING

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS
DATED 2024 TO BE USED WITH THESE PLANS.

UTILITIES

UTILITY	OWNER	CONTACT ADDRESS
ELECTRIC	Noble County, R.E.M.C. PO Box 137 Albion, IN 46701	Doug Dickmeyer 260-636-2113 doug.dickmeyer@nobleremc.com
ELECTRIC	Wabash Valley Power Association 722 N. High School Road Indianapolis, IN 46214	Melissa Oeters 317-797-3042 m_oeters@wvpa.com
COMMUNICATION	Ligioner Telephone Co., Inc., Fiber 414 S. Cavin Street Ligioner, IN 46767	Bub Durham 260-894-7161 bdurham@ligtel.net
COMMUNICATION	Frontier Communications 112 W. Broad Street Angola, IN 46703	Phil Nash 574-875-3786 phil.nash@ftr.com
COMMUNICATION	MCI / VERIZON 6835 Hillsdale Court Indianapolis, IN 46250	Chris Reed 317-408-3971 chris.reed@verizon.com

INDEX

REVISIONS

REV#	SHEET NO.	DATE	DESCRIPTION OF REVISION

NO.	DATE	REVISIONS	BY	CHECKED

Section 20
Township 34 North, Range 10 East
Jefferson Township,
Noble County, Indiana

Noble County, Indiana

KURDZIEL BARKER
BRIDGE ENGINEERING
PO Box 44127, Indianapolis, IN 46244
317.214.6720
KBENGR.COM

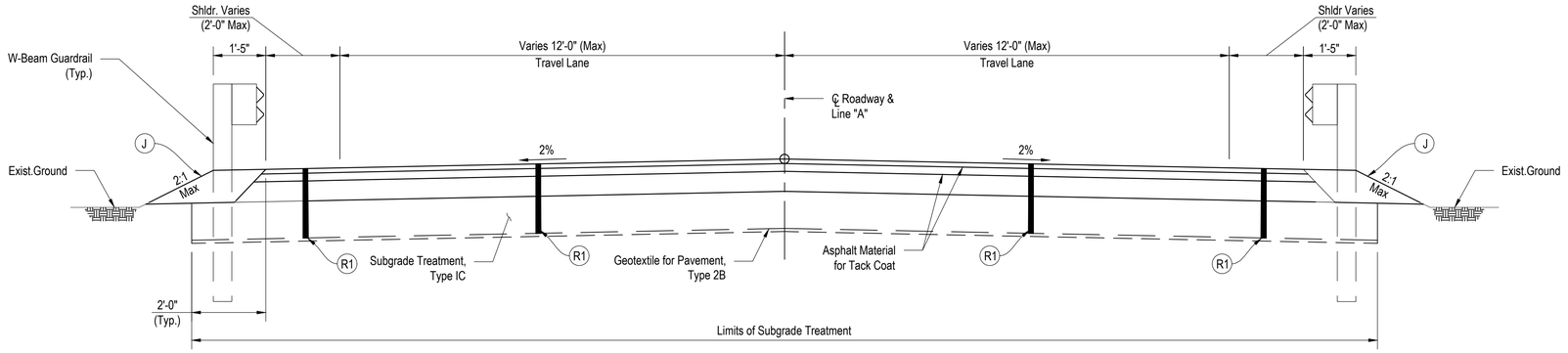
Index

SKYLER R. P. COOMBS
REGISTERED
No.
11200658
STATE OF
INDIANA
PROFESSIONAL ENGINEER
03/05/2025

CLIENT
Noble County

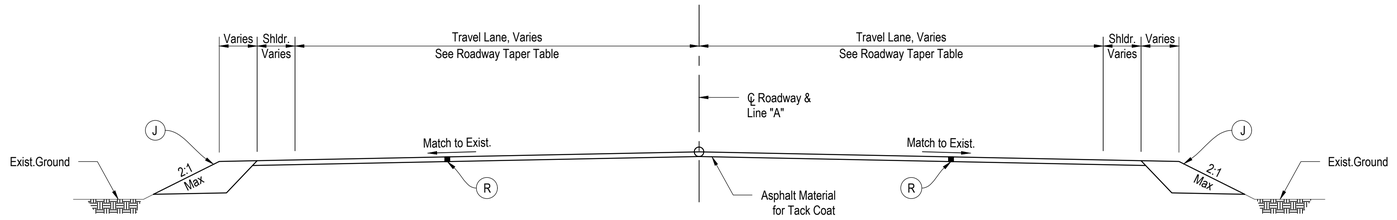
PROJECT NUMBER:	2401
DATE:	5/1/2024
DESIGNED BY:	IGA
CHECKED BY:	SRPC
DRAWN BY:	IGA
SCALE:	SEE PLAN
FILE NAME:	NC33 CAD Drawings

Bridge 33
Replacement



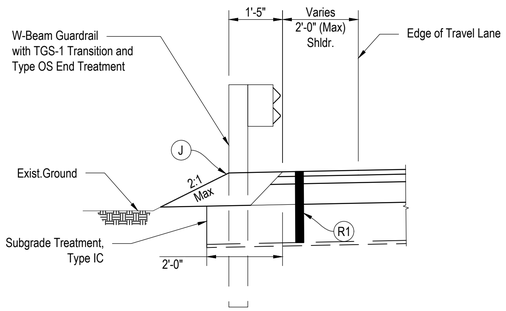
FULL DEPTH PAVEMENT TYPICAL SECTION

SCALE: ½ " = 1'-0"
Sta. 10+86.92 to Sta. 11+66.92 and Sta. 12+33.08 to Sta. 13+00
Paving Exception from Sta. 11+66.92 to Sta. 12+33.08



TRANSITION MILLING TYPICAL SECTION

SCALE: ½ " = 1'-0"
Sta. 10+81.5 to Sta. 10+86.92 and Sta. 13+00 to Sta.13+18.47

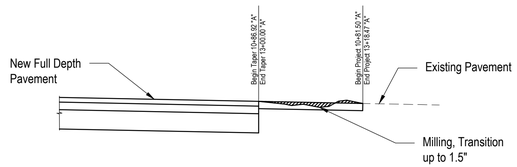


TYPICAL SHOULDER SECTION WITH GUARDRAIL

SCALE: ½ " = 1'-0"

ROADWAY TAPER					
BEGIN STATION	END STATION	TRAVEL LANE WIDTH		SHOULDER WIDTH	
		BEGIN WIDTH	END WIDTH	BEGIN WIDTH	END WIDTH
		(LFT)	(LFT)	(LFT)	(LFT)
10+81.50	10+86.92	Match Exist	10'-2"	Match Exist	2"
10+86.92	11+57.12	10'-2"	12'-0"	2"	2'-0"
11+57.12	11+66.92	12'-0"	12'-0"	2'-0"	2'-0"
12+33.08	12+42.88	12'-0"	12'-0"	2'-0"	2'-0"
12+42.88**	13+00.00**	12'-0"	10'-6"	2'-0"	**
13+00.00	13+18.47	10'-6"	Match Exist	Match Exist	Match Exist

**NOTE: Pave to Face of Guardrail. Right shoulder is Paved to the Face of Guardrail to End of OS End Treatment at Station 12+59.75.



TRANSITION MILLING DETAIL

SCALE: Not to Scale

LEGEND

(J) 10 in.Compacted Aggregate, No. 53, Shoulder

(R) Milling, Transition
165 Lbs/syd QC/QA HMA 3, 58S, Surface, 9.5mm

(R1) 165 Lbs/syd QC/QA HMA 3, 58S, Surface, 9.5mm
275 Lbs/syd QC/QA HMA 3, 58S, Intermediate, 19.0mm
660 Lbs/syd QC/QA HMA 3, 58S, Base, 25.0mm
Subgrade Treatment, Type IC on
Geotextile for Pavement, Type 2B

NOTES:

1. For Type OS End Treatment, see INDOT Standard Drawing E 601-GRET-06.
2. For W-beam Guadrail to be connected to TGS-1 Transition, refer INDOT RPD 706-B-140d.
3. After Milling the existing asphalt surface, any cracks that remain visible with 0.25 inch width or greater shall be sealed before applying Tack Coat to the Milled Surface. The materials used to fill cracks shall be PG 64-22; no emulsion shall be used. The sealed cracks should not be overbonded.

NO.	DATE	REVISIONS	BY	CHECKED

Section 20
Township 34 North, Range 10 East
Jefferson Township,
Noble County, Indiana

Noble County, Indiana

KURDZIEL BARKER
BRIDGE ENGINEERING
PO Box 44127, Indianapolis, IN 46244
317.214.6720
KBENGR.COM

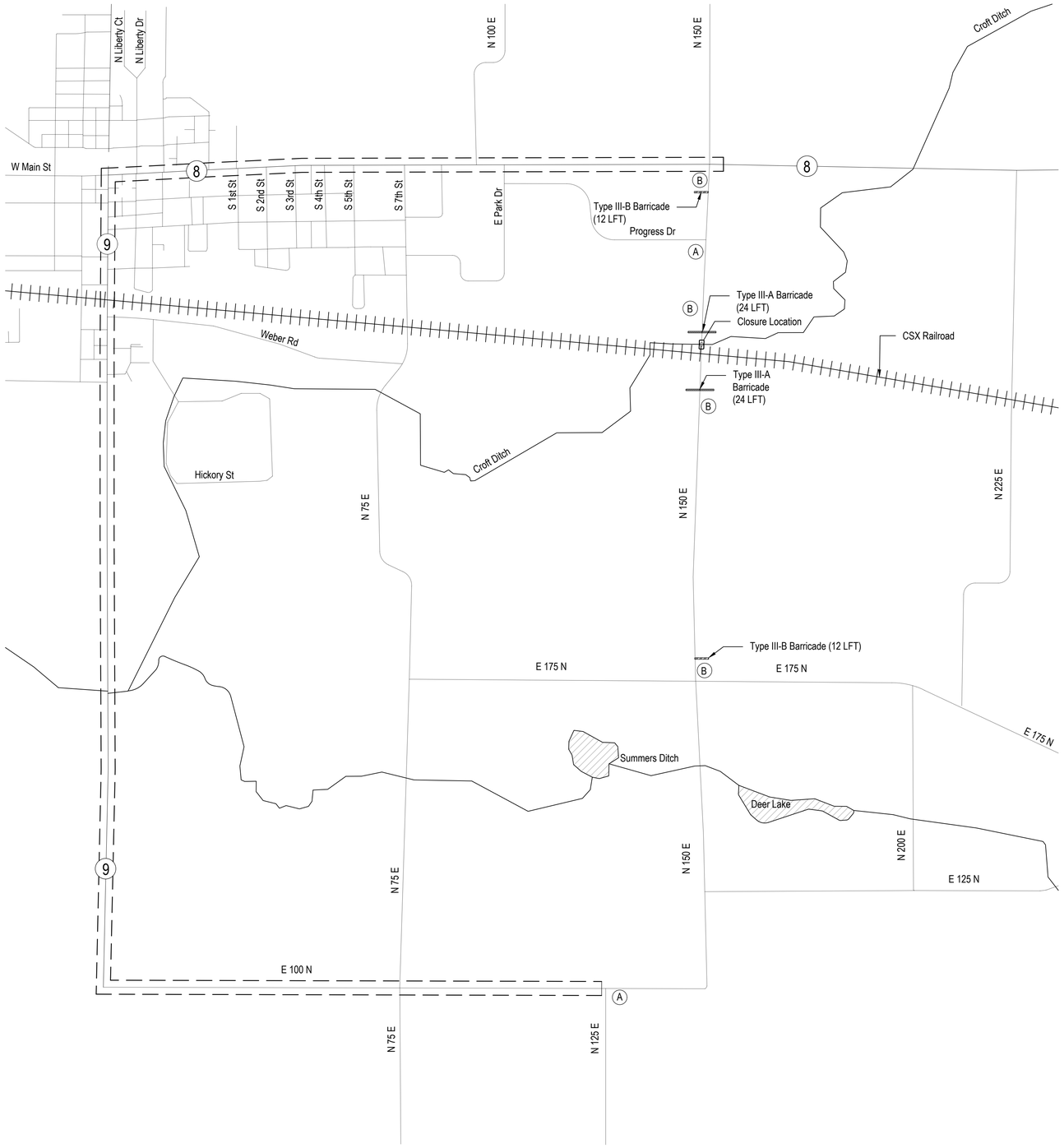
Typical Sections

SKYLER R. P. COOMBS
REGISTERED
No. 11200658
STATE OF INDIANA
PROFESSIONAL ENGINEER
03/05/2025

CLIENT
Noble County

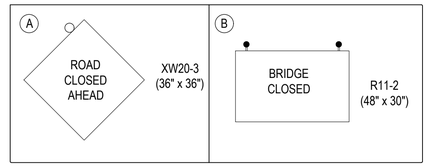
PROJECT NUMBER:	2401
DATE:	6/17/2024
DESIGNED BY:	IGA
CHECKED BY:	SRPC
DRAWN BY:	IGA
SCALE:	SEE PLAN
FILE NAME:	NC33 CAD Drawings

Bridge 33 Replacement



DETOUR ROUTE
SCALE: 1" = 800'

DETOUR ROUTE MARKER ASSEMBLIES



M.O.T. QUANTITIES

MAINTAINING TRAFFIC	1 LSUM
CONSTRUCTION SIGN A	2 EACH
ROAD CLOSURE SIGN ASSMEBLY	4 EACH
TYPE III-A BARRICADE	48 LFT
TYPE III-B BARRICADE	24 LFT

NOTES:

1. Refer to INDOT Standard Drawings E 801-TCDT, E 801-TCSN, E 801-TCLG for Further Details of Traffic Control Signs.

NO.	DATE	REVISIONS	BY	CHECKED

Section 20
Township 34 North, Range 10 East
Jefferson Township,
Noble County, Indiana

Noble County, Indiana

KURDZIEL BARKER
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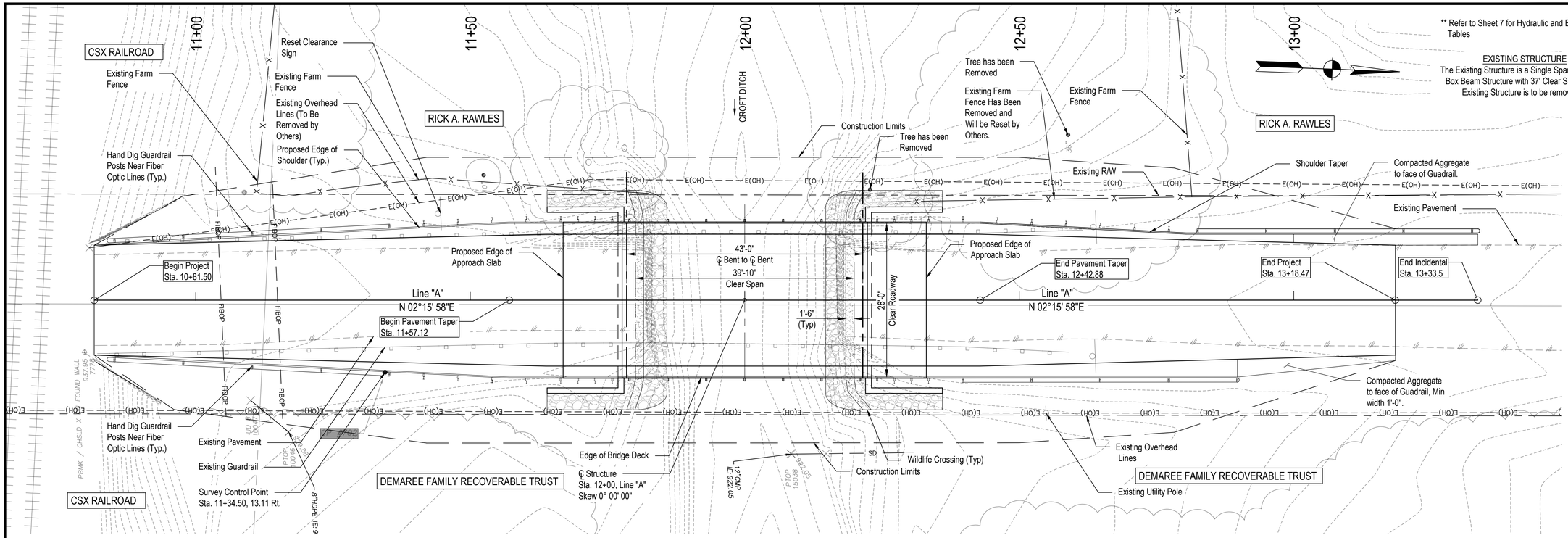
Maintenance of Traffic Detour Route

SKYLER R. P. COOMES
REGISTERED
No.
11200658
STATE OF
INDIANA
PROFESSIONAL ENGINEER
03/05/2025

CLIENT
Noble County

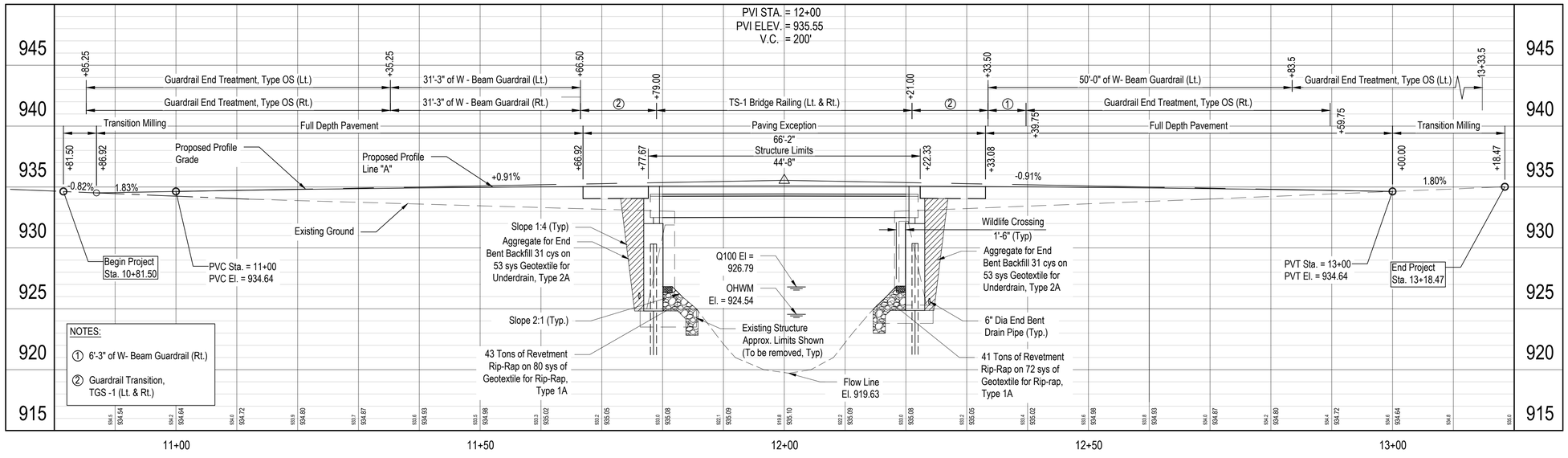
PROJECT NUMBER:	2401
DATE:	5/1/2024
DESIGNED BY:	IGA
CHECKED BY:	SRPC
DRAWN BY:	IGA
SCALE:	SEE PLAN
FILE NAME:	NC33 CAD Drawings

Bridge 33 Replacement



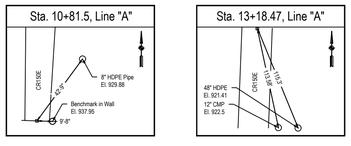
SITUATION PLAN

SCALE: 1" = 10'-0" CONTOUR INTERVAL = 1 FT.



PROFILE ON PROPOSED ℄ TRAIL

SCALE: HORIZ. 1" = 10'-0" VERT. 1" = 5'-0"



COMPOSITE PRESTRESSED CONCRETE SPREAD BOX BEAMS
SINGLE SPAN @ 43'-0"
28'-0" CLEAR ROADWAY
CR 150E OVER CROFT DITCH
NOBLE COUNTY, INDIANA

NO.	DATE	REVISIONS	BY	CHECKED

Section 20
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Jefferson Township,
Noble County, Indiana

Noble County, Indiana

KURDZIEL BARKER
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Layout

SKYLER R. P. COOMES
REGISTERED
No. 11200658
STATE OF INDIANA
PROFESSIONAL ENGINEER
03/05/2025

CLIENT
Noble County

PROJECT NUMBER:	2401
DATE:	6/17/2024
DESIGNED BY:	IGA
CHECKED BY:	SRPC
DRAWN BY:	IGA
SCALE:	SEE PLAN
FILE NAME:	NC33 CAD Drawings

Bridge 33 Replacement

BORING LOG

BORING NO.: TB-001
SHEET 1 OF 2
LATITUDE : 41.389712
LONGITUDE : 85.396025
DATUM :
DATE STARTED : 06-20-24
DATE COMPLETED : 06-20-24

ROUTE # : Bridge No. 33 COUNTY :Noble
PROJECT TYPE: Bridge Replacement
LOCATION : Albion, Indiana
DES NO. : PROJECT NO.: 24-0101-04G
ELEVATION : 929.0
STATION :
OFFSET :
LINE :
DEPTH : 90.0 ft
BORING METHOD : HSA
RIG TYPE : Truck
LOCATION :
RP LOCATION :
HAMMER : Auto
DRILLER/INSP : M. Walker
TEMPERATURE : 95 °F
WEATHER : Sunny
GROUNDWATER: ▽ Encountered at 13.5 ft ▽ At completion 42.0 ft ▽ NA After 24 hours Caved in at 60.0 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	MOISTURE CONTENT	UNCONF. COMP. tsf	ATTERBERG LIMITS LL	ATTERBERG LIMITS PL	ATTERBERG LIMITS PI	REMARKS
928.6		**Asphalt (5") Visual.** 0.4	SS 1	8 12 13							
		Sandy Loam, A-4, Brown, Slightly Moist, Stiff To Very Stiff, Tets Number 242.	SS 2	13 9 8	56	5.5					
923.0	5	6.0		4	78	11.0					
		Clay Loam, A-6(8), Brown, Very Moist, Soft, Test Number 241.	ST 1		79	34.4	1.01	30	13	17	6.0, Sample No. St-1: Shelby Tube Pushed From 6 To 8.5 Feet. Wet Unit Weight = 130.9 Pcf
919.0	10	10.0	SS 3	4 8 11	100	17.5					
		Sandy Loam, A-2-4, Brown, Slightly Moist, Medium Dense, Test Number 243.									
914.8	15	14.3	SS 4	6 7 7	100	25.8					
		Sand and Gravel, A-1-b, Gray, Saturated, Medium Dense, Test Number 244.									
910.5	20	18.5	SS 5	5 6 7	89	9.1					
	25		SS 6	10 9 12	94	10.5					
		Sandy Loam, A-4(0), Gray, Slightly Moist, Stiff To Very Stiff, Test Number 242.									
	30		SS 7	10 9 13	100	11.1					
	35		SS 8	9 12 15	67	12.8					

Continued on next page

INDOT BORING LOG 0101-04G.GPJ IN_DOT1.GDT 10/30/24

BORING LOG

BORING NO.: TB-001
SHEET 2 OF 2
LATITUDE : 41.389712
LONGITUDE : 85.396025
DATUM :

ROUTE # : Bridge No. 33 COUNTY :Noble
PROJECT TYPE: Bridge Replacement

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	MOISTURE CONTENT	UNCONF. COMP. tsf	ATTERBERG LIMITS LL	ATTERBERG LIMITS PL	ATTERBERG LIMITS PI	REMARKS
	40		SS 9	9 9 9	89	10.3		17	10	7	
		Sandy Loam, A-4(0), Gray, Slightly Moist, Stiff To Very Stiff, Test Number 242.									
	45		SS 10	12 16 13	100	8.9					
880.5		49.5									
	50		SS 11	12 12 13	94						
	55		SS 12	12 16 15	100						
	60		SS 13	10 10 15	89						60.0, Borehole Backfilled Per The Aquifer Protection Guidelines
		Sandy Loam, A-2-4, Gray, Saturated, Medium Dense To Dense, Test Number 243.									
	65		SS 14	9 11 17	100						
	70		SS 15	7 7 12	100						
	75		SS 16	8 9 15	94						
	80		SS 17	16 19 12	89						
	85		SS 18	15 15 11	100						
839.0	90	90.0	SS 19	21 16 17	100						

Bottom of Boring at 90.0 ft

INDOT BORING LOG 0101-04G.GPJ IN_DOT1.GDT 10/30/24

BORING LOG

BORING NO.: TB-002
SHEET 1 OF 2
LATITUDE : 41.389581
LONGITUDE : 85.396035
DATUM :
DATE STARTED : 06-19-24
DATE COMPLETED : 06-19-24

ROUTE # : Bridge No. 33 COUNTY :Noble
PROJECT TYPE: Bridge Replacement
LOCATION : Albion, Indiana
DES NO. : PROJECT NO.: 24-0101-04G
ELEVATION : 930.0
STATION :
OFFSET :
LINE :
DEPTH : 90.0 ft
BORING METHOD : HSA
RIG TYPE : Truck
LOCATION :
RP LOCATION :
HAMMER : Auto
DRILLER/INSP : M. Walker
TEMPERATURE : 90 °F
WEATHER : Sunny
GROUNDWATER: ▽ Encountered at 13.5 ft ▽ At completion 48.0 ft ▽ NA After 24 hours Caved in at 78.0 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	MOISTURE CONTENT	UNCONF. COMP. tsf	ATTERBERG LIMITS LL	ATTERBERG LIMITS PL	ATTERBERG LIMITS PI	REMARKS
929.7		**Asphalt (4") Visual.** 0.3	SS 1	6 4 4	100	11.1					
927.0		**Sandy Loam, A-4, Brown, Slightly Moist, Medium Stiff,** Test Number 242. 3.0									3.0, Sample No. St-1: Shelby Tube Pushed From 3.0 To 5.5 Feet. Sample No. St-1: Non-Plastic
	5		ST 1		96	12.7					
		Sandy Loam, A-2-4(0), Brown, Slightly Moist, Loose To Medium Dense, Test Number 243.	SS 2	6 8 10	0						6.0, Sample No. St-2: Two Attempts Were Made To Obtain A Splitspoon Sample
	10		SS 3	3 4 5	33	14.8					
916.5		13.5									
	15		SS 4	10 12 11	28						
		Sand and Gravel, A-1-b, Brown, Saturated, Medium Dense, Test Number 244.									
911.5		18.5									
	20		SS 5	9 10 11	78	10.2					
			ST 2		63	9.5					21.0, Sample No. St-2: Shelby Tube Pushed From 21.0 To 23.5 Feet
	25		SS 6	7 8 9	100	7.5					
		Sandy Loam, A-4, Gray, Slightly Moist, Stiff To Very Stiff, Test Number 242.									
	30		SS 7	11 12 14	100	9.9					
	35		SS 8	8 8 9	100	9.6					

Continued on next page

INDOT BORING LOG 0101-04G.GPJ IN_DOT1.GDT 10/30/24

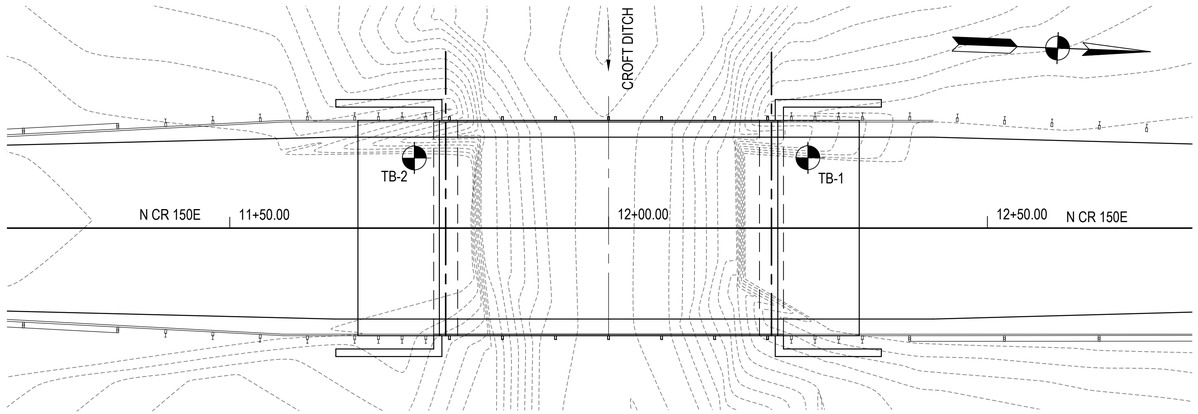
BORING LOG

BORING NO.: TB-002
SHEET 2 OF 2
LATITUDE : 41.389581
LONGITUDE : 85.396035
DATUM :

ROUTE # : Bridge No. 33 COUNTY :Noble
PROJECT TYPE: Bridge Replacement

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	MOISTURE CONTENT	UNCONF. COMP. tsf	ATTERBERG LIMITS LL	ATTERBERG LIMITS PL	ATTERBERG LIMITS PI	REMARKS
	40		SS 8	8 9 10	94	12.3					
		Sandy Loam, A-4, Gray, Slightly Moist, Stiff To Very Stiff, Test Number 242.									
	45		SS 10	7 7 8	100	9.3					
	50		SS 11	6 7 7	72	10.8					
876.5		53.5									
	55		SS 12	5 5 5	100	10.1					
		Sandy Loam, A-2-4, Brown, Saturated, Loose To Medium Dense, Test Number 243.									
	60		SS 13	12 14 17	78	9.4					60.0, 4 Feet Of Heaving Sands Encountered At 60 Feet.
866.5		63.5									63.5, Sample No. 14: Non-Plastic
	65		SS 14	18 9 10	67						
		Sand and Gravel, A-1-b, Brown, Saturated, Medium Dense, Test Number 244.									
861.5		68.5									
	70		SS 15	5 8 9	56	8.7					
		Sandy Loam, A-2-4, Brown, Saturated, Medium Dense, Test Number 243.									
	75		SS 16	10 12 13	22	10.2					
851.5		78.5									78.0, Borehole Backfilled Per The Aquifer Protection Guidelines
	80		SS 17	28 32 37	100	11.0					
		Sandy Loam, A-2-4, Brown, Saturated, Very Dense, Test Number 243.									
846.5		83.5									
	85		SS 18	31 39 44	100	9.2					
		Sandy Loam, A-2-4, Gray, Saturated, Very Dense, Test Number 243.									
840.0	90	90.0	SS 19	21 25 30	89	9.5					
	95										

Bottom of Boring at 90.0 ft



LOCATION MAP

SCALE: 1" = 10'-0"

SUMMARY OF PILE LOADING FOR GEOTECHNICAL TESTING		
	Bent No. 1	Bent No. 2
Pile Size, Type and Grade	PP 14"	PP 14"
Pipe Wall Thickness (in)	3/8	3/8
Factored Design Load, Q_f (kip)	191	191
Factored Soil Resistance, R_R (kip)	191	191
Resistance Factor $Ø_{dyn}$	0.7	0.7
Downdrag Load - D_D (kips)	0	0
Nominal Soil Resistance - R_n (kips)	273	273
Downdrag Friction - R_{ssd} (kips)	0	0
Scour Zone Friction - $R_{s,scour}$ (kips)	0	0
Nomrinal Driving Resistance - R_{ndr} (kips)	273	273
Estimated Pile Tip Elevation	871	877
Test Method	*INDOT Standard Specification 701.05 (b)*	

NOTES:
1. SPT indicates the number of blows required to drive a 1 3/8" diameter Split-Spoon Sampler 6" by means of a 140 lb. weight falling 30".

NO.	DATE	REVISIONS	BY	CHECKED

Section 20
Township 34 North, Range 10 East
Jefferson Township,
Noble County, Indiana

Noble County, Indiana

KURDZIEL BARKER
BRIDGE ENGINEERING
PO Box 44127, Indianapolis, IN 46244
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KBENGR.COM

Soil Borings

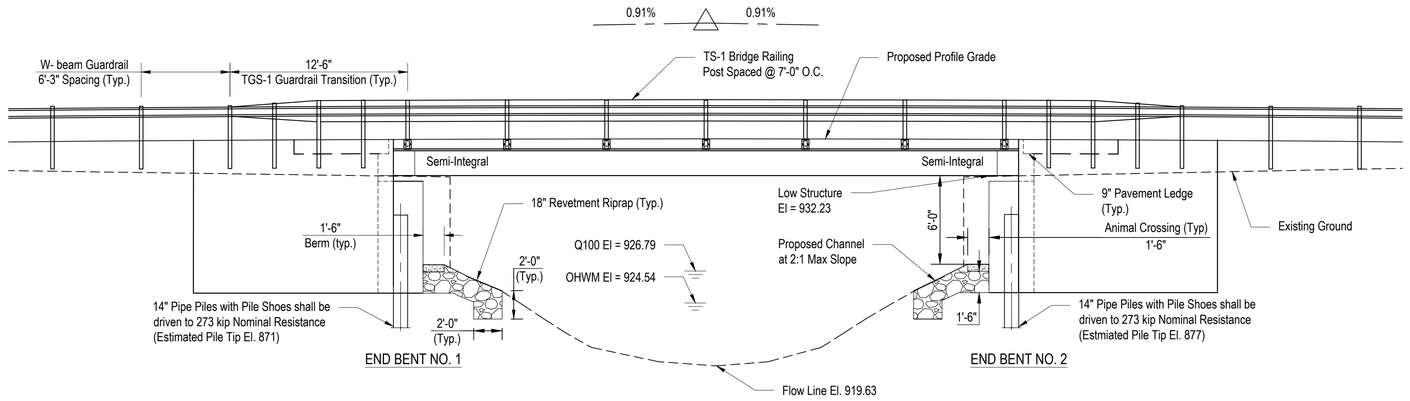
SKYLER R. P. COOMBS
REGISTERED
No. 11200658
STATE OF INDIANA
PROFESSIONAL ENGINEER
03/05/2025

CLIENT
Noble County

PROJECT NUMBER:	2401
DATE:	6/17/2024
DESIGNED BY:	IGA
CHECKED BY:	SRPC
DRAWN BY:	IGA
SCALE:	SEE PLAN
FILE NAME:	NC33 CAD Drawings

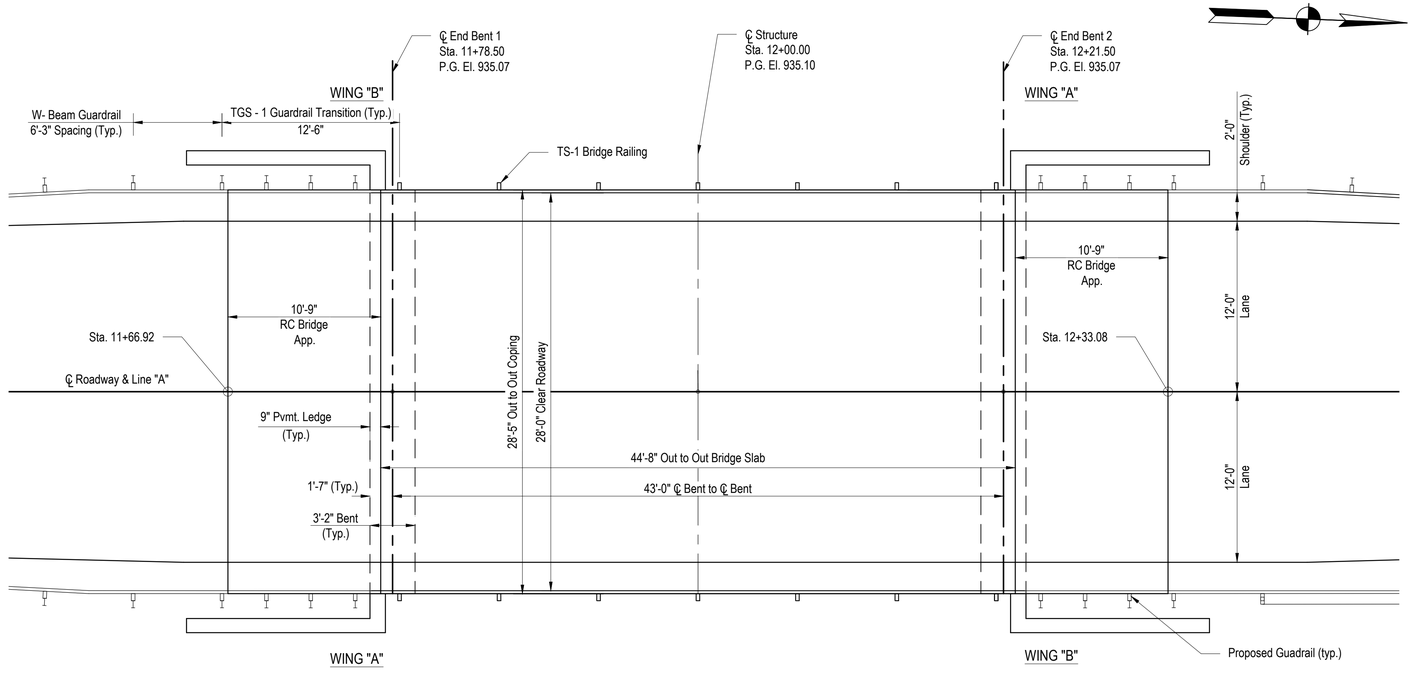
Bridge 33
Replacement

STRUCTURE TO BE BUILT ON A 200' VERTICAL CURVE



ELEVATION

SCALE: 3/16" = 1'-0"



PLAN

SCALE: 3/16" = 1'-0"

HYDRAULIC DATA

Waterway Opening Required	147	sft
Waterway Opening Provided	151	sft
Drainage Area	14.0	sq mi
Drainage Discharge Q100		cfs
Velocity		ft/s
Q100 Elevation	926.79	ft
Low Structure Elevation	932.23	ft

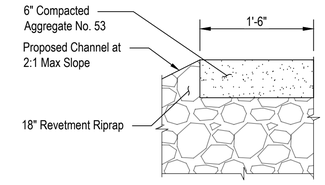
HYDRAULIC SCOUR DATA

Q100 Discharge		cfs
Q100 Elevation	926.79	ft
Velocity at Q100		ft/sec
Q500 Discharge	-N/A-	cfs
Q500 Elevation	-N/A-	ft
Velocity at Q500	-N/A-	ft/sec

EARTHWORK TABULATION

Fill + 20%	84	cys
Common Excavation	105	cys
Foundation Excavation, Unclassified	140	cys
Usable Excavation (50%)	122	cys
Usable Waterway Excavation	0	cys
Surplus Foundation Excavation	0	cys
Borrow	0	cys
Total Waterway Excavation	0	cys
Excavation, Unclassified	0	cys
Benching (Estimated)	19	cys

No direct payment for Benching. Benching will not be paid for as Common Excavation.



SECTION AT ANIMAL CROSSING

SCALE: 1" = 1'-0"

COMPOSITE PRESTRESSED CONCRETE SPREAD BOX BEAMS
SINGLE SPAN @ 43'-0"
28'-0" CLEAR ROADWAY
CR 150E OVER CROFT DITCH
NOBLE COUNTY, INDIANA

NO.	DATE	REVISIONS	BY	CHECKED

Section 20
Township 34 North, Range 10 East
Jefferson Township,
Noble County, Indiana

Noble County, Indiana

KURDZIEL BARKER
BRIDGE ENGINEERING
PO Box 44127, Indianapolis, IN 46244
317.214.8720
KBENGR.COM

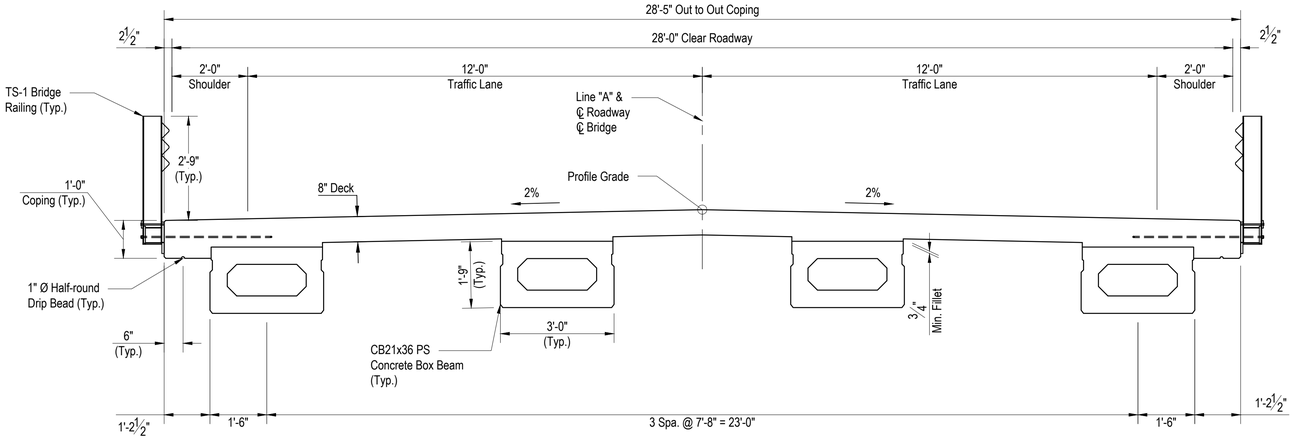
General Plan
Plan & Elevation

SKYLER R. P. COOMBS
REGISTERED
No.
11200658
STATE OF
INDIANA
PROFESSIONAL ENGINEER
03/05/2025

CLIENT
Noble County

PROJECT NUMBER:	2401
DATE:	6/17/2024
DESIGNED BY:	IGA
CHECKED BY:	SRPC
DRAWN BY:	IGA
SCALE:	SEE PLAN
FILE NAME:	NC33 CAD Drawings

Bridge 33
Replacement



TYPICAL SECTION

SCALE: ½" = 1'-0"

GENERAL NOTES

Reinforcing bar covering shall be 2 1/2" in top and 1" in bottom of the floor slabs and 2" in all other parts unless noted.

The top of the bridge floor slab, face of floor slab, deck copings, underside of bridge floor from coping to outside face of exterior beam, top of approach slab, and all exposed surfaces of wing walls and end bents shall be sealed.

Refer to INDOT RSP E706-B-140d for details about the TS-1 bridge railing and TGS-1 transition.

Concrete in superstructure, end bents and wingwalls shall be "Class C".

Chamfer exposed edges ¾" unless noted otherwise.

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

DESIGN DATA

LIVE LOAD: Designed for HL-93 loading, in accordance with AASHTO LRFD Bridge Design (9th Edition) Specifications and Interims.

DEAD LOAD: Actual weight plus 35 psf (composite) for future wearing surface and 15 psf (non-composite) for permanent metal deck forms.

FLOOR SLAB: Slab designed for HL-93 loading with a 1/2" sacrificial wearing surface.

DESIGN STRENGTHS:

PRESTRESSED CONCRETE NORMAL WEIGHT:
f'c = 7,000 psi @ 28 days
Initial f'c = 6,000 psi @ Release of Strands

PRESTRESSING STRANDS:
1/2"Φ, 7 Wire Lo-Lax Strands (As = 0.167 in²)
Min. Tensile Strength = 270,000 psi
Initial Pull = 33,817.5 lbs. per strand

CONCRETE:
Class "C": f'c = 4,000 psi

REINFORCING BARS:
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 exterior beam. The finishing machine was assumed to be supported 6 inches past the vertical coping form. The top overhang brackets were assumed to be located 6 inches past the edge of the vertical coping form. The bottom overhang brackets were assumed to be braced against the intersection of the beam bottom flange and web. The Contractor shall use blocking or other methods to ensure beam rotation does not occur prior to or during concrete placement on exterior beam.

Deck Falsework Loads: Designed for 15 psf for permanent metal stay-in-place deck forms, removable deck forms,and 2 ft. exterior walkway

Construction Live Load: Designed for 20 psf extending 2 ft. past the edge of coping and 75 plf vertical force applied at a distance of 6 inches outside the face of the coping over a 30 ft. length of the deck centered with the finishing machine.

Finishing Machine Load: 4500 lbs distributed over 10 ft. along the coping.

Wind Load: Designed for 70 mph horizontal wind loading in accordance with AASHTO LRFD 3.8.1.

SEISMIC DATA

Seismic Performance Zone	Zone 1
Acceleration Coefficient	0.079
Seismic Soil Profile Type	Class C

COMPOSITE PRESTRESSED CONCRETE SPREAD BOX BEAMS
SINGLE SPAN @ 43'-0"
28'-0" CLEAR ROADWAY
CR 150E OVER CROFT DITCH
NOBLE COUNTY, INDIANA

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General Plan
Typical Section

SKYLER R. P. COOMBS
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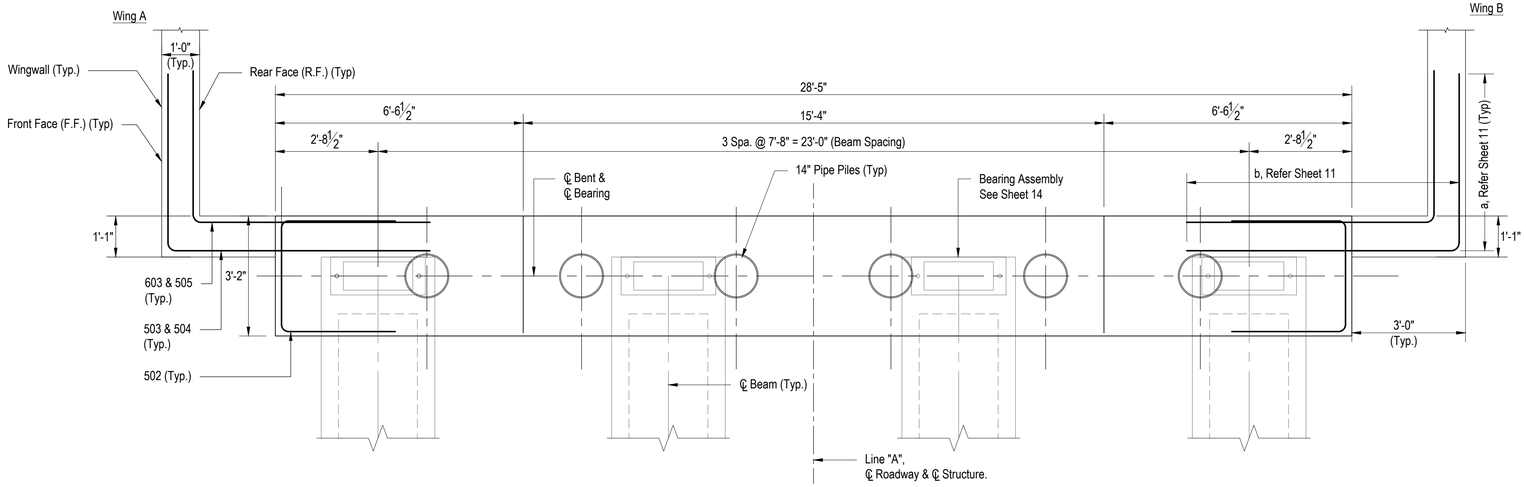
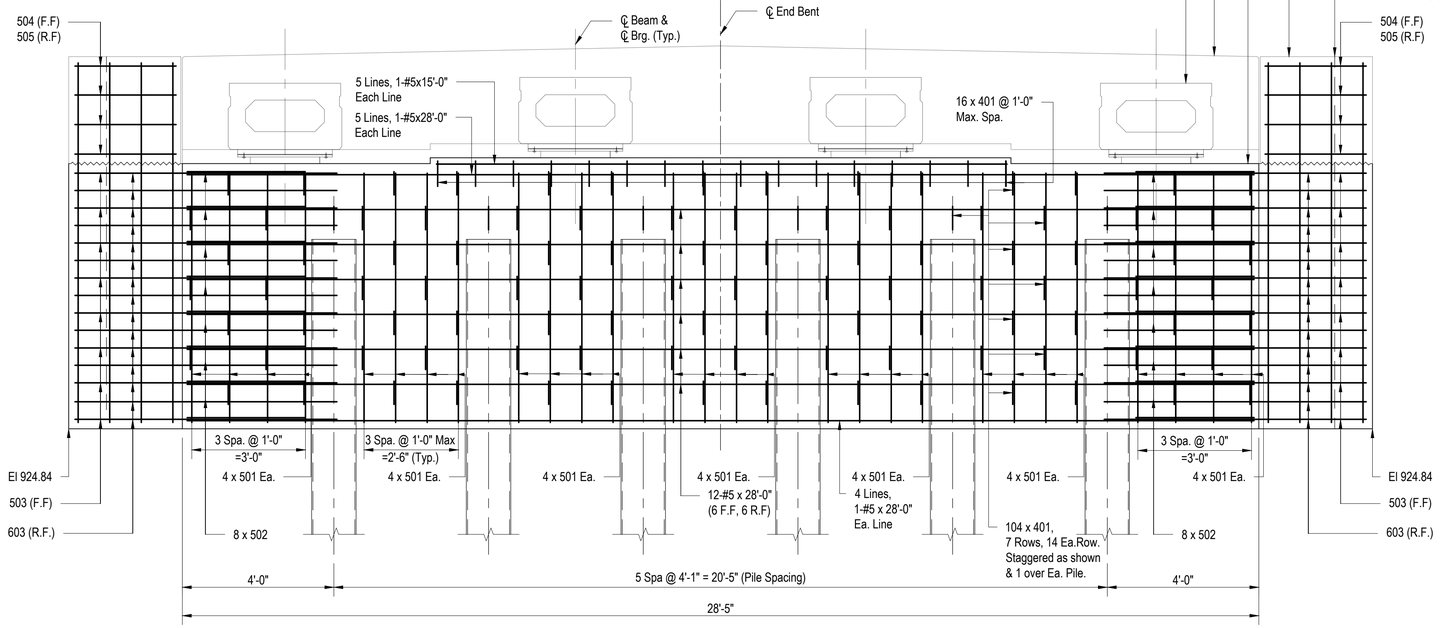
Bridge 33
Replacement



PLAN - BENT NO. 1.
BENT NO.2 SAME BY OPPOSITE HAND
SCALE: ½ " = 1'-0"



ELEVATION - BENT NO. 1.
BENT NO.2 SAME BY OPPOSITE HAND
SCALE: ½ " = 1'-0"

BEAM SEAT ELEVATIONS				
Beam	Beam No. 1	Beam No. 2	Beam No. 3	Beam No. 4
End Bent No. 1	931.84	932.00	932.00	931.84
End Bent No. 2	931.84	932.00	932.00	931.84

BENT NO.1

BENT NO.2

NOTES
1. All reinforcing bars shall be epoxy coated.
2. For reinforcing bar bending diagrams, see Sheet 11 For Reinforcing Bar Notes, see INDOT Standard Drawing E703-BRST-01.

NO.	DATE	REVISIONS	BY	CHECKED

Section 20
Township 34 North, Range 10 East
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End Bent No.
1 & 2 Details

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03/05/2025

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Noble County

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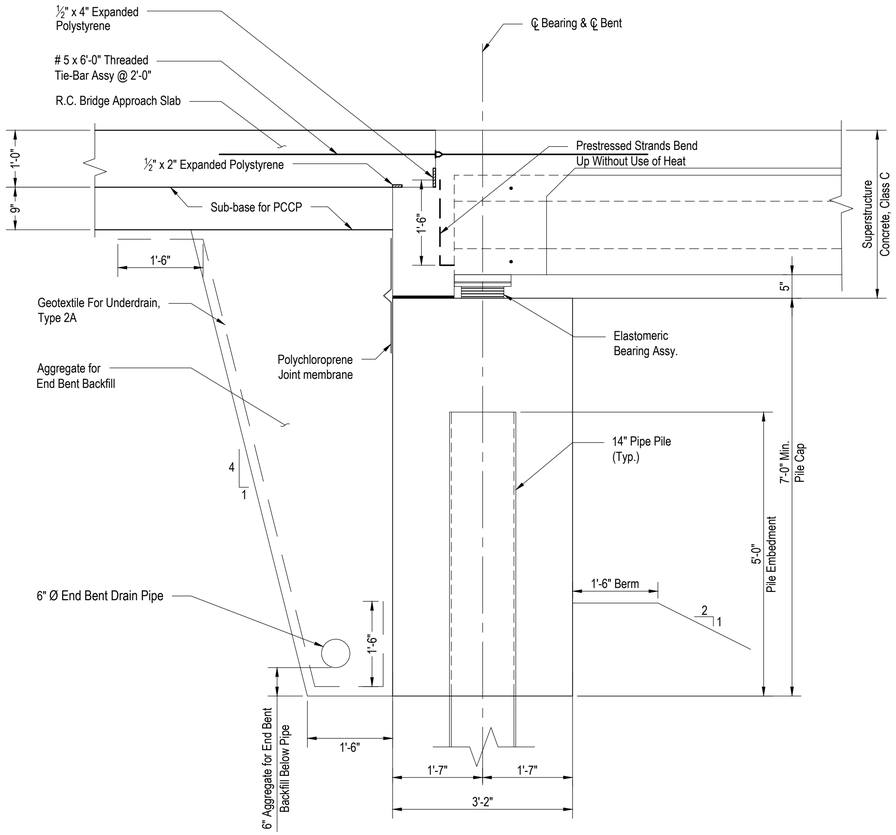
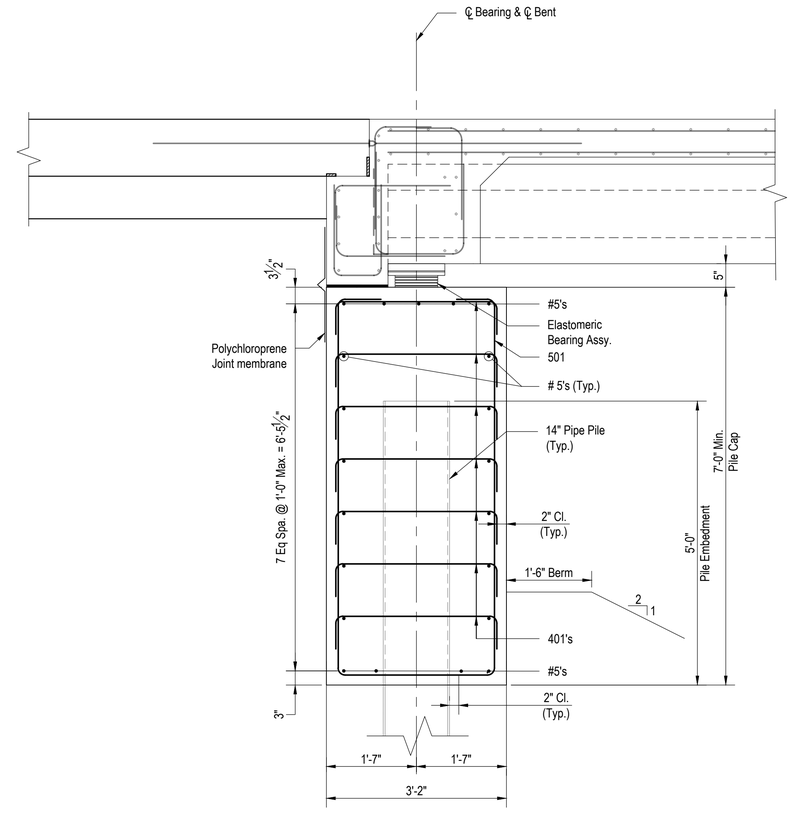
Bridge 33
Replacement



TYPICAL SECTION

SCALE: ¾" = 1'-0"



SECTION THROUGH BENT CAP

SCALE: ¾" = 1'-0"

NOTES
1. All reinforcing bars shall be epoxy coated.
2. For reinforcing bar bending diagrams, see Sheet 11.
3. For Reinforcing Bar Notes, see INDOT Standard Drawing E703-BRST-01.
4. For Pavement Ledge Details, See Sheet 19.
5. For Bearing Details, See Sheet 14.

NO.	DATE	REVISIONS	BY	CHECKED

Section 20
Township 34 North, Range 10 East
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End Bent No.
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Noble County

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CHECKED BY:	DJK
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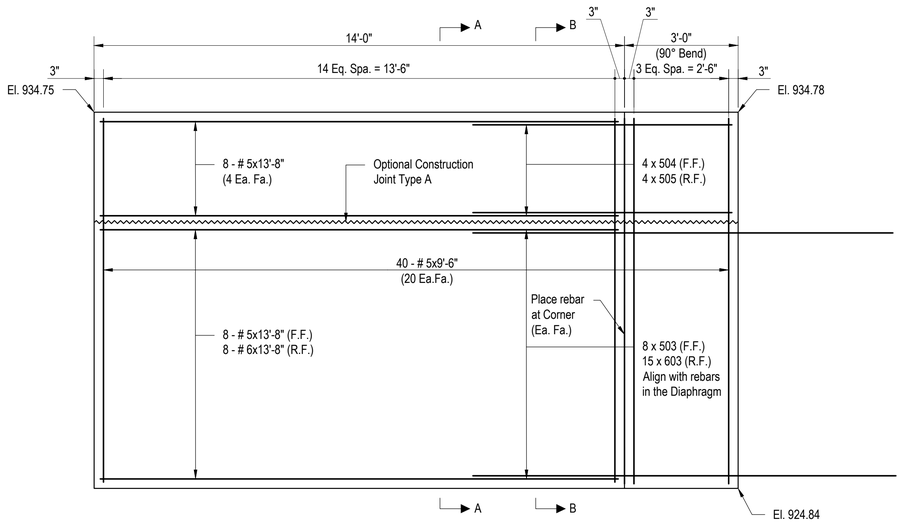
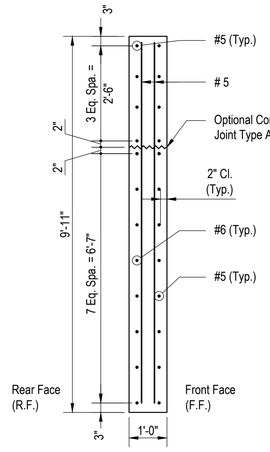
Bridge 33
Replacement



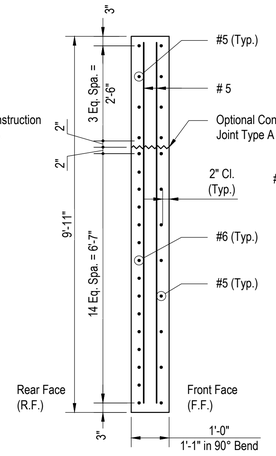
WING A ELEVATION

SCALE: ½ " = 1'-0"



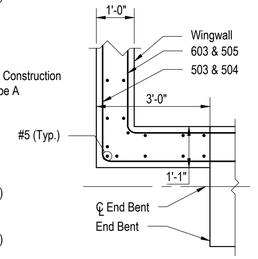
SECTION A-A

SCALE: ½ " = 1'-0"



SECTION B-B

SCALE: ½ " = 1'-0"



TYPICAL BEND DETAIL

SCALE: ½ " = 1'-0"

BILL OF MATERIALS
END BENT NO. 1 (SAME FOR END BENT 2)

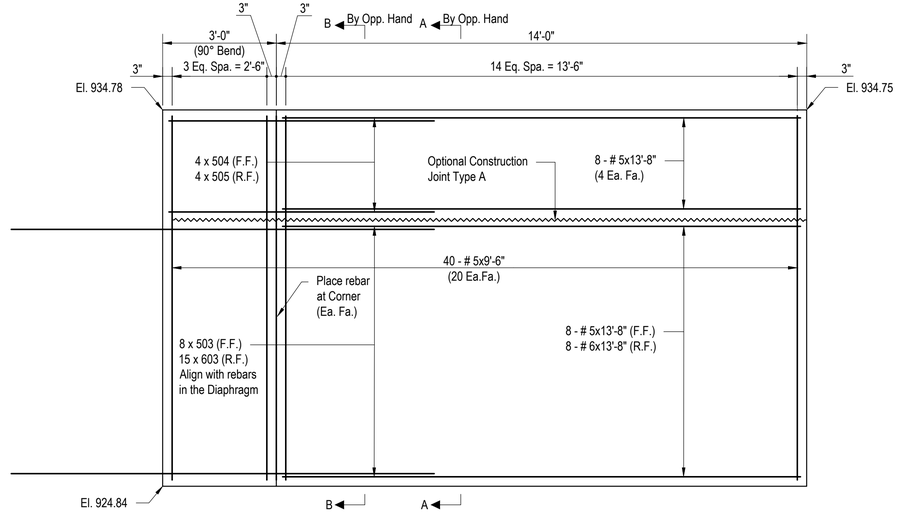
REINFORCING BARS EPOXY COATED

Size & Mark	No.of Bars	Length	Weight (Lbs.)
603	30	10' - 3"	
#6	16	13' - 8"	
TOTAL #6 EPOXY COATED REINFORCING			791
501	28	17' - 3"	
502	16	8' - 10"	
503	16	11' - 7"	
504	8	7' - 4"	
505	8	6' - 0"	
#5	21	28' - 0"	
#5	5	15' - 0"	
#5	32	13' - 8"	
#5	80	9' - 6"	
TOTAL #5 EPOXY COATED REINFORCING			2902
401	120	4' - 2"	
TOTAL #4 EPOXY COATED REINFORCING			334
TOTAL EPOXY COATED REINFORCING BARS			**4027**

CONCRETE	
CONCRETE, C, SUBSTRUCTURE	35.5 CYS

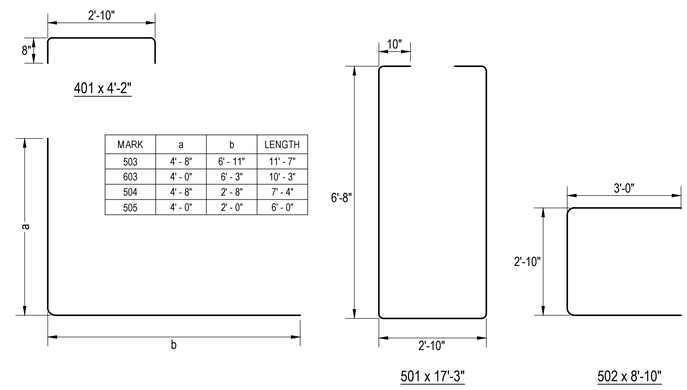
MISCELLANEOUS	QTY.
PIPE, END BENT DRAIN, 6 IN.	70 LFT
PILE, STEEL PIPE, 0.375 IN, 14IN, 6 @ 59' END BENT 1	354 LFT
PILE, STEEL PIPE, 0.375 IN, 14IN, 5 @ 53' END BENT 2	265 LFT
PILE SHOE, CONICAL TIP, 14 IN. EACH BENT	6 EACH
TEST PILE, DYNAMIC, PRODUCTION, END BENT 2	63 LFT
TEST PILE, DYNAMIC, RESTRIKE	1 EACH
DYNAMIC PILE LOAD TEST	1 EACH
GEOTEXTILE FOR UNDERDRAIN, TYPE 2A	53 SYS
STRUCTURAL BACKFILL, TYPE 2 **	19 CYS
AGGREGATE FOR END BENT BACKFILL	31 CYS

*** Behind Wingwalls*



WING B ELEVATION

SCALE: ½ " = 1'-0"



MARK	a	b	LENGTH
503	4' - 8"	6' - 11"	11' - 7"
603	4' - 0"	6' - 3"	10' - 3"
504	4' - 8"	2' - 8"	7' - 4"
505	4' - 0"	2' - 0"	6' - 0"

BAR BENDING DIAGRAMS

SCALE: ½ " = 1'-0"

NOTES
1. All reinforcing bars shall be epoxy coated.
2. For Reinforcing Bar Notes, see INDOT Standard Drawing E703-BRST-01.
3. All reinforcement below the diaphragm and all of the reinforcement in the Wings is billed in the End Bent.

NO.	DATE	REVISIONS	BY	CHECKED

Section 20
Township 34 North, Range 10 East
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Noble County, Indiana

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PO Box 44127, Indianapolis, IN 46244
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KBENGR.COM

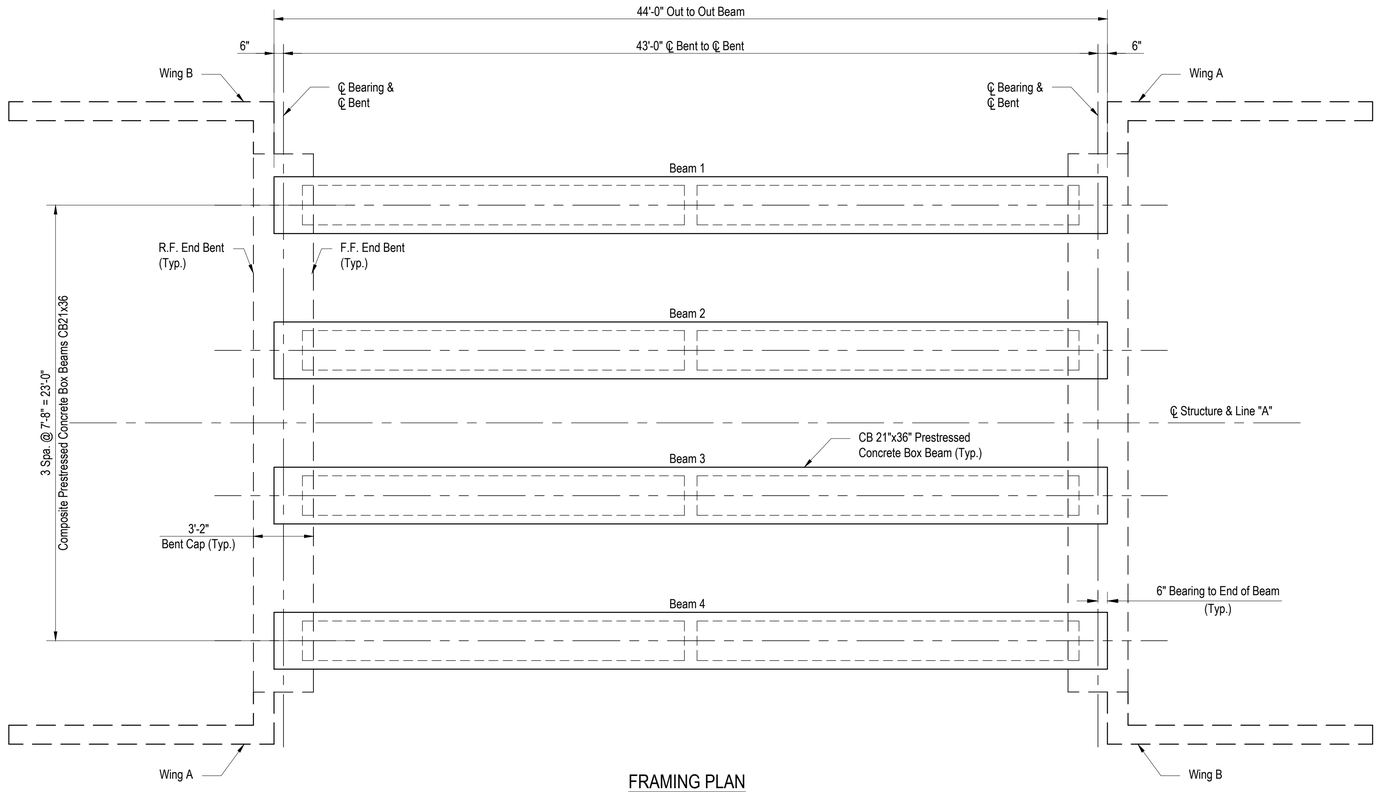
End Bent No.
1 & 2 Details

SKYLER R. P. COOMBS
REGISTERED
No.
11200658
STATE OF
INDIANA
PROFESSIONAL ENGINEER
03/05/2025

CLIENT
Noble County

PROJECT NUMBER:	2401
DATE:	5/1/2024
DESIGNED BY:	IGA
CHECKED BY:	SRPC
DRAWN BY:	IGA
SCALE:	SEE PLAN
FILE NAME:	NC33 CAD Drawings

Bridge 33
Replacement



FRAMING PLAN

SCALE: ¼" = 1'-0"

DESIGN DATA:

PRESTRESSED CONCRETE NORMAL WEIGHT:
f'c = 7,000 psi @ 28 days
Initial f'c = 6,000 psi @ Release of Strands

PRESTRESSING STRANDS:
½"Φ, 7 Wire Lo-Lax Strands (As = 0.167 in²)
Min. Tensile Strength = 270,000 psi
Initial Pull = 33,817.5 lbs. per strand

REINFORCING BARS:
Grade 60: fy = 60,000 psi

GENERAL NOTES - BEAMS

1. Beams shall be cast a minimum 28 days prior to pouring the deck.
2. Beams are to be lifted and supported at the bearing points during handling, storage and transportation.
3. Estimated elastic shortening is 0.150 in.
4. Allowance in beam length should be made during fabrication.
5. The beam manufacturer shall furnish to the engineer, through the contractor, shop drawings, for approval, prior to the casting of beams.
6. All materials shall be in accordance with the current Indiana department of transportation standard specifications for tolerance of prestressed beams, see standard drawings 707-BPBF-01 and 707-BPBF-02.
7. Surface seal shall be applied by the beam manufacturer in the shop to all the beams in accordance with the current Indiana Department of Transportation standard specifications. Do not rub.
8. Beams shall be maintained vertically at all times suitable restraints shall be provided to prevent the rotation of beams particularly the exterior beam, from construction loads such as the weight of the concrete deck, finishing machine, forms etc.
9. Top of beams are to be scored transversely at about 3" centers with a pointed tool. (Max. depth of scoring should be ¼".)
10. For Beam Details, see Sheet 13.
11. For Bearing Details, see Sheet 14.

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Framing Plan

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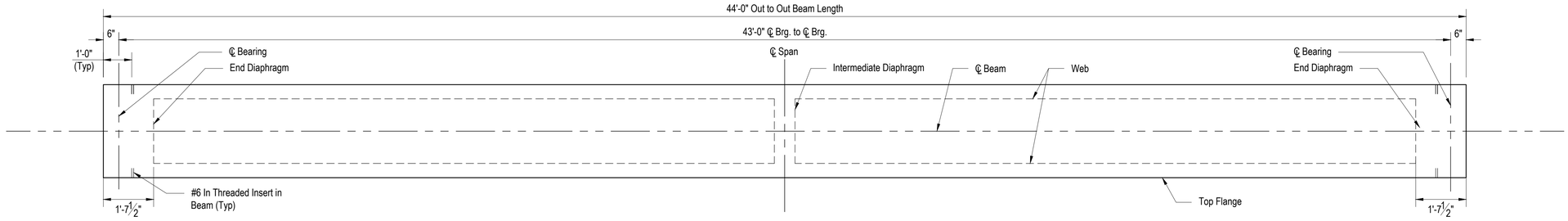
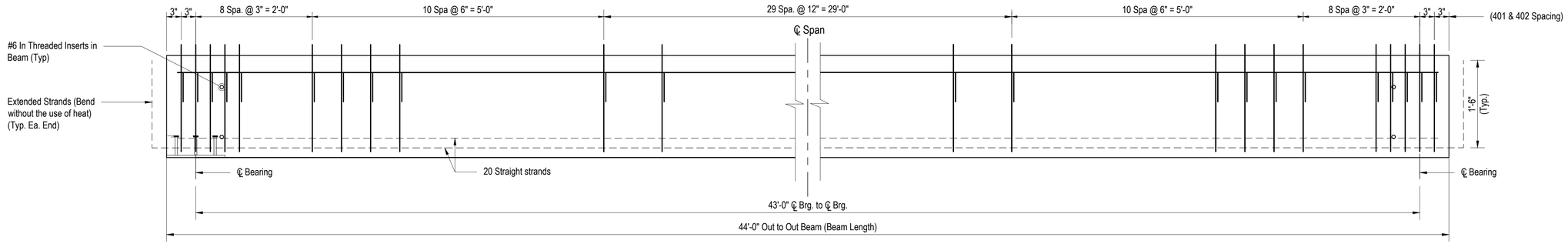


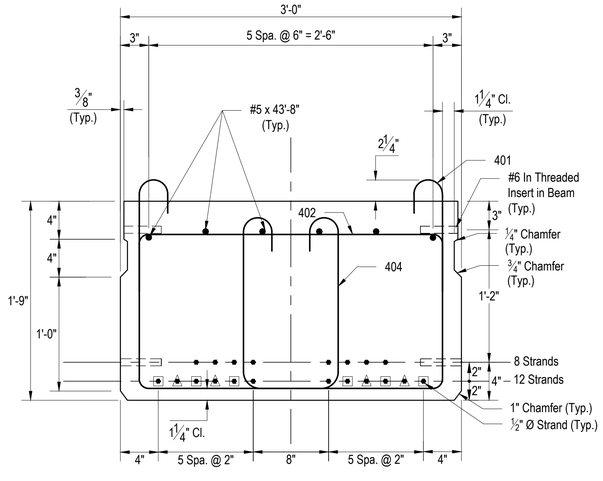
BEAM PLAN

SCALE: ½" = 1'-0"



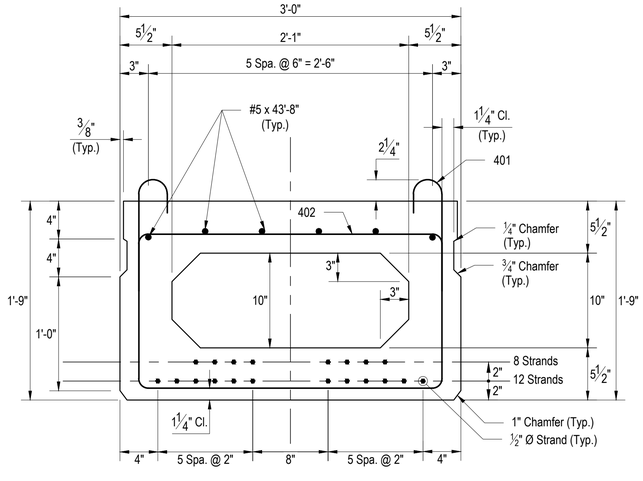
BEAM ELEVATION

SCALE: 1" = 1'-0"



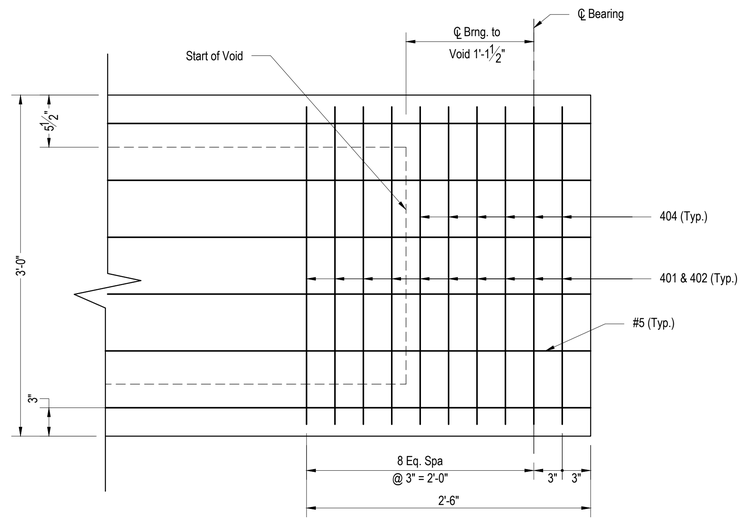
SECTION AT BEAM END

SCALE: 1½" = 1'-0"



SECTION AT MIDSPAN

SCALE: 1½"= 1'-0"



BEAM END REINFORCEMENT PLAN

SCALE: 1½"= 1'-0"

LEGEND:

□ Indicates strands at each end to be extended and bent up without the use of heat.

△ Indicates strands debonded 6'-0" at each end of beam.

NO.	DATE	REVISIONS	BY	CHECKED

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Beam Details

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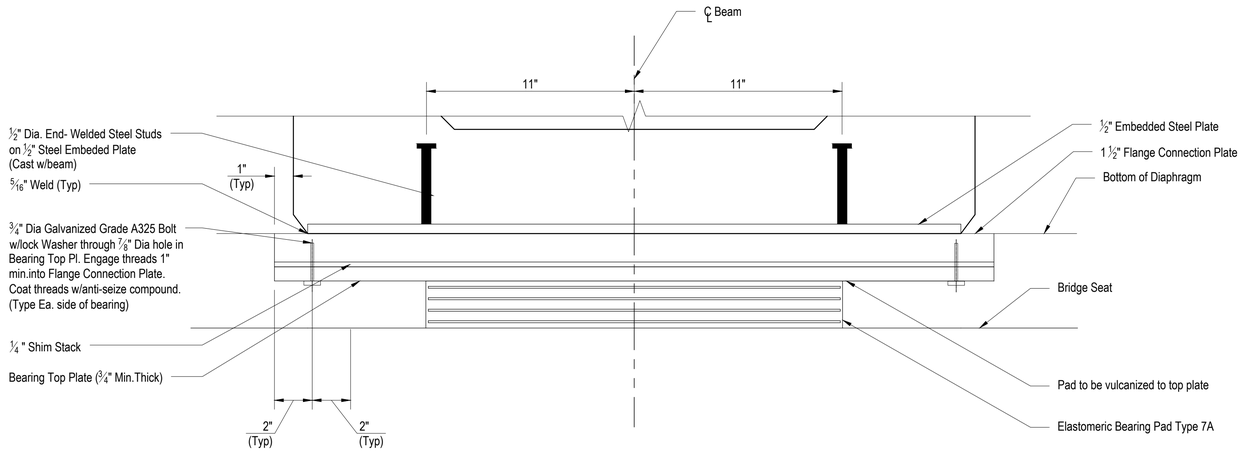
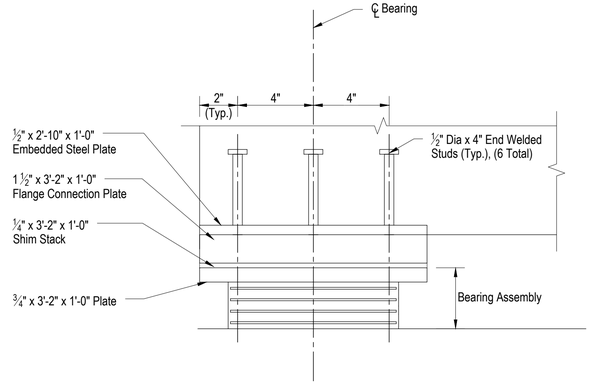
Bridge 33 Replacement



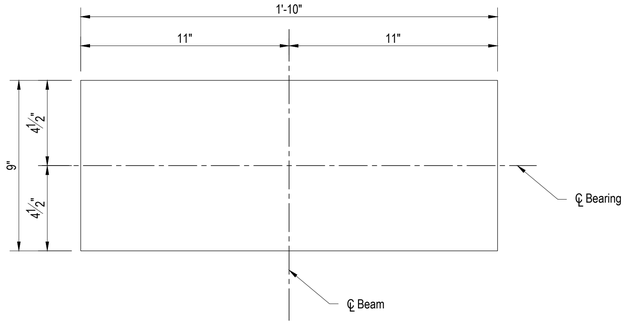
BEARING ASSEMBLY - ELEVATION

SCALE: 3" = 1'-0"

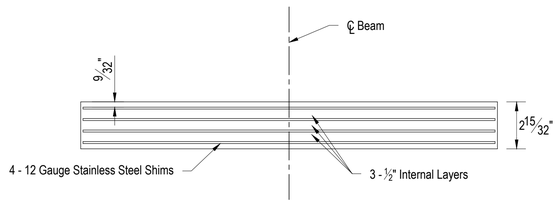


BEARING ASSEMBLY - SIDE VIEW

SCALE: 3" = 1'-0"



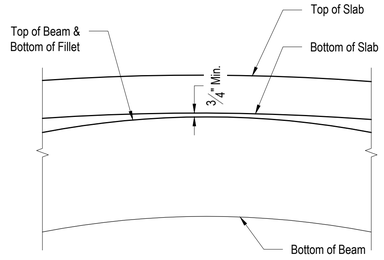
PLAN VIEW



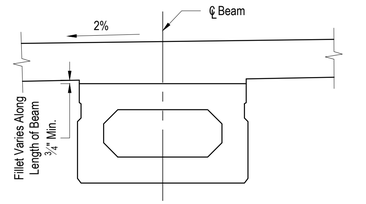
ELEVATION

ELASTOMERIC BEARING PAD DETAILS

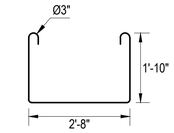
SCALE: 3" = 1'-0"



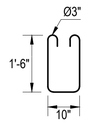
ELEVATION ALONG BEAM



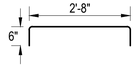
SECTION @ MIDSPAN



401 x 7'-4"
(Epoxy Coated)



404 x 4'-8"



402 x 3'-8"

BAR BENDING DIAGRAMS

SCALE: ½ " = 1'-0"

TABLE OF CAMBERS (in.)		
	INTERIOR	EXTERIOR
Initial Camber	1.308	1.308
Dead Load Deflection	-0.35	-0.35
Residual Camber	0.958	0.958

\+ Indicates Upward Deflection
\- Indicates Downward Deflection

Bridge Seat Elevations were calculated using anticipated beam camber and deadload deflection of the slab (Residual Camber) with the top of the beam ¾" below the bottom of the slab at the centerline of the span on the low edge of the top flange.

BEAM FILLET DETAIL

NOTES

1. 401 bars shall be epoxy coated.
2. For Reinforcing Bar Notes, see INDOT Standard Drawing E703-BRST-01.
3. Finished Bearing Surfaces shall be clean and free of loose material before placing bearing pad.
4. No more than 3 shim plates shall be used per bearing. Minimum thickness of individual plate shall be ⅛".
5. All steel used in bearing shims and bearing plates shall be A709 Grade 36 minimum and galvanized in accordance with ASTM A123 or A153.

NO.	DATE	REVISIONS	BY	CHECKED

Section 20
Township 34 North, Range 10 East
Jefferson Township,
Noble County, Indiana

Noble County, Indiana

KURDZIEL BARKER
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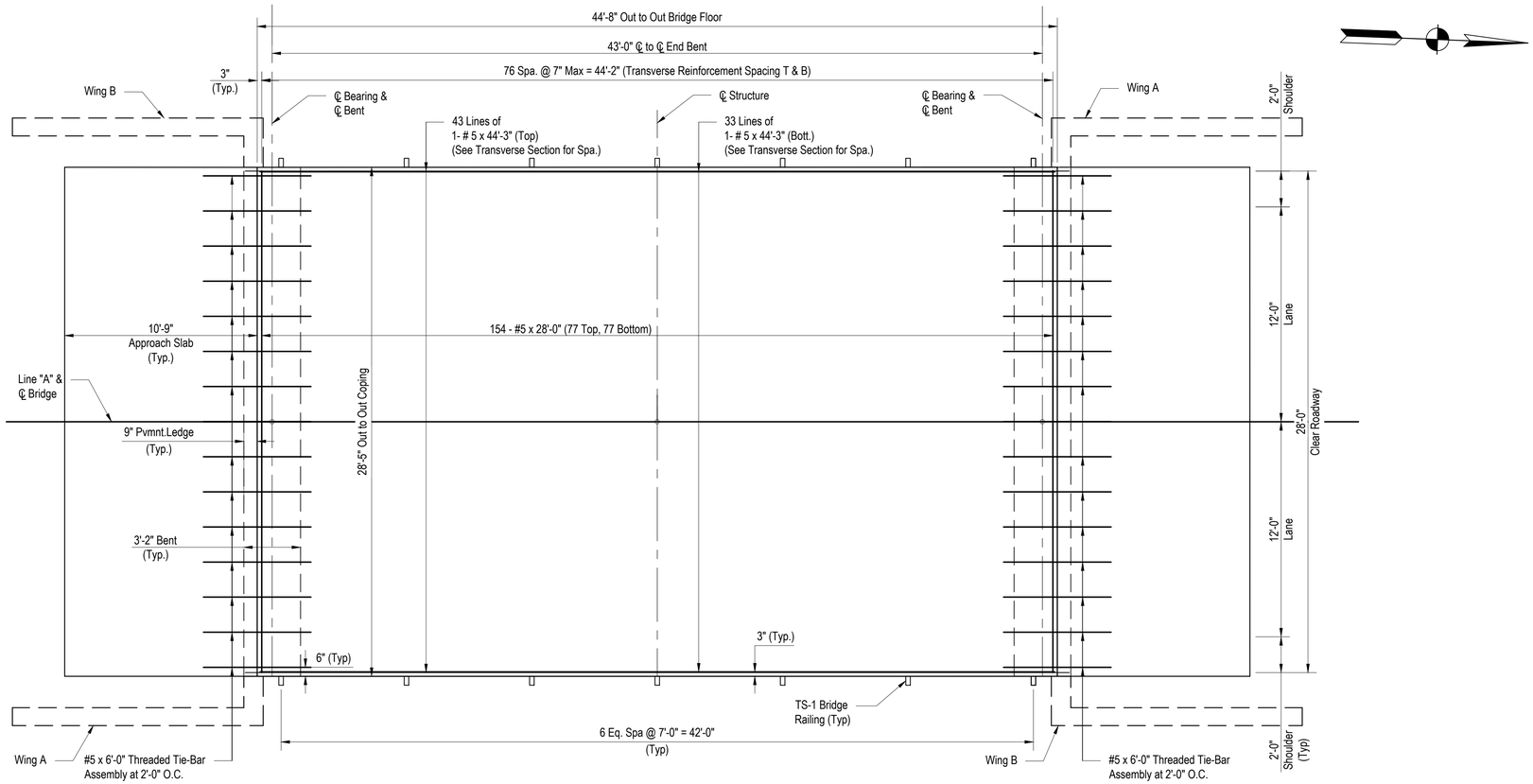
Bearing Assembly

SKYLER R. P. COOMBS
REGISTERED
No. 11200658
STATE OF INDIANA
PROFESSIONAL ENGINEER
03/05/2025

CLIENT
Noble County

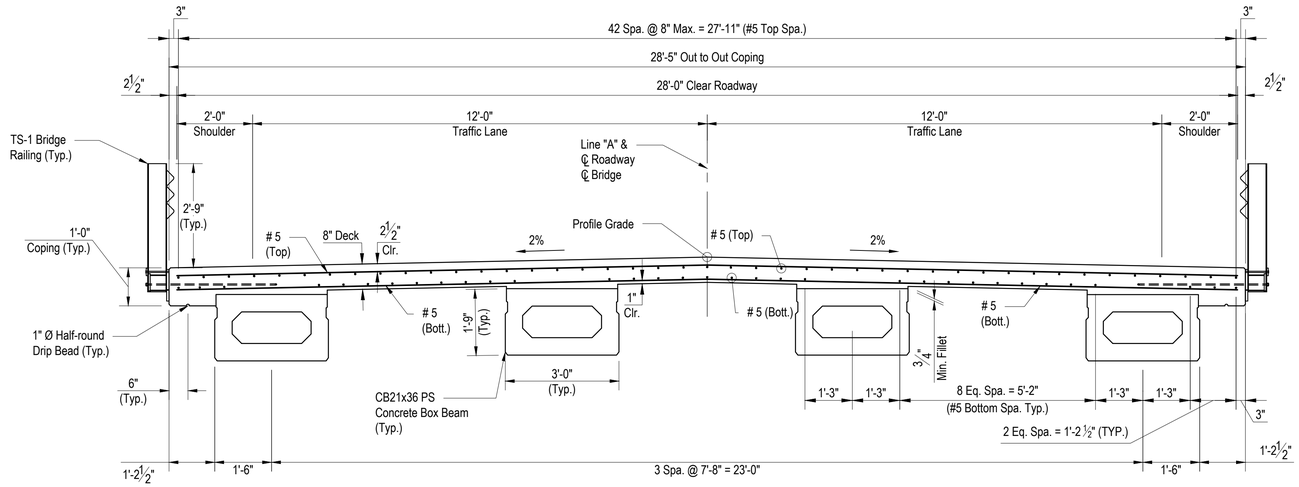
PROJECT NUMBER:	2401
DATE:	5/1/2024
DESIGNED BY:	IG
CHECKED BY:	SRPC
DRAWN BY:	IG
SCALE:	SEE PLANS
FILE NAME:	NC33 CAD Drawings

Bridge 33 Replacement



FLOOR PLAN

SCALE: ¼" = 1'-0"



TYPICAL SECTION

SCALE: ½" = 1'-0"

NOTES

1. All reinforcing bars shall be epoxy coated.
2. Concrete Mix shall include E5 Internal Cure and E5 Liquid Fly Ash in accordance with INDOT Construction Memo 24-03.
3. For Reinforcing Bar Notes, see INDOT Standard Drawing E703-BRST-01.
4. The top reinforcing in the deck shall be securely ties down to the deck form and or beams to prevent lifting during concrete placement.
5. Suitable restraint shall be provided to prevent rotation of exterior beams from construction load such as finishing machine, forms, etc.
6. For End Bent Diaphragm details, see Sheet 16 & 17.
7. For Bar Bending diagrams and Bill of Materials, See Sheet 17. The deck reinforcement is billed along with the diaphragm in the Superstructure Bill of Materials.

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Section 20
Township 34 North, Range 10 East
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Noble County, Indiana

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Superstructure Details

SKYLER R. P. COOMES
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03/05/2025

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Noble County

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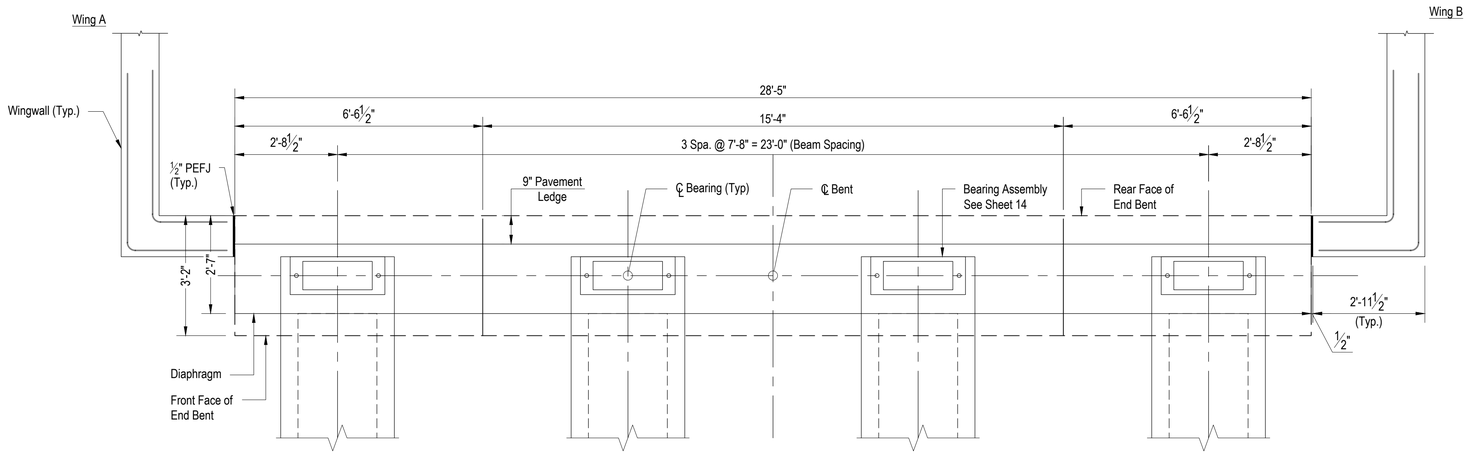
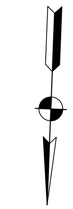
Bridge 33 Replacement



DIAPHRAGM PLAN - BENT NO. 1
SAME FOR BENT NO.2 BY OPPOSITE HAND

SCALE: ½ " = 1'-0"



BENT NO.1

BENT NO.2

NOTES
1. All reinforcing bars shall be epoxy coated.
2. For reinforcing bar bending diagrams, see Sheet 11
For Reinforcing Bar Notes, see INDOT Standard Drawing E703-BRST-01.

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Superstructure Details

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03/05/2025

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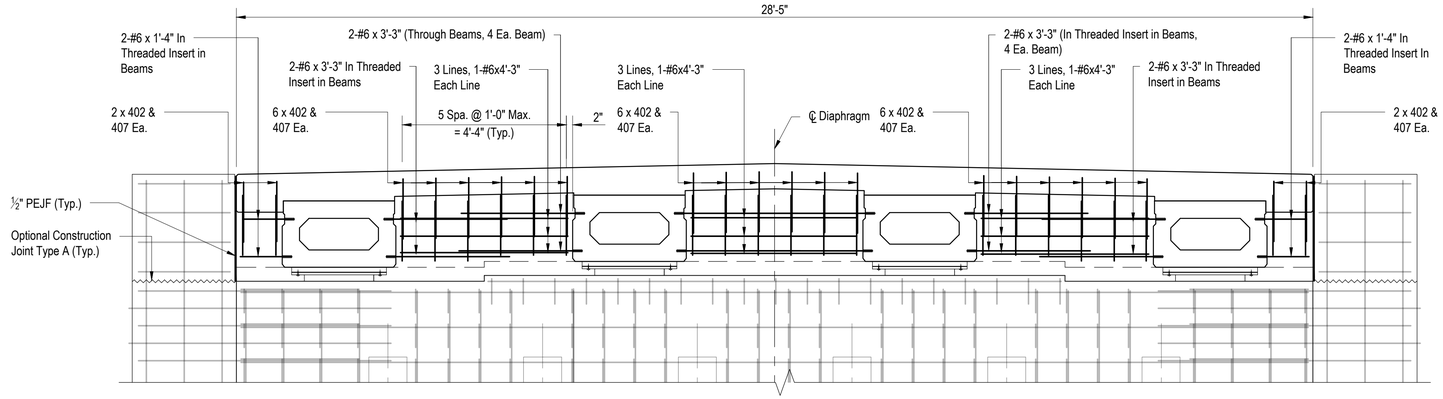
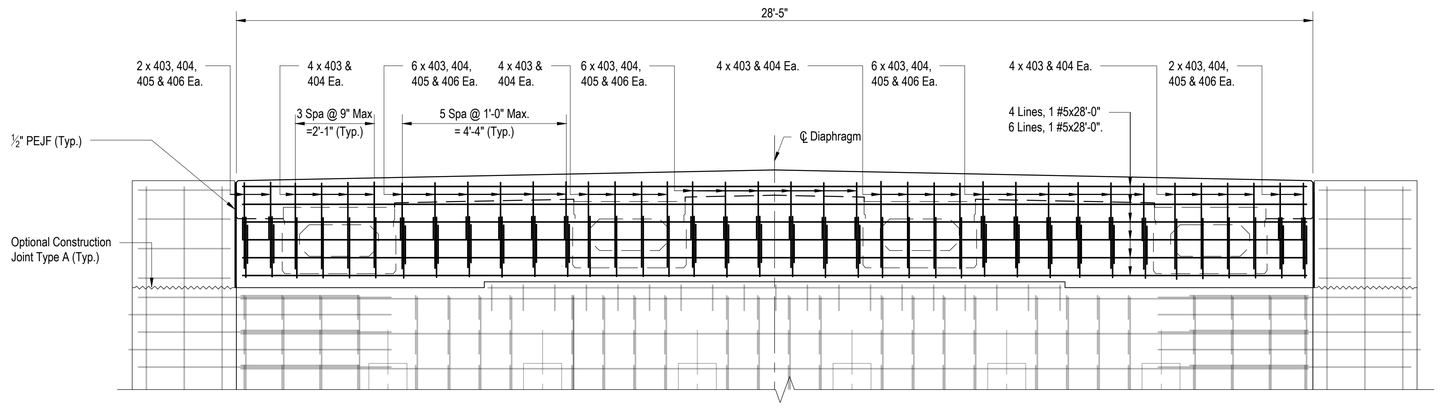
Bridge 33 Replacement



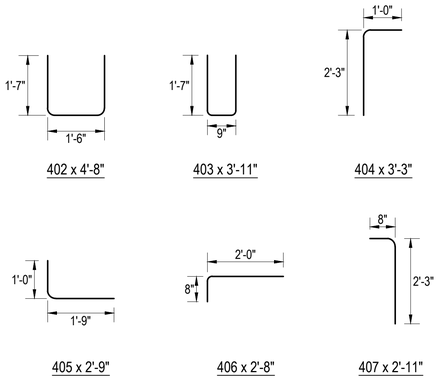
ELEVATION - DIAPHRAGM AT BENT NO.1 - FRONT FACE REINFORCEMENT
SAME FOR BENT NO.2 BY OPPOSITE HAND

SCALE: ½ " = 1'-0"



ELEVATION - DIAPHRAGM AT BENT NO.1 - REAR FACE REINFORCEMENT
SAME FOR BENT NO.2 BY OPPOSITE HAND

SCALE: ½ " = 1'-0"



BAR BENDING DIAGRAMS

SCALE: ½ " = 1'-0"

BILL OF MATERIALS
SUPERSTRUCTURE

REINFORCING BARS EPOXY COATED

Size & Mark	No.of Bars	Length	Weight (Lbs.)
#6	18	4' - 3"	
#6	24	3' - 3"	
#6	8	1' - 4"	
TOTAL #6 EPOXY COATED REINFORCING			250
#5	76	44' - 3"	
#5	174	28' - 0"	
TOTAL #5 EPOXY COATED REINFORCING			8,590
402	44	4' - 8"	
403	76	3' - 11"	
404	76	3' - 3"	
405	44	2' - 9"	
406	44	2' - 8"	
407	44	2' - 11"	
TOTAL #4 EPOXY COATED REINFORCING			748
TOTAL EPOXY COATED REINFORCING BARS			**9,588**
CONCRETE			
CONCRETE, C, SUPERSTRUCTURE, E5			46.2 CYS.
MISCELLANEOUS			QTY.
THREADED TIE BAR ASSEMBLY EPOXY COATED (#5 x 6'-0")			30 EACH

NOTES
1. All reinforcing bars shall be epoxy coated.
2. Concrete Mix shall include E5 Internal Cure and E5 Liquid Fly Ash in accordance with INDOT Construction Memo 24-03.
3. For Reinforcing Bar Notes, see INDOT Standard Drawing E703-BRST-01.
4. For Typical Sections see sheet 18.

NO.	DATE	REVISIONS	BY	CHECKED

Section 20
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Superstructure Details

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03/05/2025

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DRAWN BY:	IGA
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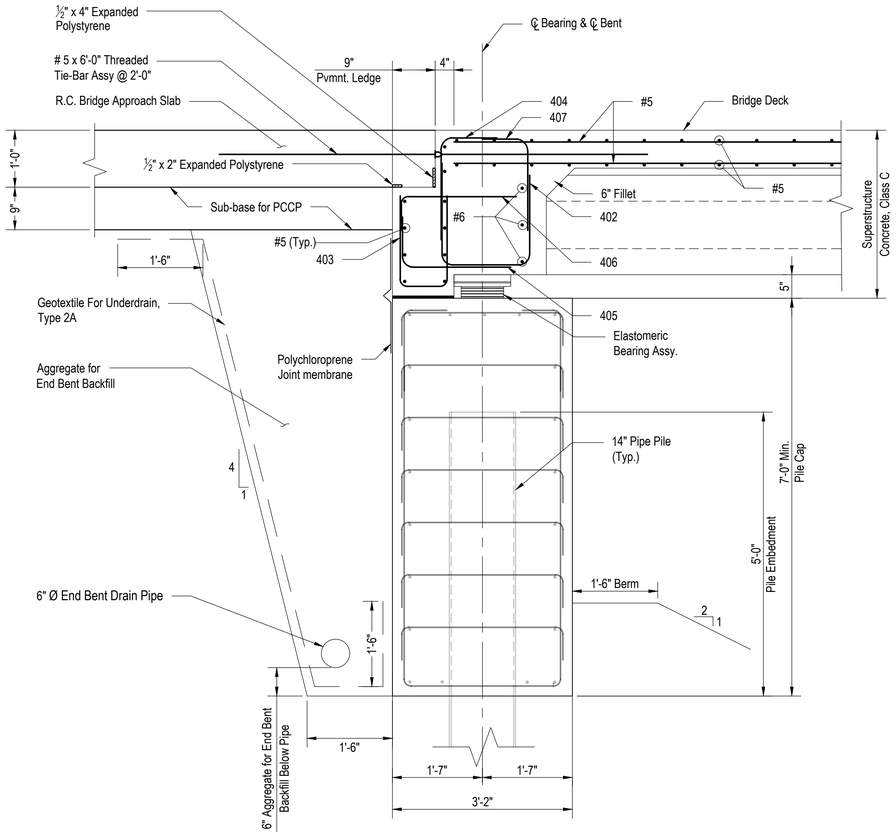
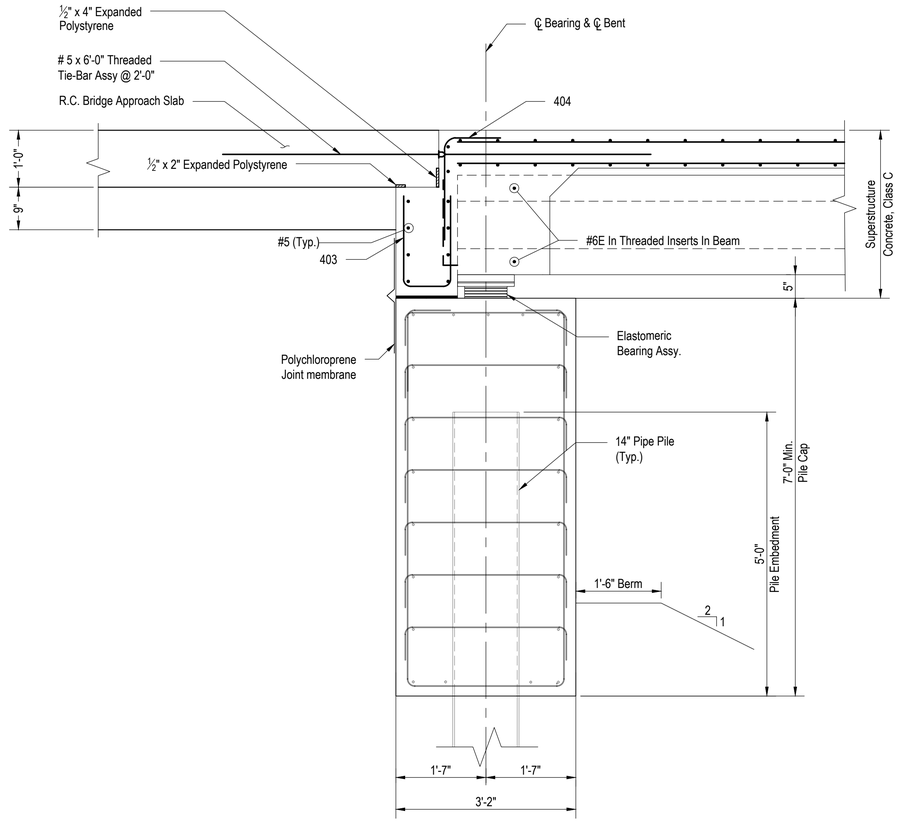
FILE NAME:	NC33 CAD Drawings

Bridge 33 Replacement



TYPICAL SECTION FOR BENT DIAPHRAGM
AWAY FROM BEAM

SCALE: ¾" = 1'-0"



TYPICAL SECTION FOR BENT DIAPHRAGM
AT FROM BEAM

SCALE: ¾" = 1'-0"

NOTES
1. All reinforcing bars shall be epoxy coated.
2. For reinforcing bar bending diagrams, see Sheet 17.
3. For Reinforcing Bar Notes, see INDOT Standard Drawing E703-BRST-01.
4. For Pavement Ledge Details, See Sheet 19.
5. For Bearing Details, See Sheet 14.

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Section 20
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Superstructure Details

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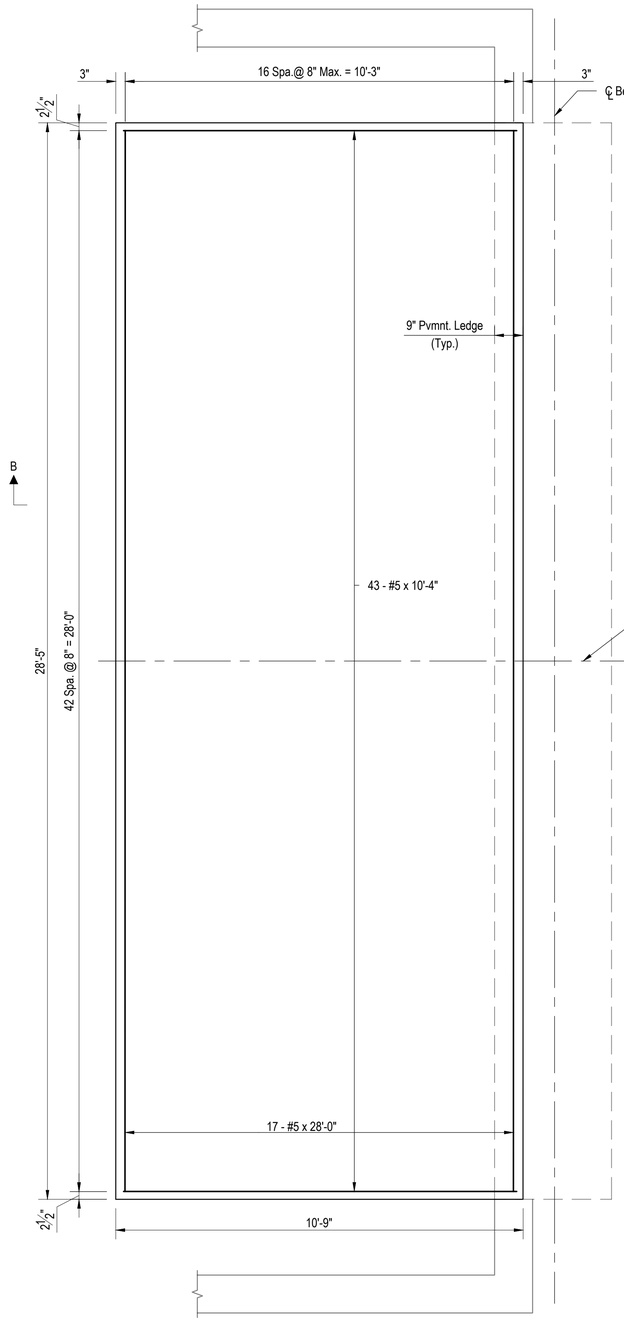
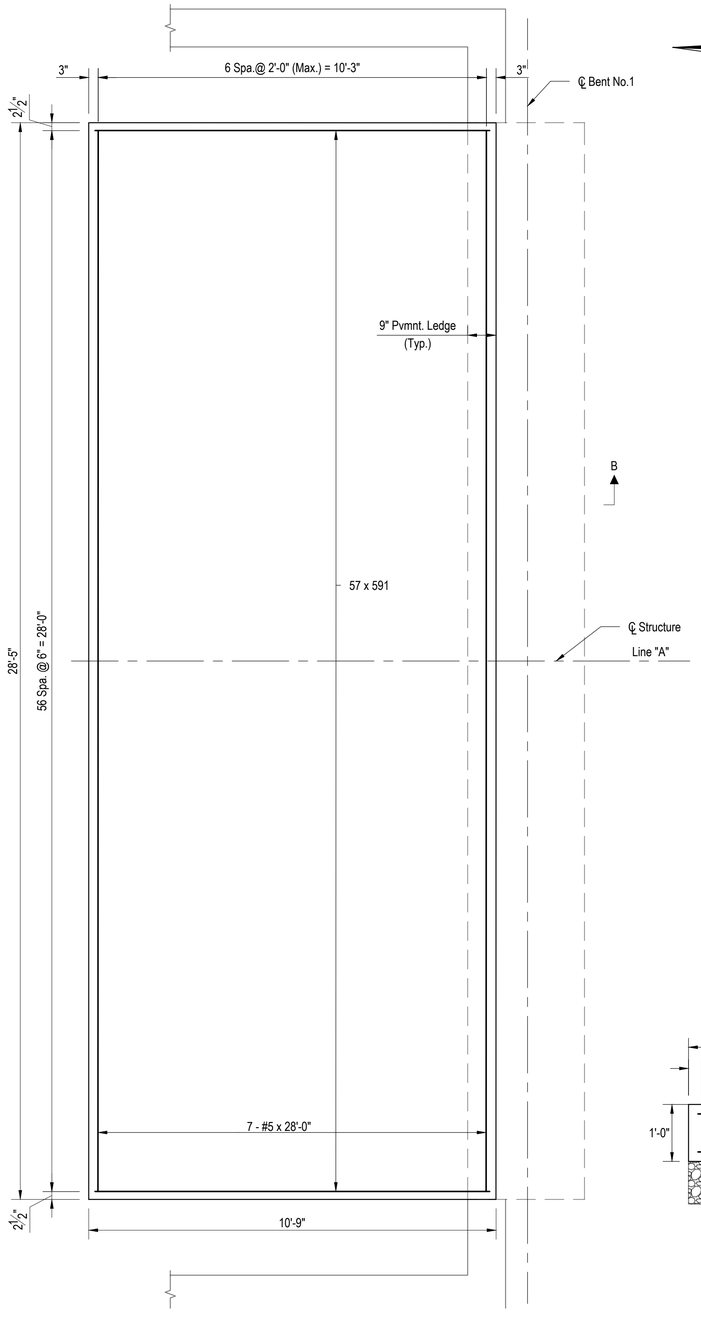
Bridge 33 Replacement



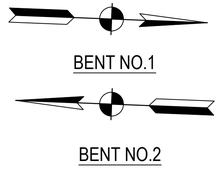
APPROACH SLAB DETAILS -BENT NO.1 TOP REINFORCING
BENT NO.2 SAME BY OPPOSITE HAND

SCALE: ½" = 1'-0"



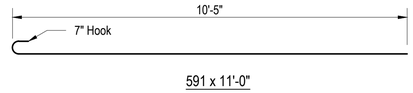
APPROACH SLAB DETAILS -BENT NO.1 BOTTOM REINFORCING
BENT NO.2 SAME BY OPPOSITE HAND

SCALE: ½" = 1'-0"



BILL OF MATERIALS
APPROACH SLAB - BENT NO.1 (SAME FOR BENT NO. 2)

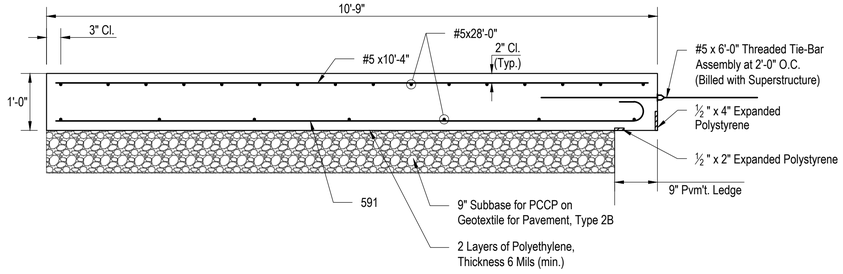
REINFORCING BARS EPOXY COATED			
Size & Mark	No.of Bars	Length	Weight (Lbs.)
591	57	11' - 0"	
#5	24	28' - 0"	
#5	43	10' - 4"	
TOTAL #5 EPOXY COATED REINFORCING			1,819
TOTAL EPOXY COATED REINFORCING BARS			**1,819**
CONCRETE			
REINFORCED CONCRETE BRIDGE APPROACH, 12", E5			34 SYS
MISCELLANEOUS			QTY.
SUBBASE FOR PCCP			8 CYS
GEOTEXTILE FOR PAVEMENT, TYPE 2B			32 SYS



591 x 11'-0"

BAR BENDING DETAIL

SCALE: ½" = 1'-0"



APPROACH SECTION B - B

SCALE: ¾" = 1'-0"

NOTES
1. All reinforcing bars shall be epoxy coated.
2. Concrete Mix shall include E5 Internal Cure and E5 Liquid Fly Ash in accordance with INDOT Construction Memo 24-03.
3. For Reinforcing Bar Notes, see INDOT Standard Drawing E703-BRST-01.

NO.	DATE	REVISIONS	BY	CHECKED

Section 20
Township 34 North, Range 10 East
Jefferson Township,
Noble County, Indiana

Noble County, Indiana

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Approach Slab Details

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REGISTERED
No. 11200658
STATE OF INDIANA
PROFESSIONAL ENGINEER
03/05/2025

CLIENT
Noble County

PROJECT NUMBER:	2401
DATE:	5/1/2024
DESIGNED BY:	IGA
CHECKED BY:	SRPC
DRAWN BY:	IGA
SCALE:	SEE PLAN
FILE NAME:	NC33 CAD Drawings

Bridge 33 Replacement

SHEET 19 OF 20

SUMMARY OF BRIDGE QUANTITIES

ITEM	CONCRETE CLASS C SUPERSTR, E5	CONCRETE CLASS C SUBSTR	TS-1 RAILING	REINF BARS, EPOXY COATED	REINF. CONC. BRIDGE APPROACH, E5 (12IN)	TGS-1 RAILING TRANSITION	COMPACT AGGREGATE NO. 53 (6 IN)	SUBBASE FOR PCCP	PILES PIPE PILE, 14 (IN)	PILES TEST PILE, DYNAMIC PRODUCTION	PILES DYNAMIC PILE LOAD TEST	PILES TEST PILE, DYNAMIC, RESTRIKE	PILES CONICAL SHOE, 14"	EXCAVATION, FOUNDATION, UNCLASSIFIED	AGGREGATE FOR END BENT BACKFILL	STRUCTURAL BACKFILL, TYPE 2	THREADED TIE BAR ASSEMBLY, EPOXY COATED	PIPE, END BENT DRAIN (6IN)	GEOTEXTILE FOR PAVEMENT TYPE 2B	GEOTEXTILE FOR UNDERDRAIN, TYPE 2A	GEOTEXTILE FOR RIPRAP, TYPE 1A	RIPRAP, REVETMENT	CONC. STR. MEMBERS CB 21" x 36" BOX BEAM	CONC. STR. MEMBERS BEARING ASSEMBLY, ELASTOMERIC	SURFACE SEAL*
	CYS	CYS	LFT	LBS	SYS	EACH	TON	CYS	LFT	LFT	EACH	EACH	EACH	CYS	CYS	CYS	EACH	LFT	SYS	SYS	SYS	TONS	LFT	EACH	SFT
End Bent No. 1		35.5		4027			2.2		354				6	70	31	19		70		53	80	43				390
End Bent no. 2		35.5		4027			2.3		265	63	1	1	6	70	31	19		70		53	72	41				390
Superstructure	46.2		84	9588													30						176	8	
Bridge Railing						4																			
Approach Slabs				3638	68			16											64						
TOTALS	46.2	71.0	84	21280	68	4	4.5	16	619	63	1	1	12	140	62	38	30	140	64	106	152	84	176	8	780

* For Information Only. Paid for as Lump Sum

PAVEMENT QUANTITIES AND APPROACH TABLE

LOCATION STATION	LOCATION STATION	DESCRIPTION (APPROACH TYPE OR CLASS)	WIDTH	LENGTH	RADII	DISTANCE BEYOND RIW LINE	GRADE 1	GRADE 2	EXCAVATION CUT	EXCAVATION FILL + 20%	SUBBASE FOR PCCP	CLEAR ZONE AT DRIVE	QC/QA - HMA MATERIALS 3, 58S, SURFACE, 9.5 mm	QC/QA - HMA MATERIALS 3, 58S, INTERM, 19.0 mm	QC/QA - HMA MATERIALS 3, 58S, BASE, 29.0 mm	MILLING TRANSITION	ASPHALT MATERIAL FOR JOINT ADHESIVE SURFACE	ASPHALT MATERIAL FOR JOINT ADHESIVE INTERMEDIATE	ASPHALT MATERIAL FOR LIQUID ASPHALT SEALANT	ASPHALT MATERIAL FOR TACK COAT	COMPACTED AGGREGATE, NO. 53 DEPTH	SUBGRADE TREATMENT, TYPE IC	GEOTEXTILE FOR PAVEMENT, TYPE 2B	REMARKS
FT	FT		FT	FT	FT	FT	%	%	CYS	CYS	CYS	FT	TONS (165)	TONS (275)	TONS (660)	SYS	LFT	LFT	LFT	SYS	TONS (10 in.)	SYS	SYS	
Line "A"																								
10+81.50	10+86.92	Transition Mill		5.42			-0.82%	-0.82%	7	0			2			13	17	17	17	13	0.2	2	2	
10+86.92	11+57.12	Full Depth	28.00	70.20			1.83%	0.91%	49	22			16	27	63		211	211	211	380	1.3	221	221	
11+57.12	11+66.92	Full Depth	28.00	9.80			0.91%	0.91%	0	10			3	5	11		30	30	30	61	0.3	35	35	
12+33.08	12+42.88	Full Depth	28.00	9.80			-0.91%	-0.91%	1	10			3	5	11		30	30	30	61	0.3	35	35	
12+42.88	13+00.00	Full Depth	28.00	57.12			-0.91%	-0.91%	31	19			14	21	51		172	172	172	305	1.2	179	179	
13+00.00	13+18.47	Transition Mill		18.47			1.80%	1.80%	17	0			3			43	56	56	56	43	0.8	23	23	
13+18.47	13+33.5	Incidental																			0.4			
		TOTALS		170.8					105	61			41	58	136	56	516	516	516	863	4.5	495	495	

GUARDRAIL SUMMARY TABLE

LOCATION FROM STATION	LOCATION TO STATION	LEFT	MEDIAN LEFT	MEDIAN RIGHT	RIGHT	W-BEAM GUARD RAIL LENGTH STANDARD POST AT 6'-3" SPA. (LFT)	STANDARD POST AT 3'-1.5" SPA (LFT)	DOUBLE FACED AT 6'-3" SPA. (LFT)	DOUBLE FACED AT 3'-1.5" SPA. (LFT)	SHOP CURVED, 27 3/4" AT 6.25' SPA. (LFT)	NESTED GUARD RAIL (EA)	GUARDRAIL TRANSITION TYPE	GUARDRAIL TRANSITION (EA)	GUARDRAIL END TREATMENT TYPE OS (EA)	GUARD RAIL REMOVE (EA)	HAND DIG GUARDRAIL POST HOLES (EA)	REMARKS
10+81.50	12+61.50				X										180.0		
10+81.50	12+61.50	X													180.0		
10+85.25	11+79.00	X				31.25						TGS-1	1	1		4	
10+85.25	11+79.00				X	31.25						TGS-1	1	1		4	
12+21.00	13+33.50	X				50.00						TGS-1	1	1			
12+21.00	12+59.75				X	6.25						TGS-1	1	1			
					TOTALS	118.75							4	4	360	8	

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Quantity Summary

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Bridge 33
Replacement

SHEET 20 OF 20