INDOT | BRIDGE DESIGN AIDS

BDA 412-06 | JANUARY 20, 2026

EXTENDED PILE BENT RETROFITS

References: IDM 17-5.11 Structural Steel Coating
IDM 409-6.01(01) Types of Interior Supports
IDM 409-6.04(01) Extended-Pile Bent
Standard Drawing series E 701-BPIL
2025 INDOT Bridge Design Conference – Open Pile Bent Repairs Presentation



Extended pile bents have a lower construction cost than many other types of interior supports, but they typically require more extensive maintenance and repair.

Deterioration and spalling of the concrete encasement can typically be repaired by patching concrete structures in accordance with *ISS* 710, and designers should consider using fiber wrap concrete casing systems as an additional measure of protection where appropriate.

Deterioration and corrosion of the steel piling itself should be evaluated early in the project development process to determine the appropriate level of maintenance or repair. The location of the most severe deterioration is often at the bottom of riprap, and designers are encouraged to investigate this region when feasible.

The following table provides general guidance on the appropriate level of preservation or rehabilitation for extended pile bents.

Observed Deterioration	Preservation Techniques	Notes
Flaking or peeling of existing coating, surface rusting with minor pitting and/or section loss	Pile Protection Options: 1) Clean and coat existing piles per ISS 619 2) Pile Jacketing Systems a) Pile Medic* b) CarboShield* c) Denso-SeaShield* d) Grout-filled Pile Sleeve e) Concrete Encasement (INDOT Standard Dwg 701-BPIL and IDM Figure 409-6A) * Proprietary Products	Piles should be cleaned and coated beyond observed deterioration, but not less than 2 ft below the groundline. Evaluate the feasibility of dewatering in a similar manner as shown in the INDOT Pile Encasement Detail. In locations where dewatering is not feasible or a more robust system is required, designers should consider the use of pile jacketing systems that can be installed under water.
Moderate to significant section loss (Localized)	Pile Repair Options: Structural encasement of deteriorated sections	See INDOT Pile Encasement Details included with this BDA. Pile Medic jacketing system may also be considered for structural encasement, but will require coordination with the manufacturer to determine feasibility.
Severe section loss (Widespread)	Install supplemental piling where accessible overhead, or replace the substructure	Designer should verify overhead accessibility for installation of supplemental piling. Designers should verify the project scope using life cycle cost analysis to confirm rehabilitation is still more cost effective than complete bridge replacement.

Payment methods for these preservation techniques will vary. Generally, payment should use existing standard pay items in the ISS, such as cleaning and coating, concrete and reinforcing, excavation. For pile jacketing systems, designers should consider using a USP to define the work, materials and payment methods. The use of proprietary pile jacketing systems will require a Proprietary Material Request be submitted for approval by the Bridge Engineering Division Director.

Design Considerations:

- Dewatering: If the pile bent is submerged, dewatering or cofferdams may be used to create a dry work environment. Sheet pile cofferdams aren't feasible under most bridges due to overhead restrictions, and sandbag cofferdam heights are typically limited to about 2 ft.
- For Pile Repairs:
    - All elements of the pile encasement (shear studs, reinforcement, etc.) or jacketing system should be designed to transfer the design loads across the deteriorated portion of the pile. See 2025 INDOT Bridge Design Conference – Open Pile Bent Repairs Presentation for additional information.
    - Falsework: Falsework may be required to support the bridge structure during repair activities, especially when replacing sections of piles.
    - Load Restrictions: Temporary load restrictions may be needed during repairs to ensure structural integrity

Sample INDOT Projects:

Repair: INDOT Pile Encasement Detail - SR38 over Stowers Ditch
- Contract B-42945
- Des No 2000625

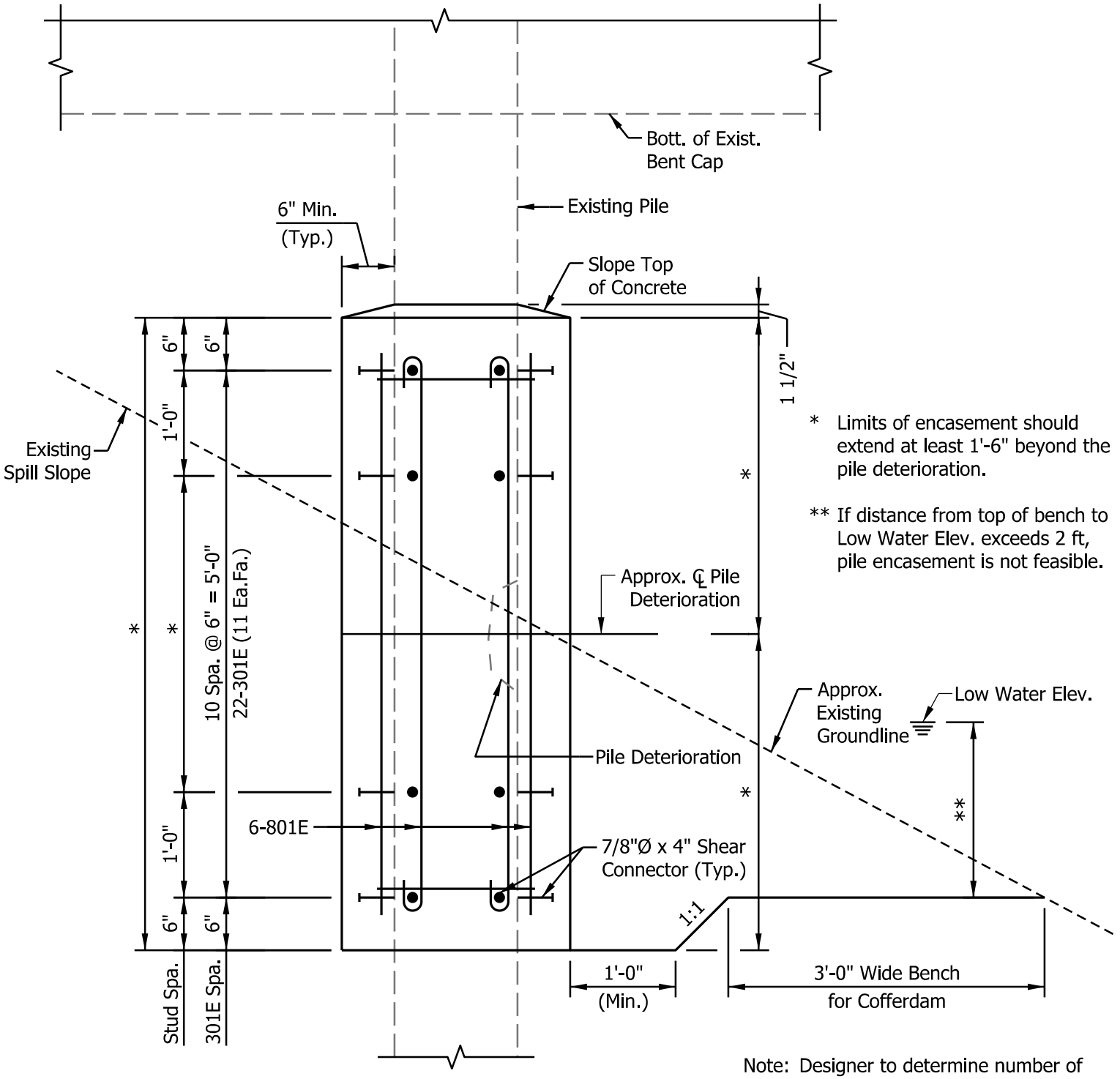
Repair: Pile Medic - I69 over Pigeon Creek
- Contract B-40352 (Pile jackets added by change order)
- Des No 1500807

Protection: Grout-Filled Pile Sleeve – US35 over Bell Creek
- Contract B-41567
- Des No 1800164

Protection: CarboShield – US20 over Burns Ditch
- Contract B-41207 (Pile jackets added by change order)
- Des No 1702611

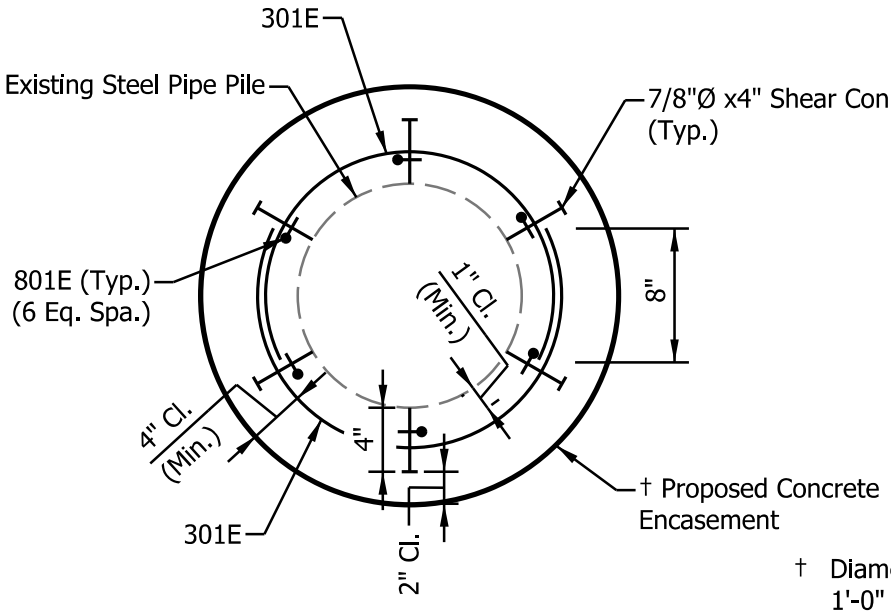
Protection: Denso Pile Jacket – SR58 over Bee Creek
- Contract B-44417
- Des No 2200872

INDOT Pile Encasement Details



TYPICAL PILE ENCASEMENT DETAIL

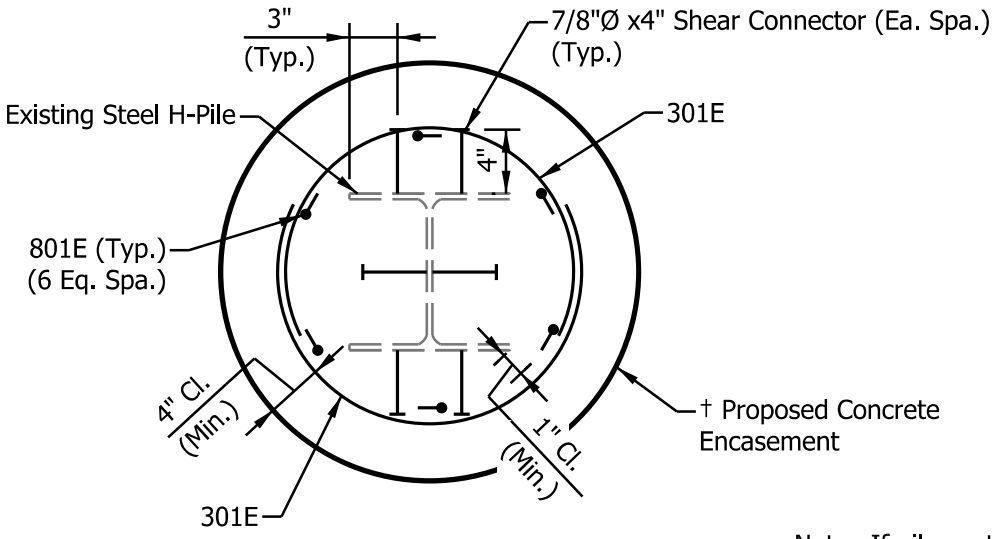
Scale: 3/4" = 1'-0"



† Diameter of encasement should be 1'-0" larger (min.) than existing pipe pile diameter or H-Pile diagonal. (Typ. 30" or 36" diameter)

SECTION SHELL PILE

Scale: 1" = 1'-0"



Note: If pile coating is required, then it should be completed prior to repairs.

SECTION H-PILE

Scale: 1" = 1'-0"

Repair: INDOT Pile Encasement Detail - SR38 over Stowers Ditch

Contract B-42945

Des No 2000625

PROJECT	DESIGNATION
2000387	2000625
CONTRACT	BRIDGE FILE
B-42945	038-12-04390 B

STRUCTURE INFORMATION				
STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
038-12-04390 B	CONTINUOUS REINFORCED CONCRETE SLAB BRIDGE	3 SPANS: 21'-0", 28'-0", 21'-0" SKEW: 0°	STOWERS DITCH	℄ STRUCTURE STA. 120+20.00 "C"

KIN PROJECT INFORMATION	
DESIGNATION	PROJECT DESCRIPTION
2000387 **(LEAD)**	Bridge Preventive Maintenance for SR 47 over Prairie Creek (047-06-06571 B)
2000636	Bridge Rehabilitation for SR 39 over Reagan Run (039-12-03953 B)
2000625	Bridge Preventive Maintenance for SR 38 over Stowers Ditch (038-12-04390 B)

INDIANA DEPARTMENT OF TRANSPORTATION

BRIDGE PREVENTIVE MAINTENANCE PLANS

FOR SPANS OVER 20 FEET

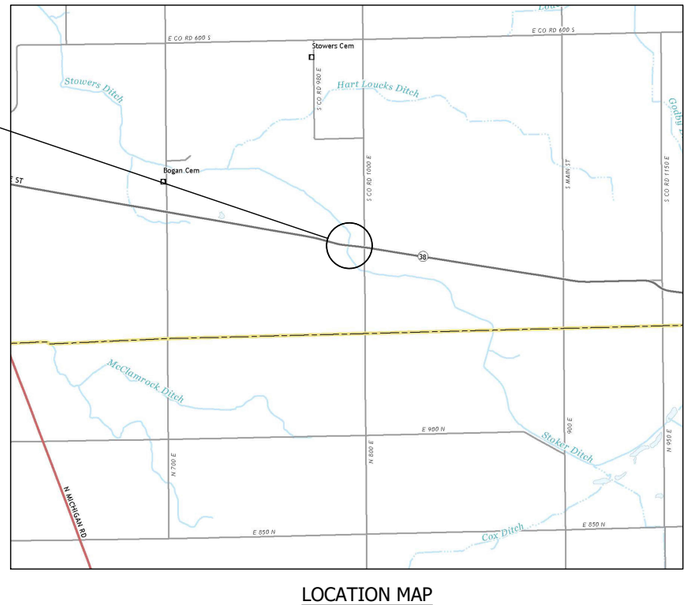
ROUTE: SR 38 AT: RP 36+44

PROJECT NO. 2000625 P.E.
R/W
2000625 CONST.

NO ADDITIONAL RIGHT-OF-WAY REQUIRED FOR THIS PROJECT

Bridge Deck Overlay on SR 38 over Stowers Ditch
2.29 miles East of US 421 in
Section 17, T-20-N, R-2-E, Kirklin Township, Clinton County, Indiana

PROJECT LOCATION
Begin Project-Sta.119+53.75 "C"
End Project-Sta.120+86.25 "C"



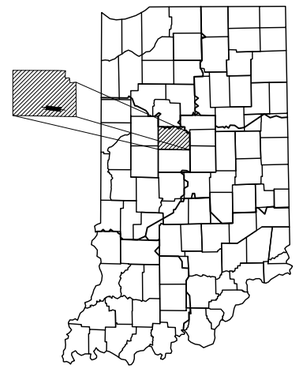
LOCATION MAP
SCALE: 1"=2000'

TRAFFIC DATA

A.A.D.T.	(2023)	238 V.P.D.
A.A.D.T.	(2043)	238 V.P.D.
D.H.V	(2043)	38 V.P.H.
DIRECTIONAL DISTRIBUTION		47.06 %
TRUCKS		19.75 % A.A.D.T.
		15.97 % D.H.V.

DESIGN DATA

DESIGN SPEED	55 M.P.H.
PROJECT DESIGN CRITERIA	PREVENTIVE MAINTENANCE (PRESERVATION)
FUNCTIONAL CLASSIFICATION	STATE COLLECTOR
RURAL/URBAN	RURAL
TERRAIN	LEVEL
ACCESS CONTROL	NONE



PROJECT LOCATION SHOWN BY
CLINTON COUNTY

LATITUDE: 40°11'8.59" N LONGITUDE: 86°19'12.47" W

BRIDGE LENGTH: 0.014 MI.
ROADWAY LENGTH: 0.011 MI.
TOTAL LENGTH: 0.025 MI.
MAX. GRADE: -0.87 %

HUC 12: 051201100102
HUC 14: 05120110010020

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2022
TO BE USED WITH THESE PLANS.

PLANS PREPARED BY:
BLN: BEAM·LONGEST·NEFF
8320 CRAIG STREET | INDIANAPOLIS, IN 46250
317.849.5832 | f: 317.841.4280 | WWW.B-L-N.COM

ALFRED V. WESSLING REGISTERED No. PE10809520 STATE OF INDIANA PROFESSIONAL ENGINEER

PLANS PREPARED BY: BEAM, LONGEST & NEFF, LLC (317)849-5832 PHONE NUMBER

CERTIFIED BY: Alfred V. Wessling 3/17/2023 DATE

APPROVED FOR LETTING: Stephanie J. Wagner 05/31/2023 DATE
INDIANA DEPARTMENT OF TRANSPORTATION

BRIDGE FILE
038-12-04390 B
DESIGNATION
2000625

DRAWING NO.	SHEETS
	1 of 13
CONTRACT	PROJECT
B-42945	2000387

UTILITIES

No Utilities within the Project Area.

811. Know what's below. Call before you dig.

INDIANA UNDERGROUND
1-800-382-5544 OR CALL 811
24 HOURS A DAY 7 DAYS A WEEK

REVISIONS

SHEET NO.	DATE	REVISED

INDEX

ALFRED V. WESSLING REGISTERED No. PE10809520 STATE OF INDIANA PROFESSIONAL ENGINEER

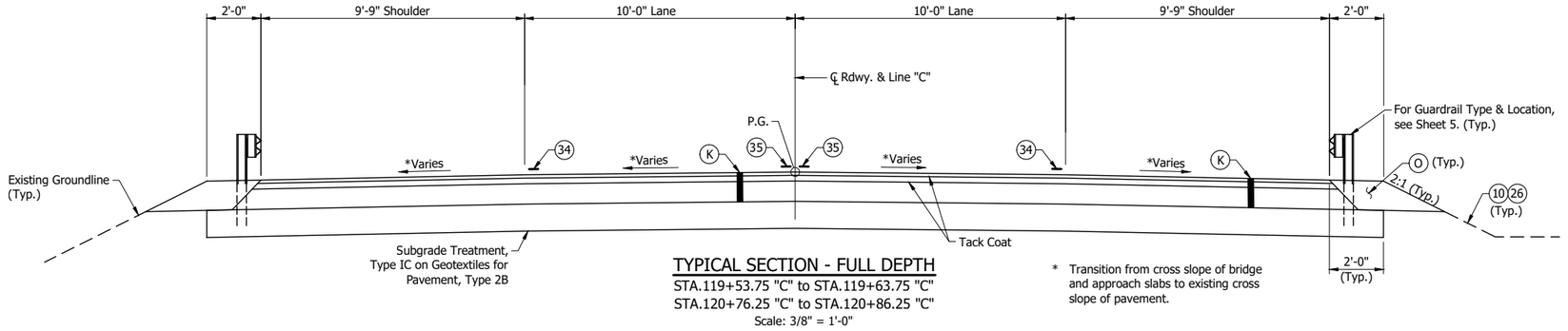
RECOMMENDED FOR APPROVAL Alfred V. Wessling 3/17/2023
DESIGN ENGINEER DATE

DESIGNED: NDM DRAWN: NW
CHECKED: AVW CHECKED: NDM

INDIANA
DEPARTMENT OF TRANSPORTATION

INDEX SHEET

HORIZONTAL SCALE	BRIDGE FILE
N/A	038-12-04390 B
VERTICAL SCALE	DESIGNATION
N/A	2000625
DRAWING NO.	SHEETS
	2 of 13
CONTRACT	PROJECT
B-42945	2000387



TYPICAL SECTION - FULL DEPTH

STA.119+53.75 "C" to STA.119+63.75 "C"
STA.120+76.25 "C" to STA.120+86.25 "C"
Scale: 3/8" = 1'-0"

* Transition from cross slope of bridge and approach slabs to existing cross slope of pavement.

LEGEND

(10) Linear Grading (as directed by the Engineer)

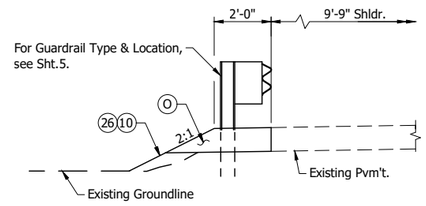
(26) Mulched Seeding, R

(34) Line, Paint, Solid, White, 6 in.

(35) Line, Paint, Solid, Yellow, 6 in. with Snowplowable Raised Pavement Markers placed @ Sta.119+60 "C" & Sta.120+80 "C"

(K) 165 lbs/Syd. QC/QA HMA, 3, 64, Surface, 9.5mm on 275 lbs/Syd. QC/QA HMA, 3, 64, Intermediate, 19.0 mm on 990 lbs/Syd. QC/QA HMA, 3, 64, Base, 25.0mm (Tack Coat between HMA Layers)

(O) 13" Compacted Aggregate, No.53



SECTION A-A

Typical Section @ Guardrail
Scale: 3/8"=1'-0"

Note:
For Location of Section A-A, see Sht.5.

Snowplowable Raised Pavement Markers shall not be placed on Approach Slabs or Bridge Deck.

ALFRED V. WESSLING REGISTERED No. PE10809520 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Alfred V. Wessling 3/17/2023
DESIGN ENGINEER DATE

DESIGNED: NDM DRAWN: NW
CHECKED: AVW CHECKED: NDM

INDIANA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
3/8" = 1'-0"	038-12-04390 B
VERTICAL SCALE	DESIGNATION
3/8" = 1'-0"	2000625
DRAWING NO.	SHEETS
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CONTRACT	PROJECT
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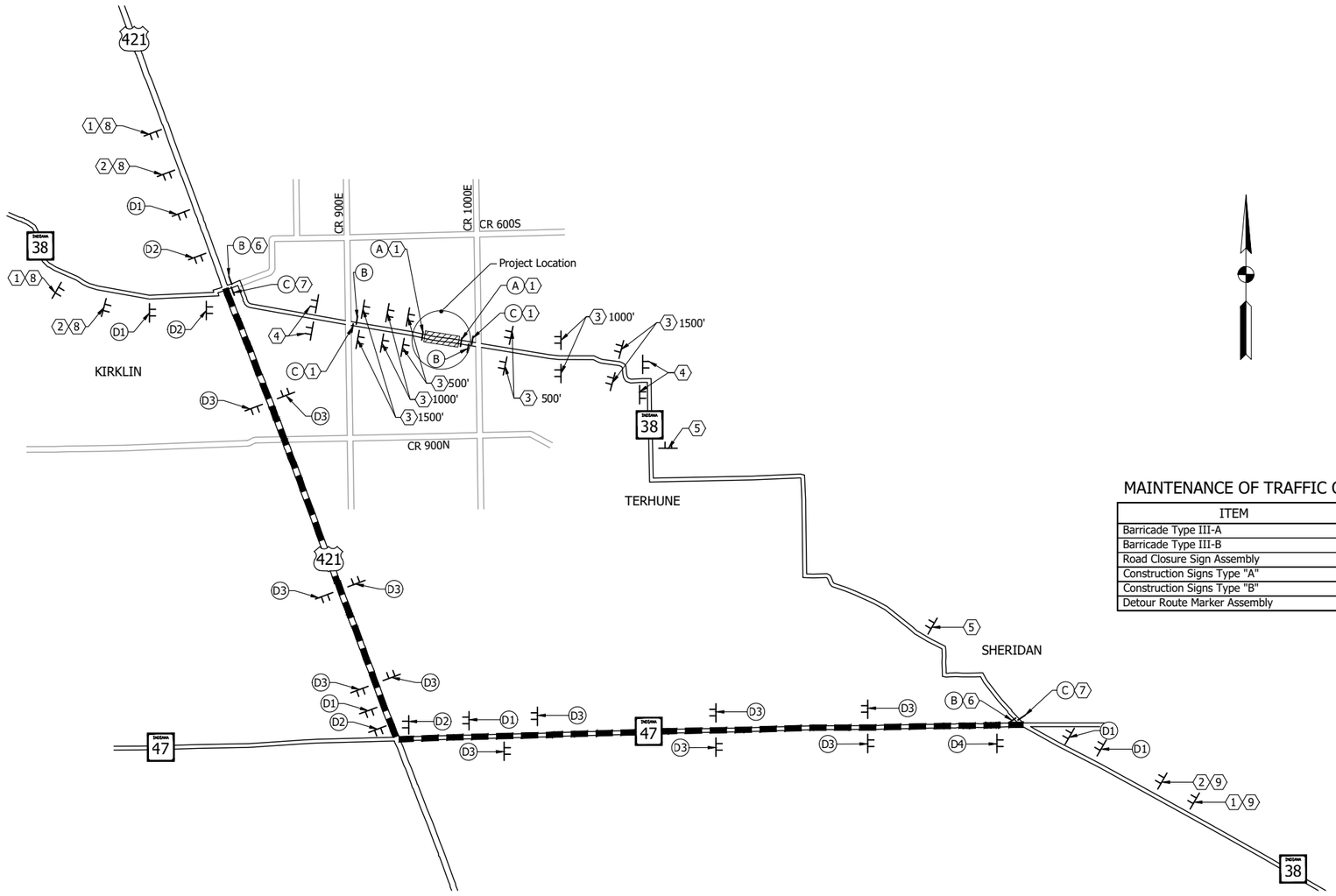


SIGN PLACEMENT PLAN
No Scale

MAINTENANCE OF TRAFFIC QUANTITIES

ITEM	QUANTITY
Barricade Type III-A	96 Lft.
Barricade Type III-B	192 Lft.
Road Closure Sign Assembly	7 Ea.
Construction Signs Type "A"	25 Ea.
Construction Signs Type "B"	12 Ea.
Detour Route Marker Assembly	23 Ea.

LEGEND

- (A) Barricade Type III-A & Road Closure Sign Assembly
- (B) Barricade Type III-B
- (C) Barricade Type III-B & Road Closure Sign Assembly
- (D) XM4-8 Detour Route Marker Assembly
  1. Advance Turn
  2. Directional
  3. Confirming
  4. End

Construction Area

Construction Sign and Supports

Detour Route

CONSTRUCTION SIGNS TYPE "A"

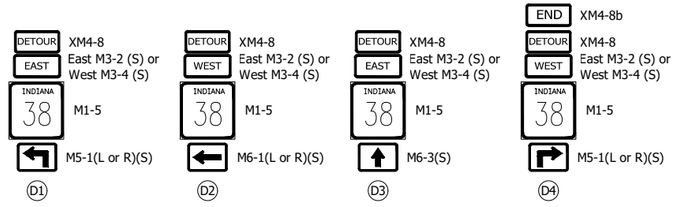
1. R11-2 Road Closed
2. XW20-2 Detour Ahead
3. XW20-3 Road Closed Ahead
4. XG20-2 End Construction
5. R11-4 Road Closed To Thru Traffic
6. XG20-5 Road Closed on or After xx/xx/xxxx
7. R11-3 Road Closed xxx Miles Ahead Local Traffic Only

CONSTRUCTION SIGNS TYPE "B"

8. EAST / INDIANA 38 — M3-2 (S) 24"x12" / M1-5 24"x24"
9. WEST / INDIANA 38 — M3-4 (S) 24"x12" / M1-5 24"x24"

MAINTENANCE OF TRAFFIC GENERAL NOTES

1. All construction signs, drums, and barricades shall be equipped with Construction Warning Lights, Type A.
2. Actual construction sign location shall be determined by the Project Engineer. The locations shown are approximate and may be adjusted by the Project Engineer.
3. The Contractor shall be required to erect, furnish and maintain all construction signs and barricades as shown.
4. Maintenance of Traffic shall be in accordance with Section 104.04 of the Indiana Department of Transportation Standard Specifications, 2022. The Indiana Manual on Uniform Traffic Control Devices, 2011, with Revisions #1, #2, and #3, and the Maintaining Traffic Sequence for Individual Segments as detailed.



DETOUR ROUTE MARKER ASSEMBLIES
No Scale

ALFRED V. WESSLING REGISTERED No. PE10809520 STATE OF INDIANA PROFESSIONAL ENGINEER

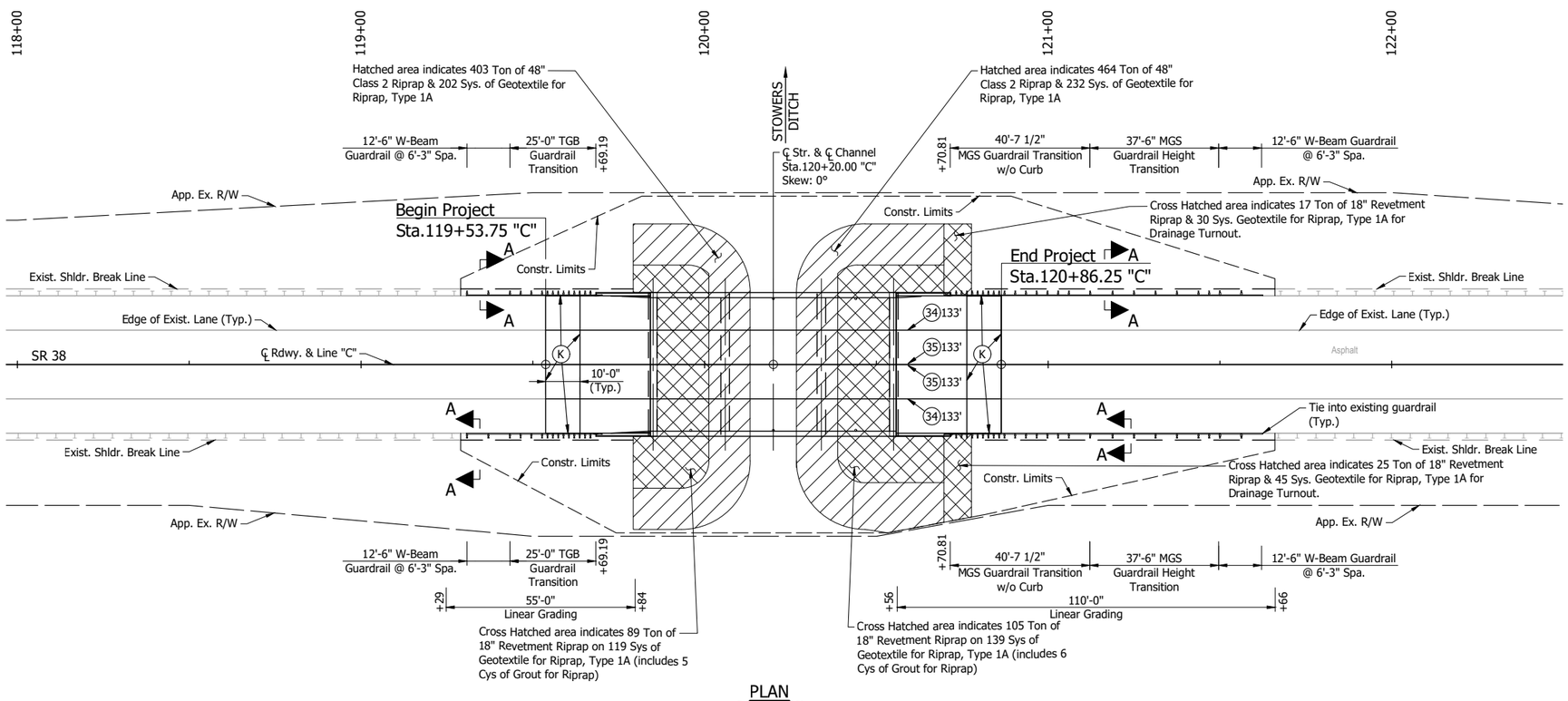
RECOMMENDED FOR APPROVAL — DESIGN ENGINEER — 3/17/2023 DATE

DESIGNED: NDM | DRAWN: NW | CHECKED: AVW | CHECKED: NDM

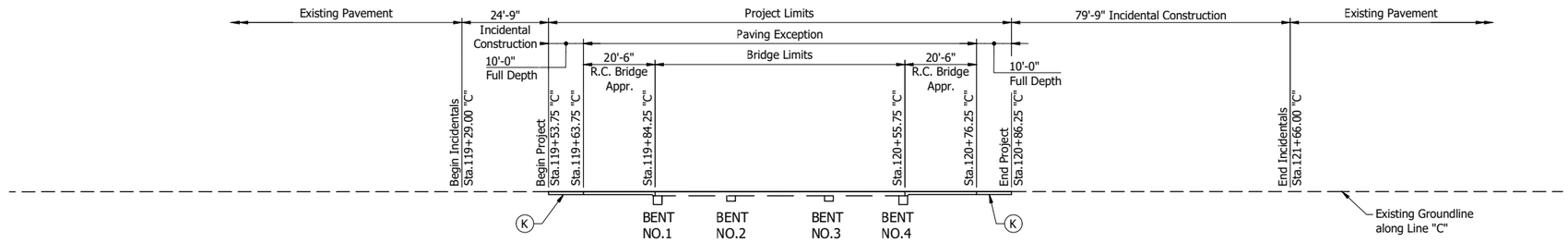
INDIANA DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC

HORIZONTAL SCALE	BRIDGE FILE
NO SCALE	038-12-04390 B
VERTICAL SCALE	DESIGNATION
NO SCALE	2000625
DRAWING NO.	SHEETS
	4 of 13
CONTRACT	PROJECT
B-42945	2000387



PLAN
Scale: 1"=20'



LONGITUDINAL SECTION
Scale: 1" = 20'

EXISTING STRUCTURE

Existing Structure is a 3 span continuous reinforced concrete slab bridge (21'-0", 28'-0",21'-0") with a 38'-10" Clear Roadway (To be Rehabilitated.)

HYDRAULIC DATA

Drainage Area	9.84 Sq Mi
Design Discharge, Q100	2,000 cfs
High Water Elevation, Q100	El. 919.20
Existing Bridge	
Skew	0°
Flowline Elevation (@ Upstream Coping)	El.909.29
Contraction Scour, Q100	6.13 ft
Total Scour, Q100	9.82 ft
Low Scour Elevation, Q100	El. 899.47
Max. Velocity, Q100 (℄ Channel)	11.80 ft/sec
Avg. Velocity, Q100	8.71 ft/sec
Low Structure Elevation	El. 922.38

EARTHWORK SUMMARY

Common Excavation	115 Cys
Usable Common Excavation	0 Cys
Fill + 25%	0 Cys
Waterway Excavation	55 Cys
Usable Waterway Excavation (50%)	0 Cys
Waste	170 Cys

Notes:

For Section A-A & Typical Sections, see Sht.3.
Do not disturb Trees outside Construction Limits.

Underdrain work to be completed if an existing underdrain is disturbed or damamged during construction. See Special Provisions for Additional Details.

ALFRED V. WESSLING REGISTERED No. PE10809520 STATE OF INDIANA PROFESSIONAL ENGINEER

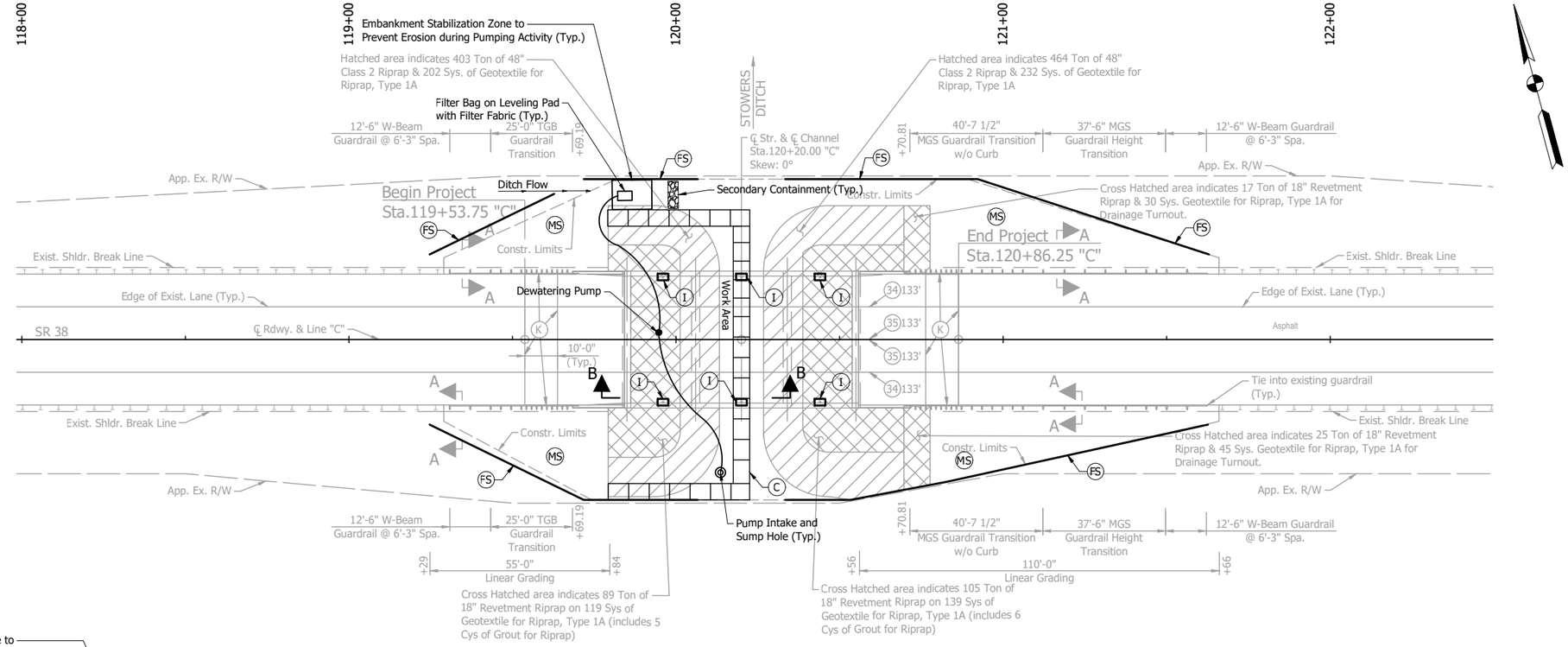
RECOMMENDED FOR APPROVAL — DESIGN ENGINEER — 3/17/2023 DATE

DESIGNED: NDM | DRAWN: NW | CHECKED: AVW | CHECKED: NDM

INDIANA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION LAYOUT DETAILS

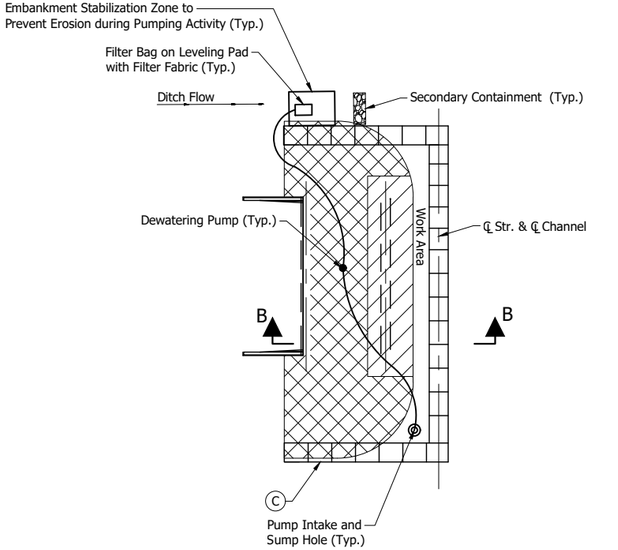
HORIZONTAL SCALE	BRIDGE FILE
1"=20'	038-12-04390 B
VERTICAL SCALE	DESIGNATION
1"=20'	2000625
DRAWING NO.	SHEETS
	5 of 13
CONTRACT	PROJECT
B-42945	2000387



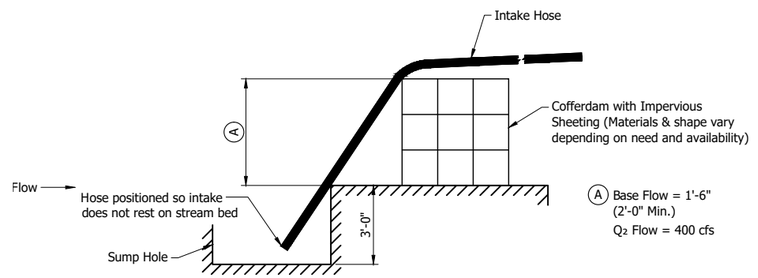
EROSION CONTROL PLAN
Scale: 1"=20'

LEGEND

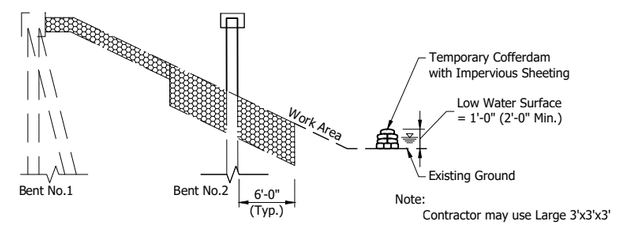
FS	Filter Sock
C	Temporary Cofferdam
MS	Temporary Mulch Stabilization
I	Temporary Inlet Protection



TEMPORARY COFFERDAM - PLAN
(Bent. No.1 and Bent No.2 Shown, Bent No.3 and Bent No.4 same by Opposite hand)
No Scale



COFFERDAM/SUMP HOLE WORK AREA
Detail For Illustration Purposes Only
No Scale



SECTION B-B
(Bent No.1 and Bent No.2 Shown, Bent No.3 and Bent No.4 same by Opposite hand)
No Scale

Note:
Placement of Temp. Cofferdam shown for work at Bent No.1 and Bent No.2. Temporary Cofferdam shall be mirrored for work at Bent No.3 Bent. No.4.

For Temporary Erosion Control Details, see Std.Dwg.E205-TECD-01 thru 12.

ALFRED V. WESSLING REGISTERED No. PE10809520 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Alfred V. Wessling DESIGN ENGINEER 3/17/2023 DATE

DESIGNED: LLS DRAWN: MEN

CHECKED: AVW CHECKED: LLS

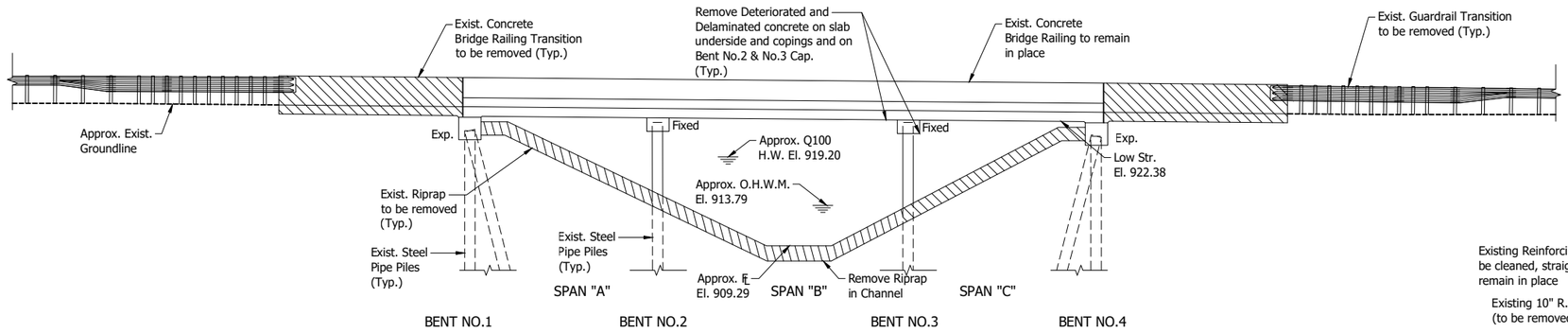
INDIANA DEPARTMENT OF TRANSPORTATION

EROSION CONTROL LINE "C"

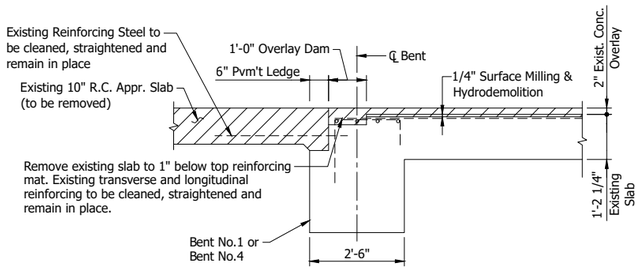
HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	038-12-04390 B
VERTICAL SCALE	DESIGNATION
AS NOTED	2000625
DRAWING NO.	SHEETS
	6 of 13
CONTRACT	PROJECT
B-42945	2000387

lboesche | p:\200064\sr 38 over stowers ditch-des 2000625\02bridge\04plans\200064 - sht erosion control.dwg | construction layout details | 3/20/2023 11:38:49 AM ||

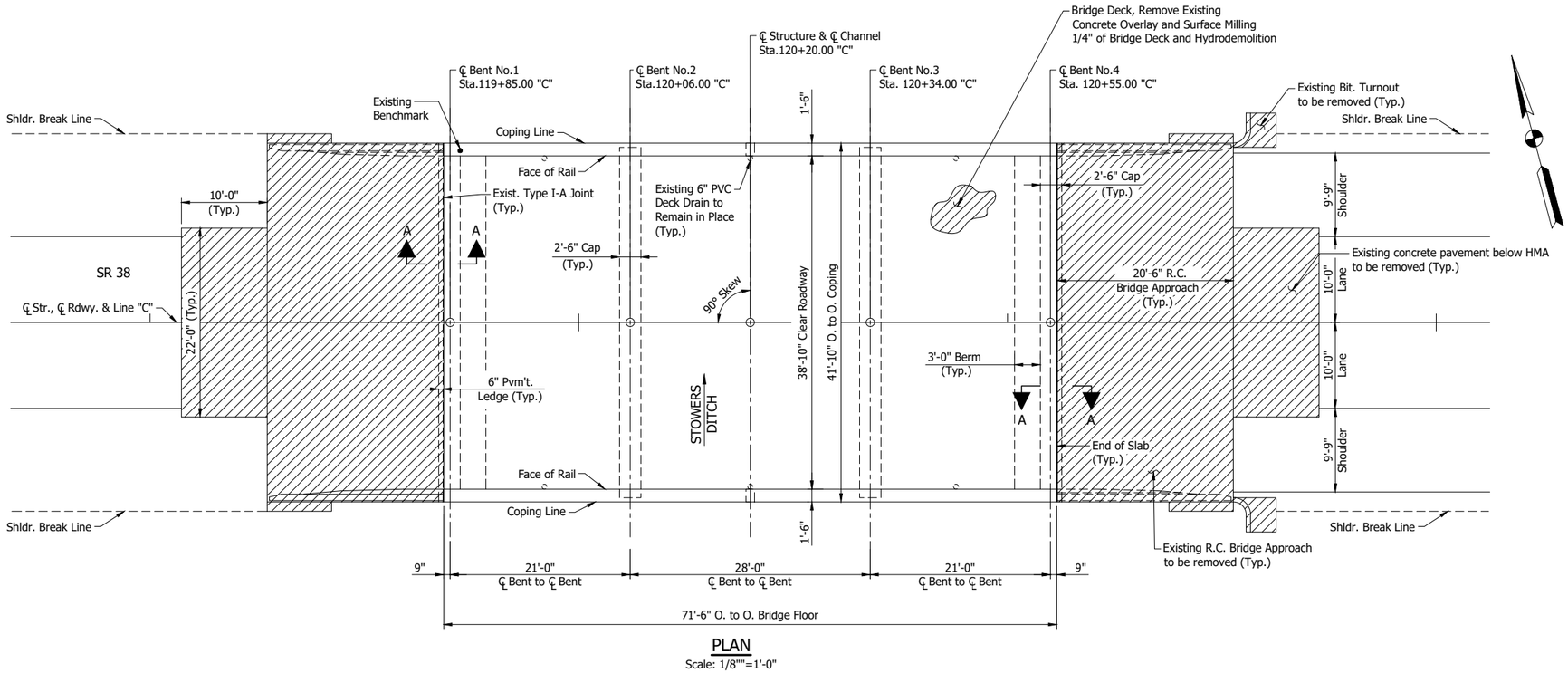
STRUCTURE BUILT TO A -0.87% GRADE



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



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



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

Notes:

For General Notes, Design Data, Construction Procedures, & Typical Sections, see Dwg.C3.

For Proposed Plan & Elevation, see Dwg.C2

Hatched area indicates portions to be removed.

CONTINUOUS REINFORCED CONCRETE SLAB BRIDGE
3 SPANS: 21'-0", 28'-0", 21'-0"
38'-10" CLEAR ROADWAY SKEW: 0°
SR 38 OVER STOWERS DITCH
CLINTON COUNTY

ALFRED V. WESSLING REGISTERED No. PE10809520 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL — DESIGN ENGINEER — 3/17/2023 DATE

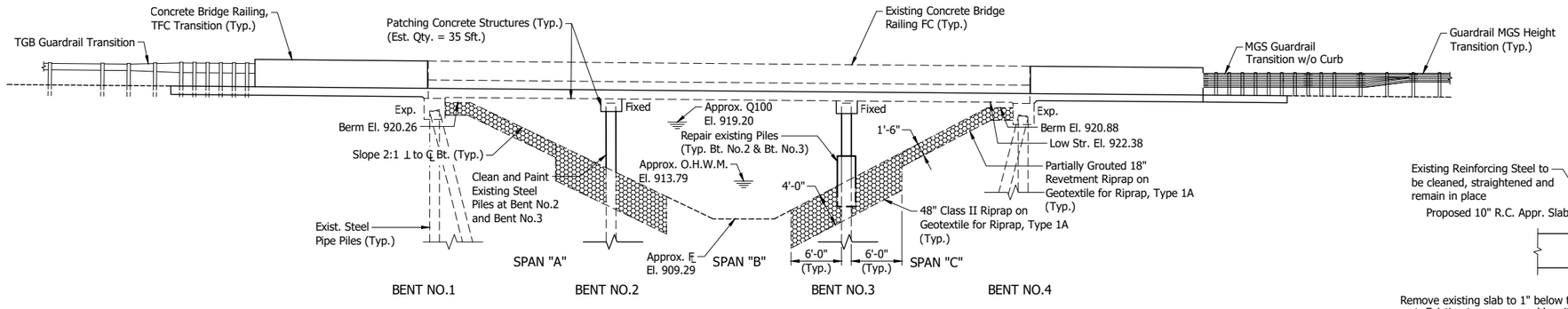
DESIGNED: NDM | DRAWN: NW | CHECKED: AVW | CHECKED: NDM

INDIANA DEPARTMENT OF TRANSPORTATION

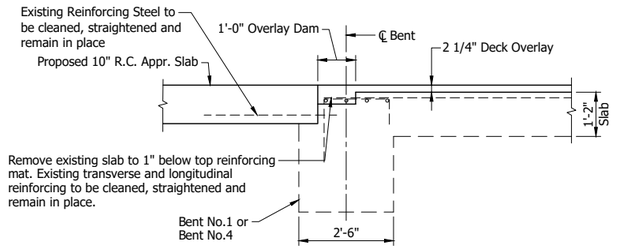
GENERAL PLAN EXISTING

HORIZONTAL SCALE	BRIDGE FILE
1/8"=1'-0"	038-12-04390 B
VERTICAL SCALE	DESIGNATION
1/8"=1'-0"	2000625
DRAWING NO.	SHEETS
C1 of C5	7 of 13
CONTRACT	PROJECT
B-42945	2000387

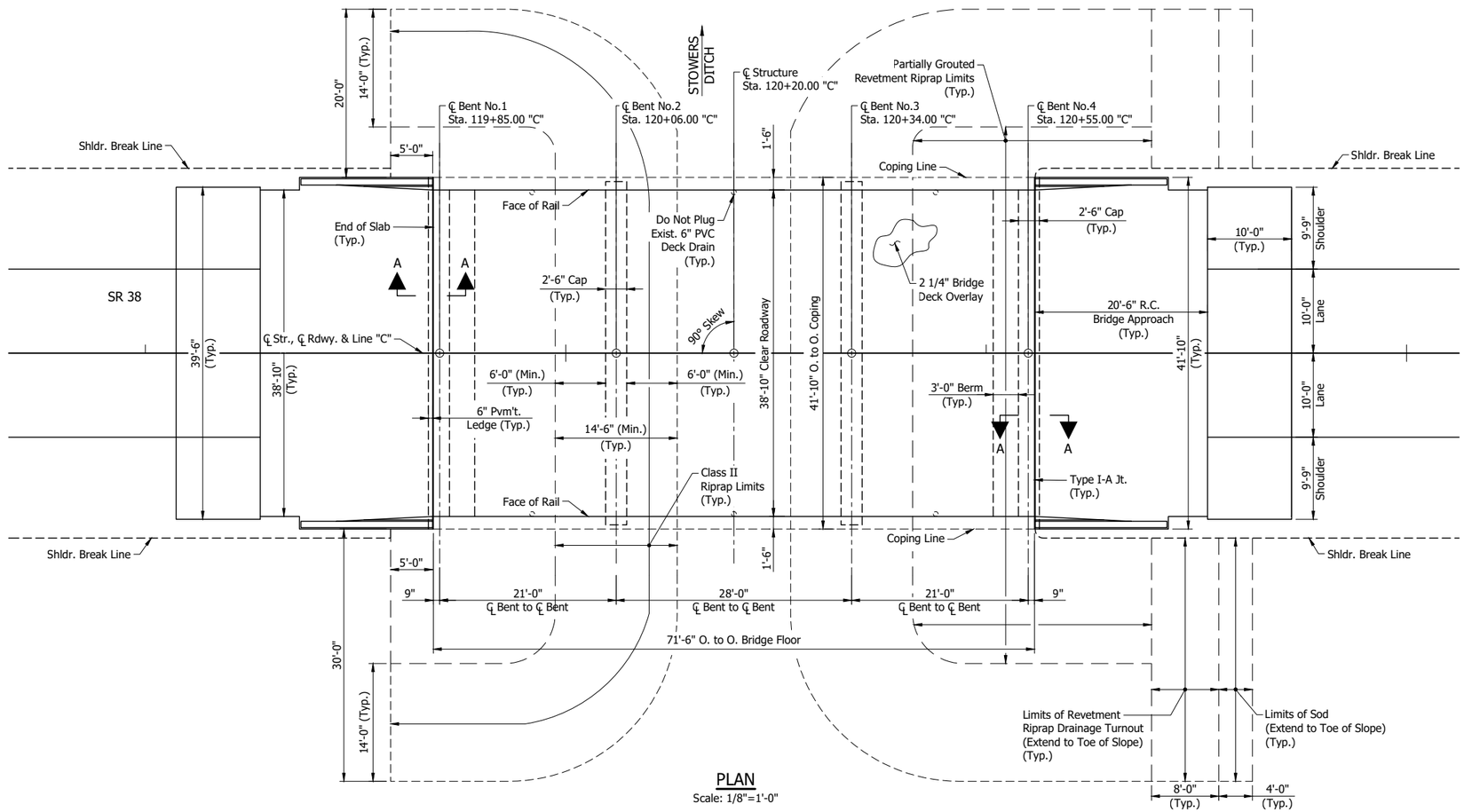
STRUCTURE BUILT TO A -0.87% GRADE



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



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



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

Notes:

For Existing Plan & Elevation, see Dwg.C1.

For General Notes, Design Data, Construction Procedures & Typical Sections, see Dwg.C3.

CONTINUOUS REINFORCED CONCRETE SLAB BRIDGE
3 SPANS: 21'-0", 28'-0", 21'-0"
38'-10" CLEAR ROADWAY SKEW: 0°
SR 38 OVER STOWERS DITCH
CLINTON COUNTY

ALFRED V. WESSLING REGISTERED No. PE10809520 STATE OF INDIANA PROFESSIONAL ENGINEER

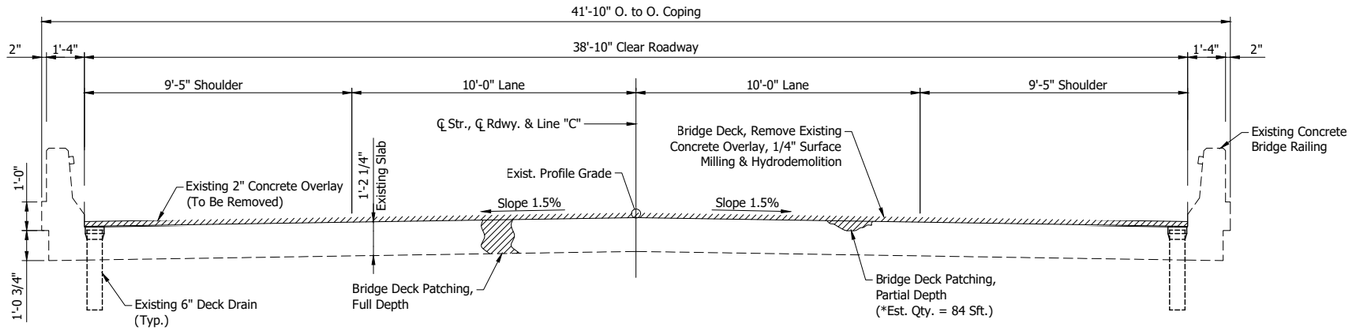
RECOMMENDED FOR APPROVAL — DESIGN ENGINEER — 3/17/2023 DATE

DESIGNED: NDM | DRAWN: NW | CHECKED: AVW | CHECKED: NDM

INDIANA DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
PROPOSED

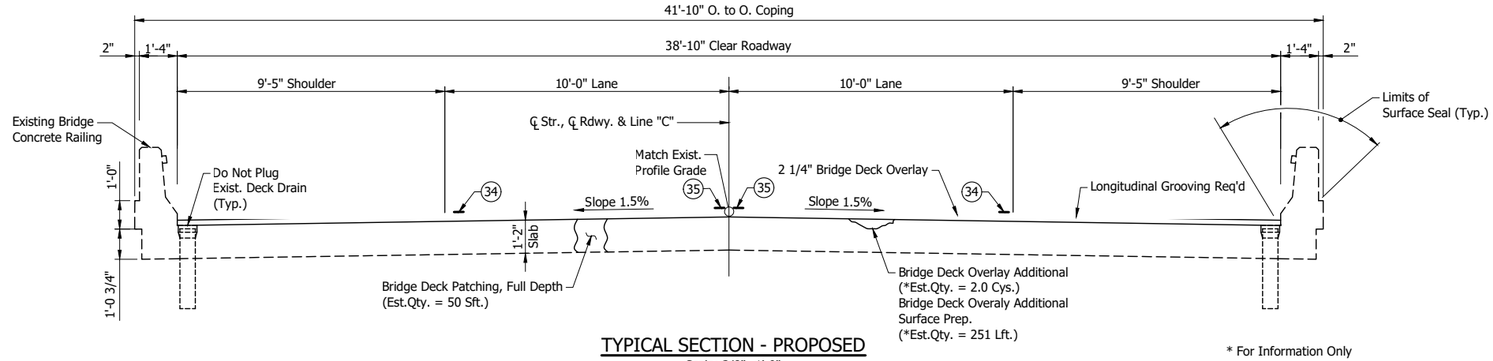
HORIZONTAL SCALE	BRIDGE FILE
1/8"=1'-0"	038-12-04390 B
VERTICAL SCALE	DESIGNATION
1/8"=1'-0"	2000625
DRAWING NO.	SHEETS
C2 of C5	8 of 13
CONTRACT	PROJECT
B-42945	2000387



TYPICAL SECTION - EXISTING

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

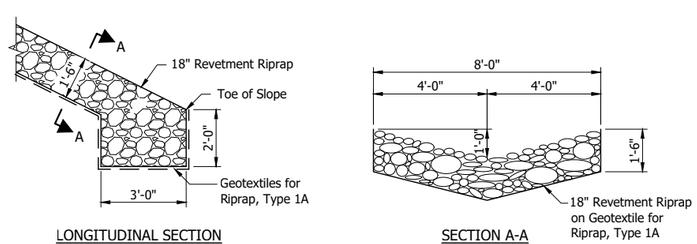
*For Information Only



TYPICAL SECTION - PROPOSED

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

* For Information Only



RIPRAP DRAINAGE TURNOUT DETAIL

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

GENERAL NOTES

Contractor shall notify the Engineer if the existing overlay thickness is different than shown in the plans.

All exposed faces of concrete bridge and transition railings to be sealed in accordance with Article 702.21 of the Specifications.
(Estimated Quantity = 1300 Sft.)

The handchipping and cleaning of deteriorated substructure areas shall be as directed by the Engineer. It is the intent of these plans that all such deteriorated concrete be removed, and should there be any doubt as to the quality of the concrete, removal shall continue until perfectly sound concrete is exoosed.

Data shown for existing bridge and subsequent geometry for proposed structure taken from original and rehabilitation plans.

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

Original and Rehabiliation Plans for existing structure are on file in the Research and Documents Section at the Indiana Department of Transportation, as Bridge File Nos.38-C-4390 and 38-12-4390A and are available upon request.

DESIGN DATA

LIVE LOAD

Originally designed for HS20-44 loading in accordance with the 1961 AASHTO Bridge Design Specifications.

DESIGN STRENGTHS

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

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

MATERIAL NOTES

BRIDGE DECK OVERLAY

2 1/4" Latex Modified Portland Cement Concrete or
2 1/4" Silica Fume Modified Structural Concrete.

LEGEND

(34) Line, Paint, Solid, White, 6 in.

(35) Line, Paint, Solid, Yellow, 6 in. with Snowplowable Raised Pavement Markers placed @ Sta.119+60 "C" & Sta.120+80 "C"

Notes:
Hatched area indicates portions to be removed.
For Existing Plan & Elevation, see Dwg.C1.
For Proposed Plan & Elevation, see Dwg.C2.

CONTINUOUS REINFORCED CONCRETE SLAB BRIDGE
3 SPANS: 21'-0", 28'-0", 21'-0"
38'-10" CLEAR ROADWAY SKEW: 0°
SR 38 OVER STOWERS DITCH
CLINTON COUNTY

ALFRED V. WESSLING REGISTERED No. PE10809520 STATE OF INDIANA PROFESSIONAL ENGINEER

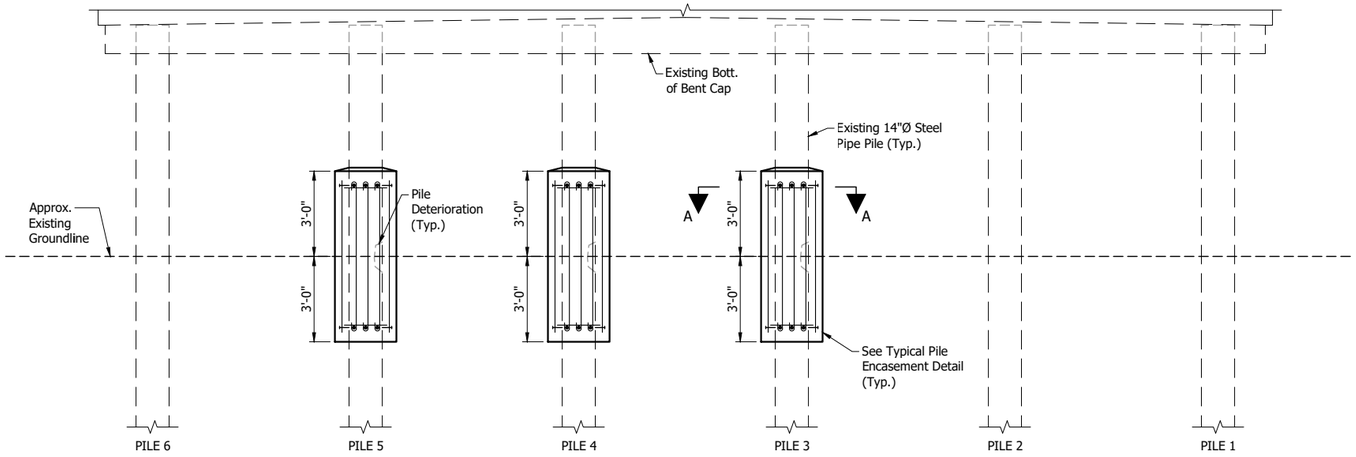
RECOMMENDED FOR APPROVAL Alfred V. Wessling 3/17/2023
DESIGN ENGINEER DATE

DESIGNED: NDM DRAWN: NW
CHECKED: AVW CHECKED: NDM

INDIANA
DEPARTMENT OF TRANSPORTATION

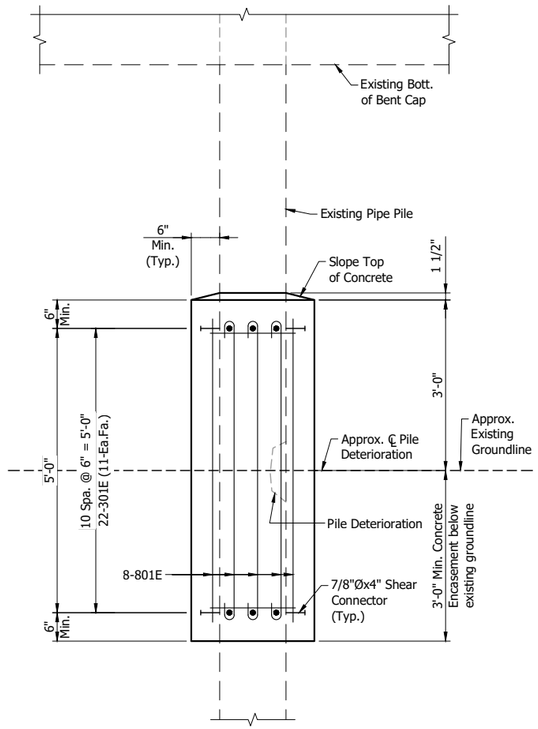
GENERAL PLAN
TYPICAL SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
3/8"=1'-0"	038-12-04390 B
VERTICAL SCALE	DESIGNATION
3/8"=1'-0"	2000625
DRAWING NO.	SHEETS
C3 of C5	9 of 13
CONTRACT	PROJECT
B-42945	2000387

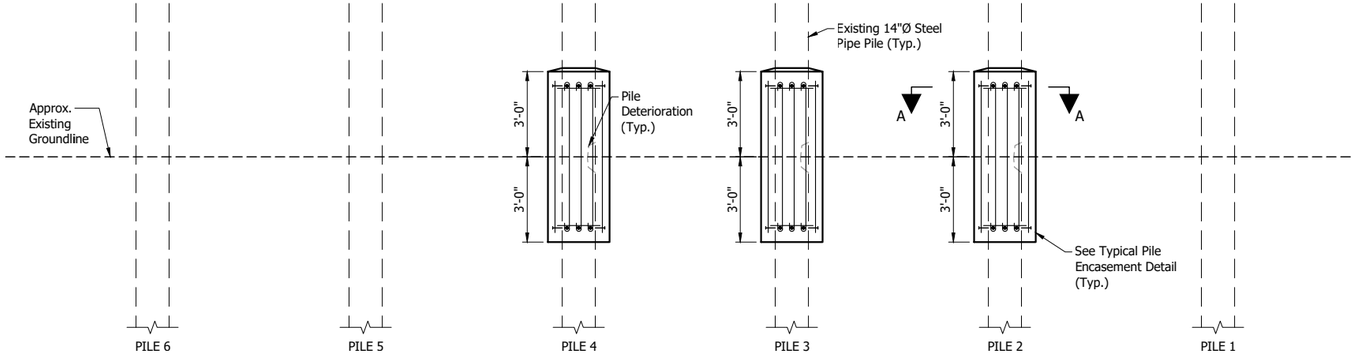


ELEVATION - BENT NO.2
(FACING EAST)
Scale: 3/8" = 1'-0"

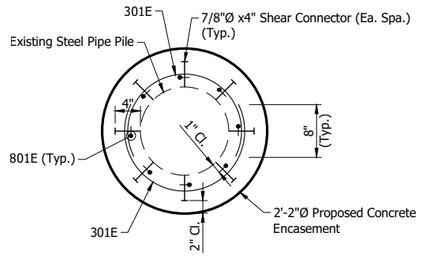
Note:
Remove Deteriorated and delaminated concrete on all existing Bent Piles that will be encased in concrete.



TYPICAL PILE ENCASEMENT DETAIL
Scale: 3/4" = 1'-0"



ELEVATION - BENT NO.3
(FACING EAST)
Scale: 3/8" = 1'-0"



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

BILL OF MATERIALS

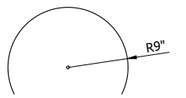
BENT REPAIR
BENT NO.2

EPOXY COATED REINFORCING BARS			
SIZE or MARK	of BARS	LENGTH	WEIGHT (Lbs)
301E	66	3'-1"	
Total #3E			77
801E	24	7-2"	
Total #8E			459
Total Epoxy Coated Reinforcing Bars			536
CONCRETE			
Total Concrete, Class A in Substructure			1.8 Cys
Shear Connector, 7/8 in. Stud			48 Ea.

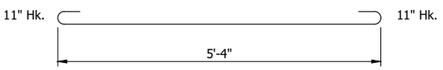
BILL OF MATERIALS

BENT REPAIR
BENT NO.3

EPOXY COATED REINFORCING BARS			
SIZE or MARK	of BARS	LENGTH	WEIGHT (Lbs)
301E	66	3'-1"	
Total #3E			77
801E	24	7-2"	
Total #8E			459
Total Epoxy Coated Reinforcing Bars			536
CONCRETE			
Total Concrete, Class A in Substructure			1.8 Cys
Shear Connector, 7/8 in. Stud			48 Ea.



301E x 3'-1"
(Cuts 132 Bars)



801E x 7'-2"

ALFRED V. WESSLING
REGISTERED
No.
PE10809520
STATE OF
INDIANA
PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL — DESIGN ENGINEER — 3/17/2023 DATE

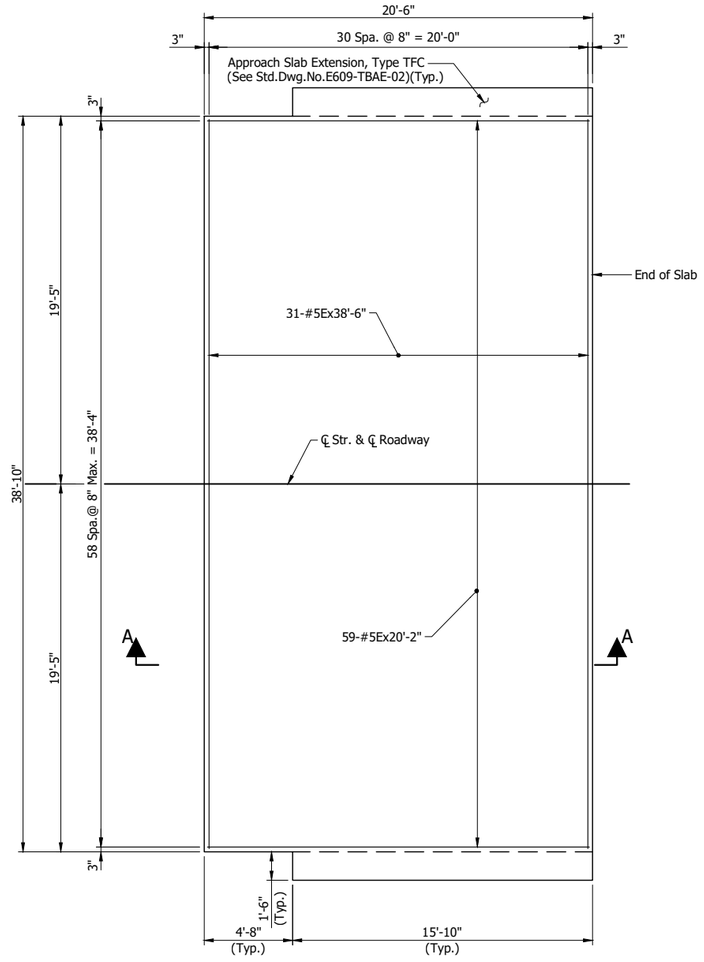
DESIGNED: AAM
DRAWN: SS
CHECKED: AVW
CHECKED: AAM

INDIANA
DEPARTMENT OF TRANSPORTATION

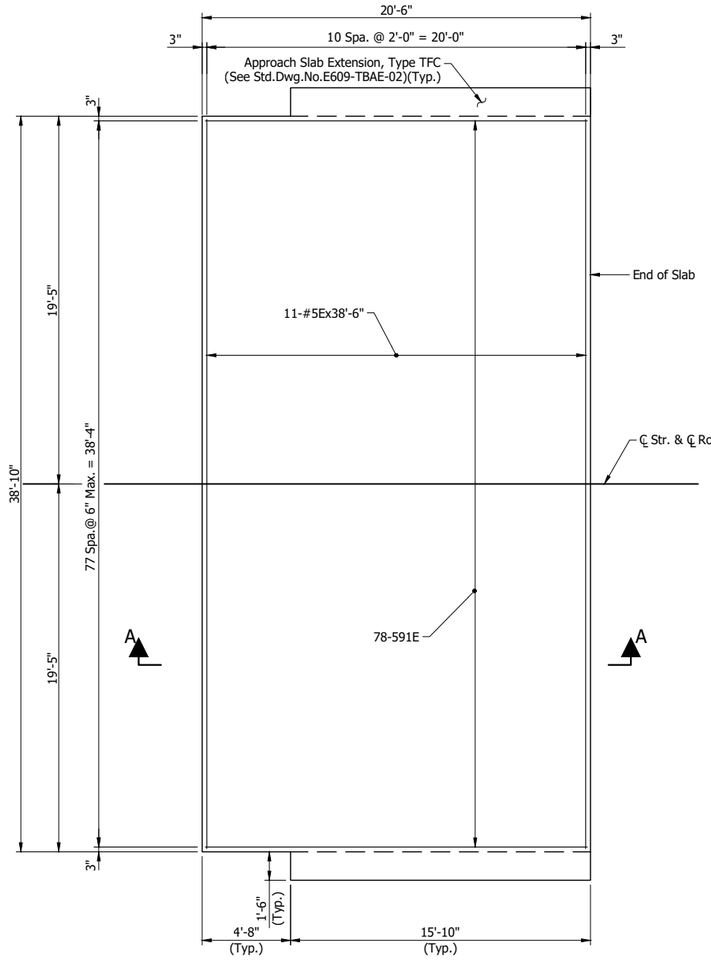
BENT NO.2 & BENT NO.3
REPAIR DETAILS

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	038-12-04390 B
VERTICAL SCALE	DESIGNATION
AS NOTED	2000625

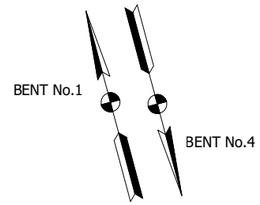
DRAWING NO.	SHEETS
C4 of C5	10 of 13
CONTRACT	PROJECT
B-42945	2000387



TOP REINFORCING



BOTTOM REINFORCING



APPROACH SLAB PLAN-BENT NO.1

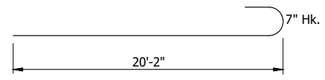
(Bent No.4, Same by 180° Rotation)
Scale: 1/4"=1'-0"

BILL OF MATERIALS

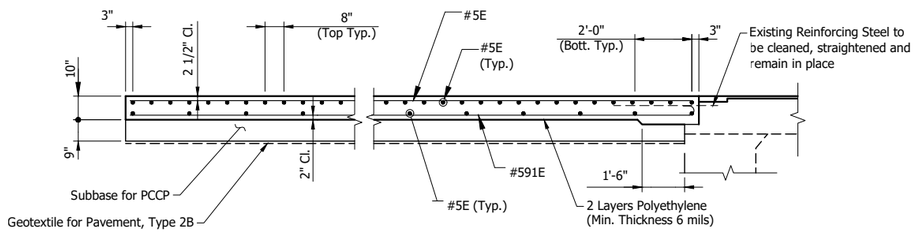
APPROACH SLAB BENT NO.1
(BENT NO.4 SAME)

EPOXY COATED REINFORCING BARS			
SIZE or MARK	No. of BARS	LENGTH	WEIGHT (Lbs)
591E	78	20'-9"	
#5E	42	38'-6"	
#5E	59	20'-2"	
Total #5E			4616
Total from Br. Railing Transition, TFC (2)			1102
Total from RCBA Extensions (2)			430
Total Epoxy Coated Reinforcing Bars			6148

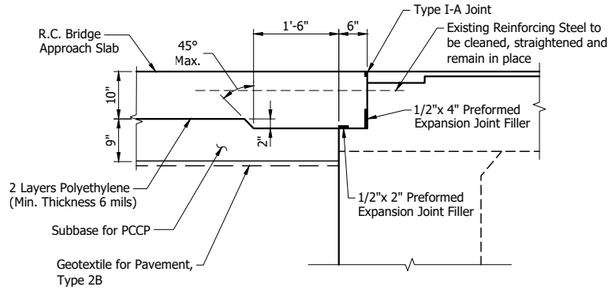
MISCELLANEOUS	
Reinforced Conc. Br. Approach, 10"	95 Sys.
Conc. Bridge Railing Transition, TFC	2 Ea.
Subbase for PCCP	24 Cys.
Geotextile for Subgrade, Type 2B	93 Sys.
Longitudinal Grooving	89 Sys.
Surface Seal (Est. Qty.)	200 Sft.



591E x 20'-9"



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



PAVEMENT LEDGE DETAIL
Scale: 3/4" = 1'-0"

Notes:

For General Notes, see Dwg.C3

For Type I-A Joint, see Std.Dwg.No.E609-BRJT-01.

For Reinforcing Bar Notes, see Std.Dwg.No.E703-BRST-01.

"E" denotes Epoxy Coated Reinforcing Steel.

For Concrete Bridge Railing Transition, type TFC, see Std.Dwg.No.E706-TTFC-01 thru 03.

ALFRED V. WESSLING REGISTERED No. PE10809520 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Alfred V. Wessling DESIGN ENGINEER 3/17/2023 DATE

DESIGNED: AAM DRAWN: MEN

CHECKED: AVW CHECKED: AVW

INDIANA
DEPARTMENT OF TRANSPORTATION

APPROACH SLAB DETAILS

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	038-12-04390 B
VERTICAL SCALE	DESIGNATION
AS NOTED	2000625
DRAWING NO.	SHEETS
C5 of C5	11 of 13
CONTRACT	PROJECT
B-42945	2000387

SUMMARY OF BRIDGE QUANTITIES

ITEM	CONCRETE				RAILING, CONCRETE, FC	RAILING, STEEL, PF-1	STUD SHEAR CONNNECTORS	CONC. BRIDGE RAILING TRANSITION, TFC	BARRIER DELINEATOR	REINF. CONC. BRIDGE APPROACH (10")	REINF. STEEL, EPOXY COATED	FIELD DRILLED HOLE IN CONCRETE	GEOTEXTILE FOR PAVEMENT TYPE 2B	SUBBASE FOR PCCP	LONGITUDINAL GROOVING	BRIDGE DECK OVERLAY, ADDITIONAL	OVERLAY DAM	PAVEMENT REMOVE	HYDRO-DEMOLITION	RIPRAP, CLASS 2	BRIDGE DECK PATCHING, FULL DEPTH	BRIDGE DECK OVERLAY	BRIDGE DECK, REMOVE EXISTING CONCRETE OVERLAY	PATCHING CONCRETE STRUCTURES	GROUT FOR RIPRAP	RIPRAP, REVETMENT	GEOTEXTILE FOR RIPRAP TYPE 1A	SURFACE SEAL*
	CLASS C	CLASS B		CLASS A																									
	SUPERSTR.	ABOVE FTG.	IN FTG.	SUBSTR.																									
	CYS	CYS	CYS	CYS	LFT	LFT	EACH	EACH	EACH	SYS	LBS	EACH	SYS	CYS	SYS	CYS	SFT	SYS	SYS	TON	SFT	SYS	SYS	SFT	CYS	TON	SYS	SFT
BENT NO.1																									5	89	119	
BENT NO.2				1.8			48				536									403							202	
BENT NO.3				1.8			48				536									464							232	
BENT NO.4																									6	105	139	
SUPERSTRUCTURE															309		78		309		50	309	309	35				900
R.C. BRIDGE APPROACH - BENT NO. 1								2		95	6148		93	24	89			97										200
R.C. BRIDGE APPROACH - BENT NO. 4								2		95	6148		93	24	89			97										200
TOTALS				3.6			96	4		190	13368		186	48	487		78	194	309	867	50	309	309	35	11	194	692	1300

* Estimated Quantity

BRIDGE PAINTING LOCATIONS AND INFORMATION

CONTRACT BRIDGE NO. (1)	DES. NO.	BRIDGE FILE NUMBER	ROUTE AND CROSSING	ROUTE	REF. POST	COUNTY	LOCATION	YEAR BUILT	YEAR LAST PAINTED	EXISTING PRIMER TYPE (HAZARDOUS OR NON-HAZARDOUS)	NO. SPANS	NO. PIER	NO. PILES @ EA. PIER	SPAN LENGTHS	SURF. AREA STRUCTURAL STEEL (SFT) (2)	NEW PAINT COLOR NAME (3)	ADDITIONAL INFORMATION: CLEAN AND PAINT CASTING, (EACH)	ADDITIONAL INFORMATION: CLEAN AND PAINT STEEL PILING, (SFT) (2)
3	2000625	038-12-04390 B	SR 38 OVER STOWERS DITCH	SR 38	36+44	CLINTON	2.29 MILES EAST OF US 421	1966	1966	HAZARDOUS	3	2	6	21'-0", 28'-0", 21'-0"		BUFF (13711)		596

(1) See RSP 101-B-042, Bridge Numbers for Pay Item
(2) Quantities shown are approximate. The Contractor shall determine the quantities upon which to base its bid
(3) See Standard Specifications section 909.02 for allowable color numbers for full and partial bridge painting.

REVISIONS

DATE	ITEM

ALFRED V. WESSLING REGISTERED No. PE10809520 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL — DESIGN ENGINEER — 3/17/2023 DATE

DESIGNED: NDM | DRAWN: NW | CHECKED: AVW | CHECKED: NDM

INDIANA
DEPARTMENT OF TRANSPORTATION

BRIDGE SUMMARY OF QUANTITIES

HORIZONTAL SCALE	BRIDGE FILE
N/A	038-12-04390 B
VERTICAL SCALE	DESIGNATION
N/A	2000625
DRAWING NO.	SHEETS
	12 of 13
CONTRACT	PROJECT
B-42945	2000387

PAVEMENT QUANTITIES AND APPROACH TABLE

LOCATION	DESCRIPTION (APPROACH TYPE OR CLASS)	WIDTH	LENGTH	RADII	DISTANCE BEYOND R/W/LINE	SURFACE BEYOND R/W LINE: COMPACTED AGGREGATE BASE	SURFACE BEYOND R/W LINE: HMA	SURFACE BEYOND R/W LINE: PCCP	GRADE 1	GRADE 2	EXCAVATION: CUT	EXCAVATION: FILL	LINEAR GRADING	HMA FOR APPROACHES: SURFACE (LBS PER SYD)	HMA FOR APPROACHES: INTERMED (LBS PER SYD)	HMA FOR APPROACHES: BASE (LBS PER SYD)	QA/QC HMA FOR ROADS: SURFACE 3, 64 9.5MM (LBS PER SYD)	QA/QC HMA FOR ROADS: INTERMD 3, 64 19.0MM (LBS PER SYD)	QA/QC HMA FOR ROADS: BASE 3, 64 25.0MM (LBS PER SYD)	ASPHALT MATERIAL FOR TACK COAT	JOINT ADHESIVE SURFACE	JOINT ADHESIVE INTERMEDIATE	LIQUID ASPHALT SEALANT	COMPACTED AGGREGATE FOR BASE NO. 53 DEPTH 6"	COMPACTED AGGREGATE FOR BASE NO. 53 DEPTH 13"	COMPACTED AGGREGATE NO.53 SHOULDERS DEPTH 13"	COMPACTED AGGREGATE NO.53 SHOULDERS DEPTH 6"	MILLING TRANSITION	SUBGRADE TREATMENT TYPE IC	GEOTEXTILES FOR PAVEMENT TYPE 2B	PAVEMENT REMOVE	CURB & GUTTER CONCRETE	REMARKS
		FT	FT	FT	FT	SYS	SYS	SYS	%	%	CYS	CYS	FT	TONS	TONS	TONS	TONS	TONS	TONS	TONS	SYS	LFT	LFT	LFT	CYS	CYS	TONS	TONS	SYS	SYS	SYS	SYS	LFT	
LINE "C"																																			
Sta.119+29.00 to Sta.119+53.75	INCIDENTAL												55														11								
Sta.119+53.75 to Sta.120+86.25	MAINLINE																14		20		52		264	60	60	60			15			98	98	50		
Sta.120+86.25 to Sta.120+66.00	INCIDENTAL												110														38								
TOTALS													165				14		20		52		264	60	60	60			64			98	98	50		

TEMPORARY EROSION CONTROL TABLE

LOCATION	FILTER SOCK	DRAINAGE BARRIER AT SWALE	TEMPORARY INLET PROTECTION	COFFERDAM	CHECK DAM NO.REQ'D.	CHECK DAM SPA.	TEMPORARY CHECK DAM, REVETMENT RIPRAP	TEMPORARY CHECK DAM, REVETMENT RIPRAP, MODIFIED	TEMPORARY CHECK DAM, TRANSVERSABLE	PUMP AROUND	TEMPORARY SEDIMENT TRAP	TEMPORARY GEOTEXTILE	TEMPORARY FILTER SOCK	TEMPORARY FILTER STONE	SEDIMENT, REMOVE	NO.2 STONE	TEMPORARY MULCH	TEMPORARY SEED	TEMPORARY MULCH STABILIZATION, TYPE A	MANUFACTURED SURFACE PROTECTION PRODUCT, TYPE ___	EROSION CONTROL BLANKETS	MOB & DEMOB FOR SURFACE STABILIZATION
STATION TO STATION	LFT	LFT	EACH	LSUM	EACH	LFT	TON	TON	LFT	EACH	TON	SYS	LFT	TON	CYS	TON	TON	LBS	SYS	SYS	SYS	EACH
LINE "C"				1						2		235				100						
CONSTRUCTION ENTRANCE																						
NW QUAD	88														2		0.3	7	160			
SW QUAD	88														2		0.2	7	120			
NE QUAD	140														3		0.3	7	230			
SE QUAD	140														3		0.2	7	130			
SUPERSTRUCTURE			6																			
TOTAL	456		6	1						2		235			10	100	1	28	640			2

PAVEMENT MARKING TABLE

LT/RT	LOCATION STATION	6 in., PAINT, SOLID WHITE EDGE LINE	6 in., PAINT, SOLID YELLOW CENTERLINE	SNOWPLOWABLE RAISED PAVEMENT MARKER, REMOVE	SNOWPLOWABLE RAISED PAVEMENT MARKER	TRANSVERSE MARKING, THERMO, STOP LINE, 24 in.
Lt.	119+53.75 to 120+86.25	133'				
Cl.	119+53.75 to 120+86.25		266'	5	2	
Rt.	119+53.75 to 120+86.25	133'				
TOTALS		266'	266'	5	2	

PERMANENT EROSION CONTROL SUMMARY TABLE

LOCATION FROM STATION	LOCATION TO STATION	PAVEMENT SIDE DITCH LEFT	PAVEMENT SIDE DITCH MEDIAN	PAVEMENT SIDE DITCH RIGHT	ACTUAL LENGTH	CUT OFF WALLS (8 FT EQUIVAL LENGTH EACH)	TOTAL EQUIVALENT PAY LENGTHS TYPE					RIPRAP, REVETMENT	RIPRAP, UNIFORM	GEOTEXTILES FOR RIPRAP, TYPE IA	SODDING: FOR PAVED SIDE DITCHES	SODDING: FOR BRIDGE TURNOUTS	SODDING: FOR MEDIAN	SODDING: FOR SHOULDER BREAK	SODDING: AT BRIDGE CONE	MULCHED SEEDING, R	WATER	MOB & DEMOB FOR SEEDING
					LFT	EACH	LFT	LFT	LFT	LFT	LFT	TONS	TONS	SYS	SYS	SYS	SYS	SYS	SYS	SYS	K GAL	EACH
119+29 "C"	119+80 "C"	X																		106		
119+29 "C"	119+80 "C"			X																79		
120+69 "C"	121+66 "C"	X										17		30		10				155	0.5	
120+69 "C"	121+66 "C"			X								25		45		15				87	0	
TOTALS												42		75		25				427	1	2

GUARDRAIL SUMMARY TABLE

LOCATION FROM STATION	LOCATION TO STATION	LEFT	MEDIAN LEFT	MEDIAN RIGHT	RIGHT	W-BEAM GUARDRAIL LENGTH: STANDARD POST AT 6 FT. 3 IN. SPA.	STANDARD POST AT 3 FT. 1.5 IN. SPA.	DOUBLE FACED AT 6 FT. 3 IN. SPA.	DOUBLE FACED AT 3 FT. 1.5 IN. SPA	SHOP CURVED AT ___ FT. SPA.	MGS GUARDRAIL LONG SPAN, TYPE 1	MGS GUARDRAIL LONG SPAN, TYPE 2	GUARDRAIL FLARE RATE	GUARDRAIL TRANSITION TYPE TGB	MGS GUARDRAIL TRANSITION WITHOUT CURB	MGS GUARDRAIL HEIGHT TRANSITION	GUARDRAIL END TREATMENT TYPE OS		CURVED W-BEAM GUARDRAIL SYSTEM: TERMINAL SYSTEM TYPE	TERMINAL SYSTEM EACH	CONNECTOR SYSTEM TYPE	CONNECTOR SYSTEM EACH	GUARDRAIL REMOVE	GUARDRAIL RESET	IMPACT ATTENUATOR TYPE ___	IMPACT ATTENUATOR TYPE ___	REMARKS
						LFT	LFT	LFT	LFT	LFT	EACH	EACH		EACH	EACH	EACH	EACH		TYPE	EACH	TYPE	EACH	LFT	LFT	EACH	EACH	
119+31.69	119+69.19	X				12.5								1									37.5				
119+31.69	119+69.19				X	12.5								1									37.5				
120+70.81	121+61.44	X				12.5									1	1							91				
120+70.81	121+61.44				X	12.5									1	1							91				
TOTALS						50								2	2	2							257				

REVISIONS

DATE	ITEM

RECOMMENDED FOR APPROVAL — DESIGN ENGINEER — 3/17/2023 DATE

ALFRED V. WESSLING REGISTERED No. PE10809520 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGNED: NDM DRAWN: NW CHECKED: AVW CHECKED: NDM

INDIANA DEPARTMENT OF TRANSPORTATION

ROAD SUMMARY OF QUANTITIES

HORIZONTAL SCALE	BRIDGE FILE
N/A	038-12-04390 B
VERTICAL SCALE	DESIGNATION
N/A	2000625
DRAWING NO.	SHEETS
	13 of 13
CONTRACT	PROJECT
B-42945	2000387

Repair: Pile Medic - I69 over Pigeon Creek

Contract B-40352 (Pile jackets added by change order)

Des No 1500807

PROJECT	DESIGNATION NO.
1500807 (08)	1500807 (08)
CONTRACT	BRIDGE FILE
B-40352	I69-345-04725D (NB & SB)

STRUCTURE INFORMATION			
STRUCTURE	TYPE	SPAN AND SKEW	OVER
I69-345-04725D (NB & SB)	Prestessed Concrete I-Beam Bridge	20 Spans @ 32'-0 & 1 @ 48'-0" 30° Skew Lt.	Pigeon Creek

KIN DESIGNATION NUMBERS	
	BRIDGE MAINTENANCE AND REPAIR PLANS
1500807 (08)	I-69 OVER PIGEON CREEK (LEAD DES. NUMBER)
	BRIDGE DECK OVERLAY PLANS
1701227 (29)	I-69 OVER PIGEON CREEK

INDIANA DEPARTMENT OF TRANSPORTATION

BRIDGE REHABILITATION PLANS

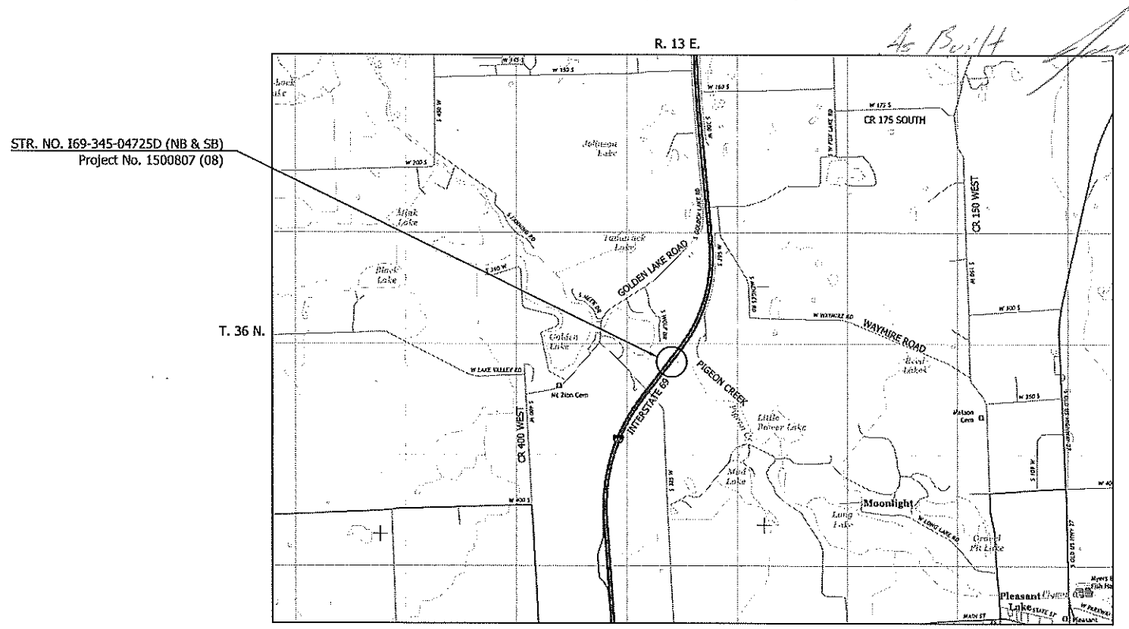
FOR SPANS OVER 20 FEET

ROUTE: I-69 AT: 345+31

PROJECT NO. 1500807 (08) P.E.
1500807 (08) CONST.

NO ADDITIONAL R/W
REQUIRED FOR THIS PROJECT.

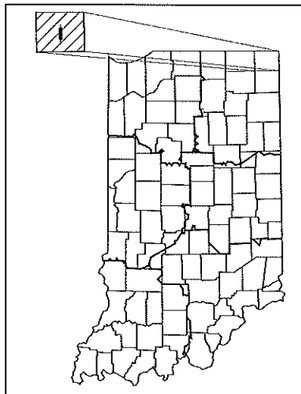
BRIDGE MAINTENANCE AND REPAIR PLANS ON I-69 OVER PIGEON CREEK. THE PROJECT IS LOCATED 2.75 MILES SOUTH OF U.S. 20, IN SECTION 8, TOWNSHIP 36 NORTH, RANGE 13 EAST, STEUBEN TOWNSHIP, STEUBEN COUNTY, INDIANA.



LOCATION MAP

SCALE 1" = 2000'

TRAFFIC DATA	
A.A.D.T. (2017)	27,500 V.P.D.
A.A.D.T. (2037)	33,500 V.P.D.
D.H.V. (2037)	2,600 V.P.H.
DIRECTIONAL DISTRIBUTION	55 %
TRUCKS	30 % D.H.V.
	30 % A.A.D.T.
DESIGN DATA	
DESIGN SPEED	70 MPH
POSTED SPEED	70 MPH
PROJECT DESIGN CRITERIA	BRIDGE PRESERVATION
FUNCTIONAL CLASSIFICATION	INTERSTATE
RURAL/URBAN	RURAL
TERRAIN	LEVEL
ACCESS CONTROL	FULL



PROJECT LOCATION SHOWN BY —

LATITUDE: 41°35'47.58" N. LONGITUDE: 85°03'05.31" W.

BRIDGE LENGTH = 0.135 mi.
ROAD LENGTH = 0.000 mi.
TOTAL LENGTH = 0.135 mi.
MAX. GRADE = +0.24%

HUC: 04050001110060

As Built [signature] INDOT

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2018
TO BE USED WITH THESE PLANS

USI consultants
8415 East 56th Street
Indianapolis, Indiana 46216

PLANS PREPARED BY: USI Consultants, Inc. 317-544-4996 (PHONE NUMBER)

CERTIFIED BY: [signature] 12-22-17 (DATE)

APPROVED FOR LETTING: _____ (INDIANA DEPARTMENT OF TRANSPORTATION) (DATE)

MICHAEL J. HALTERMAN REGISTERED No. 20931 STATE OF INDIANA PROFESSIONAL ENGINEER

CONTRACT	PROJECT NO.
B-40352	1500807 (08)

BRIDGE FILE
I69-345-04725D(NB & SB)
DESIGNATION NO.
1500807 (08)
SHEETS
1 of 9

UTILITIES

NONE AT THIS SITE

INDEX

REVISIONS

SHEET NO,	DATE	REVISED

Indiana 811
Know what's below. Call before you dig.

1-800-382-5544
CALL BEFORE YOU DIG

CAUTION !!

THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED UPON ABOVE GROUND EVIDENCE (including, but not limited to, manholes, inlets, valves, and marks made upon the ground by others) AND ARE SPECULATIVE IN NATURE. THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES FOR WHICH THERE IS NO ABOVE GROUND EVIDENCE OR FOR WHICH NO ABOVE GROUND EVIDENCE WAS OBSERVED. THE EXACT LOCATIONS OF SAID EXISTING UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.

MICHAEL J. HALTERMAN
REGISTERED
No. 20931
STATE OF INDIANA
PROFESSIONAL ENGINEER

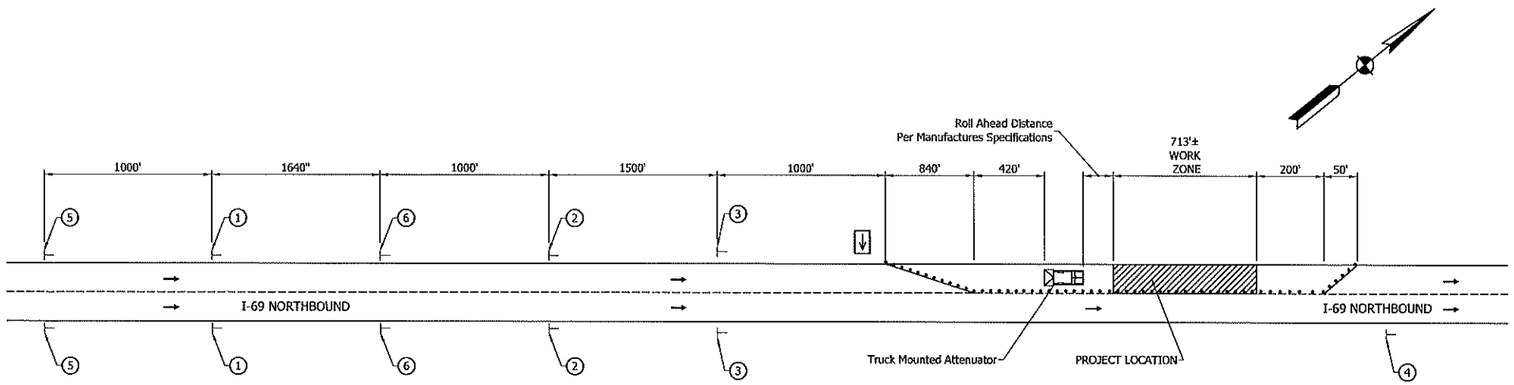
RECOMMENDED FOR APPROVAL: Michael J. Halterman 12-22-17
DESIGN ENGINEER — DATE

DESIGNED: MJH | DRAWN: DWB
CHECKED: GCW | CHECKED: MJH

INDIANA
DEPARTMENT OF TRANSPORTATION

INDEX SHEET

HORIZONTAL SCALE	BRIDGE FILE
NONE	I-69-145-04725D (NB & SB)
VERTICAL SCALE	DESIGNATION
NONE	1500807(08)
SURVEY BOOK	SHEETS
	2 of 9
CONTRACT	PROJECT
B-40352	1500807(08)



NOTE:
Channelizing Devices shall be spaced at 50' in tapered sections and 100' in tangent sections. See Standard Drawing 801-TCDV-01 for acceptable types of devices.

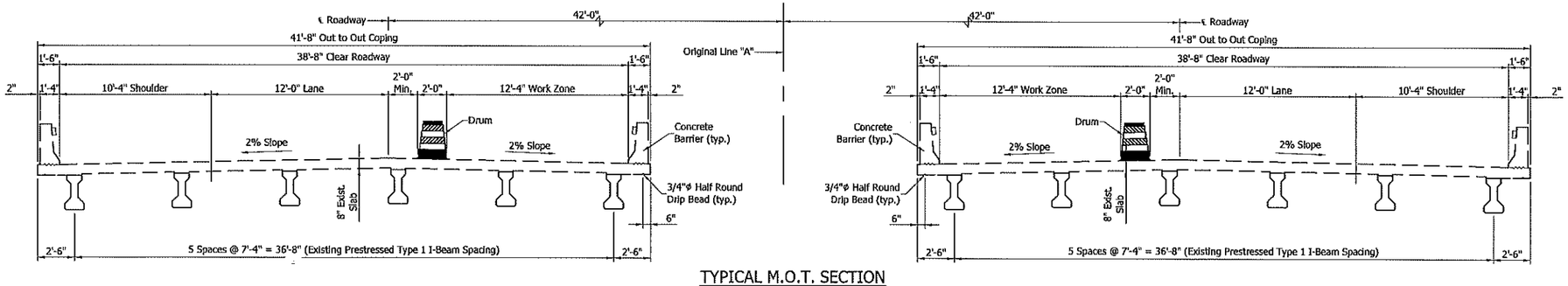
TRAFFIC CONTROL FOR NORTHBOUND LANES
(S.B.L. SAME BY 180° ROTATION)

No Scale

LEGEND

- Flashing Arrow Sign
- Standard Drum Type "C" Steady Burning Light (not a pay item)
- Indicates Traffic Flow

LEGEND	DESCRIPTION		SIZE	TYPE	QTY.
①	ROAD CONSTRUCTION AHEAD	XW20-1	48" x 48"	A	4 EACH
②	LEFT LANE CLOSED AHEAD	XW20-5(L)	48" x 48"	A	4 EACH
③		XW4-2-A(L)	48" x 48"	A	4 EACH
	45 M.P.H.	XW13-1-A	24" x 24"	B	4 EACH
④	END CONSTRUCTION	XW20-2	60" x 24"	A	2 EACH
⑤	Speeding Max $1000 Reckless Driving Max 6 Yrs	XW2-6-A	78" x 42"	A	4 EACH
⑥	BE PREPARED TO STOP	W3-4 (Mod.)	48" x 48"	A	4 EACH



TYPICAL M.O.T. SECTION

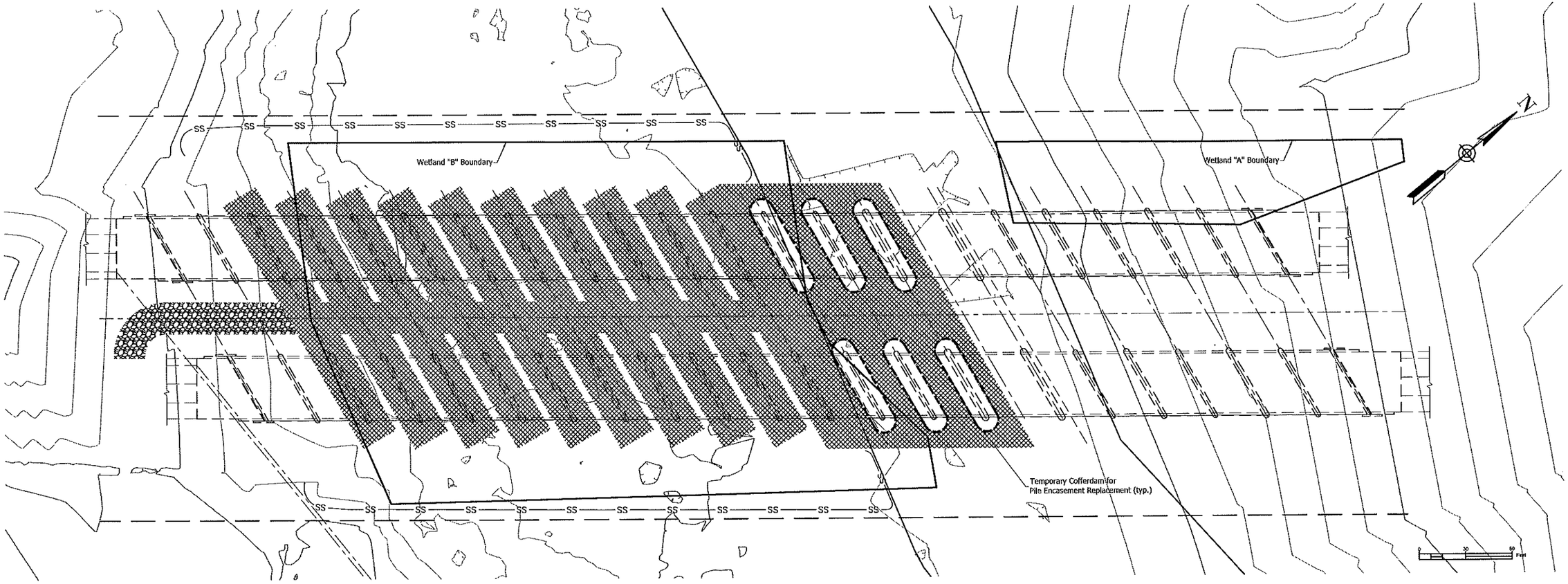
Scale: 1/4"=1'-0"

NOTES:
See Std. Drawing E801-TCLG-01 for Standard Notes.

As Built

	RECOMMENDED FOR APPROVAL: Michael J. Hallerman, DESIGN ENGINEER, 12-22-17 DATE	INDIANA DEPARTMENT OF TRANSPORTATION
MICHAEL J. HALLERMAN REGISTERED No. 20931 STATE OF INDIANA PROFESSIONAL ENGINEER	DESIGNED: MJH DRAWN: DWB CHECKED: GCW CHECKED: MJH	TRAFFIC MAINTENANCE DETAILS

HORIZONTAL SCALE	BRIDGE FILE
NONE	I-69-145-04725D (NB & SB)
VERTICAL SCALE	DESIGNATION
NONE	1500807(08)
SURVEY BOOK	SHEETS
	3 of 9
CONTRACT	PROJECT
B-40352	1500807(08)



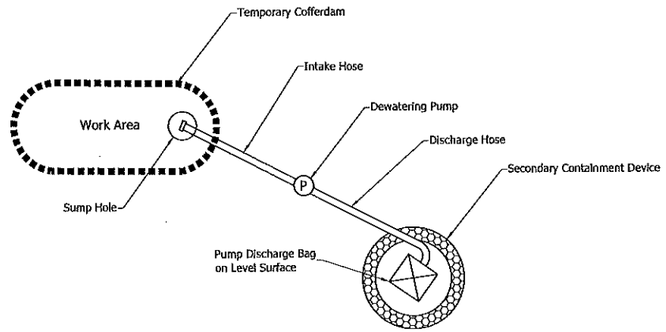
EROSION CONTROL LEGEND

- SS — Temporary Filter Sock
- Temporary Construction and Causeway Area
- Temporary Construction Access (Suggested)
- Temporary Cofferdam

TEMPORARY EROSION AND SEDIMENT CONTROL TABLE				
LOCATION		Temporary Filter Sock	Temporary Geotextiles	No. 2 Stone
Quadrant (Phase)	LT./RT.			
SE (Phase 1)	RT.	430 lft.		
SW (Phase 1)	LT.	410 lft.		
NE (Phase 2)	RT.	150 lft.		
NW (Phase 2)	LT.	130 lft.		
Construction Entrances			235 sys.	100 tons
TOTALS		1120 lft.	235 sys.	100 tons

**TEMPORARY CAUSEWAY TABLE				
LOCATION		Temporary Silt Fence	Temporary Geotextiles	No. 2 Stone
Quadrant (Phase)	LT./RT.			
SE/SW (Phase 1)	LT. / RT.		6325 sys.	
NE/NW (Phase 2)	LT. / RT.		2265 sys.	
SE/SW (Phase 1)	LT. / RT.			7550 tons
NE/NW (Phase 2)	LT. / RT.			2710 tons
TOTALS			8590 tons.	10260 tons

**NOTE: Quantities for estimating purposes only.



DEWATERING DETAIL
(SUGGESTED DEWATERING)
No Scale

As Built

MICHAEL J. HALTERMAN
REGISTERED
No. 20931
STATE OF INDIANA
PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL — DESIGN ENGINEER — 12-22-17 DATE

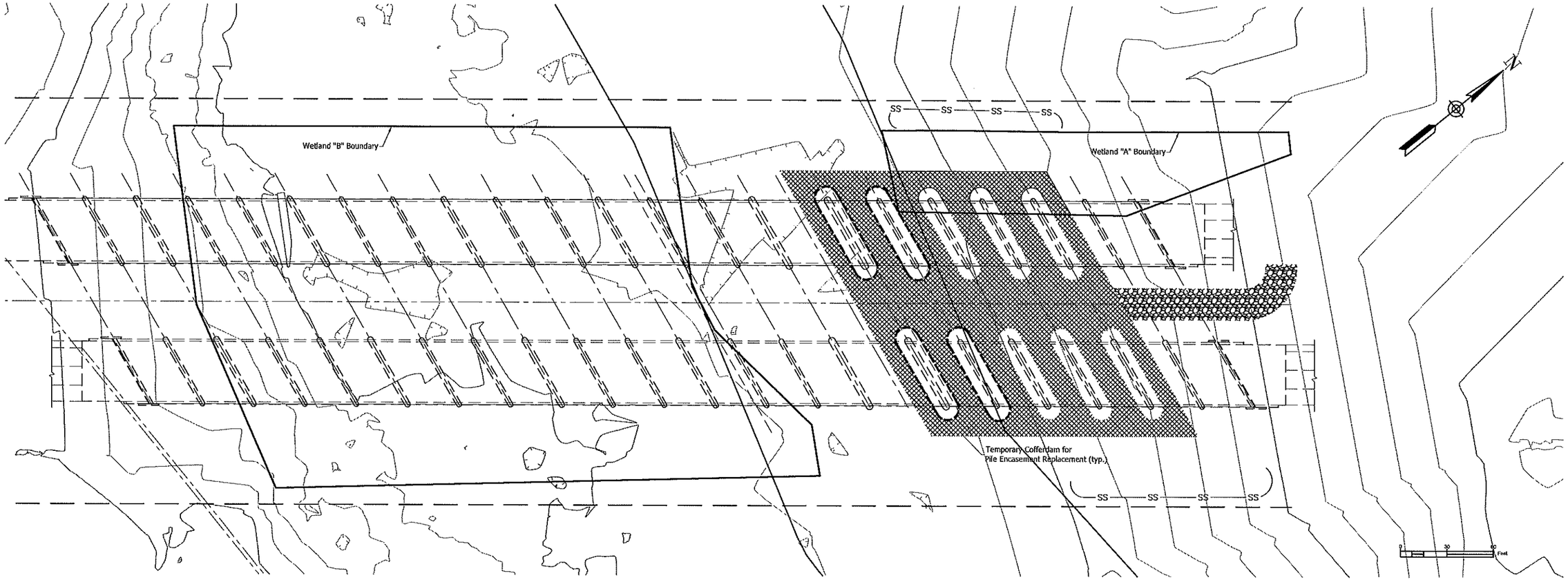
DESIGNED: MKT | DRAWN: MKT
CHECKED: MJH | CHECKED: MJH

INDIANA
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL DETAILS
PHASE I

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	I-69-145-04725D (NB & SB)
VERTICAL SCALE	DESIGNATION
AS NOTED	1500807(08)
SURVEY BOOK	SHEETS
	4 of 9
CONTRACT	PROJECT
B-40352	1500807(08)

S:\Bridges\I69-145-04725D\1500807\Plans\2016-424 Erosion Control.dwg, Erosion Control Plan (Phase 1), 1/22/2018 10:35:24 AM



EROSION CONTROL LEGEND

- SS — Temporary Filter Sock
- Temporary Construction and Causeway Area
- Temporary Construction Access (Suggested)
- Temporary Cofferdam

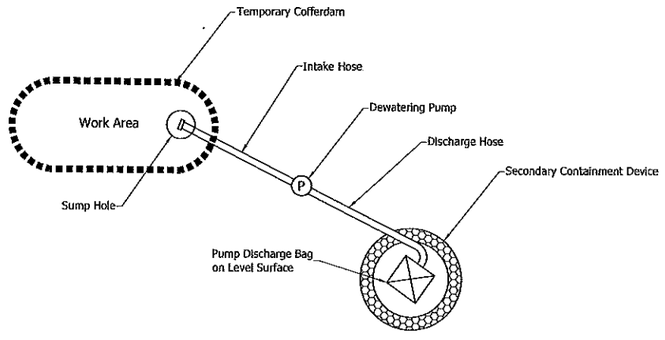
TEMPORARY EROSION AND SEDIMENT CONTROL TABLE

LOCATION Quadrant (Phase)	LT./RT.	Temporary Filter Sock	Temporary Geotextiles	No. 2 Stone
SE (Phase 1)	RT.	430 lft.		
SW (Phase 1)	LT.	410 lft.		
NE (Phase 2)	RT.	150 lft.		
NW (Phase 2)	LT.	130 lft.		
Construction Entrances			235 sys.	100 tons
TOTALS		1120 lft.	235 sys.	100 tons

**TEMPORARY CAUSEWAY TABLE

LOCATION Quadrant (Phase)	LT./RT.	Temporary Silt Fence	Temporary Geotextiles	No. 2 Stone
SE/SW (Phase 1)	LT. / RT.		6325 sys.	
NE/NW (Phase 2)	LT. / RT.		2265 sys.	
SE/SW (Phase 1)	LT. / RT.			7550 tons
NE/NW (Phase 2)	LT. / RT.			2710 tons
TOTALS			8590 tons.	10260 tons

**NOTE: Quantities for estimating purposes only.



DEWATERING DETAIL
(SUGGESTED DEWATERING)
No Scale

As Built

MICHAEL J. HALTERMAN REGISTERED No. 20931 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Michael J. Halterman 12-22-17
DESIGN ENGINEER DATE

DESIGNED: MKT DRAWN: MKT
CHECKED: MJH CHECKED: MJH

INDIANA
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL DETAILS
PHASE II

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	I-69-145-04725D (NB & SB)
VERTICAL SCALE	DESIGNATION
AS NOTED	1500807(08)
SURVEY BOOK	SHEETS
	5 of 9
CONTRACT	PROJECT
B-40352	1500807(08)

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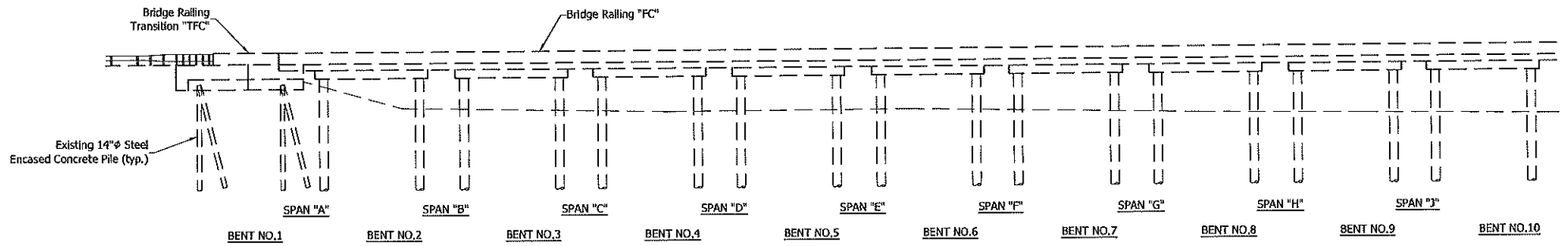
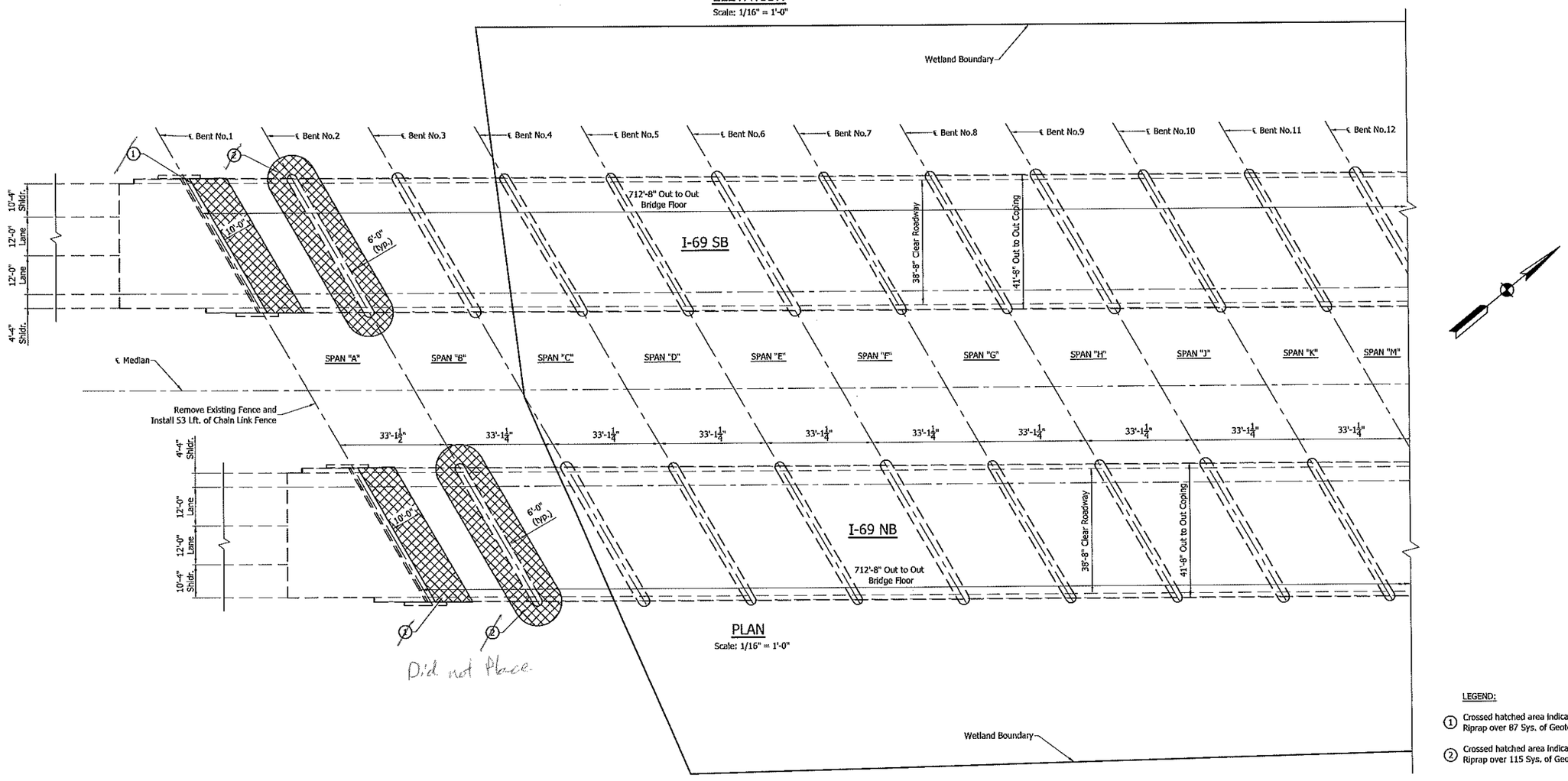


ELEVATION

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



PLAN

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

LEGEND:

① Crossed hatched area indicates 65 Tons of 24" Revetment Riprap over 87 Sys. of Geotextiles for Riprap Type 2A req'd.

② Crossed hatched area indicates 90 Tons of 24" Revetment Riprap over 115 Sys. of Geotextiles for Riprap Type 2A req'd.

As Built

MICHEL J. HALDEMAN REGISTERED No. 20931 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL — DESIGN ENGINEER — 12-22-17 DATE

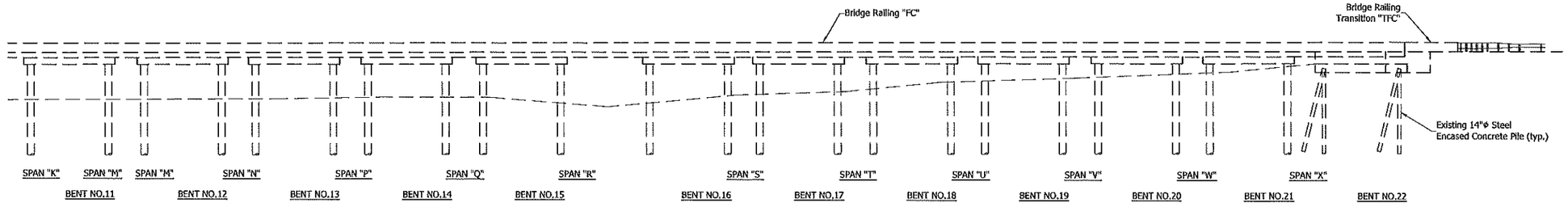
DESIGNED: MJH DRAWN: DWB

CHECKED: GCW CHECKED: MJH

INDIANA DEPARTMENT OF TRANSPORTATION

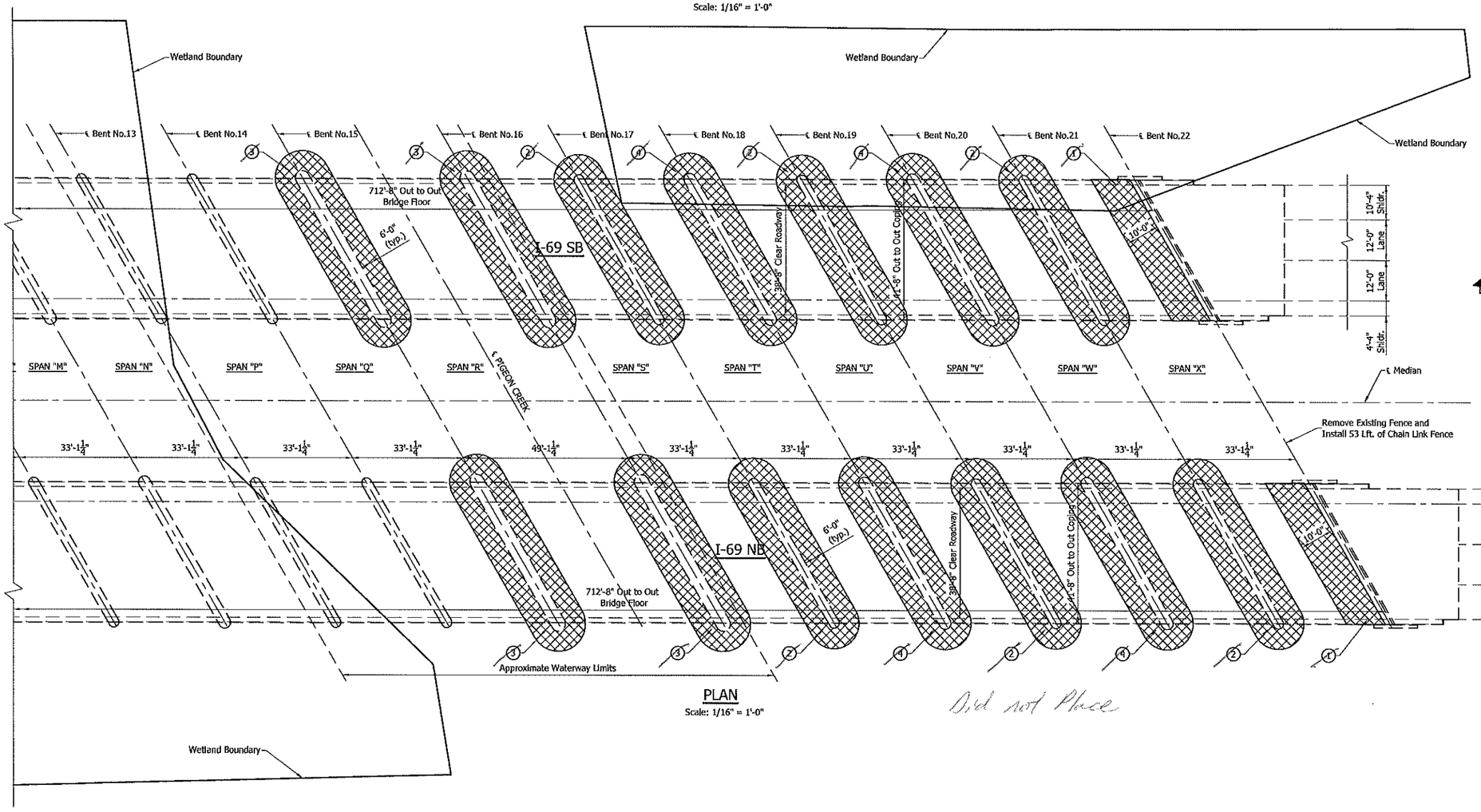
GENERAL PLAN EXISTING

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	I-69-145-04725D (NB & SB)
VERTICAL SCALE	DESIGNATION
AS NOTED	1500807(08)
SURVEY BOOK	SHEETS
	6 of 9
CONTRACT	PROJECT
B-40352	1500807(08)



ELEVATION

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



PLAN

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

Did not Place

HYDRAULIC DATA:

Scour Critical?	=Yes
Q100 Discharge	= 650 cfs.
Drainage Area	= 83.53 sq. mi.
Elevation @ Q100	=956.60 ft.
Velocity @ Q100	= 0.27 ft./sec.
Contraction Scour Depth	= 1.56 ft.
Total Scour Depth	= 7.52 ft.
Low Scour Elevation	= 940.58 ft.
Low Footing Elevation	= Varies

LEGEND:

① Crossed hatched area indicates 65 Tons of 24" Revetment Riprap over 87 Sys. of Geotextiles for Riprap Type 2A req'd.

② Crossed hatched area indicates 90 Tons of 24" Revetment Riprap over 115 Sys. of Geotextiles for Riprap Type 2A req'd.

③ Crossed hatched area indicates 94 Tons of 24" Revetment Riprap over 120 Sys. of Geotextiles for Riprap Type 2A req'd.

④ Crossed hatched area indicates 91 Tons of 24" Revetment Riprap over 117 Sys. of Geotextiles for Riprap Type 2A req'd.

As Built

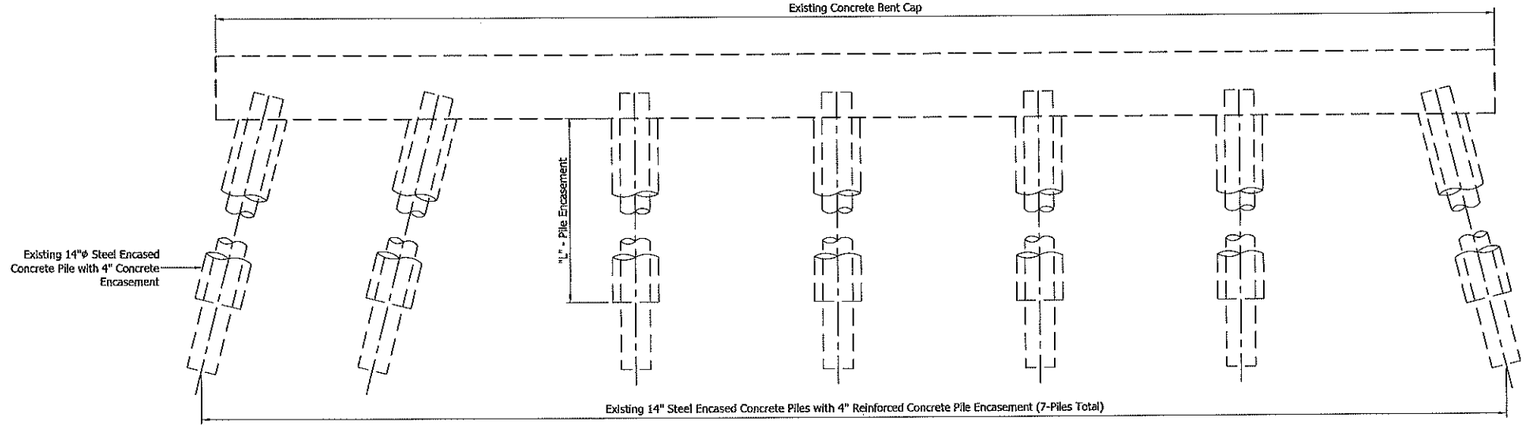
MICHAEL J. HALSTROM REGISTERED No. 20931 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	12-22-17 DATE
DESIGNED: MJH	DRAWN: DWB	
CHECKED: GCW	CHECKED: MJH	

INDIANA DEPARTMENT OF TRANSPORTATION

GENERAL PLAN EXISTING

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	I-69-145-04725D (NB & SB)
VERTICAL SCALE	DESIGNATION
AS NOTED	1500807(08)
SURVEY BOOK	SHEETS
	7 of 9
CONTRACT	PROJECT
B-40352	1500807(08)



ELEVATION
BENT NOS. 2 THRU 14 & NOS. 17 THRU 21
Scale: 3/8" = 1'-0"

NOTE: Southbound Lanes shown, Northbound same by opposite hand.

BENT NO.	EXISTING ENCASEMENT LENGTHS "L"	CONCRETE "A" SUBSTRUCTURE CYS/BENT	REINFORCING STEEL LBS./BENT
2	4'-0"	1.3	273
3	5'-0"	1.7	364
4	6'-0"	2.1	455
5	7'-0"	2.6	546
6	8'-0"	3.0	637
7	8'-0"	3.0	637
8	9'-0"	3.4	728
9	9'-0"	3.4	728
10	9'-0"	3.4	728
11	9'-0"	3.4	728
12	10'-0"	3.8	819
13	10'-0"	3.8	819
14	10'-0"	3.8	819
15	11'-0"	4.8	1040
16	11'-0"	4.8	1040
17	10'-0"	3.8	819
18	8'-0"	3.0	637
19	7'-0"	2.6	546
20	3'-0"	0.9	182
	TOTALS	58.6	12,545

See Attached sheets for Fiber Wrap Plans

PROPOSED REHABILITATION

Bent Nos. 2 thru 21

-All Existing Pile Encasements to be removed.

-All Existing 14"ϕ Steel Encased Piles to be blasted, cleaned & prime painted from bottom of existing bent cap to 2'-0" below existing ground line.

-Install new 4" Reinforced Concrete Encasement from 1'-0" below bottom of existing bent cap to 2'-0" below existing ground line for all piles.

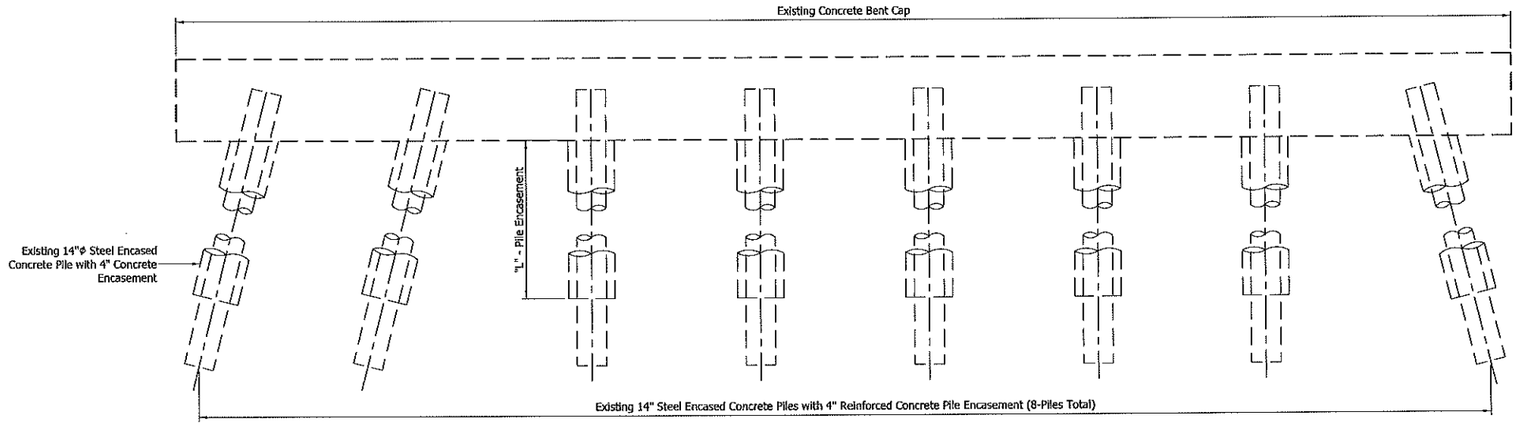
-Top exposed 1'-0" of Piles to receive epoxy intermediate coat and polyurethane finish coat.

Bent Nos. 3 thru 14

-To be backfilled per Special Provisions and Pile Encasement Detail (See Sheet No.9)

Bent Nos. 2 and 15 thru 21

-To receive Scour Counter Measures



ELEVATION
BENT NOS. 15 & 16
Scale: 3/8" = 1'-0"

NOTE: Southbound Lanes shown, Northbound same by opposite hand.

NOTE:

- Original pile encasements are reinforced (6 or 7 piles/bent).
- Exterior piles & encasements added with 1997 reconstruction are un-reinforced concrete. (1 pile/bent)
- Existing concrete encasement lengths are per original plans, actual pile encasement length may vary.

As Built

MICHEL J. HALTEMAN REGISTERED No. 20931 STATE OF INDIANA PROFESSIONAL ENGINEER

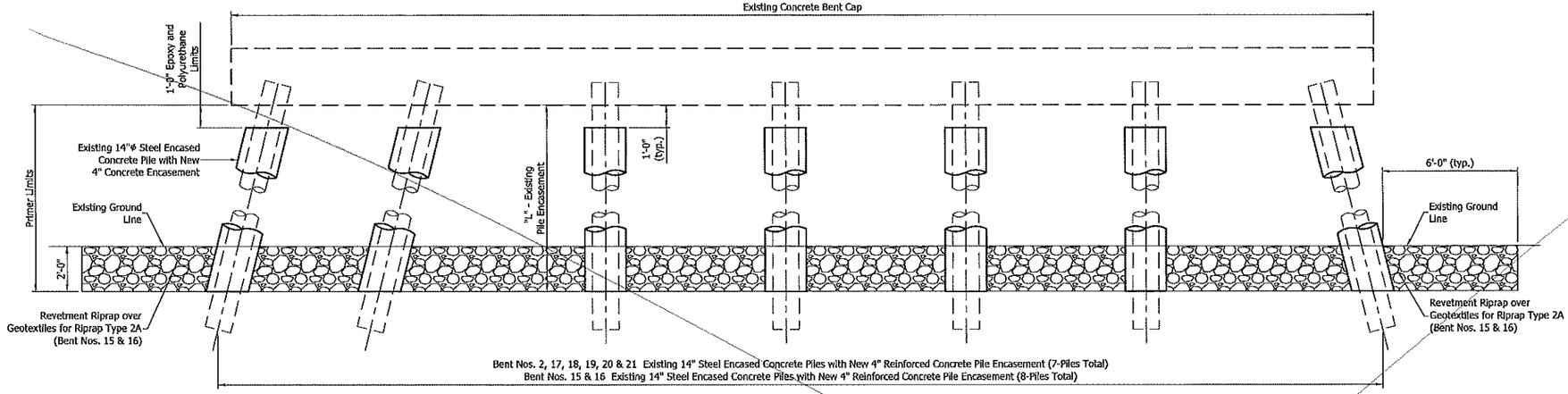
RECOMMENDED FOR APPROVAL: Michael J. Halteman 12-22-17
DESIGN ENGINEER DATE

DESIGNED: MJH DRAWN: DWB
CHECKED: GCW CHECKED: MJH

INDIANA DEPARTMENT OF TRANSPORTATION

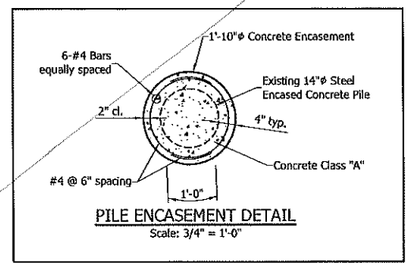
INTERIOR BENT DETAILS

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	I-69-145-04725D (NB & SB)
VERTICAL SCALE	DESIGNATION
AS NOTED	1500807(08)
SURVEY BOOK	SHEETS
	8 of 9
CONTRACT	PROJECT
B-40352	1500807(08)



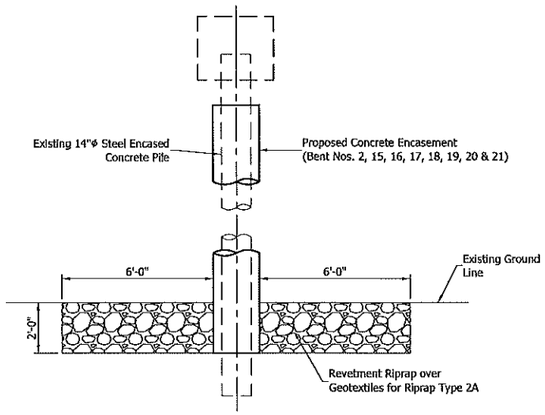
ELEVATION
BENT NOS. 2 & 13 THRU 21
Scale: 3/8" = 1'-0"

NOTE: Southbound Lanes shown, Northbound same by opposite hand.

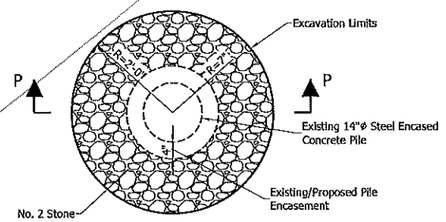


PILE ENCASEMENT DETAIL
Scale: 3/4" = 1'-0"

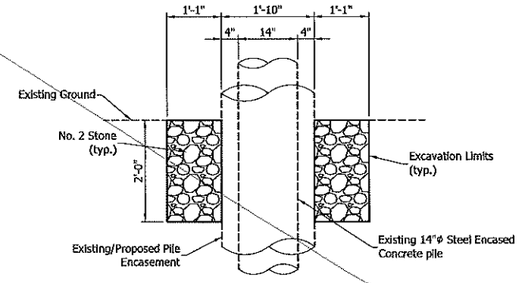
TABLE OF MATERIALS		
Minimum Encasement Diameter	Reinforcing Bars Lbs./Ft.	Class "A" Concrete Cys./Ft.
1'-10"	13.0	0.06



BENT SECTION
SHOWING SCOUR COUNTER MEASURES
Scale: 3/8" = 1'-0"



PILE ENCASEMENT REPAIR DETAIL
BENT NOS. 3 THRU 14
Scale: 3/4" = 1'-0"



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

As Built

MICHAEL J. HALTERMAN REGISTERED No. 20931 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL: DESIGN ENGINEER — DATE 12-22-17

DESIGNED: MJH | DRAWN: DWB | CHECKED: GCW | CHECKED: MJH

INDIANA DEPARTMENT OF TRANSPORTATION

INTERIOR BENT DETAILS

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	1-69-145-04725D (NB & SB)
VERTICAL SCALE	DESIGNATION
AS NOTED	1500807(08)
SURVEY BOOK	SHEETS
	9 of 9
CONTRACT	PROJECT
B-40352	1500807(08)

PROJECT DESCRIPTION

THESE DOCUMENTS WERE PRODUCED BY QUAKEWRAP, INC FOR USE BY FRP CONSTRUCTION, LLC AND THE INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) BRIDGE DIVISION. THE DESIGN AND CONSTRUCTION DOCUMENTS ARE FOR THE REPAIR AND STRENGTHENING OF STEEL PIPE PILES. THE REPAIR AND STRENGTHENING WILL UTILIZE THE PILEMEDIC® PILE JACKETING SYSTEM.

NOTE: THE WORK DESCRIBED ABOVE IS A SUMMARY OF THE PROJECT SCOPE. ACTUAL SCOPE IS DEPICTED IN THE DRAWINGS AND GENERAL PROJECT NOTES.

GENERAL PROJECT NOTES

GENERAL NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS, PROJECT BOUNDARIES, AND EXISTING CONDITIONS AT THE SITE PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL VERIFY DETAILS AND DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS WITH RELATED REQUIREMENTS ON OTHER CONSTRUCTION DOCUMENTS.
2. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE STRUCTURAL ENGINEER OF RECORD (SEOR) OF ANY CONFLICTS BETWEEN THE STRUCTURAL DRAWINGS AND OTHER CONSTRUCTION DOCUMENTS OR EXISTING CONDITIONS. THE CONTRACTOR SHALL NOT ORDER MATERIAL, FABRICATE ELEMENTS, OR CONSTRUCT ANY PORTION OF STRUCTURE THAT IS IN CONFLICT UNTIL RESOLUTION IS MADE.
3. WHEN DIMENSIONS ARE UNCLEAR, REQUEST CLARIFICATION FROM THE SEOR. DO NOT SCALE DRAWINGS. UNLESS NOTED OTHERWISE, PLAN DIMENSIONS INDICATE CENTERLINE OF BEAMS AND STEEL COLUMNS.
4. WHERE INFORMATION IS CONFLICTING WITHIN THE STRUCTURAL DOCUMENTS, SPECIFIC DETAILS SHALL GOVERN OVER TYPICAL DETAILS.
5. DETAILS NOTED AS TYPICAL ON STRUCTURAL SHEETS SHALL APPLY IN ALL CASES UNLESS SPECIFICALLY SHOWN OR NOTED OTHERWISE. WHERE NO DETAIL IS INDICATED, CONSTRUCTION SHALL BE OF THE SAME NATURE AS FOR SIMILAR CASES OF CONSTRUCTION ON THIS PROJECT.
6. THE CONTRACTOR SHALL PROVIDE ALL NEW (N) MATERIALS TO PERFORM THE WORK INDICATED ON STRUCTURAL DOCUMENTS UNLESS NOTED AS EXISTING (E) OR SUPPLIED BY OTHERS. WRITTEN APPROVAL FROM THE SEOR SHALL BE OBTAINED PRIOR TO THE SUBSTITUTION OF ANY MATERIAL OR PRODUCT SPECIFIED ON THE STRUCTURAL DOCUMENTS.
7. STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE, UNLESS OTHERWISE SHOWN THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION OR NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN OF TEMPORARY ERECTION AIDS, FORMWORK, SCAFFOLDING, SAFETY MEASURES, SHORING OF ANY PORTION OF WORK, AND PROTECTION OF ADJACENT PROPERTIES. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. VISITS TO THE SITE BY THE SEOR SHALL NOT INCLUDE OBSERVATION OR INSPECTION OF THE ABOVE ITEMS AND DO NOT IN ANY WAY RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITIES FOR THE ABOVE.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT. THE SEOR AND THE OWNER DO NOT ACCEPT ANY RESPONSIBILITY FOR THE CONTRACTOR'S FAILURE TO COMPLY WITH THESE.
9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH FEDERAL, STATE, AND LOCAL PERMIT CONDITIONS.
10. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE SEQUENCES AND PROCEDURES TO BE USED.
11. CONSTRUCTION MATERIALS AND ERECTION LOADS SHALL BE DISTRIBUTED WHEN PLACED ON THE STRUCTURE SUCH THAT THEY DO NOT EXCEED DESIGN LIVE LOADS OR RESULT IN AN UNBALANCED CONDITION. MAXIMUM PERMANENT EQUIPMENT WEIGHTS, POSTED LOAD LIMITS OR OTHER RESTRICTIONS NOTED ON THE STRUCTURAL DRAWINGS SHALL NOT BE EXCEEDED WITHOUT PRIOR WRITTEN APPROVAL BY THE SEOR. UNLESS SPECIFICALLY STATED, THE STRUCTURE IS NOT DESIGNED TO SUPPORT TRAFFIC FROM CRANES OR OTHER HEAVY CONSTRUCTION VEHICLES.
12. FLOOR, ROOF AND WALL OPENINGS, SLEEVES, INSERTS, EMBEDS, CONDUITS AND OTHER BUILDING ELEMENTS MUST BE LOCATED BEFORE THE CONTRACTOR PROCEEDS WITH CONSTRUCTION. THE STRUCTURAL DRAWINGS DO NOT NECESSARILY INDICATE THESE ITEMS.
13. STRUCTURAL DRAWINGS INDICATE THE APPROXIMATE LOCATION OF EQUIPMENT AND THEIR SECONDARY FRAMING SUPPORTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF THESE ITEMS.
14. THE FOLLOWING REFERENCE DOCUMENTS WERE USED IN THE PRODUCTION OF THESE DRAWINGS:
    A. STATE OF INDIANA - STATE HIGHWAY DEPARTMENT. "BRIDGE PLANS FOR SPANS OVER 20 FEET ON F.A PROJECT NO. I-69-5(51)145 INTERSTATE ROUTE I-69 OVER PIGEON CREEK" DRAWINGS DATED 08/11/1961.
    B. INDIANA DEPARTMENT OF TRANSPORTATION. "BRIDGE REHABILITATION PLANS FOR SPANS OVER 20 FEET - ROUTE I-69 AT 345+31, PROJECT NO. 1500807 (08) P.E. AND 1500807 (08) CONST." DATED 12/22/2017

EXISTING CONDITIONS

1. FIELD VERIFY ALL EXISTING CONDITIONS AS REQUIRED PRIOR TO START OF WORK.
2. FIELD VERIFY DIMENSIONS AS REQUIRED PRIOR TO START OF WORK.
3. WHERE EXISTING CONDITIONS VARY SIGNIFICANTLY FROM THOSE DEPICTED IN THE DRAWINGS, THE SOER SHALL BE NOTIFIED PRIOR TO CONTINUED CONSTRUCTION OF SUBJECT AREA.
4. DO NOT CUT OR DAMAGE EXISTING CONCRETE OR MASONRY REINFORCEMENT EXCEPT AS INDICATED IN DRAWINGS.
5. NOTIFY SEOR OF EXISTING STRUCTURAL DETERIORATION, APPARENT DISTRESS, OR COMPROMISED MEMBERS THAT EXCEED THE SCOPE OF THE REPAIR OR STRENGTHENING.

NON-SHRINK GROUT

1. NON-SHRINK GROUT SHALL BE PILEMEDIC® UW GROUT, A CEMENT-BASED NON-SHRINK GROUT, CONFORMING TO ASTM C1107 AND SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI, AS MANUFACTURED BY QUAKEWRAP, INC., TUCSON, AZ. OR EQUIVALENT ACCEPTED BY THE ENGINEER.
2. NON-SHRINK GROUT SHALL BE MIXED AND INSTALLED PER MANUFACTURER GUIDELINES.

EPOXY GROUT

1. EPOXY GROUT SHALL BE PILEMEDIC® UW EPOXY GROUT, A THREE-COMPONENT, 100% SOLIDS HIGH STRENGTH, WATER-DISPLACING EPOXY GROUT DESIGNED TO CURE UNDERWATER, AS MANUFACTURED BY QUAKEWRAP, INC., TUCSON, AZ. OR EQUIVALENT ACCEPTED BY THE ENGINEER.
2. EPOXY GROUT SHALL BE MIXED AND INSTALLED PER MANUFACTURER GUIDELINES.

PILE JACKETING SYSTEM

1. THE PILE JACKETING SYSTEM SHALL BE PILEMEDIC® PLG60.60, A HIGH-STRENGTH, HIGH-MODULUS FIBER REINFORCED POLYMER (FRP) LAMINATE, AS MANUFACTURED BY QUAKEWRAP, INC., TUCSON, AZ. OR EQUIVALENT ACCEPTED BY THE ENGINEER.
2. ALL PILE JACKETING SYSTEMS SHALL BE MANUFACTURED AND INSTALLED AS REQUIRED BY THE STRUCTURAL DRAWINGS AND SPECIFICATIONS.
3. THE WORK INCLUDES THE FURNISHING OF ALL MATERIALS, LABOR, EQUIPMENT AND SERVICES SUPPORTING INSTALLATION AND FINISH OF ALL STRUCTURAL STRENGTHENING USING EXTERNALLY BONDED FRP SYSTEMS.
4. THE GENERAL CONTRACTOR OR SUBCONTRACTOR SHALL FURNISH ALL MATERIALS, TOOLS, EQUIPMENT, TRANSPORTATION, NECESSARY STORAGE, ACCESS, LABOR AND SUPERVISION REQUIRED FOR THE PROPER INSTALLATION OF THE EXTERNALLY BONDED FRP SYSTEMS.
5. MATERIALS FOR THE FRP SYSTEM HAVE BEEN PRE-QUALIFIED AND SHALL BE SUPPLIED BY THE FOLLOWING MANUFACTURERS:
    A. QUAKEWRAP, INC. (6840 S. TUCSON BLVD., TUCSON, AZ 85756. TEL: 520-791-7000, FAX: 520-791-6800).
6. PRODUCT DELIVERY, HANDLING AND STORAGE:
    A. DELIVER EPOXY MATERIALS IN FACTORY-SEALED CONTAINERS WITH THE MANUFACTURER'S LABELS INTACT AND LEGIBLE WITH VERIFICATION OF DATE OF MANUFACTURE AND SHELF LIFE.
    B. STORE MATERIALS IN A PROTECTED AREA AT A TEMPERATURE BETWEEN 40°F AND 100°F.
    C. PRODUCTS SHALL BE STORED ACCORDING TO THE MANUFACTURER'S REQUIREMENTS AND SHALL AVOID CONTACT WITH SOIL AND MOISTURE. PRODUCTS SHALL BE STORED TO AVOID UV EXPOSURE.
7. CONTRACTOR TO PROVIDE COMPATIBLE PRIMER, FILLER AND OTHER MATERIALS RECOMMENDED BY THE MANUFACTURER AS NEEDED FOR THE PROPER INSTALLATION OF THE COMPLETE SURFACE BONDED FRP COMPOSITE SYSTEM.
8. PILE JACKETING SYSTEM SHALL BE INSTALLED PER MANUFACTURER SPECIFICATIONS AND PRODUCT DATA SHEETS.

SHOP DRAWING REVIEW

X No Exception Taken — Make Corrections Noted
— Rejected – See Remarks — Revise and Resubmit

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USI CONSULTANTS, INC.
Engineers – Land Surveyors
Indianapolis, Indiana

Date: 11/29/18 By: Michael J Halteman

DRAWING INDEX

ABBREVIATIONS

NOTE: NOT ALL ABBREVIATIONS SHOWN BELOW ARE USED IN THIS DRAWING SET.

(E)	- EXISTING	MAX.	- MAXIMUM
(N)	- NEW	MIN.	- MINIMUM
#	- POUNDS		
Ø	- DIAMETER	NDT	- NONDESTRUCTIVE TESTING
		NTS	- NOT TO SCALE
ALT.	- ALTERNATE		
A.B.	- ANCHOR BOLT	O.C.	- ON CENTER
		O.H.	- OPPOSITE HAND
BM.	- BEAM	OPN'G.	- OPENING
BOC	- BOTTOM OF CONCRETE	OPP.	- OPPOSITE
BOS	- BOTTOM OF STEEL		
BOTT.	- BOTTOM	PL.	- PLATE
BTWN.	- BETWEEN	PT	- PRETENSIONED
CLR.	- CLEAR, CLEARANCE	R	- RADIUS
CMU	- CONCRETE MASONRY UNIT	REINF.	- REINFORCEMENT
COL.	- COLUMN	REQ'D.	- REQUIRED
CONC.	- CONCRETE		
CONN.	- CONNECTION	SEOR	- STRUCTURAL ENGINEER OF RECORD
CONT.	- CONTINUOUS	SIM.	- SIMILAR
DBL.	- DOUBLE	SPECS.	- SPECIFICATIONS
DIA.	- DIAMETER	SQ.	- SQUARE
DO	- DITTO	STL.	- STEEL
DWG.	- DRAWING	STRUC.	- STRUCTURAL
		SYM.	- SYMMETRICAL
E.F.	- EACH FACE		
E.W.	- EACH WAY	T&B	- TOP AND BOTTOM
EA.	- EACH	TOC	- TOP OF CONCRETE
EMBED.	- EMBEDMENT	TOS	- TOP OF STEEL
EQ.	- EQUAL	TYP.	- TYPICAL
FLEX.	- FLEXURAL	U.N.O., UNO	- UNLESS NOTED OTHERWISE
FRP	- FIBER REINFORCED POLYMER	VERT.	- VERTICAL
GA.	- GAUGE	W	- WITH
GLBM	- GLULAM BEAM	W.O.	- WHERE OCCURS
GALV.	- GALVANIZED	W.P.	- WORK POINT
H.A.S.	- HEADED ANCHOR STUD	WT.	- WEIGHT
HORIZ.	- HORIZONTAL		

MATERIALS AND SYMBOLS

CEMENTITIOUS GROUT

EPOXY GROUT

STEEL BARS

STEEL PILE

SECTION — A — LETTER REFERENCE / SHEET REFERENCE

DETAIL — 1 — NUMBER REFERENCE / SHEET REFERENCE

SPOT ELEVATION — EL.+0.00 FT

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6840 S. Tucson Blvd.
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www.QuakeWrap.com

PROJECT:

18-549 IN - I-69 BRIDGE
STEUBEN COUNTY BRIDGE
14" PILE RETROFIT

CLIENT:

INDOT

TITLE:

GENERAL PROJECT NOTES

DONALD VAN GERVE — REGISTERED — PE11600005 — 11/28/18 — STATE OF INDIANA — PROFESSIONAL ENGINEER

APPROVED FOR CONSTRUCTION

REVISIONS

NO.	DESCRIPTION	DRAWN	CHECKED	DATE
P1	PRELIMINARY DESIGN	JL	AKU	08/22/2018
0	APPROVED FOR CONSTRUCTION	JL	AKU	11/19/2018
1	CHANGE TO CONCRETE COMPRESSIVE STRENGTH	BJS	AKU	11/27/2018

G - 01

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SHOP DRAWING REVIEW

X No Exception Taken — ___ Make Corrections Noted
___ Rejected – See Remarks — ___ Revise and Resubmit

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USI CONSULTANTS, INC.
Engineers – Land Surveyors
Indianapolis, Indiana

Date: 11/29/18 By: Michael J Halteman

NOTES:

1. INSTALL PILEMEDIC® SYSTEM PER PILEMEDIC® SPECIFICATIONS.
2. CEMENTITIOUS GROUT SHALL BE NON-SHRINK GROUT WITH A 4,000 PSI MINIMUM COMPRESSIVE STRENGTH.
3. ALL STEEL REINFORCEMENT SHALL BE GRADE 60 KSI.
4. ALL PILEMEDIC® JACKETS TO BE 2 COMPLETE LAYERS PLUS AN ADDITIONAL 8" OVERLAP IN HOOP DIRECTION.
5. PILEMEDIC® JACKET TO BE INSTALLED USING QUAKEBOND™ 220UR UNIVERSAL RESIN.
6. EXISTING REINFORCED CONCRETE ENCASEMENT SHALL BE COMPLETELY REMOVED PRIOR TO THE INSTALLATION OF THE PILEMEDIC® SYSTEM. DAMAGE TO THE EXISTING STEEL PILES SHALL BE AVOIDED.
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8. QUAKEWRAP® VB2610G SHALL BE SATURATED USING QUAKEBOND™ J300SR. QUAKEBOND 220UR SHALL BE USED AS THE ADHESIVE COAT.
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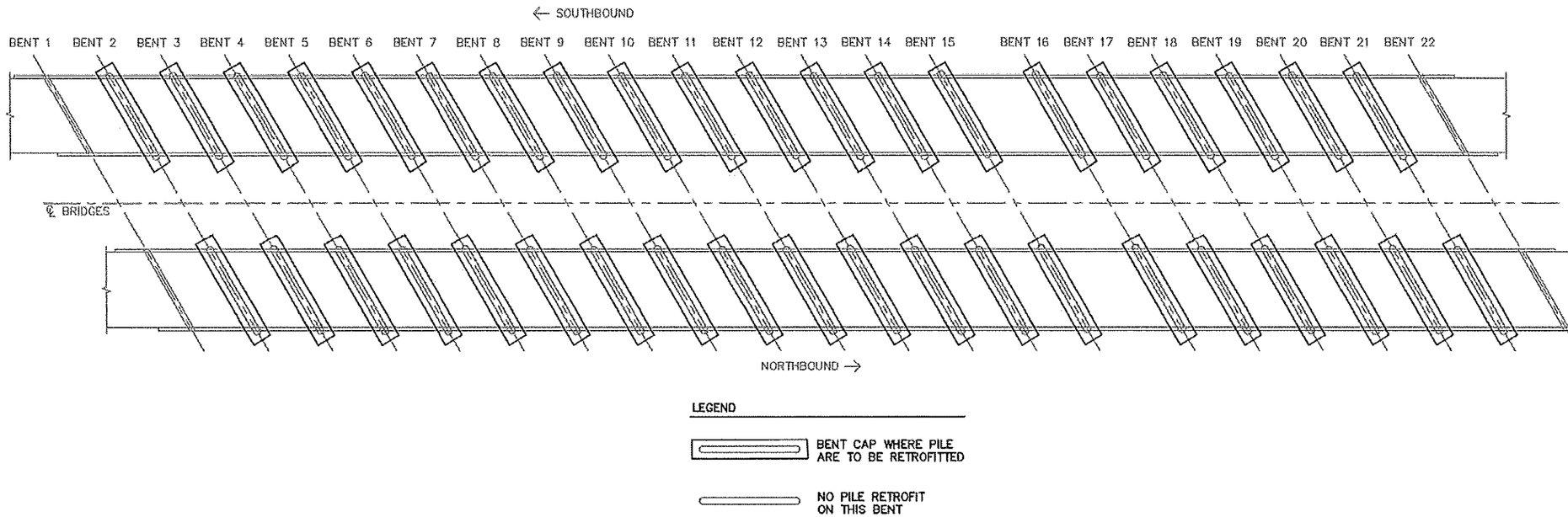

PLAN VIEW I-69 PASS OVER PIGEON CREEK

SCALE: NTS

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QuakeWrap Inc.

6840 S. Tucson Blvd.
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Toll Free: (866) QuakeWrap

www.QuakeWrap.com

PROJECT:

18-549 IN - I-69 BRIDGE
STEUBEN COUNTY BRIDGE
14" PILE RETROFIT

CLIENT:

INDOT

TITLE:

BRIDGE PLAN VIEW

DONALD VAN GERVE REGISTERED PE11600005 11/28/18 STATE OF INDIANA PROFESSIONAL ENGINEER

APPROVED FOR CONSTRUCTION

REVISIONS				
NO.	DESCRIPTION	DRAWN	CHECKED	DATE
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S - 01

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SHOP DRAWING REVIEW

X No Exception Taken
___ Rejected – See Remarks
___ Make Corrections Noted
___ Revise and Resubmit

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USI CONSULTANTS, INC.
Engineers – Land Surveyors
Indianapolis, Indiana

Date: 11/29/18 By: Michael J Halteman

NOTES:

1. INSTALL PILEMEDIC® SYSTEM PER PILEMEDIC® SPECIFICATIONS.
2. CEMENTITIOUS GROUT SHALL BE NON-SHRINK GROUT WITH A 4,000 PSI MINIMUM COMPRESSIVE STRENGTH.
3. ALL STEEL REINFORCEMENT SHALL BE GRADE 60 KSI.
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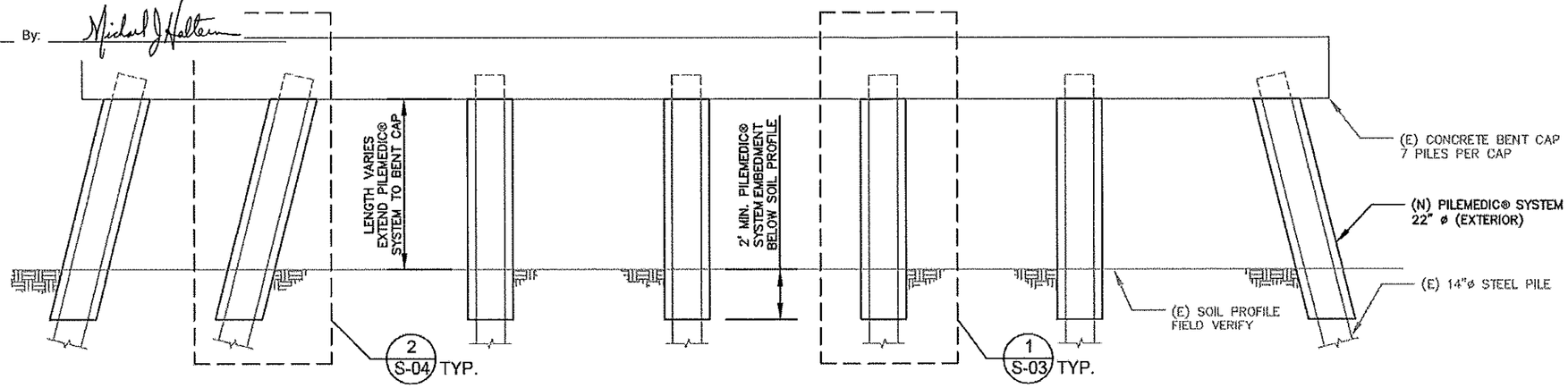
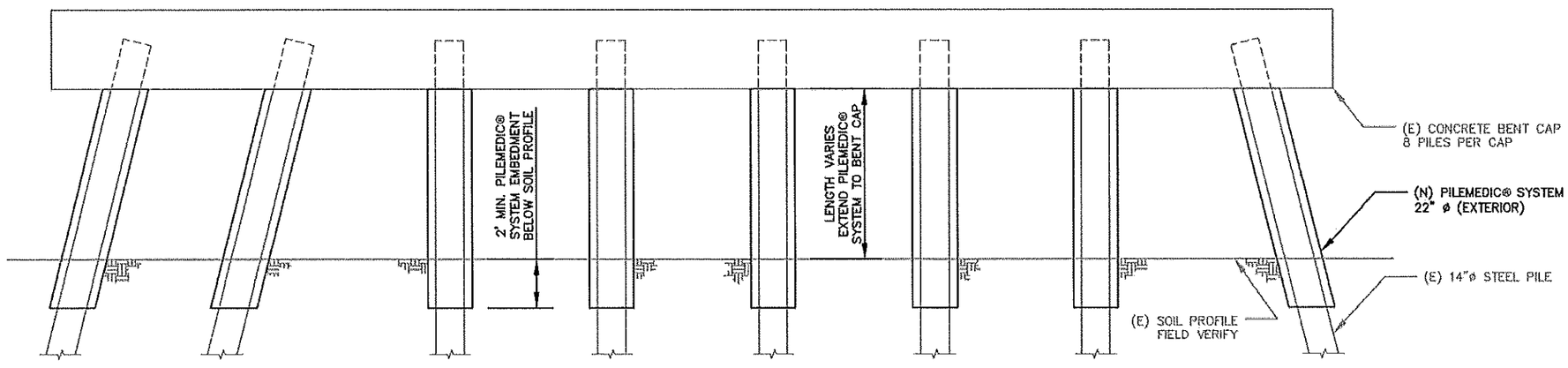
9. A UV RESISTANT COATING SHALL BE APPLIED OVER THE REGION WHERE THE QUAKEWRAP VB2610G FABRIC IS INSTALLED.



ELEVATION FOR BENTS #2 - #14 & #17 - #21
SCALE: 3/16"=1'-0"



ELEVATION FOR BENTS #15 - #16
SCALE: 3/16"=1'-0"

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PROJECT:
18-549 IN - I-69 BRIDGE
STEUBEN COUNTY BRIDGE
14" PILE RETROFIT

CLIENT:
INDOT

TITLE:
BENT ELEVATIONS

DONALD VAN GERVE REGISTERED PE11600005 11/28/18 STATE OF INDIANA PROFESSIONAL ENGINEER

APPROVED FOR CONSTRUCTION

REVISIONS

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1	CHANGE TO CONCRETE COMPRESSIVE STRENGTH	BJS	AKU	11/27/2018

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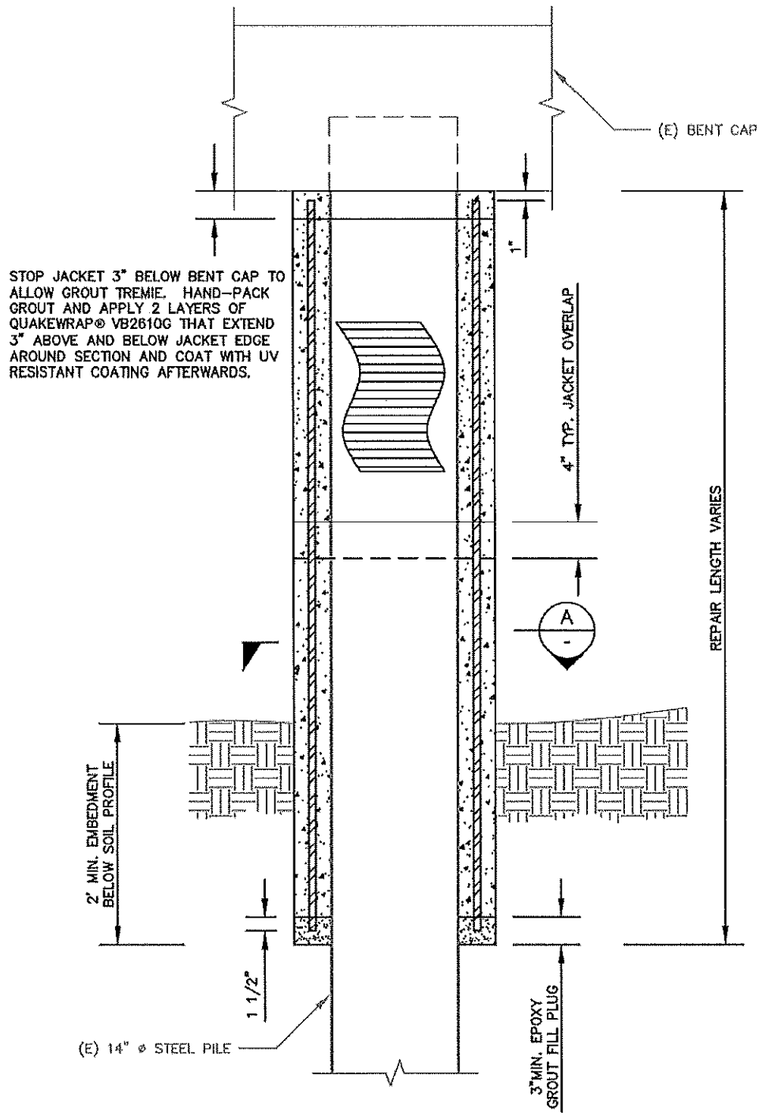

TYPICAL RETROFIT ELEVATION - PLUMB PILE (1 / S-02)
SCALE: 3/4"=1'-0"

NOTES:

1. INSTALL PILEMEDIC® SYSTEM PER PILEMEDIC® SPECIFICATIONS.
2. CEMENTITIOUS GROUT SHALL BE NON-SHRINK GROUT WITH A 4,000 PSI MINIMUM COMPRESSIVE STRENGTH. (1)
3. ALL STEEL REINFORCEMENT SHALL BE GRADE 60 KSI.
4. ALL PILEMEDIC® JACKETS TO BE 2 COMPLETE LAYERS PLUS AN ADDITIONAL 8" OVERLAP IN HOOP DIRECTION.
5. PILEMEDIC® JACKET TO BE INSTALLED USING QUAKEBOND™ 220UR UNIVERSAL RESIN.
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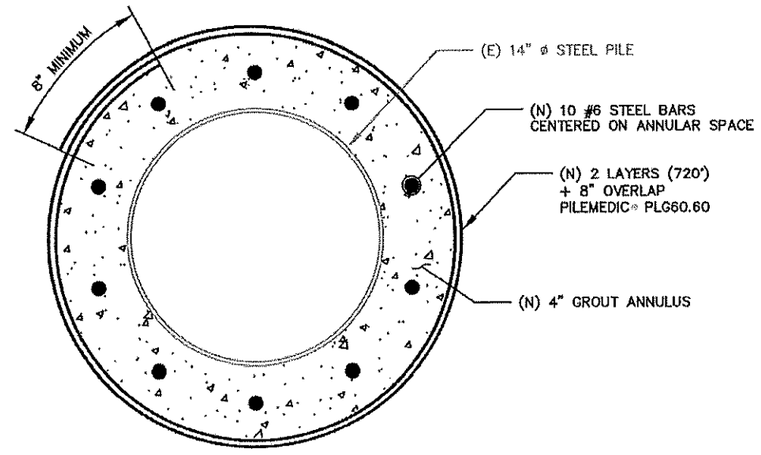

SECTION (A / -)
SCALE: 1-1/2"=1'-0"

SHOP DRAWING REVIEW

X No Exception Taken — Make Corrections Noted
Rejected – See Remarks — Revise and Resubmit

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PROJECT:
18-549 IN - I-69 BRIDGE
STEUBEN COUNTY BRIDGE
14" PILE RETROFIT

CLIENT:
INDOT

TITLE:
RETROFIT DETAIL FOR PLUMB PILES

DONALD VAN GERVE
REGISTERED
PE11600006
11/28/18
STATE OF INDIANA
PROFESSIONAL ENGINEER

APPROVED FOR CONSTRUCTION

REVISIONS

NO.	DESCRIPTION	DRAWN	CHECKED	DATE
P1	PRELIMINARY DESIGN	JL	AKU	08/22/2018
0	APPROVED FOR CONSTRUCTION	JL	AKU	11/19/2018
1	CHANGE TO CONCRETE COMPRESSIVE STRENGTH	BJS	AKU	11/27/2018

S - 03

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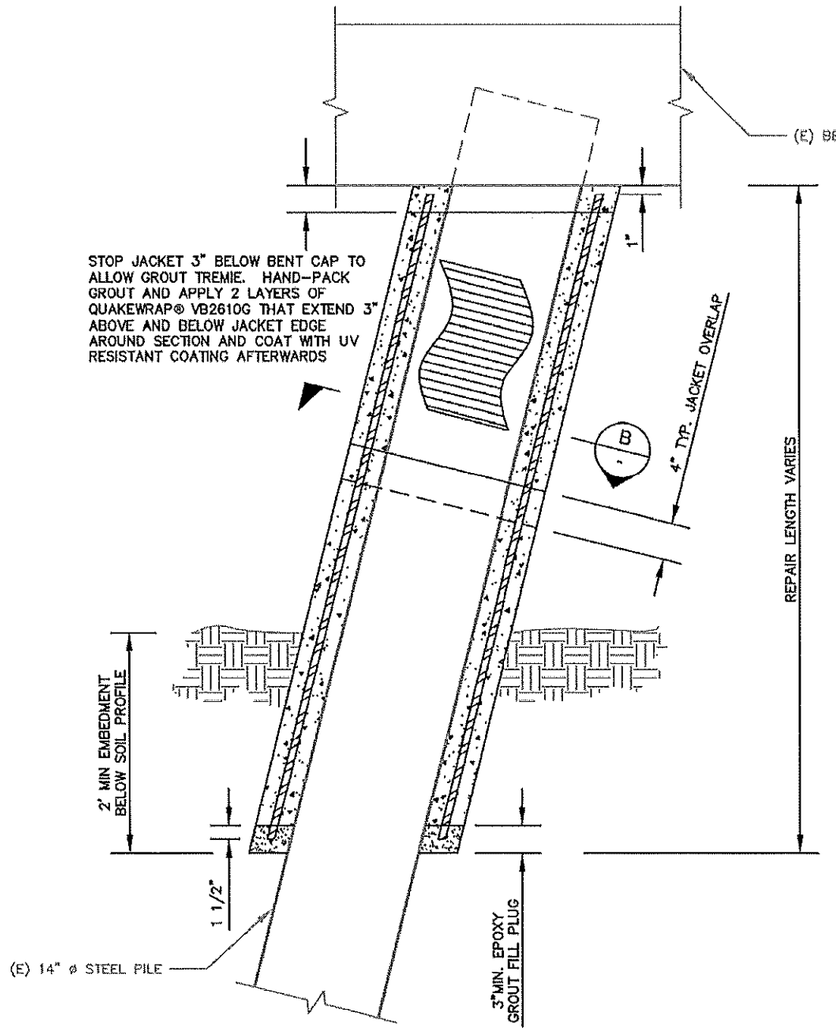

TYPICAL RETROFIT ELEVATION - BATTER PILE (2 / S-02)
SCALE: 3/4"=1'-0"

NOTES:

1. INSTALL PILEMEDIC® SYSTEM PER PILEMEDIC® SPECIFICATIONS.
2. CEMENTITIOUS GROUT SHALL BE NON-SHRINK GROUT WITH A 4,000 PSI MINIMUM COMPRESSIVE STRENGTH. (1)
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8. QUAKEWRAP® VB2610G SHALL BE SATURATED USING QUAKEBOND™ J300SR. QUAKEBOND 220UR SHALL BE USED AS THE ADHESIVE COAT.
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SHOP DRAWING REVIEW

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Engineers – Land Surveyors
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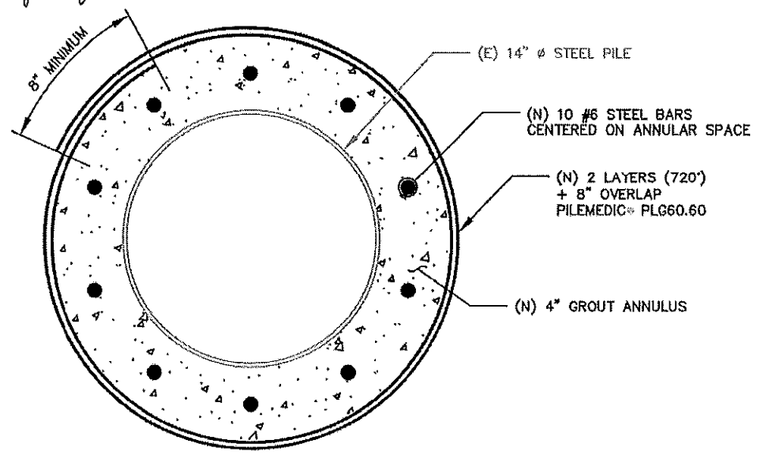


SECTION (B / -)
SCALE: 1-1/2"=1'-0"

ALL SERVICES, METHODS AND PRODUCTS OF PILEMEDIC, LLC AND QUAKEWRAP, INC. WHETHER OFFERED BY THIS COMPANY OR VIA ANY OTHER CHANNEL ARE PROTECTED BY MULTIPLE US AND INTERNATIONAL PATENTS AND PENDING PATENT APPLICATIONS.

QuakeWrap®

QuakeWrap Inc.
6840 S. Tucson Blvd.
Tucson, Arizona 85756
Phone: (520) 791-7000
Toll Free: (866) QuakeWrap
www.QuakeWrap.com

PROJECT:
18-549 IN - I-69 BRIDGE
STEUBEN COUNTY BRIDGE
14" PILE RETROFIT

CLIENT:
INDOT

TITLE:
RETROFIT DETAIL FOR BATTER PILES

DONALD VAN GERVE REGISTERED PE11600005 11/28/18 STATE OF INDIANA PROFESSIONAL ENGINEER

APPROVED FOR CONSTRUCTION

REVISIONS

NO.	DESCRIPTION	DRAWN	CHECKED	DATE
P1	PRELIMINARY DESIGN	JL	AKU	08/22/2018
0	APPROVED FOR CONSTRUCTION	JL	AKU	11/19/2018
1	CHANGE TO CONCRETE COMPRESSIVE STRENGTH	BJS	AKU	11/27/2018

S - 04

Z:\QW Data NEW\PROJECTS\Archive Projects\18 – Projects\18-142 IN I69 Pigeon Creek\1. Job Set-Up\1.3 Bid Documents\Engineering\DWG\18-549 IN – Steuben County Piles REV 1.dwg

Protection: Grout-Filled Pile Sleeve – US35 over Bell Creek

Contract B-41567

Des No 1800164

PROJECT	DESIGNATION
1800164	1800164
CONTRACT	BRIDGE FILE
B-41567	035-27-06900 A

INDIANA DEPARTMENT OF TRANSPORTATION

STRUCTURE INFORMATION

STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
035-27-06900 A	CONTINUOUS REINFORCED CONCRETE SLAB	3 SPANS: 19'-0", 25'-0", 19'-0" SKEW: 8°00'00" LT.	BELL CREEK	10+91.00 LINE "BrA" *

*REESTABLISHED FROM EXISTING PLANS

KIN PROJECT INFORMATION

DESIGNATION	PROJECT DESCRIPTION	
1800164	US 35 OVER BELL CREEK	LEAD DES
2000570	SR 15 OVER METOCINAH CREEK	

BRIDGE REHABILITATION PLANS

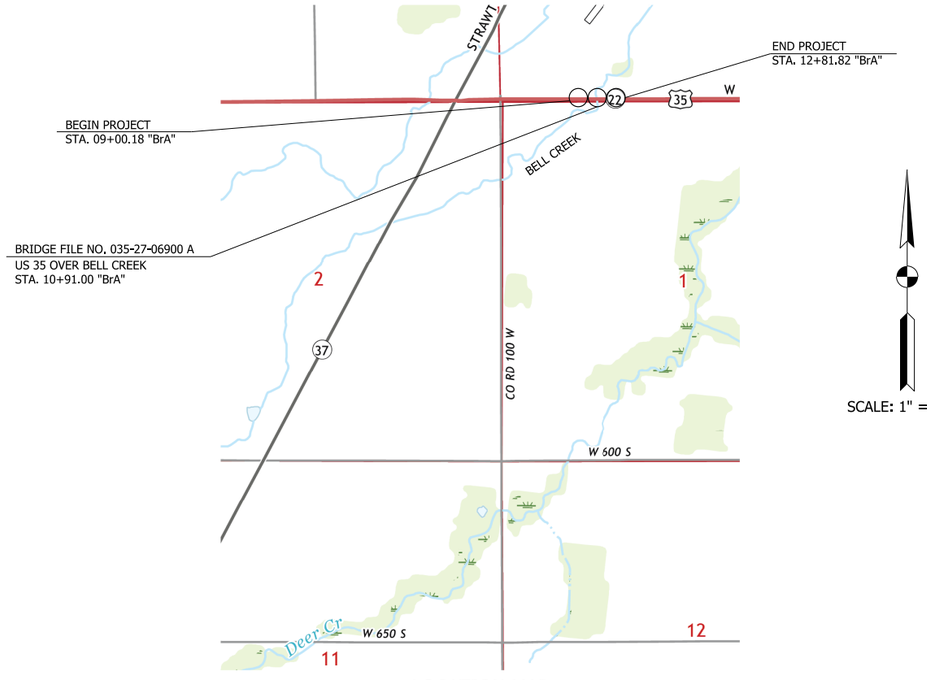
FOR SPANS OVER 20 FEET

ROUTE: US 35 AT: RP 81+96

PROJECT NO. 1800164 (P.E., CONST.)

NO ADDITIONAL RIGHT-OF-WAY REQUIRED FOR THIS PROJECT

BRIDGE REHABILITATION ON US 35 OVER BELL CREEK, LOCATED APPROXIMATELY 0.39 MILES EAST OF SR 37, IN SECTION 36, T-24-N, R-7-E, FRANKLIN TOWNSHIP, AND SECTION 1, T-23-N, R-7-E, LIBERTY TOWNSHIP, GRANT COUNTY, INDIANA



LOCATION MAP
(GRANT COUNTY)

SCALE: 1" = 1000'

TRAFFIC DATA

A.A.D.T. (2023)	3790	V.P.D.
A.A.D.T. (2043)	4550	V.P.D.
D.H.V (2043)	406	V.P.H.
DIRECTIONAL DISTRIBUTION	50,84	%
TRUCKS	19,20	% A.A.D.T.
	12,74	% D.H.V.

DESIGN DATA

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

PROJECT LOCATION SHOWN BY
GRANT COUNTY

LATITUDE: 40°28'49" LONGITUDE: -85°41'10"

BRIDGE LENGTH: 0.012 MI.
ROADWAY LENGTH: 0.060 MI.
TOTAL LENGTH: 0.072 MI.
MAX. GRADE: 0.0 %

12 DIGIT HUC: 051201030508

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2022
TO BE USED WITH THESE PLANS.

HNTB Indiana, Inc.
The HNTB Companies
Infrastructure Solutions
111 Monument Circle
Suite 1200
Indianapolis, IN 46204

THOMAS BIENEMAN REGISTERED No. 21000447 STATE OF INDIANA PROFESSIONAL ENGINEER

PLANS PREPARED BY: HNTB Indiana, Inc. (317) 636-4682 PHONE NUMBER

CERTIFIED BY: Thomas Bieneman 6/21/2022 DATE

APPROVED FOR LETTING: _____ DATE
INDIANA DEPARTMENT OF TRANSPORTATION

BRIDGE FILE
035-27-06900 A
DESIGNATION
1800164

SURVEY BOOK	SHEETS
ELECTRONIC	1 of 18
CONTRACT	PROJECT
B-41567	1800164

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UTILITIES

ELECTRIC:

AMERICAN ELECTRIC POWER
GARTH MILLER
4504 S LINCOLN BLVD
MARION, IN 46953
765-677-6010
DGMILLER@AEP.COM

COMMUNICATION:

AT&T DISTRIBUTION
DAVID W. SMITH
116 E. TAYLOR ST.
KOKOMO, IN 46901
765-454-5021
DS8383@ATT.COM

GAS:

CENTERPOINT ENERGY
TOM OCHOA
1800 W 26TH ST.
MUNCIE, IN 47302
765-287-2112
THOMAS.OCHOA@CENTERPOINTENERGY.COM

Indiana811.org

INDEX

REVISIONS

SHEET NO.	DATE	REVISED

THOMAS BIENEMAN REGISTERED No. 21000044 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

DESIGNED: NIK DRAWN: NIK
CHECKED: TMB CHECKED: TMB

INDIANA
DEPARTMENT OF TRANSPORTATION

INDEX

HORIZONTAL SCALE	BRIDGE FILE
N/A	035-27-06900 A
VERTICAL SCALE	DESIGNATION
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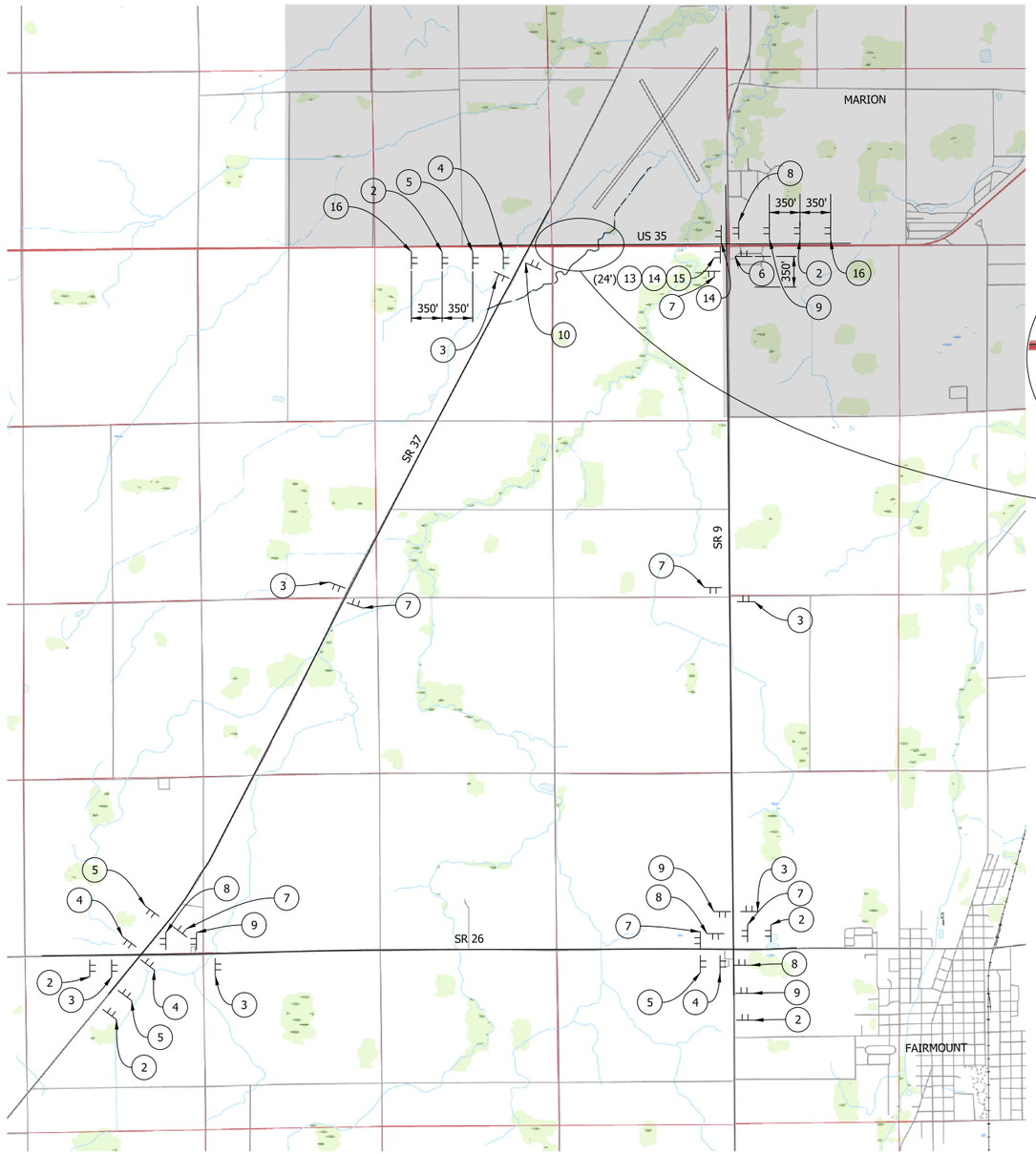
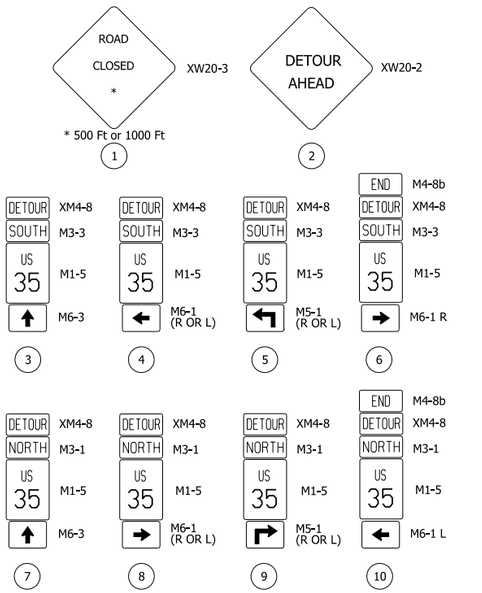
SURVEY BOOK	SHEETS
ELECTRONIC	2 of 18
CONTRACT	PROJECT
B-41567	1800164





LEGEND:

URBAN AREA BOUNDARY

CONSTRUCTION SIGN

MOT SUMMARY		
ITEM	UNITS	TOTALS
DETOUR ROUTE MARKER ASSEMBLIES	EA	30
** CONSTRUCTION SIGN, A	EA	22
ROAD CLOSURE SIGN ASSEMBLY	EA	4
BARRICADE, III-A	LF	96
BARRICADE, III-B	LF	120
MAINTAINING TRAFFIC	LS	1

** INCLUDES 2 XG20-5 ROUTE CLOSURE NOTICE SIGNS FIELD LOCATED BY FIELD ENGINEER.

NOTES:

1. IN RURAL AREAS SIGN (5) SHALL BE PLACED 500' PRIOR TO SIGN (4).
2. IN RURAL AREAS SIGN (9) SHALL BE PLACED 500' PRIOR TO SIGN (8).
3. IN URBAN AREAS SIGN (5) SHALL BE PLACED 300' PRIOR TO SIGN (4).
4. IN URBAN AREAS SIGN (9) SHALL BE PLACED 300' PRIOR TO SIGN (8).
5. FOR ADDITIONAL INFORMATION ON DETOUR SIGN PLACEMENT, SEE STANDARD DRAWING E 801-TCDT-04.
6. PUBLIC SCHOOLS, PUBLIC TRANSIT, EMERGENCY SERVICES, AND POSTAL SERVICES SHALL BE CONTACTED A MINIMUM OF 14 DAYS PRIOR TO BEGINNING CONSTRUCTION.
7. ACCESS TO PRIVATE DRIVES SHALL BE MAINTAINED DURING CONSTRUCTION.

THOMAS BIENEMAN REGISTERED No. 21000044 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

DESIGNED: NIK DRAWN: NIK
CHECKED: TMB CHECKED: TMB

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC DETAILS

HORIZONTAL SCALE	BRIDGE FILE
NTS	035-27-06900 A
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NTS	1800164
SURVEY BOOK	SHEETS
ELECTRONIC	3 of 18
CONTRACT	PROJECT
B-41567	1800164

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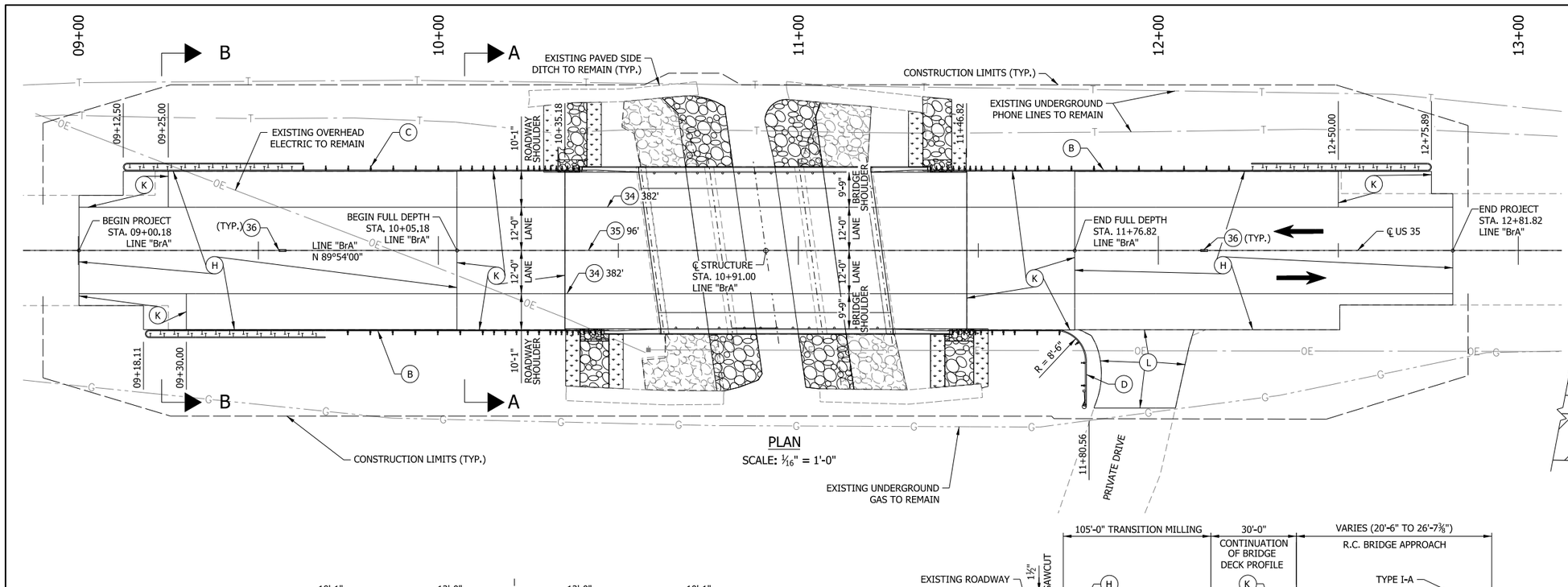
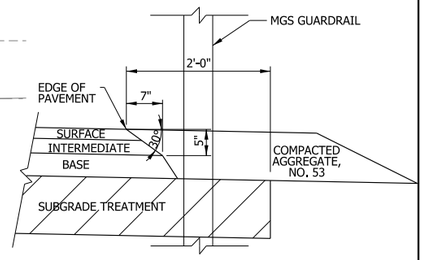


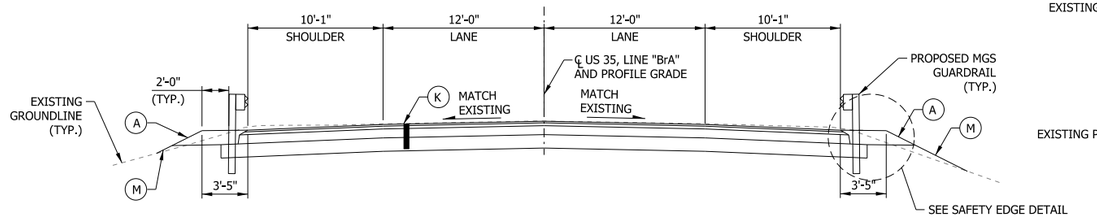
PLAN

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



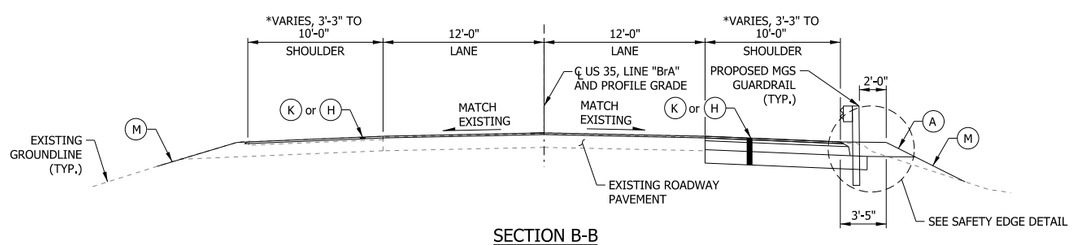
SAFETY EDGE ON HMA PAVEMENT

N.T.S.



SECTION A-A

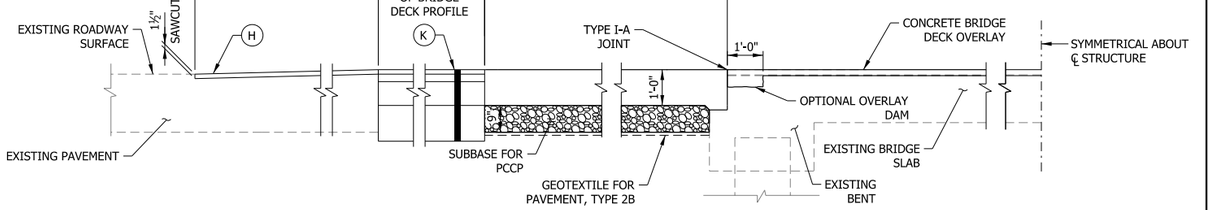
SCALE: 3/16" = 1'-0"



SECTION B-B

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

(RIGHT SHOULDER SHOWN AS FULL DEPTH, LEFT SHOULDER SHOWN AS MILLED AND RESURFACED. SEE PLAN VIEW FOR LOCATION OF FULL DEPTH AND MILL AND RESURFACE LIMITS)



LONGITUDINAL SECTION

SCALE: ½" = 1'-0"

LEGEND

- (A) COMPACTED AGGREGATE, NO. 53.
- (B) INSTALL MGS GUARDRAIL TRANSITION WITHOUT CURB, 12.5' MGS W-BEAM, GUARDRAIL, 6'-3" SPACING, MGS HEIGHT TRANSITION AND RESET EXISTING OS END TREATMENT.
- (C) INSTALL MGS GUARDRAIL TRANSITION WITHOUT CURB, MGS HEIGHT TRANSITION, AND RESET OS END TREATMENT.
- (D) INSTALL TGB GUARDRAIL TRANSITION AND CURVED W-BEAM GUARDRAIL TERMINAL SYSTEM, TYPE 2.
- (M) LINEAR GRADING.
- (34) LINE, PAINT, SOLID, WHITE, 6 IN.
- (35) LINE, PAINT, BROKEN, YELLOW, 6 IN.
- (36) SNOWPLOWABLE RAISED PAVEMENT MARKER.
- (H) 165 LBS/SYS QC/QA-HMA, 3, 70, SURFACE, 9.5 MM.
- (K) 165 LBS/SYS QC/QA-HMA, 3, 70, SURFACE, 9.5 MM. ON 275 LBS/SYS QC/QA-HMA, 3, 70, INTERMEDIATE, 19.0 MM ON 880 LBS/SYS QC/QA-HMA, 3, 64, BASE, 25.0 MM ON SUBGRADE TREATMENT, TYPE ID
- (L) HMA FOR APPROACHES, TYPE B

* LT. SHOULDER WIDTH = 3'-3" FROM STA. 09+00.18 LINE "BrA" TO STA. 09+12.50 LINE "BrA" AND STA. 12+75.89 LINE "BrA" TO STA. 12+81.82 LINE "BrA"
LT. SHOULDER WIDTH = 10'-0" FROM STA. 09+12.50 LINE "BrA" TO STA. 10+05.18 LINE "BrA" AND STA. 11+76.82 LINE "BrA" TO STA. 12+75.89 LINE "BrA"
RT. SHOULDER WIDTH = 3'-3" FROM STA. 09+00.18 LINE "BrA" TO STA. 09+18.11 LINE "BrA" AND STA. 12+50.43 LINE "BrA" TO STA. 12+81.82 LINE "BrA"
RT. SHOULDER WIDTH = 10'-0" FROM STA. 09+18.11 LINE "BrA" TO STA. 10+05.18 LINE "BrA" AND STA. 11+76.82 LINE "BrA" TO STA. 12+50.43 LINE "BrA"

NOTES:

1. AFTER MILLING THE EXISTING ASPHALT PAVEMENT SURFACE, ANY CRACKS THAT REMAIN VISIBLE WITH 0.25 INCH WIDTH OR GREATER SHALL BE SEALED BEFORE APPLYING TACK COAT TO THE MILLED SURFACE.
2. ENTIRE EXISTING GUARDRAIL ALONG EXISTING APPROACH ROADWAY, EXISTING BRIDGE APPROACH SLAB, AND ATTACHED TO EXISTING BRIDGE DECK SHALL BE REMOVED. EXISTING OS END TREATMENTS SHALL BE RESET.
3. FOR GUARDRAIL NOTES, SEE STANDARD DRAWING E 601-MGSA-01 THROUGH -05, -12, AND -16.

THOMAS BIENEMAN REGISTERED No. 21000447 STATE OF INDIANA PROFESSIONAL ENGINEER

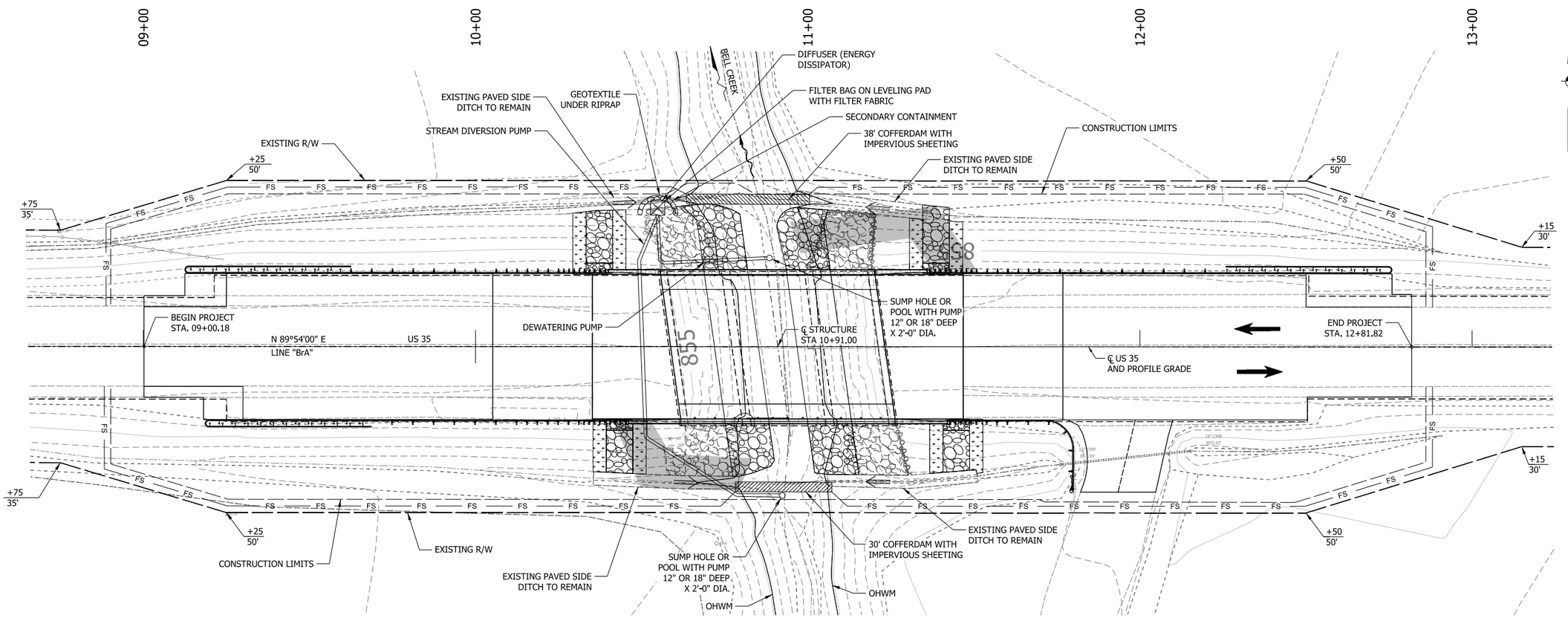
RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

DESIGNED: NIK DRAWN: NIK
CHECKED: TMB CHECKED: TMB

INDIANA DEPARTMENT OF TRANSPORTATION

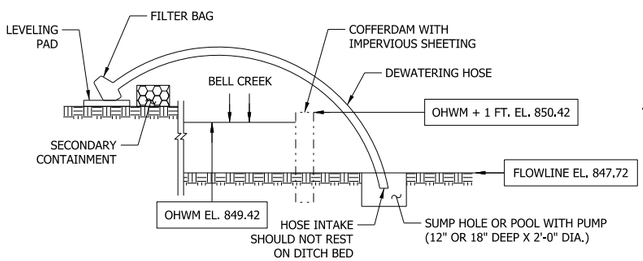
APPROACH ROADWAY DETAILS

HORIZONTAL SCALE	BRIDGE FILE
AS SHOWN	035-27-06900 A
VERTICAL SCALE	DESIGNATION
AS SHOWN	1800164
SURVEY BOOK	SHEETS
ELECTRONIC	4 of 18
CONTRACT	PROJECT
B-41567	1800164



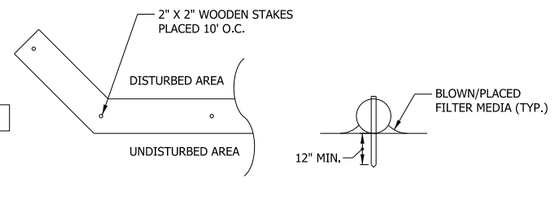
PLAN

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



DEWATERING / WORK AREA

NOT TO SCALE



FILTER SOCK DETAIL

NOT TO SCALE

SEDIMENT REMOVE *	
LOCATION	(CYS)
FILTER SOCK	2

CONSTRUCTION * ENTRANCES	
NO. 2 STONE	TEMP. GEOTEXTILES
(TONS)	(SYS)
100	235

FILTER SOCK *	
LOCATION	LENGTH (LFT)
STA. 8+90 TO 10+79 LT LINE "BrA"	225
STA. 8+90 TO 10+88 RT LINE "BrA"	230
STA. 10+94 TO 12+88 LT LINE "BrA"	225
STA. 11+01 TO 12+88 RT LINE "BrA"	220
TOTAL	900

* FOR INFORMATION ONLY. ESTIMATED QUANTITY INCLUDED IN STORM WATER MANAGEMENT BUDGET.

NOTES:

1. CONTRACTOR SHALL VERIFY EXISTING FLOW LINE ELEVATION TO SET THE APPROPRIATE PUMP DEPTH PRIOR TO CONSTRUCTION.
2. PUMP AROUND SHOWN IS PART OF DOCUMENTATION INCLUDED FOR PERMIT APPROVAL. SEE SPECIAL PROVISIONS.
3. BELL CREEK DRAINAGE AREA = 3.07 SQUARE MILE.
4. DISTURBED AREAS ABOVE THE OHWM SHALL BE REGRADED AND RESTORED WITH INDOT SEED MIXTURE R.
5. DEWATERING SHALL BE USED TO PLACE RIPRAP IN DRY CONDITIONS.
6. TEMPORARY DEWATERING MEASURES ARE ANTICIPATED TO BE IN PLACE APPROXIMATELY 2 MONTHS.
7. DEWATERING HOSE SHALL BE POSITIONED SO INTAKE DOES NOT REST ON STREAM BED.

LEGEND

OHWM ORDINARY HIGH WATER MARK

CONSTRUCTION ACCESS

FS FILTER SOCK

OFFSITE DRAINAGE POINT OF ENTRY

STORM WATER EXIT (OPEN CHANNEL)

THOMAS BIENEMAN REGISTERED No. 21000044 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

DESIGNED: KCF DRAWN: KCF

CHECKED: CDC CHECKED: CDC

INDIANA DEPARTMENT OF TRANSPORTATION

EROSION CONTROL DETAILS

HORIZONTAL SCALE	BRIDGE FILE
AS SHOWN	035-27-06900 A
VERTICAL SCALE	DESIGNATION
AS SHOWN	1800164
SURVEY BOOK	SHEETS
ELECTRONIC	5 of 18
CONTRACT	PROJECT
B-41567	1800164

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model Erosion control details
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SOIL CLASSIFICATIONS	
MAP SYMBOL	MAP UNIT NAME
BgmA	Blount silt loam, ground moraine, 0 to 2 percent slopes
GlqC2	Glynwood clay loam, ground moraine, 6 to 12 percent slopes, eroded
GlsB2	Glynwood silt loam, ground moraine, 2 to 6 percent slopes, eroded
Pw	Pewamo silty clay loam, 0 to 1 percent slopes
Sn	Sloan silty clay loam, 0 to 1 percent slopes, occasionally flooded

THOMAS BIENEMAN REGISTERED No. 21000044 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

DESIGNED: KCF DRAWN: KCF
CHECKED: CDC CHECKED: CDC

INDIANA
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL SOILS MAP

HORIZONTAL SCALE	BRIDGE FILE
1"=200'	035-27-06900 A
VERTICAL SCALE	DESIGNATION
1"=200'	1800164
SURVEY BOOK	SHEETS
ELECTRONIC	6 of 18
CONTRACT	PROJECT
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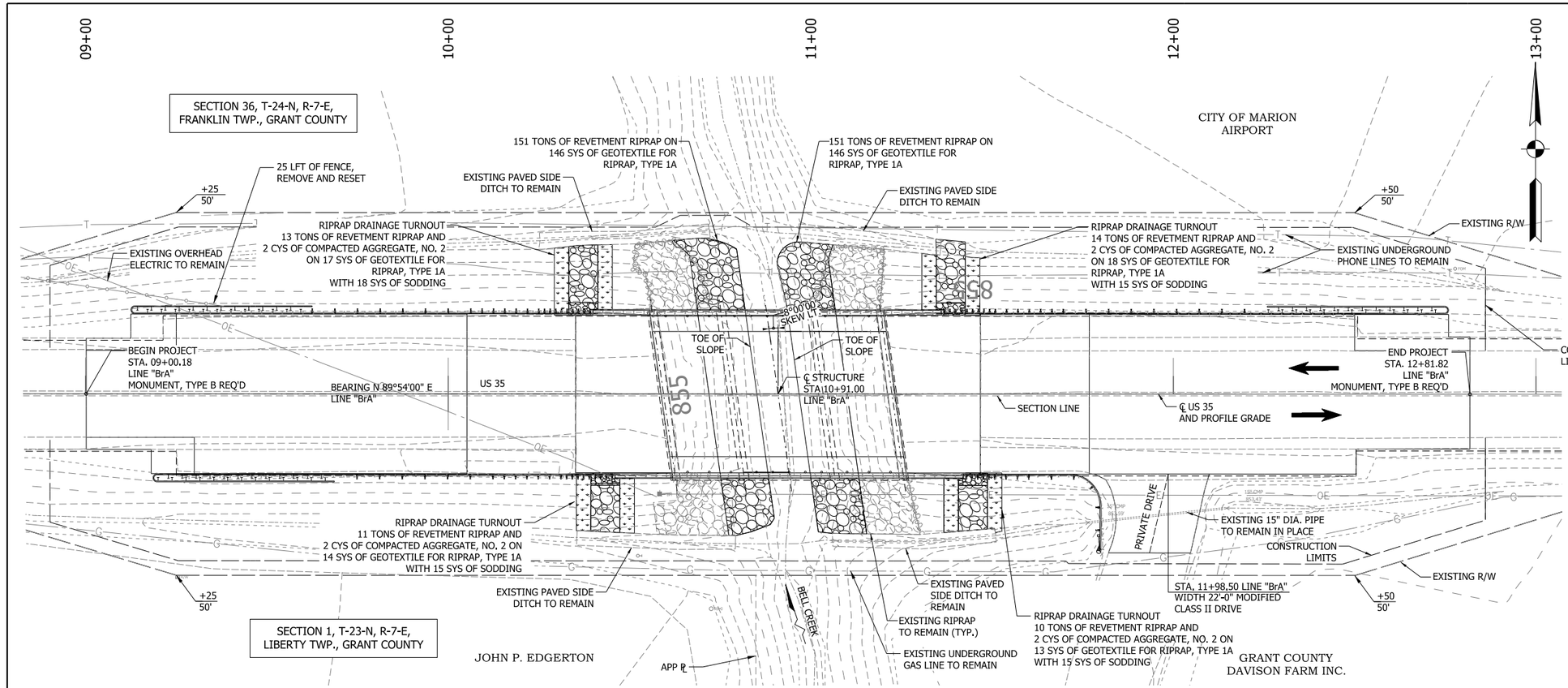

PORTIONS OF SUPERSTRUCTURE TO BE REMOVED

EXISTING STRUCTURE

THE EXISTING STRUCTURE IS A THREE SPAN CONTINUOUS REINFORCED CONCRETE SLAB BRIDGE BUILT IN 1985 WITH SPANS OF 19'-0", 25'-0", 19'-0" AND CLEAR ROADWAY OF 44'-0". PORTIONS OF EXISTING STRUCTURE TO REMAIN IN PLACE. PLANS FOR THE EXISTING BRIDGE ARE ON FILE IN THE RECORDS UNIT OF THE INDIANA DEPARTMENT OF TRANSPORTATION AS BRIDGE FILE 35-27-6900.

DATUM

ELEVATIONS ARE BASED ON EXISTING PLAN ELEVATIONS CONVERTED TO NAVD 88 USING A -0.53' VERTICAL DATUM SHIFT.

HYDRAULIC SCOUR DATA

Q100 DISCHARGE	=	860	CFS
Q100 ELEVATION	=	853.53	FT
VELOCITY AT Q100	=	4.72	FT/SEC
SCOUR DEPTH (CONTRACTION)	=	1.15	FT
SCOUR DEPTH (TOTAL)	=	3.96	FT
LOW SCOUR ELEVATION	=	843.76	FT
DRAINAGE AREA	=	3.79	SQ MI

EARTHWORK TABULATION

FILL + 20%	0	CYS
COMMON EXCAVATION	85	CYS
USABLE WATERWAY EXCAVATION (70%)	0	CYS
SURPLUS FOUNDATION EXCAVATION (70%)	0	CYS
BORROW	105	CYS
TOTAL WATERWAY EXCAVATION	0	CYS
* EXCAVATION UNCLASSIFIED	0	CYS
Ø BENCHING (ESTIMATED)	0	CYS

Ø NO DIRECT PAYMENT. BENCHING WILL NOT BE PAID FOR AS A COMMON EXCAVATION.
* NO DIRECT PAYMENT FOR EXCAVATION UNCLASSIFIED.

BENCHMARK INFORMATION:
TBM #1- RAILROAD SPIKE SET 1' UP IN THE NORTH FACE OF A POWER POLE ON THE SOUTH SIDE OF US 35. STA. 10+58.47, 27.70' RT. ELEV. 856.92
TBM #2- RAILROAD SPIKE SET 1' UP IN THE WEST FACE OF A POWER POLE #660-49 ON THE NORTH SIDE OF US 35. STA. 14+88.98, 29.71' LT. ELEV. = 856.68

CONTINUOUS REINFORCED
CONCRETE SLAB BRIDGE
3 SPANS: 19'-0", 25'-0", 19'-0"
SKEW: 08°00'00" LT.
43'-6" CLEAR ROADWAY
US 35 OVER BELL CREEK
GRANT COUNTY

100	NORTH: 165585.0330	101	NORTH: 165559.7800
	EAST: 790748.1820		EAST: 791160.0550
102	NORTH: 165662.2340	500	NORTH: 165617.1768
	EAST: 791508.5630		EAST: 790187.3940
501	NORTH: 165618.8393	502	NORTH: 165620.3171
	EAST: 791087.3925		EAST: 791887.3911

5/8" Rebar w/ "HNTB" cap (Set)	5/8" Rebar w/ "HNTB" cap (Set)	5/8" Rebar w/ "HNTB" cap (Set)	Mag Nail (Set)	Mag Nail (Set)	Mag Nail (Set)
Not to scale	Not to scale	Not to scale	Not to scale	Not to scale	Not to scale
Primary Control	Primary Control	Primary Control	P.O.T. 1+00.00 LINE "BrA"	P.O.T. 10+00.00 LINE "BrA"	P.O.T. 18+00.00 LINE "BrA"

THOMAS BIENEMAN
REGISTERED
No. 21000044
STATE OF INDIANA
PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

DESIGNED: NIK DRAWN: NIK
CHECKED: TMB CHECKED: TMB

INDIANA
DEPARTMENT OF TRANSPORTATION

LAYOUT

HORIZONTAL SCALE	BRIDGE FILE
1/16" = 1'-0"	035-27-06900 A
VERTICAL SCALE	DESIGNATION
3/16" = 1'-0"	1800164
SURVEY BOOK	SHEETS
ELECTRONIC	7 of 18
CONTRACT	PROJECT
B-41567	1800164

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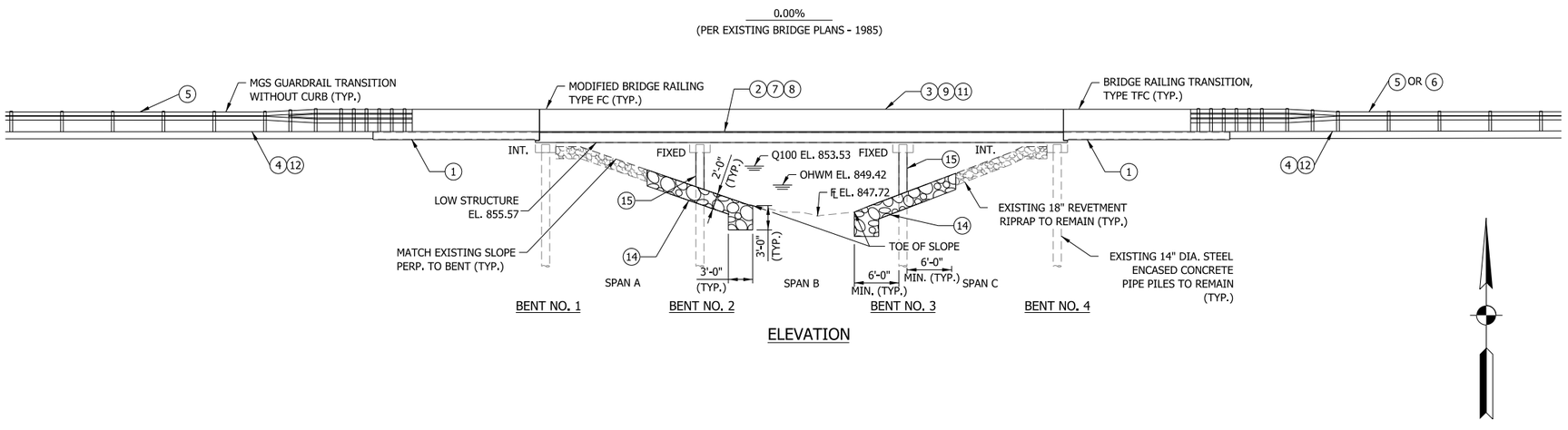
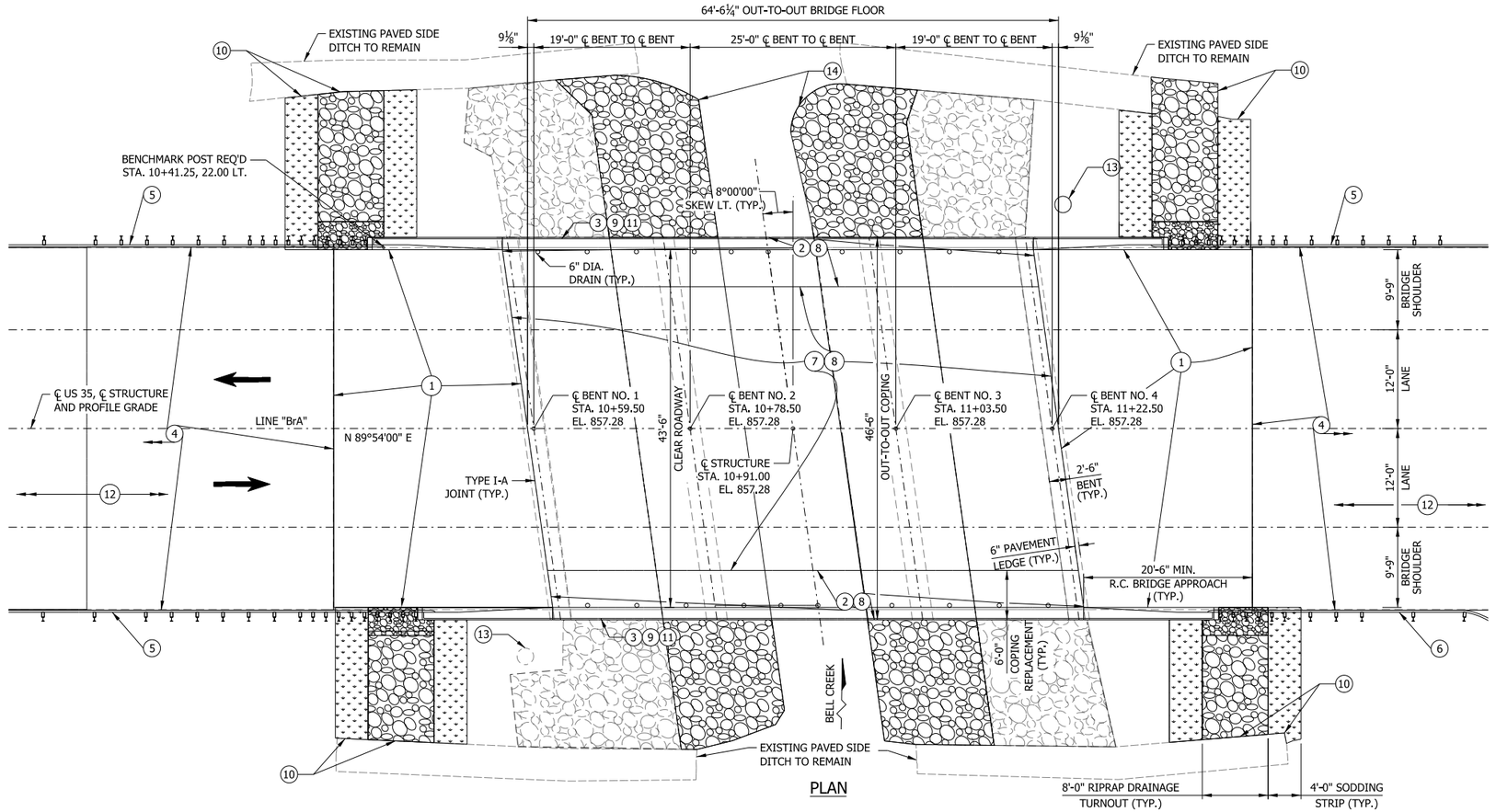


ELEVATION



PLAN

LEGEND

1. REMOVE EXISTING REINFORCED CONCRETE BRIDGE APPROACH SLABS AND CONSTRUCT NEW REINFORCED CONCRETE BRIDGE APPROACH SLABS WITH TYPE TFC CONCRETE BRIDGE RAILING TRANSITIONS.
2. REMOVE AND REPLACE 6'-0" OF BRIDGE COPING.
3. REMOVE EXISTING BRIDGE ALUMINUM RAILING TYPE 5A.
4. PROVIDE FULL DEPTH HMA PAVEMENT REPLACEMENT AND TRANSITION MILLING WITH RESURFACING ON THE APPROACH ROADWAY TO ADJUST FOR THE CHANGE IN THE BRIDGE PROFILE.
5. REMOVE EXISTING APPROACH ALUMINUM RAILING. ATTACH MGS GUARDRAIL TRANSITIONS TO THE NEW BRIDGE RAIL TRANSITIONS, INSTALL NEW MGS W-BEAM GUARDRAIL, 6'-3" SPACING, MGS HEIGHT TRANSITIONS, AND REUSE EXISTING OS END TREATMENTS. SEE SHEET 4 FOR MORE INFORMATION.
6. REMOVE EXISTING APPROACH ALUMINUM RAILING. ATTACH TGB GUARDRAIL TRANSITION AND CURVED W-BEAM GUARDRAIL TERMINAL SYSTEM, TYPE 2.
7. SURFACE MILL THE EXISTING BRIDGE DECK ½" AND PERFORM HYDRODEMOLITION TO REMOVE UNSOUND CONCRETE. PERFORM PARTIAL DEPTH PATCHING (EST. 112 SFT). PERFORM OVERHEAD PATCHING ON THE UNDERSIDE OF THE BRIDGE DECK (EST. 75 SFT) AND EPOXY INJECT LONGITUDINAL CRACKS ON ALL THREE SPANS (EST. 64 LFT).
8. CONSTRUCT RIGID CONCRETE BRIDGE DECK OVERLAY MAINTAINING 1.56% CROSS SLOPE.
9. CONSTRUCT NEW MODIFIED TYPE FC CONCRETE BRIDGE RAILING AND INSTALL BARRIER DELINEATORS AT 40'-0" MAX. SPACING.
10. INSTALL RIPRAP TURNOUTS AND SODDING STRIPS AT THE ENDS OF THE NEW CONCRETE BRIDGE RAIL TRANSITIONS.
11. SURFACE SEAL THE CONCRETE BRIDGE RAIL AND BRIDGE RAIL TRANSITIONS.
12. REPLACE PAVEMENT MARKINGS WITHIN THE PROJECT LIMITS. DO NOT REPLACE RAISED PAVEMENT MARKERS ON THE BRIDGE DECK OR APPROACH SLABS.
13. RESET EXISTING EASTBOUND RP MARKER AND INSTALL A NEW RP MARKER FOR WESTBOUND US 35.
14. INSTALL 2'-0" THICK REVETMENT RIPRAP ON GEOTEXTILES FOR RIPRAP, TYPE 1A, FROM THE EXISTING RIPRAP TO TOE OF SLOPE 6'-0" MIN. FROM FACE OF PILES.
15. SANDBLAST AND PAINT EXISTING EPOXY COATED STEEL PILES TO 2'-0" MIN. BELOW GRADE. INSTALL GROUTED PILE SLEEVES ON EXTERIOR PILES.

CONTINOUS REINFORCED
CONCRETE SLAB BRIDGE
3 SPANS: 19'-0", 25'-0", 19'-0"
SKEW: 08°00'00" LT.
43'-6" CLEAR ROADWAY
US 35 OVER BELL CREEK
GRANT COUNTY

THOMAS BIENEMAN REGISTERED No. 21000044 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

DESIGNED: NIK DRAWN: NIK
CHECKED: TMB CHECKED: TMB

INDIANA DEPARTMENT OF TRANSPORTATION

GENERAL PLAN

HORIZONTAL SCALE	BRIDGE FILE
⅛" = 1'-0"	035-27-06900 A
VERTICAL SCALE	DESIGNATION
⅛" = 1'-0"	1800164
SURVEY BOOK	SHEETS
ELECTRONIC	8 of 18
CONTRACT	PROJECT
B-41567	1800164

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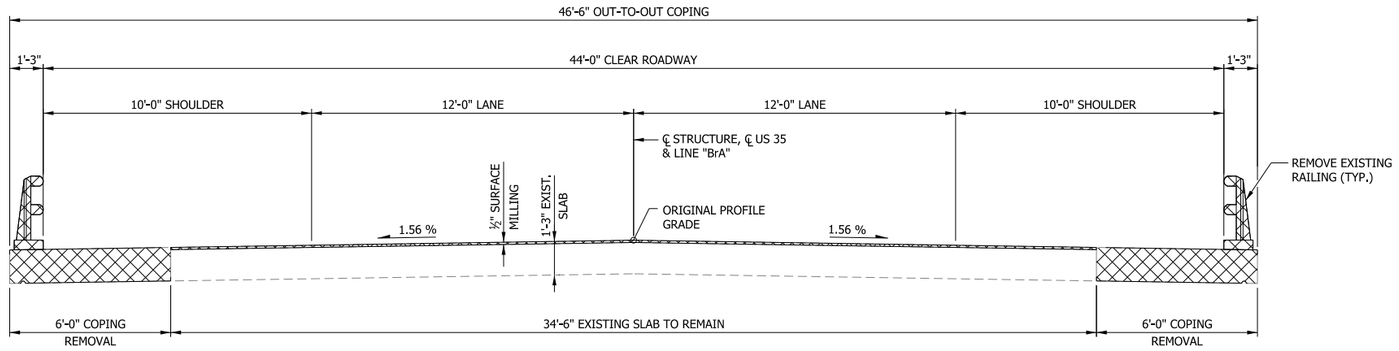
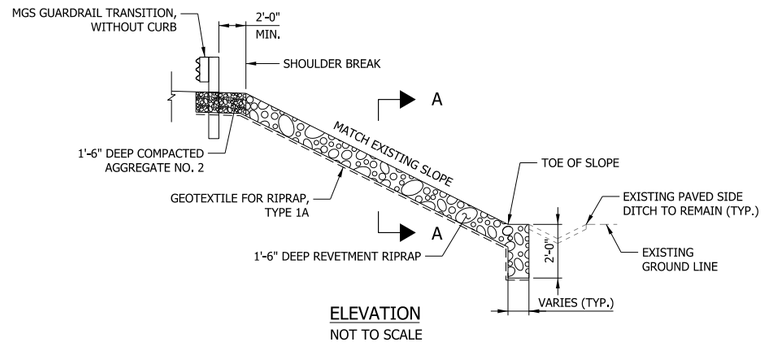


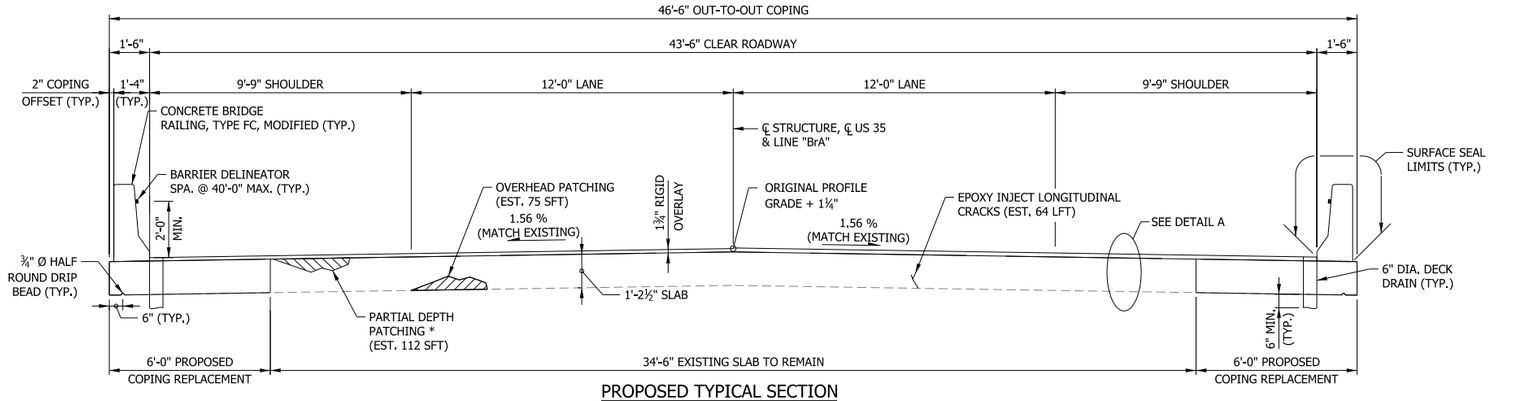
EXISTING TYPICAL SECTION

(LOOKING AHEAD STATION)
SCALE: ⅜" = 1'-0"



ELEVATION

NOT TO SCALE



PROPOSED TYPICAL SECTION

(LOOKING AHEAD STATION)
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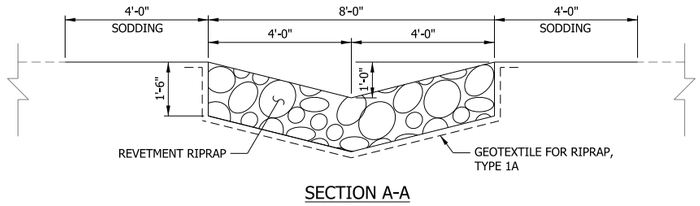
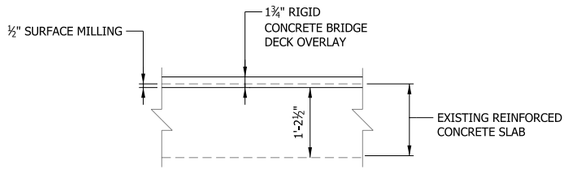


SECTION A-A

NOT TO SCALE

TURNOUT DETAILS



DETAIL A

NOT TO SCALE

GENERAL NOTES

EXISTING BRIDGE ELEVATIONS SHALL BE CHECKED BY THE CONTRACTOR PRIOR TO CONSTRUCTION TO ENSURE PROPER FIT OF THE NEW CONCRETE TO THE EXISTING CONCRETE. STATIONS AND ELEVATIONS SHOWN ARE BASED ON EXISTING PLAN SET 035-27-06900, DATED MARCH 01, 1985, WITH A DATUM SHIFT SHOWN ON THE LAYOUT SHEET.

WHERE NEW WORK IS TO BE FITTED TO OLD WORK, THE CONTRACTOR SHALL VERIFY 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.

REINFORCING BAR COVER SHALL BE 2" MIN. ON TOP, 1" MIN. ON BOTTOM, AND 2" EVERYWHERE ELSE UNLESS OTHERWISE NOTED.

EPOXY RESIN ADHESIVE SHALL BE USED WHERE NEW CONCRETE ABUTS EXISTING CONCRETE.

ALL EXPOSED FACES OF THE BARRIER RAILING AND BARRIER TRANSITIONS SHALL BE CLEANED AND SURFACE SEALED.

PAVEMENT MARKINGS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED IN KIND. DO NOT REPLACE RAISED PAVEMENT MARKERS ON THE APPROACH SLABS OR BRIDGE DECK.

DESIGN DATA

LIVE LOAD
EXISTING AND PROPOSED BRIDGE IS DESIGNED FOR HS-20-44 IN ACCORDANCE WITH 1983 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.

DEAD LOAD
EXISTING AND PROPOSED BRIDGE IS DESIGNED FOR ACTUAL DEAD LOAD PLUS 35 PSF FOR FUTURE WEARING SURFACE. EXISTING SLAB IS DESIGNED WITH A 1'-1½" STRUCTURAL DEPTH.

DESIGN STRENGTHS

EXISTING CONCRETE	f'c	=	3,000 psi
EXISTING REINFORCING BARS	fy	=	40,000 psi
PROPOSED CLASS "C" CONCRETE	f'c	=	4,000 psi
PROPOSED REINFORCING BARS	fy	=	60,000 psi

MATERIAL NOTES

BRIDGE DECK OVERLAY:
1¾" LATEX-MODIFIED PORTLAND CEMENT CONCRETE
OR
1¾" SILICA FUME MODIFIED STRUCTURAL CONCRETE

LEGEND

* FOR INFORMATION ONLY. INCLUDED IN HYDRODEMOLITION.

PATCHING

INDICATES LIMITS OF REMOVAL

CONTINUOUS REINFORCED
CONCRETE SLAB BRIDGE
3 SPANS: 19'-0", 25'-0", 19'-0"
SKEW: 08°00'00" LT.
43'-6" CLEAR ROADWAY
US 35 OVER BELL CREEK
GRANT COUNTY

THOMAS BIENEMAN REGISTERED No. 21000044 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

DESIGNED: NIK DRAWN: NIK
CHECKED: TMB CHECKED: TMB

INDIANA
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN

HORIZONTAL SCALE	BRIDGE FILE
AS SHOWN	035-27-06900 A
VERTICAL SCALE	DESIGNATION
AS SHOWN	1800164
SURVEY BOOK	SHEETS
ELECTRONIC	9 of 18
CONTRACT	PROJECT
B-41567	1800164

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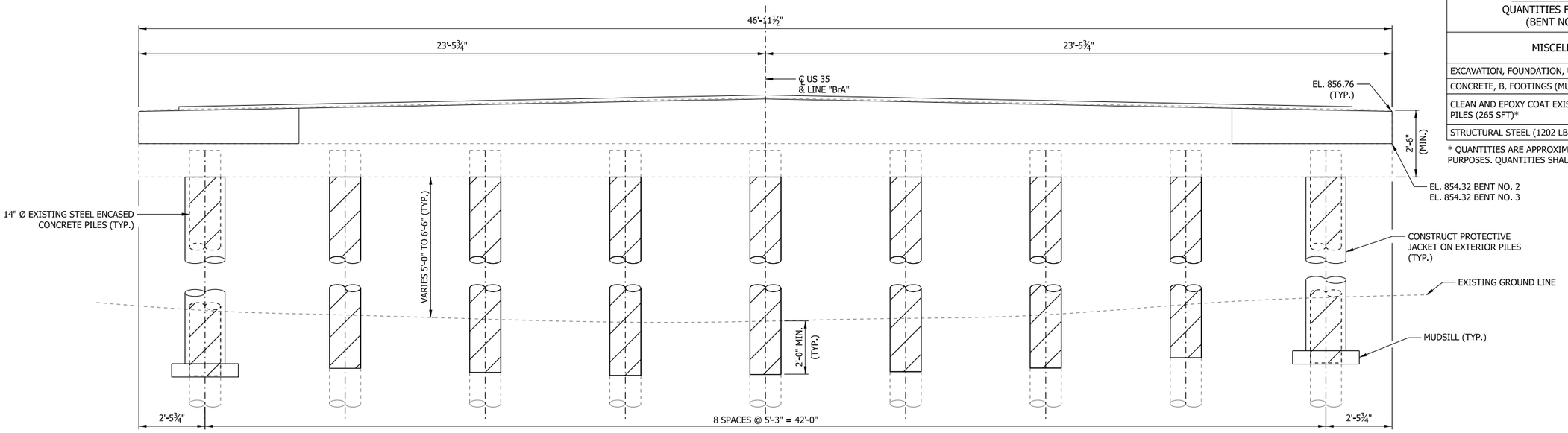


PROPOSED PILE TREATMENT

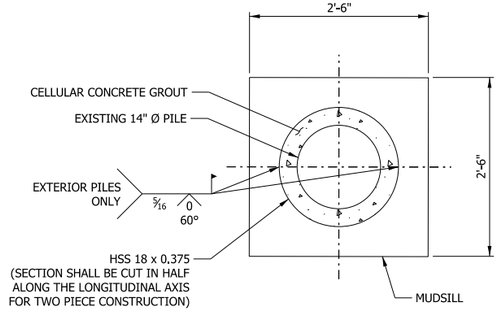
(LOOKING AHEAD STATION)
(BENT NO. 2 SHOWN, BENT NO. 3 SAME)

BILL OF MATERIALS

QUANTITIES FOR BENT NO. 2
(BENT NO. 3 SAME)

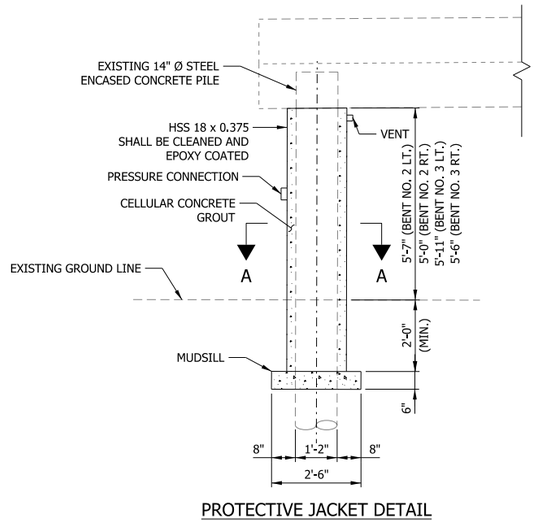
MISCELLANEOUS	
EXCAVATION, FOUNDATION, UNCLASSIFIED	6 CYS
CONCRETE, B, FOOTINGS (MUDSILL)	0.4 CYS
CLEAN AND EPOXY COAT EXISTING PILES (265 SFT)*	1 LS
STRUCTURAL STEEL (1202 LBS)*	1 LS

* QUANTITIES ARE APPROXIMATE AND USED FOR ESTIMATION PURPOSES. QUANTITIES SHALL BE FIELD VERIFIED.



SECTION A-A

SCALE: 1" = 1'-0"



PROTECTIVE JACKET DETAIL

SCALE: ½" = 1'-0"

LEGEND:

LIMITS OF SANDBLAST AND PAINT

NOTES:

1. ALL PILES SHALL BE CLEANED TO NEAR WHITE THEN PAINTED USING THREE COAT SYSTEM.
2. FOR ADDITIONAL INFORMATION ON PROTECTIVE JACKETS, SEE SPECIAL PROVISIONS.
3. BACKFILL AROUND PILES AFTER ALL WORK IS COMPLETE WITH THE EXCAVATED SOIL.

THOMAS BIENEMAN REGISTERED No. 21000044 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

DESIGNED: EAH DRAWN: EAH
CHECKED: TMB CHECKED: TMB

INDIANA
DEPARTMENT OF TRANSPORTATION

INTERIOR BENT DETAILS

HORIZONTAL SCALE	BRIDGE FILE
½" = 1'-0"	035-27-06900 A
VERTICAL SCALE	DESIGNATION
½" = 1'-0"	1800164
SURVEY BOOK	SHEETS
ELECTRONIC	10 of 18
CONTRACT	PROJECT
B-41567	1800164

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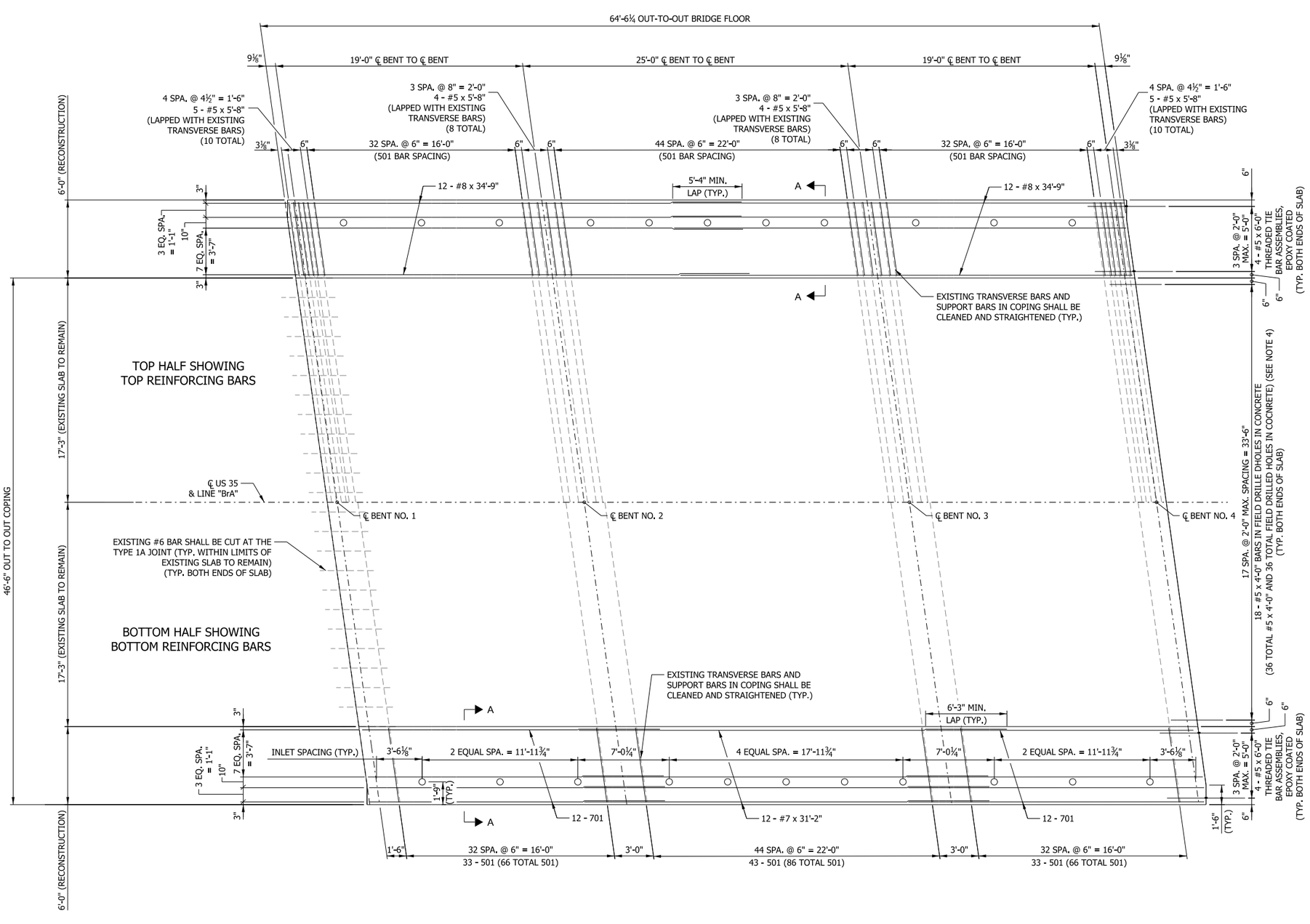


FLOOR PLAN

NOTES:

1. ALL REINFORCING BARS SHALL BE EPOXY COATED.
2. FOR BAR BENDING DIAGRAMS AND BILL OF MATERIALS, SEE SHEET NO. 14.
3. FOR SECTION A - A, SEE SHEET NO. 14.
4. BARS PLACED IN FIELD DRILLED HOLES IN CONCRETE. EMBED BAR MIN. 1'-0" WITH AN APPROVED ANCHOR SYSTEM. MINIMUM PULLOUT = 18.6 KIPS.
5. FOR ADDITIONAL SLAB BRIDGE FLOOR DRAIN DETAILS, SEE STANDARD DRAWING E 704-SBFD-01.

THOMAS BIENEMAN REGISTERED No. 21000044 STATE OF INDIANA PROFESSIONAL ENGINEER

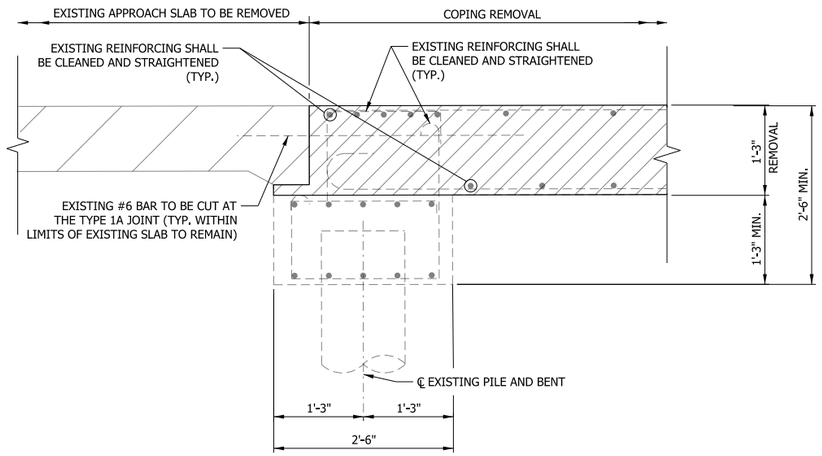
RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

DESIGNED: EDK DRAWN: EDK
CHECKED: ALM CHECKED: ALM

INDIANA
DEPARTMENT OF TRANSPORTATION

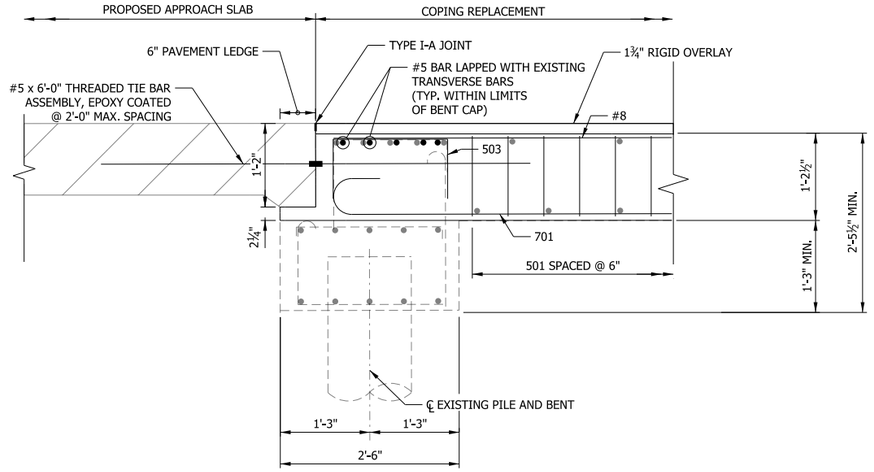
SUPERSTRUCTURE DETAILS

HORIZONTAL SCALE	BRIDGE FILE
¼" = 1'-0"	035-27-06900 A
VERTICAL SCALE	DESIGNATION
¼" = 1'-0"	1800164
SURVEY BOOK	SHEETS
ELECTRONIC	11 of 18
CONTRACT	PROJECT
B-41567	1800164



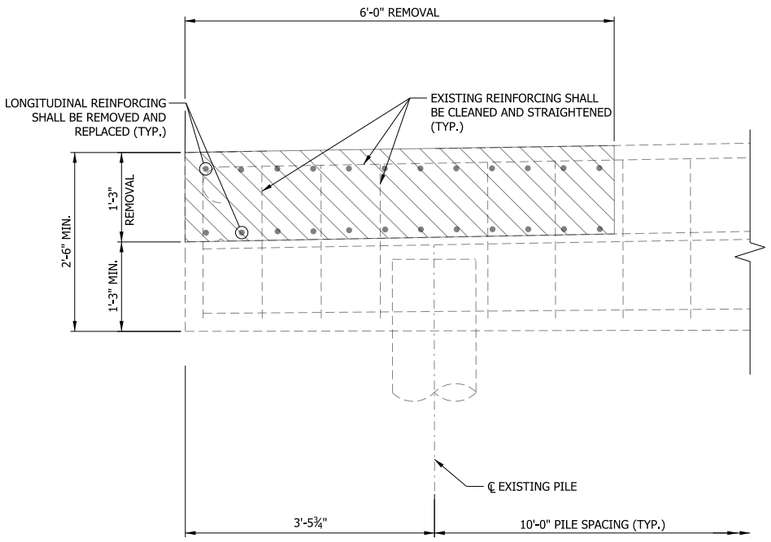
REMOVAL SECTION - BENT NO. 1 AND 4

(WITH SKEW)



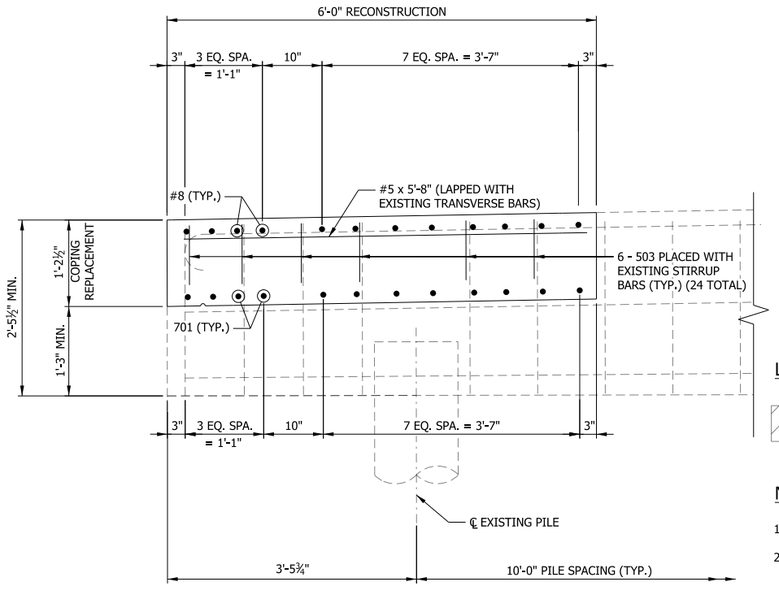
PROPOSED SECTION - BENT NO. 1 AND 4

(WITH SKEW)



REMOVAL ELEVATION - BENT NO. 1 AND 4

(WITH SKEW)



PROPOSED ELEVATION - BENT NO. 1 AND 4

(WITH SKEW, OVERLAY NOT SHOWN FOR CLARITY)

LEGEND:

REMOVAL LIMITS

NOTES:

1. ALL REINFORCING BARS SHALL BE EPOXY COATED.
2. FOR BAR BENDING DIAGRAMS AND BILL OF MATERIALS, SEE SHEET NO. 14.
3. ALL LOOSE CONCRETE SHALL BE REMOVED FROM CAPS, CAPS SHALL BE ROUGHENED, AND EPOXY RESIN ADHESIVE SHALL BE APPLIED AS A BONDING AGENT PRIOR TO PLACING NEW CONCRETE.
4. CONCRETE DIMENSIONS AND EXISTING REINFORCEMENT ARE APPROXIMATE AND SHALL BE FIELD VERIFIED.

THOMAS B. IENEMAN REGISTERED No. 21000447 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

DESIGNED: EDK DRAWN: EDK
CHECKED: ALM CHECKED: ALM

INDIANA
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS

HORIZONTAL SCALE	BRIDGE FILE
1" = 1'-0"	035-27-06900 A
VERTICAL SCALE	DESIGNATION
1" = 1'-0"	1800164
SURVEY BOOK	SHEETS
ELECTRONIC	12 of 18
CONTRACT	PROJECT
B-41567	1800164

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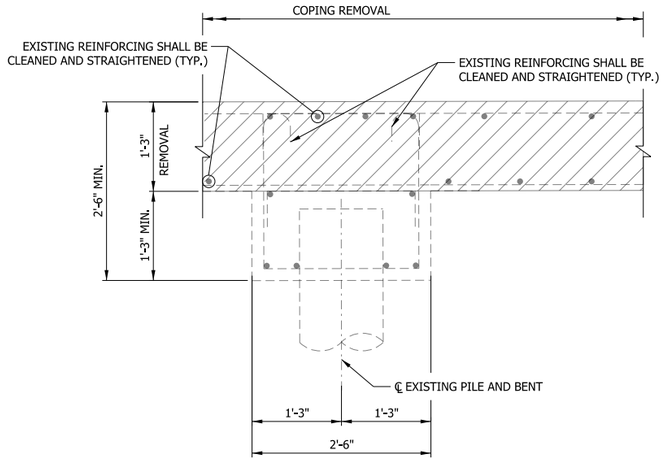
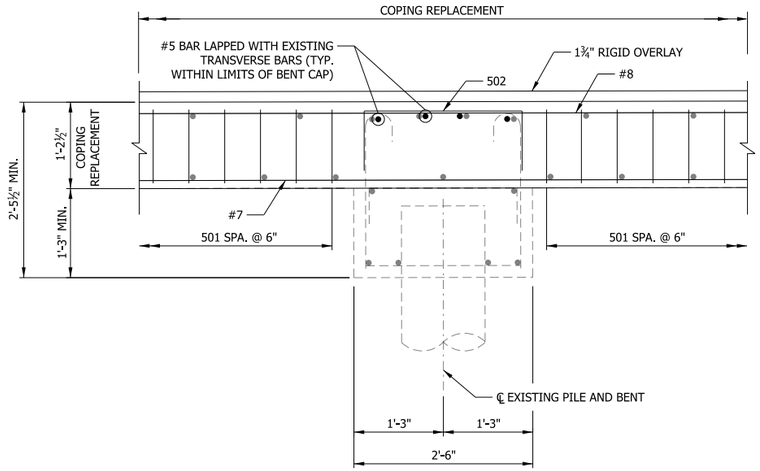


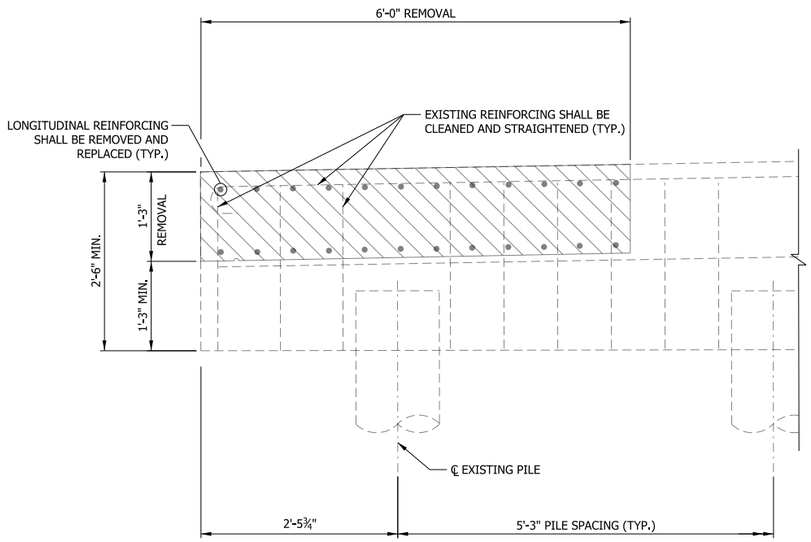
REMOVAL SECTION - BENT NO. 2 AND 3

(WITH SKEW)



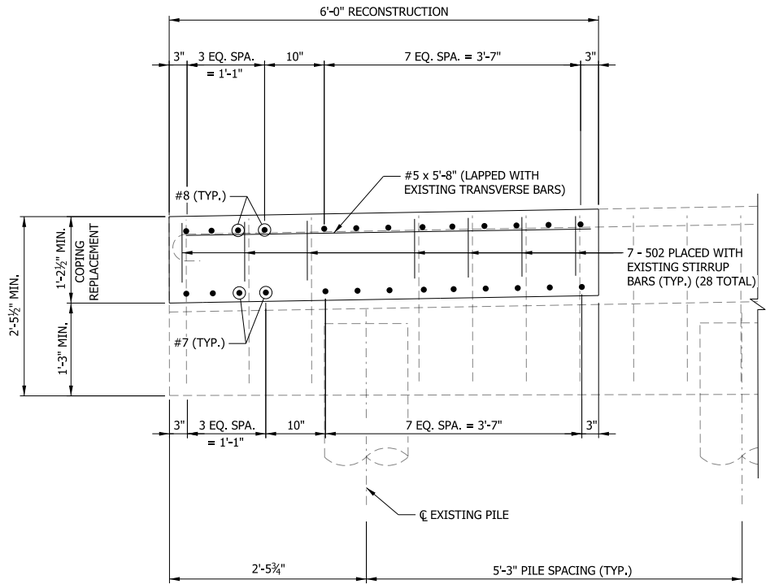
PROPOSED SECTION - BENT NO. 2 AND 3

(WITH SKEW)



REMOVAL ELEVATION - BENT NO. 2 AND 3

(WITH SKEW)



PROPOSED ELEVATION - BENT NO. 2 AND 3

(WITH SKEW, OVERLAY NOT SHOWN FOR CLARITY)

LEGEND:

REMOVAL LIMITS

NOTES:

1. ALL REINFORCING BARS SHALL BE EPOXY COATED.
2. FOR BAR BENDING DIAGRAMS AND BILL OF MATERIALS, SEE SHEET NO. 14.
3. ALL LOOSE CONCRETE SHALL BE REMOVED FROM CAPS, CAPS SHALL BE ROUGHENED, AND EPOXY RESIN ADHESIVE SHALL BE APPLIED AS A BONDING AGENT PRIOR TO PLACING NEW CONCRETE.
4. CONCRETE DIMENSIONS AND EXISTING REINFORCEMENT ARE APPROXIMATE AND SHALL BE FIELD VERIFIED.

THOMAS BIENEMAN REGISTERED No. 21000044 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

DESIGNED: EDK | DRAWN: EDK

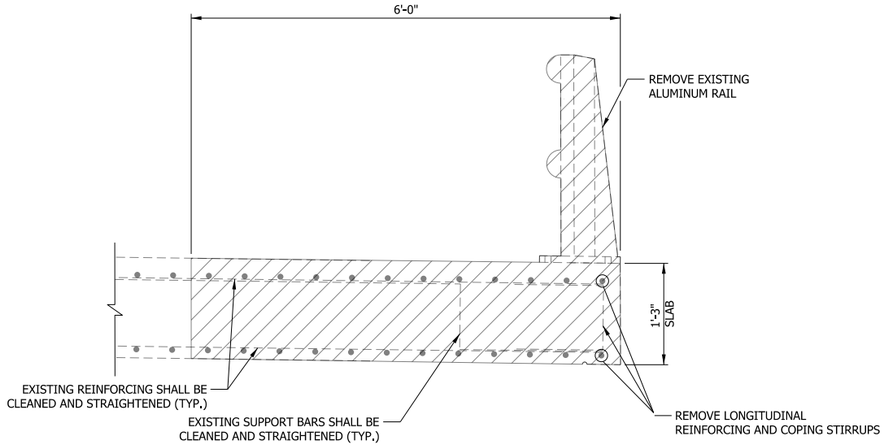
CHECKED: ALM | CHECKED: ALM

INDIANA
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS

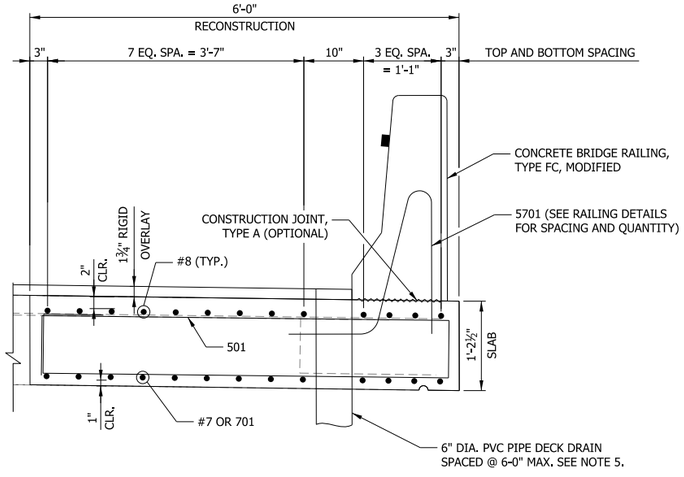
HORIZONTAL SCALE	BRIDGE FILE
1" = 1'-0"	035-27-06900 A
VERTICAL SCALE	DESIGNATION
1" = 1'-0"	1800164

SURVEY BOOK	SHEETS
ELECTRONIC	13 of 18
CONTRACT	PROJECT
B-41567	1800164



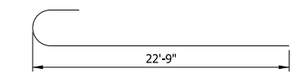
SECTION A-A - REMOVAL

SCALE: 1" = 1'-0"

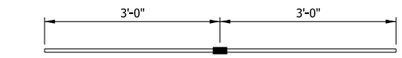


SECTION A-A - PROPOSED

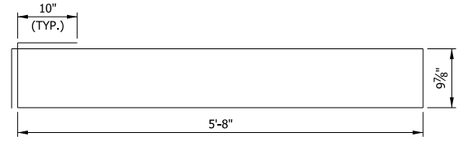
SCALE: 1" = 1'-0"



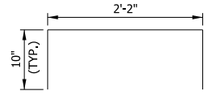
701 x 23'-7"



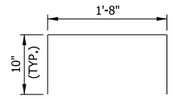
THREADED TIE BAR ASSEMBLY, EPOXY-COATED
#5 x 6'-0"



501 x 14'-8"



502 x 3'-10"



503 x 3'-4"

BAR BENDING DIAGRAM

NOT TO SCALE

BILL OF MATERIALS

QUANTITIES FOR SUPERSTRUCTURE

EPOXY COATED REINFORCING BARS

MARK OR SIZE	NO. OF BARS	LENGTH (FT.-IN.)	WEIGHT (LBS.)
#8	48	34'-9"	
TOTAL #8			4454
701	48	23'-7"	
#7	24	31'-2"	
TOTAL #7			3843
501	218	14'-8"	
502	28	3'-10"	
503	24	3'-4"	
#5	36	5'-8"	
#5	36	4'-0"	
TOTAL #5			3894
TOTAL EPOXY-COATED REINFORCING BARS			12191
CONCRETE			
CONCRETE, C, SUPERSTRUCTURE			34.7 CYS
MISCELLANEOUS			
THREADED TIE BAR ASSEMBLY, EPOXY COATED			16 EACH
FIELD DRILLED HOLE IN CONCRETE			36 EACH

LEGEND:

REMOVAL LIMITS

NOTES:

1. ALL REINFORCING REINFORCING BARS SHALL BE EPOXY COATED.
2. FOR LOCATIONS OF SECTION A-A, SEE SHEET NO. 11.
3. FOR ADDITIONAL REINFORCING BAR NOTES AND BAR BENDING DETAILS, SEE STD. DWG. NO. E703-BRST-01.
4. ALL LOOSE CONCRETE SHALL BE REMOVED FROM CAPS. CAPS SHALL BE ROUGHENED, AND EPOXY RESIN ADHESIVE SHALL BE APPLIED AS A BONDING AGENT PRIOR TO PLACING NEW CONCRETE.
5. FOR ADDITIONAL SLAB BRIDGE FLOOR DRAIN DETAILS, SEE STANDARD DRAWING E 704-SBFD-01.

THOMAS BIENEMAN REGISTERED No. 21000044 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

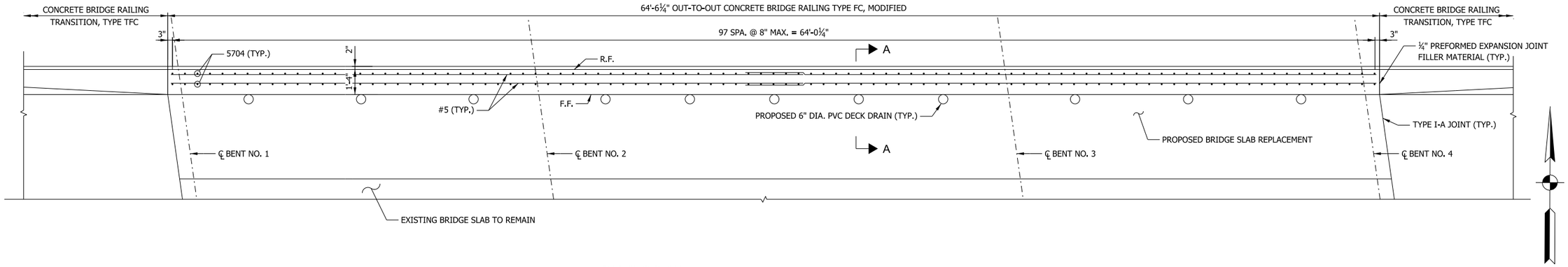
DESIGNED: EDK DRAWN: EDK

CHECKED: ALM CHECKED: ALM

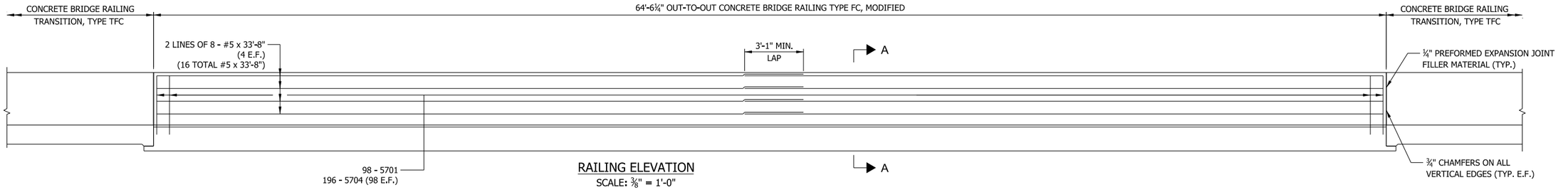
INDIANA
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS

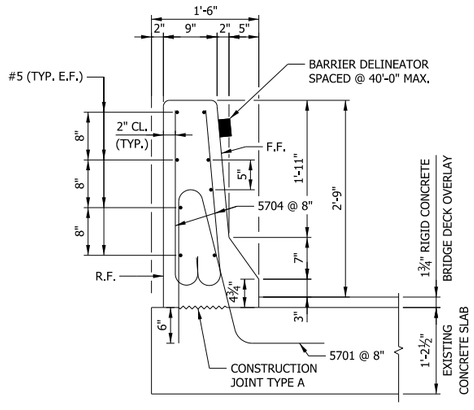
HORIZONTAL SCALE	BRIDGE FILE
AS SHOWN	035-27-06900 A
VERTICAL SCALE	DESIGNATION
AS SHOWN	1800164
SURVEY BOOK	SHEETS
ELECTRONIC	14 of 18
CONTRACT	PROJECT
B-41567	1800164



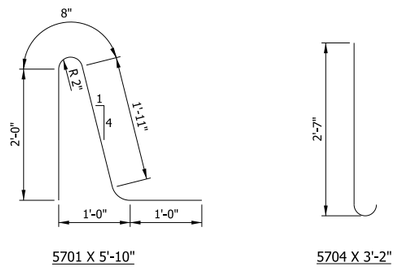
RAILING PLAN
SCALE: ⅜" - 1'-0"
(NORTH RAIL SHOWN, SOUTH RAIL SAME)



RAILING ELEVATION
SCALE: ⅜" = 1'-0"
(NORTH RAIL SHOWN, SOUTH RAIL SAME)



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



5701 X 5'-10"

5704 X 3'-2"

BAR BENDING DETAILS
NOT TO SCALE

BILL OF MATERIALS
CONCRETE BRIDGE RAILING, TYPE FC, MODIFIED
(QUANTITES FOR NORTH RAIL, SOUTH RAIL SAME)

EPOXY COATED REINFORCING

MARK OR SIZE	NO. OF BARS	LENGTH (FT.-IN.)	WEIGHT (LBS.)
5701	98	5'-10"	
5704	196	3'-2"	
#5	16	33'-8"	
TOTAL #5			1806
CONCRETE BRIDGE RAILING TRANSITION, TYPE TFC (2 x 551 LBS)			1102
TOTAL EPOXY COATED REINFORCING BARS			2908

CONCRETE

RAILING, CONCRETE, FC, MODIFIED	6.7 CYS

MISCELLANEOUS

CONCRETE BRIDGE RAILING TRANSITION, TYPE TFC	2 EACH
SURFACE SEAL (622 SFT)	1 LS
BARRIER DELINEATOR	4 EACH

LEGEND
R.F. DENOTES REAR FACE

F.F. DENOTES FRONT FACE

E.F. DENOTES EACH FACE

NOTES:
1. FOR ADDITIONAL REINFORCING BAR NOTES AND BAR BENDING DETAILS, SEE STD. DWG. E 703-BRST-01.
2. FOR ADDITIONAL CONCRETE BRIDGE RAILING DETAILS, SEE STD. DWG. E 706-BRSF-01 & -02.
3. FOR CONCRETE BRIDGE RAILING TRANSITION DETAILS, SEE STD. DWG. E 706-TTFC-01 THROUGH -03.
4. FOR BRIDGE RAILING TRANSITION ATTACHMENT OF GUARDRAIL DETAILS, SEE STD. DWG. E 706-CBRT-04.
5. ALL REINFORCED BARS SHALL BE EPOXY COATED.
6. FOR TYPE A CONSTRUCTION JOINT DETAILS, SEE STD. DWG. E 702-CJTA-01.

THOMAS BIENEMAN REGISTERED No. 21000044 STATE OF INDIANA PROFESSIONAL ENGINEER

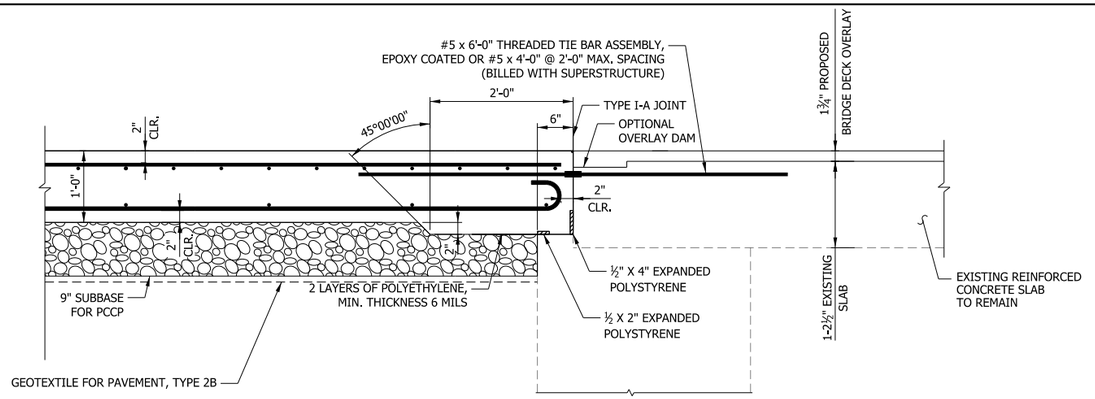
RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

DESIGNED: EAH DRAWN: EAH
CHECKED: ALM CHECKED: ALM

INDIANA
DEPARTMENT OF TRANSPORTATION

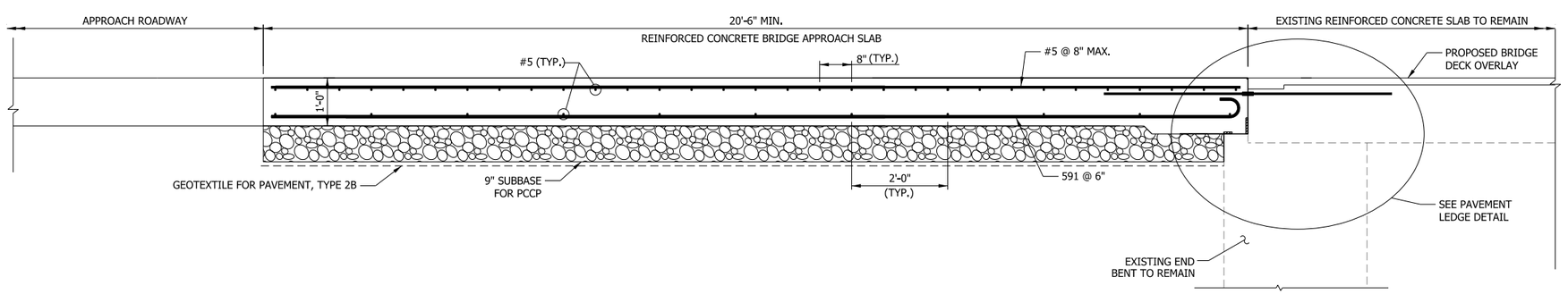
RAILING DETAILS

HORIZONTAL SCALE	BRIDGE FILE
AS SHOWN	035-27-06900 A
VERTICAL SCALE	DESIGNATION
AS SHOWN	1800164
SURVEY BOOK	SHEETS
ELECTRONIC	15 of 18
CONTRACT	PROJECT
B-41567	1800164



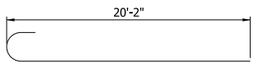
PAVEMENT LEDGE DETAIL

SCALE: 1" = 1'-0"

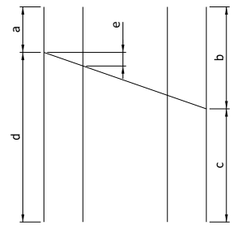


SECTION A-A

SCALE: ¾" = 1'-0"



591 x 20'-9"



CUTTING GROUP	DESCRIPTION	a	b	c	d	e
5c01	4 - #5 x 44'-9" MAKES 8 BARS	5'-9"	20'-0"	24'-9"	39'-0"	4'-9"
5c02	33 - #5 x 10'-1" MAKES 66 BARS	2'-0"	5'-0"	5'-1"	8'-1"	1⅛"
5c03	43 - 5 x 10'-2" MAKES 86 BARS	2'-1"	5'-0⅝"	5'-1⅜"	8'-1"	⅞"

BILL OF MATERIALS

QUANTITIES FOR WEST APPROACH SLAB
(QUANTITIES FOR EAST APPROACH SLAB SAME)

EPOXY COATED REINFORCING BARS

MARK OR SIZE	NO. OF BARS	LENGTH (FT.-IN.)	WEIGHT (LBS.)
591	87	20'-9"	
5c01	4	44'-9"	
5c02	33	10'-1"	
5c03	43	10'-2"	
#5	2	43'-6"	
#5	42	43'-2"	
#5	1	29'-6"	
#5	66	20'-2"	
#5	1	15'-3"	
TOTAL #5			6290
TOTAL FROM RCBA EXTENSION (230 LBS X 2)			460
TOTAL EPOXY COATED REINFORCING BARS			6750

CONCRETE	
REINF. CONCRETE BRIDGE APPROACH, 12"	120 SYS
MISCELLANEOUS	
SUBBASE FOR PCCP	30 SYS
GEOTEXTILE FOR PAVEMENT, TYPE 2B	120 SYS

NOTES:

1. FOR ADDITIONAL REINFORCING BAR NOTES AND BAR BENDING DETAILS, SEE STANDARD DRAWING E 703-BRST-01.
2. ALL REINFORCING BARS SHALL BE EPOXY COATED.
3. FOR DETAILS OF TYPE I-A JOINT, SEE STANDARD DRAWING E 609-BRJT-01.
4. FOR LOCATION OF SECTION A-A, SEE SHEET 16.

THOMAS BIENEMAN REGISTERED No. 21000444 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

DESIGNED: EAH DRAWN: EAH
CHECKED: TMB CHECKED: TMB

INDIANA
DEPARTMENT OF TRANSPORTATION

APPROACH SLAB DETAILS

HORIZONTAL SCALE	BRIDGE FILE
AS SHOWN	035-27-06900 A
VERTICAL SCALE	DESIGNATION
AS SHOWN	1800164
SURVEY BOOK	SHEETS
ELECTRONIC	17 of 18
CONTRACT	PROJECT
B-41567	1800164

SUMMARY OF BRIDGE QUANTITIES

ITEM	PAVEMENT REMOVAL	PRESENT STRUCTURE, REMOVE PORTIONS	BRIDGE RAILING, REMOVE	EXCAVATION, FOUNDATION, UNCLASSIFIED	GEOTEXTILE FOR PAVEMENT, TYPE 2B	COMPACTED AGGREGATE NO 2	SUBBASE FOR PCCP	BARRIER DELINEATOR	FENCE, FARM FIELD, RESET	REINFORCED CONCRETE BRIDGE APPROACH, 12"	RIPRAP, REVETMENT	GEOTEXTILE FOR RIPRAP TYPE 1A	MULCHED SEEDING, R	SODDING	CLEAN AND PAINT STEEL PILING	CONCRETE, B, FOOTINGS	FIELD DRILLED HOLE IN CONCRETE	REINFORCING BARS, EPOXY COATED	THREADED TIE BAR ASSEMBLY, EPOXY COATED	CONCRETE, C, SUPERSTRUCTURE	RAILING, CONCRETE, FC, MODIFIED	CONCRETE BRIDGE RAILING TRANSITION, TFC	SURFACE SEAL	PATCHING CONCRETE STRUCTURES	STRUCTURAL STEEL	BRIDGE DECK OVERLRAY	HYDRODEMOLITION	BRIDGE DECK OVERLAY BUDGET*		LONGITUDINAL GROOVING	BRIDGE DECK, REMOVE EXISTING CONCRETE SURFACE	OVERLAY DAM	EPOXY INJECTION, CRACK PREPARATION	EPOXY INJECTION, EPOXY MATERIAL	EPOXY INJECTION, FURNISHING EQUIPMENT	REFERENCE POST	SIGN GROUND MOUNTED RESET
																													ADDITIONAL OVERLAY	ADDITIONAL SURFACE PREP									
	SYS	LS	LFT	CYS	SYS	CYS	CYS	EACH	LFT	SYS	TON	SYS	SYS	SYS	SFT*	CYS	EACH	LBS	EACH	CYS	CYS	EACH	SFT*	SFT	LBS*	SYS	SYS	CYS	LFT	SYS	SYS	SFT	LFT	GAL	LS	EACH	EACH
035-27-06900 A		1							25				529																								
Superstructure																	36	12191	16	34.7				75		312	248	2.3	201	540	248	87	64	14	1	1	1
End Bent No.1				6		4					175	177		33																							
Bent No. 2															265	0.4									1202												
Bent No. 3															265	0.4									1202												
End Bent No. 4				6		4					175	177		30																							
R.C. Bridge Approach (12") at End Bent No. 1	116				120		30			120								6750																			
R.C. Bridge Approach (12") at End Bent No. 4	116				120		30			120								6750																			
Concrete Bridge Railing			130					8										5816			13.4	4	1244														
TOTAL	232	1	130	12	240	8	60	8	25	240	350	354	529	63	530	0.8	36	31507	16	34.7	13.4	4	1244	75	2404	312	248	2.3	201	540	248	87	64	14	1	1	1

* FOR INFORMATION ONLY, ESTIMATED QUANTITY PAID FOR AS LUMP SUM PER BRIDGE,

GUARDRAIL SUMMARY TABLE

LOCATION						MGS W BEAM GUARDRAIL LENGTH								MGS ASSEMBLY								CURVED W-BEAM GUARDRAIL SYS.						CABLE BARRIER SYSTEM			
FROM STATION	TO STATION	LEFT	RIGHT	MEDIAN LEFT	MEDIAN RIGHT	STANDARD POST AT 6'-3" SPA.	STANDARD POST AT 3'-1.5" SPA.	DOUBLE FACED AT 6'-3" SPA.	LONG POST AT 6'-3" SPA.	LONG POST AT 3'-1.5" SPA.	NESTED GUARDRAIL	MODIFIED POSTS, NESTED GUARDRAIL	GUARDRAIL FLARE RATE	TRANSITION WITHOUT CURB	TRANSITION WITH CURB	GUARDRAIL TRANSITION TYPE TGB	GUARDRAIL END TREATMENT MS	GUARDRAIL END TREATMENT OS	GUARDRAIL W-BEAM, CABLE TERMINAL ANCHOR	GUARDRAIL MGS HEIGHT TRANSITION	W-BEAM, SHOP CURVED AT 6'-3" SPA.	TERMINAL SYSTEM		CONNECTOR SYSTEM		GUARDRAIL REMOVE	GUARDRAIL END TREATMENT, RESET	CABLE BARRIER SYSTEM, TYPE TL-4	SAFETY TERMINAL TYPE, TL-4	IMPACT ATTENUATOR TYPE CR1/W1, TL-2	IMPACT ATTENUATOR TYPE R1/W1, TL-2
DES 1800164						ft	ft	ft	ft	ft	EACH	EACH		EACH	EACH	EACH	EACH	EACH	EACH	EACH	LFT	TYPE	EACH	TYPE	EACH	ft	EACH	ft	EACH	EACH	EACH
LINE "BrA"																															
09+12.50	10+40.01	X												1						1						135	1				
09+18.11	10+46.13		X			12.5								1						1						135	1				
11+35.87	12+75.89	X				12.5								1						1						75	1				
11+41.99	11+80.56		X													1						2	1			135					
	TOTAL					25								3		1				3		2	1			480	3				

MONUMENT TABLE

STATION	OFFSET	TYPE
STA. 9+00.18	0.00 RT.	TYPE B
STA. 10+41.25	22.00 LT.	BENCHMARK
STA. 12+81.82	0.00 RT.	TYPE B

PAVEMENT QUANTITIES AND APPROACH TABLE

LOCATION	DESCRIPTION (APPROACH TYPE OR CLASS)	WIDTH	LENGTH	RADII	DISTANCE BEYOND R/W LINE	SURFACE BEYOND R/W LINE			GRADE				EXCAVATION		CLEAR ZONE AT DRIVE	HMA MATERIALS			HMA MATERIAL FOR:		JOINT ADHESIVE, SURFACE	JOINT ADHESIVE, INTERMEDIATE	LIQUID ASPHALT SEALANT	SUBGRADE TREATMENT, TYPE ID	MILLING, TRANSITION	COMPACTED AGGREGATE, NO. 53	CRACKS AND JOINTS IN ASPHALT PAVEMENT, ROUT AND SEAL	PAVEMENT, REMOVAL	LINEAR GRADING	HMA FOR APPROACHES
						COMPACTED AGGREGATE BASE	HMA	CONCRETE	1	2	3	4	CUT	FILL		3, 70, SURFACE 9.5 mm	3, 70, INTERMD. :9.0 mm	3, 64, BASE 25.0 mm	PRIME COAT	TACK COAT											
									LBS. PER SYD.							165	275	880												
		FT	FT	FT	FT	SYS	SYS	SYS	%	%	%	%	CYS	CYS	FT	TONS	TONS	TONS	SYS	SYS	LFT	LFT	LFT	SYS	SYS	TONS	TONS	SYS	LFT	TON
STA. 09+00.18 TO 10+35.18 LINE "BrA"													44			53	26	81		665	449	216	449	211	453	30	0.5	80	141	0
STA. 11+46.82 TO 12+81.82 LINE "BrA"													41			53	25	79		722	449	182	449	199	513	24	0.5	80	141	5
TOTAL													85			106	51	160		1387	898	398	898	410	966	54	1	160	282	5

PAVEMENT MARKING TABLE

ITEM	PAINT MARKINGS			
	SOLID, WHITE, 6"	BROKEN, YELLOW, 6"	SNOWPLOWABLE RAISED PAVEMENT MARKER, REMOVE	SNOWPLOWABLE RAISED PAVEMENT MARKER
	LFT	LFT	EACH	EACH
STA. 09+00.18 LT. TO 12+81.82 LT.	382			
STA. 09+00.18 LT. TO 12+81.82 CL.		96	6	5
STA. 09+00.18 RT. TO 12+81.82 RT.	382			
GRAND TOTAL	764	96	6	5

THOMAS BIENEMAN REGISTERED No. 21000044 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

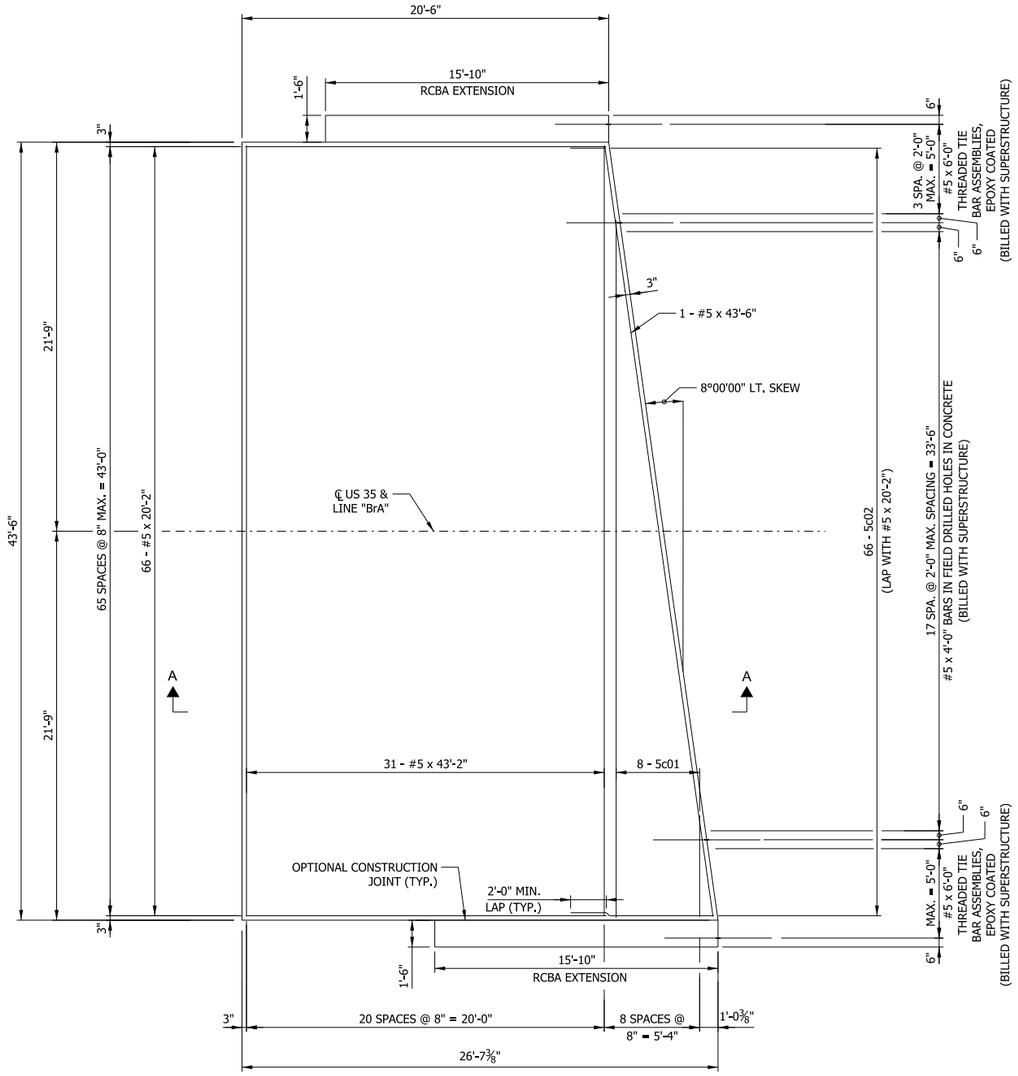
DESIGNED: NIK DRAWN: NIK

CHECKED: TMB CHECKED: TMB

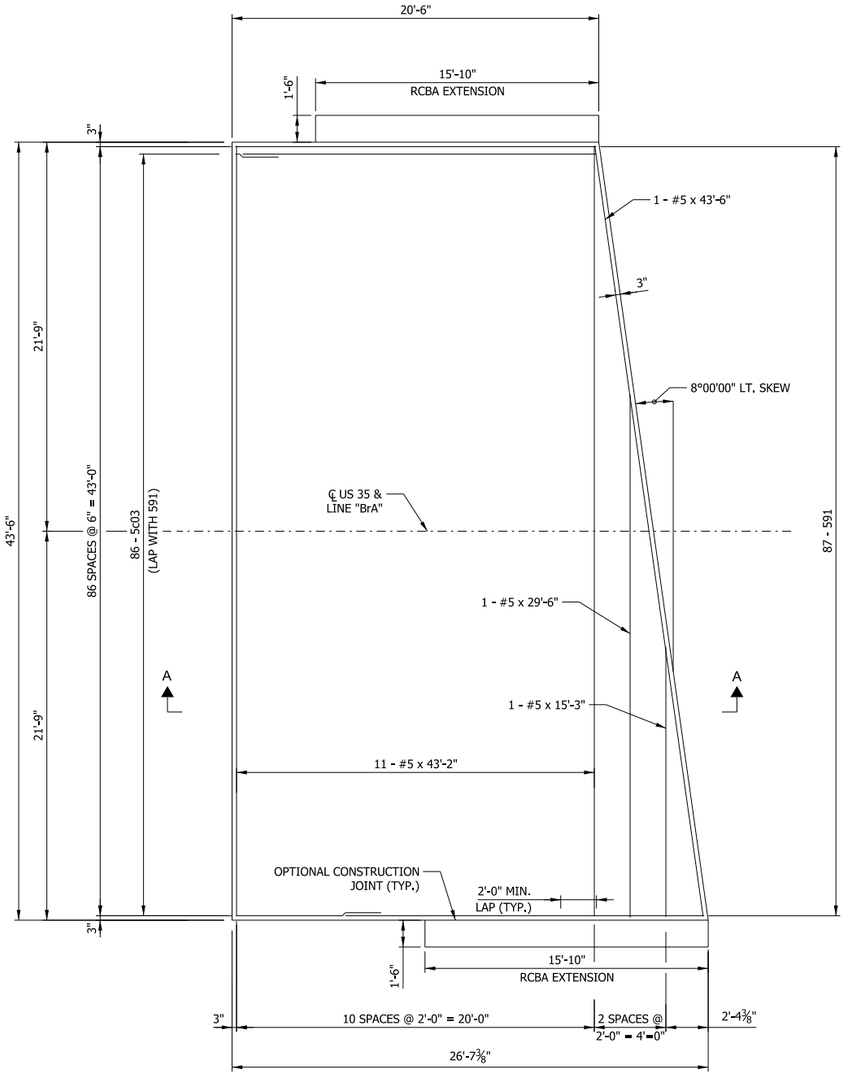
INDIANA
DEPARTMENT OF TRANSPORTATION

BRIDGE SUMMARY

HORIZONTAL SCALE	BRIDGE FILE
N/A	035-27-06900 A
VERTICAL SCALE	DESIGNATION
N/A	1800164
SURVEY BOOK	SHEETS
ELECTRONIC	18 of 18
CONTRACT	PROJECT
B-41567	1800164



WEST APPROACH SLAB - TOP REINFORCEMENT
(EAST APPROACH SLAB SAME BY 180° ROTATION)



WEST APPROACH SLAB - BOTTOM REINFORCEMENT
(EAST APPROACH SLAB SAME BY 180° ROTATION)

NOTES:

1. FOR SECTION A-A, SEE SHEET NO. 17.
2. FOR ADDITIONAL RCBA EXTENSION DETAILS AND GENERAL NOTES, SEE STD. DWG. E 609-TBAE-01 AND -04.
3. FOR CONCRETE BRIDGE RAILING TRANSITION, TYPE TFC DETAILS, SEE STD. DWG. E 706-TTFC-01 THROUGH -03.
4. ALL REINFORCING BARS SHALL BE EPOXY COATED.

THOMAS BIENEMAN REGISTERED No. 21000044 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Thomas Bieneman 6/21/2022
DESIGN ENGINEER DATE

DESIGNED: EAH DRAWN: EAH
CHECKED: TMB CHECKED: TMB

INDIANA
DEPARTMENT OF TRANSPORTATION

APPROACH SLAB DETAILS

HORIZONTAL SCALE	BRIDGE FILE
¼" = 1'-0"	035-27-06900 A
VERTICAL SCALE	DESIGNATION
¼" = 1'-0"	1800164
SURVEY BOOK	SHEETS
ELECTRONIC	16 of 18
CONTRACT	PROJECT
B-41567	1800164

nkess
6/15/2022 8:58:20 am
model-4approach slab details
file:\\indot\1209projects\74550 corneliino rfp\1811060\020 us 35 des 1800164\cadd\lb1\tcds\74550-s-br-asd01.dgn