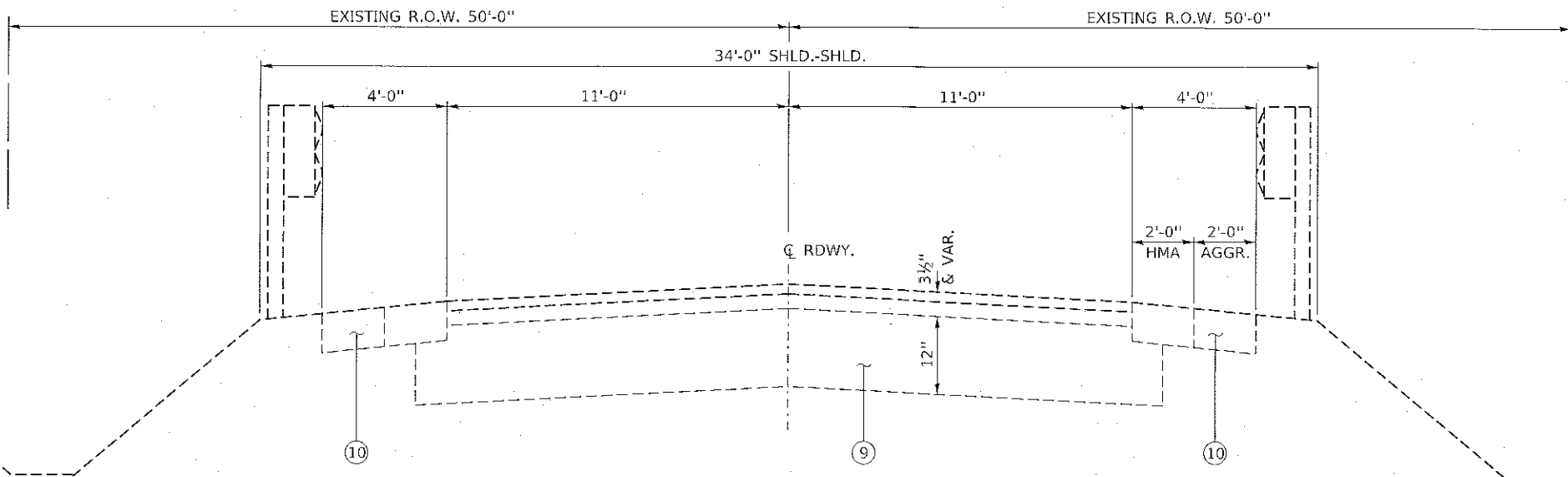
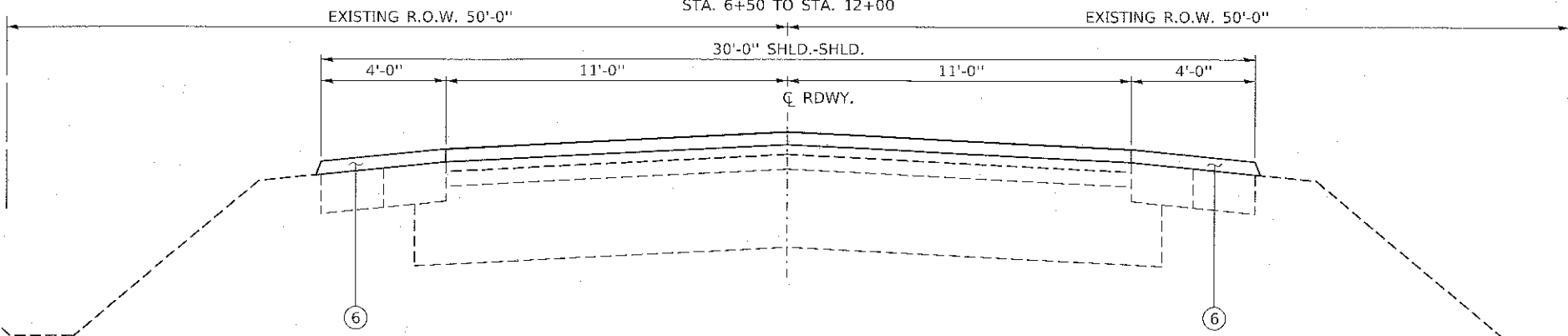


FIELD ENTRANCE DETAIL



EXISTING TYPICAL CROSS SECTION

STA. 6+50 TO STA. 12+00



PROPOSED TYPICAL CROSS SECTION

STA. 6+50 TO STA. 7+00 &
STA. 11+50 TO 12+00

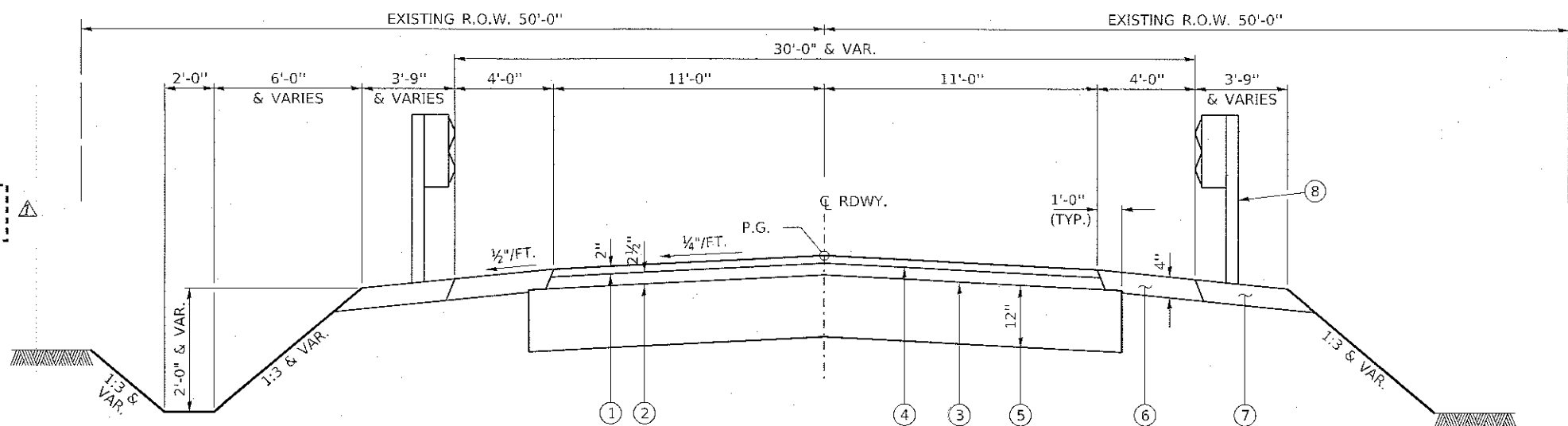
LEGEND

- ① HMA SURFACE COURSE, MIX C, N50 (2" THICKNESS)
- ② HMA BINDER COURSE, IL-19.0, N50 (2½" THICKNESS)
- ③ BITUMINOUS MATERIALS (PRIME COAT)
- ④ BITUMINOUS MATERIALS (TACK COAT)
- ⑤ AGGREGATE BASE COURSE, TYPE A (12")
- ⑥ HMA SHOULDERS (4")
- ⑦ AGGREGATE SHOULDERS, TYPE B (4")
- ⑧ PROPOSED SM RAIL
- ⑨ EXISTING BITUMINOUS CONCRETE SURFACE (31#2") ON AGGREGATE BASE (12")
- ⑩ EXISTING HMA / AGGREGATE SHOULDER

MIXTURE REQUIREMENTS			
	HOT MIX ASPHALT SURFACE COURSE	HOT MIX ASPHALT BINDER COURSE	HOT MIX ASPHALT SHOULDERS
PG GRADE*	PG64-22	PG64-22	PG64-22
DESIGN AIR VOIDS	4% @ N50	4% @ N50	4% @ N50
MIXTURE COMPOSITION	IL 9.5	IL 19.0 FG	IL 19.0 FG
FRICITION AGGREGATE	MIXTURE C	NONE	NONE
MIXTURE WEIGHT	112 lb / in / sq yd	112 lb / in / sq yd	112 lb / in / sq yd
DENSITY TEST METHOD	QCQA	QCQA	QCQA

NOTES:

1. MATERIAL SHALL BE COMPACTED TO 93.0-97.4 PERCENT OF THE MAXIMUM THEORETICAL DENSITY, EXCEPT THAT WHEN PLACED AS FIRST LIFT ON AN UNIMPROVED SUBGRADE THE MINIMUM PERCENT COMPACTION SHALL BE 92.0 PERCENT. THE MAXIMUM THEORETICAL DENSITY SHALL BE DETERMINED FROM THE MOVING AVERAGE AS SPECIFIED IN THE QCQA SPECIFICATION.
2. WHEN RAP/RAS ABR EXCEEDS 20 PERCENT, THE HIGH AND LOW VIRGIN ASPHALT BINDER GRADES SHALL EACH BE REDUCED BY ONE GRADE (I.E. 25% ABR WOULD REQUIRE A VIRGIN ASPHALT BINDER GRADE OF PG 64-22 TO BE REDUCED TO PG 58-28).



SUGGESTED CUT SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

PROPOSED TYPICAL CROSS SECTION

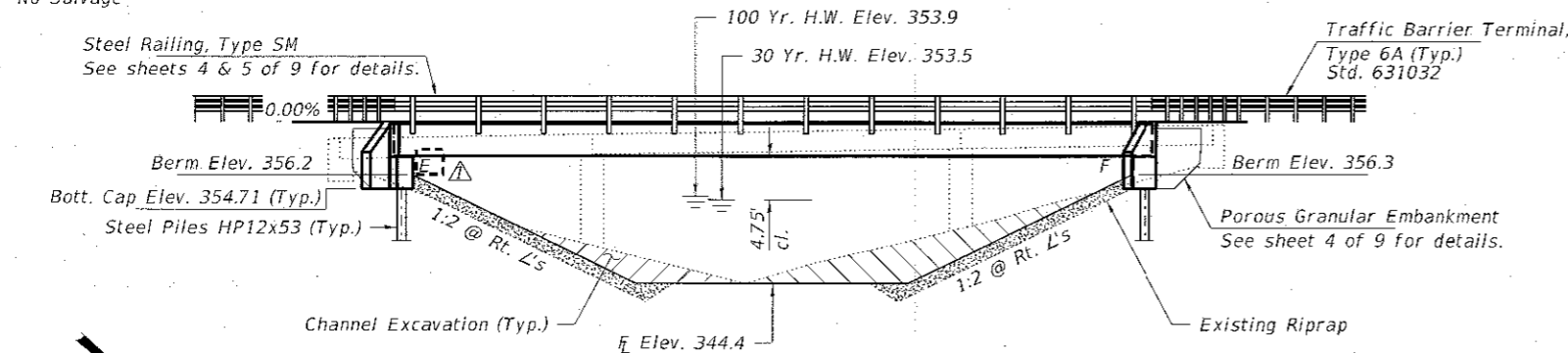
STA. 7+00 TO STA. 11+50
SEE SHEET 5 FOR SHOULDER LAYOUT

SUGGESTED FILL SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

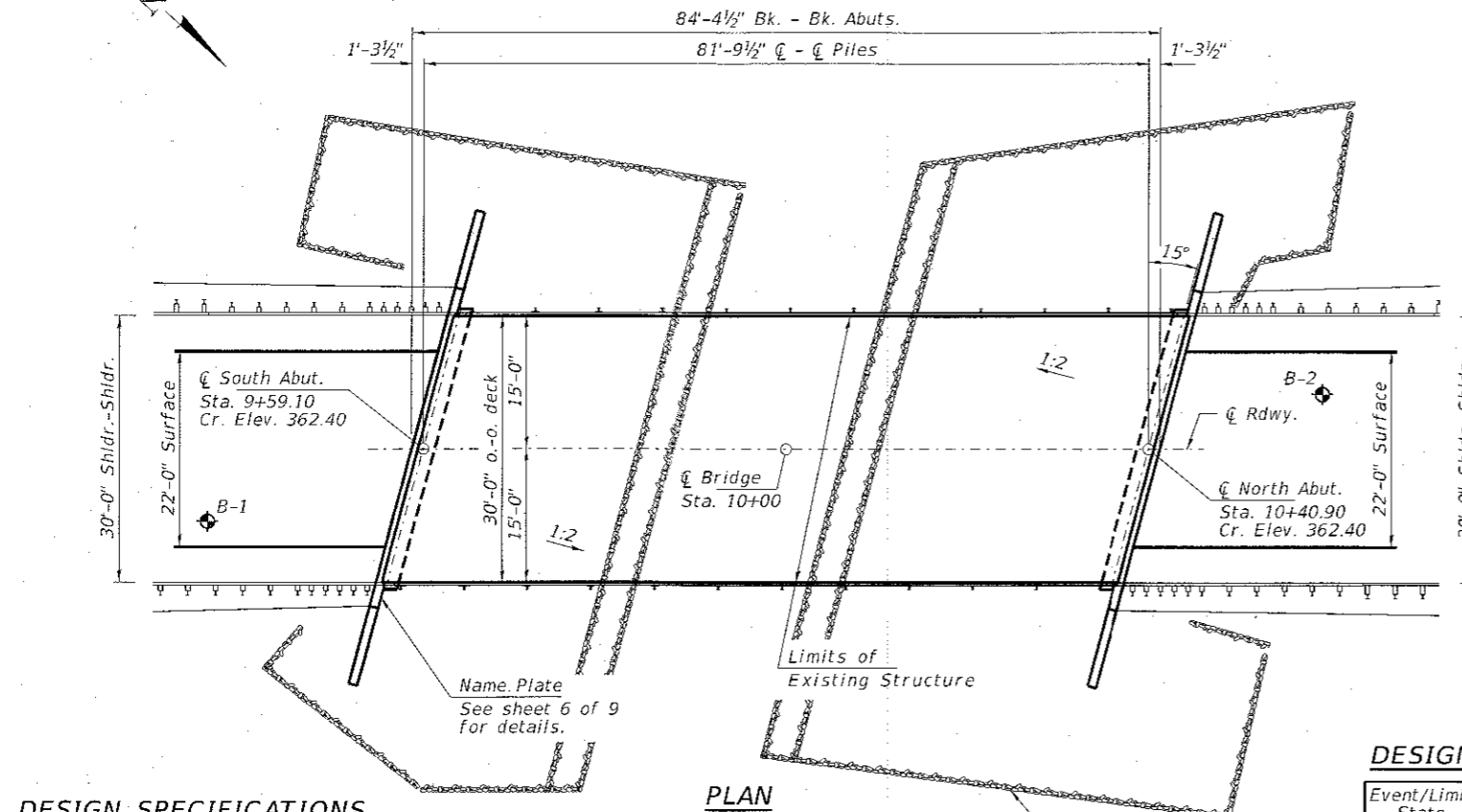
EXISTING STRUCTURE NO. 030-3115: Sta. 10+00 - Three span precast concrete slab bridge with concrete abutments and wingwalls. 95.75' Fc.-fc.; 30.0' o.-o. deck.

Structure closed to traffic during construction.

No Salvage



ELEVATION



PLAN

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with all interims.

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinf.)

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi (1/2"Ø low lax. strands)
fpbt = 201,960 psi (1/2"Ø low lax. strands)
fy = 60,000 psi (Reinf.)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.315g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.739g
Soil Site Class = D

WATERWAY INFORMATION

Drainage Area = 6.7 Sq. Mi.		Existing Low Grade Elev. 359.3 @ Sta. 7+50		Proposed Low Grade Elev. 359.8 @ Sta. 6+50	
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.	Nat. Head - Ft.	Headwater El.
Design	30	650	430	353.5	0.1 0.0 353.6 353.6
Base	100	790	450	353.9	0.1 0.1 354.0 354.0
Prop. Overtop	Ohio River backwater overtops south approach.				
Max Calc.	500	970	490	354.4	0.1 0.1 354.5 354.4

DESIGN SCOUR ELEVATION TABLE

Event/Limit State	Design Scour Elev. (ft.)		Item
	E. Abut.	W. Abut.	
Q100	354.7	354.7	8
Q200	354.7	354.7	
Design	354.7	354.7	
Check	354.7	354.7	

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "AASHTO LRFD Specifications."

Steven W. Megginson 03/30/18
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



Expires 11-30-2018

GENERAL NOTES

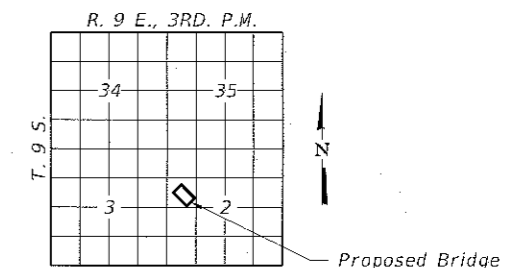
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
All bars to be epoxy coated.
Excavation required to construct the Abutments shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation.
All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act.
The IEPA has issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions.
All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M 300, Type 1.

INDEX OF STRUCTURE SHEETS

1. General Plan & Elevation
2. 42"x36" PPC Deck Beam
3. 42"x36" PPC Deck Beam Details
4. Superstructure Details
5. Steel Railing, Type SM
6. Abutments
7. HP Pile Details
- 8-9. Borings

N. FK. CYPRESS CREEK
BUILT 201 BY
GALLATIN COUNTY
SEC. 15-00081-00-BR
C.H. 11 / F.A.S. 858
STR. NO. 030-3138
LOADING HL-93

NAME PLATE
See Std. 515001



LOCATION SKETCH

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			185
Porous Granular Embankment	Ton			220
Stone Dumped Riprap, Class A4	Sq. Yd.			50
Hot-Mix Asphalt Surface Course, Mix "C", N50	Ton	44		44
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		38.0	38.0
Precast Prestressed Conc. Deck Beams (42" Depth)	Sq. Ft.	2,490		2,490
Reinforcement Bars, Epoxy Coated	Pound		5,670	5,670
Steel Railing, Type SM	Foot	166		166
Furnishing Steel Piles HP12x53	Foot		1,560	1,560
Driving Piles	Foot		1,560	1,560
Name Plates	Each		1	1
Portland Cement Mortar Fairing Course	Foot	190		190
Terminal Marker - Direct Applied	Each	4		4

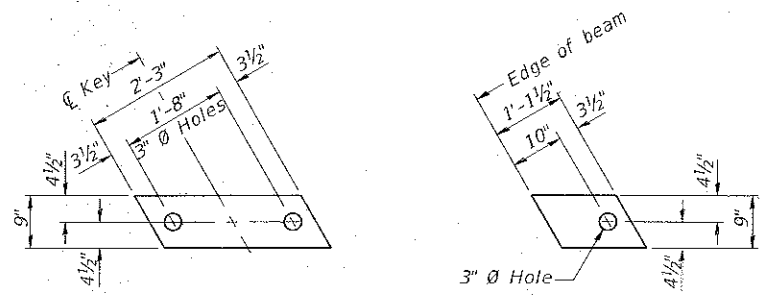
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PLOT DATE = 5/29/2018		DRAWN - R.D.H.	REVISED -
		CHECKED - D.A.B.	REVISED -

STATE OF ILLINOIS
GALLATIN COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN & ELEVATION
STRUCTURE NO. 030-3138

SHEET NO. 1 OF 9 SHEETS

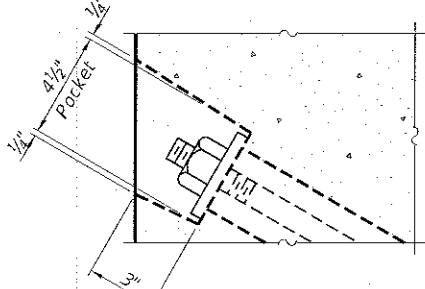
F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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SHAWNEETOWN-NEW HAVEN ROAD			CONTRACT NO. 99604	
ILLINOIS FED. AID PROJECT L739(824)				



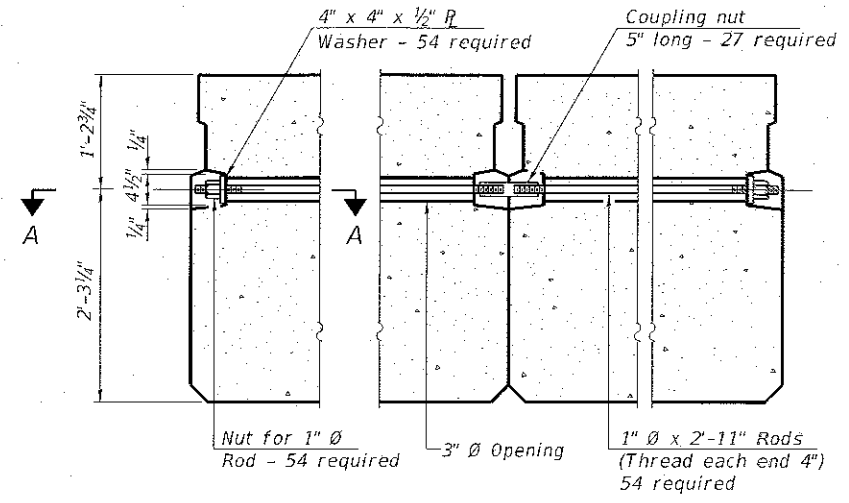
FABRIC BEARING PAD
(Interior - 18 Req'd.)

FABRIC BEARING PAD
(Exterior - 4 Req'd.)

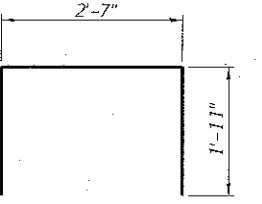
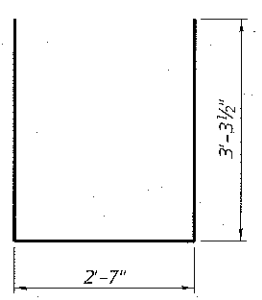
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



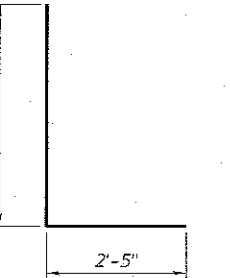
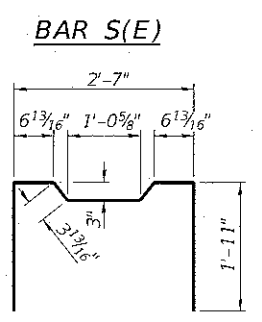
SECTION A-A



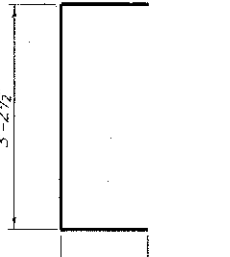
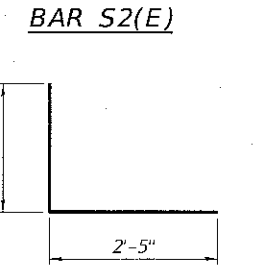
TYPICAL TRANSVERSE TIE ASSEMBLY



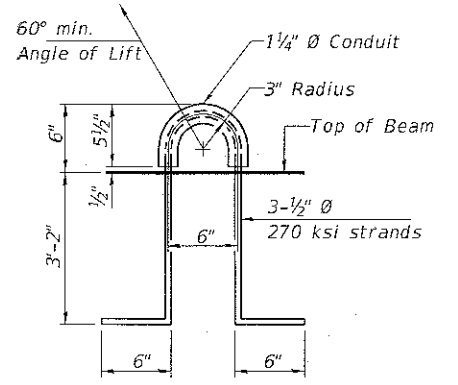
BAR S1(E)



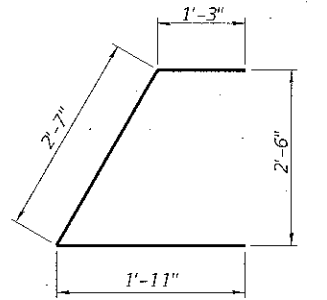
BAR S3(E)



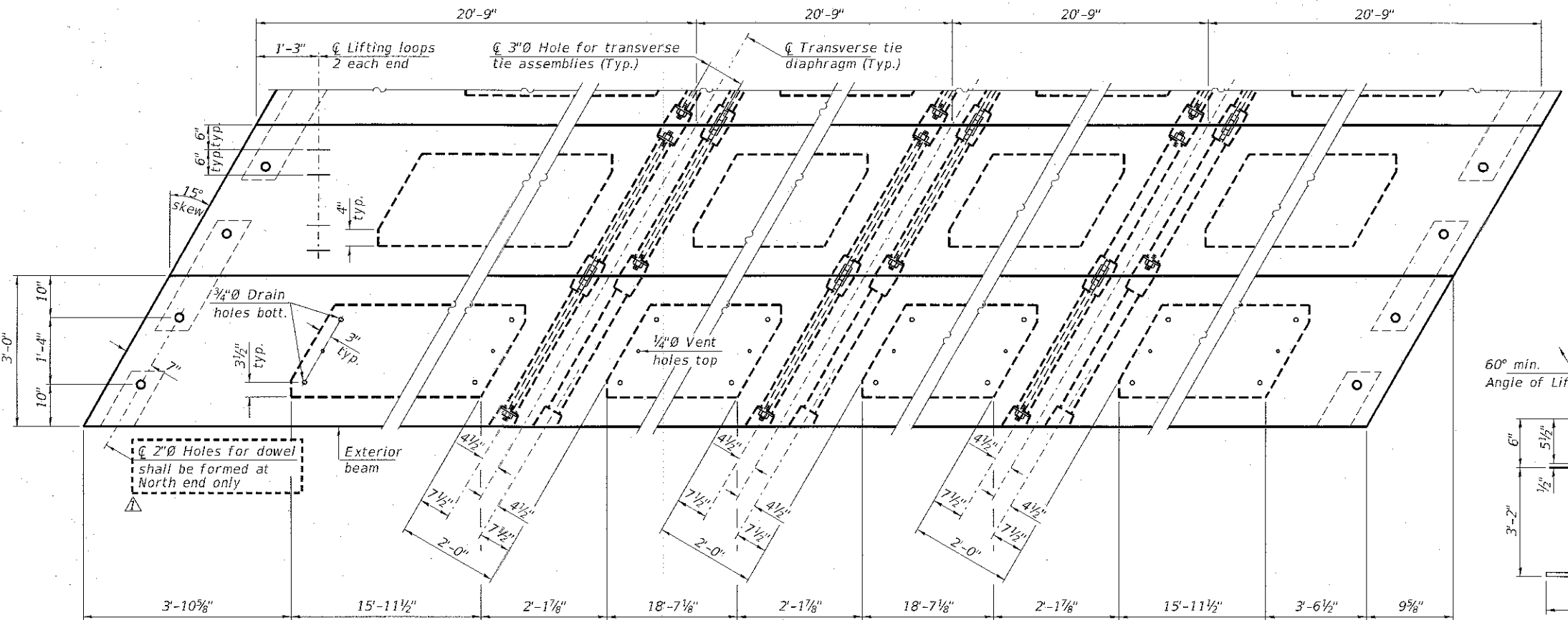
BAR U(E)



LIFTING LOOP DETAIL



BAR U1(E)



PLAN VIEW

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" Ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
A minimum 2 1/2" Ø lifting pin shall be used to engage the lifting loops during handling.
Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.
Reinforcement bars designated (E) shall be epoxy coated.

Note: Connect beams in pairs with the transverse tie configuration shown.

BILL OF MATERIAL

Item	Unit	Quantity
Precast Prestressed Conc. Deck Bms. (42" depth)	Sq. Ft.	2,490
Hot-Mix Asphalt Surface Course, Mix "C", N50	Ton	44
Portland Cement Mortar Fairing Course	Foot	190

PD-4236-LD 2-17-2017

FILE NAME = 180029-shl-bridge 42" beam.dgn	USER NAME = rmcack
DESIGNED - R.D.H.	CHECKED - S.W.M.
DRAWN - R.D.H.	CHECKED - D.A.B.
PLOT SCALE =	PLOT DATE = 5/29/2018

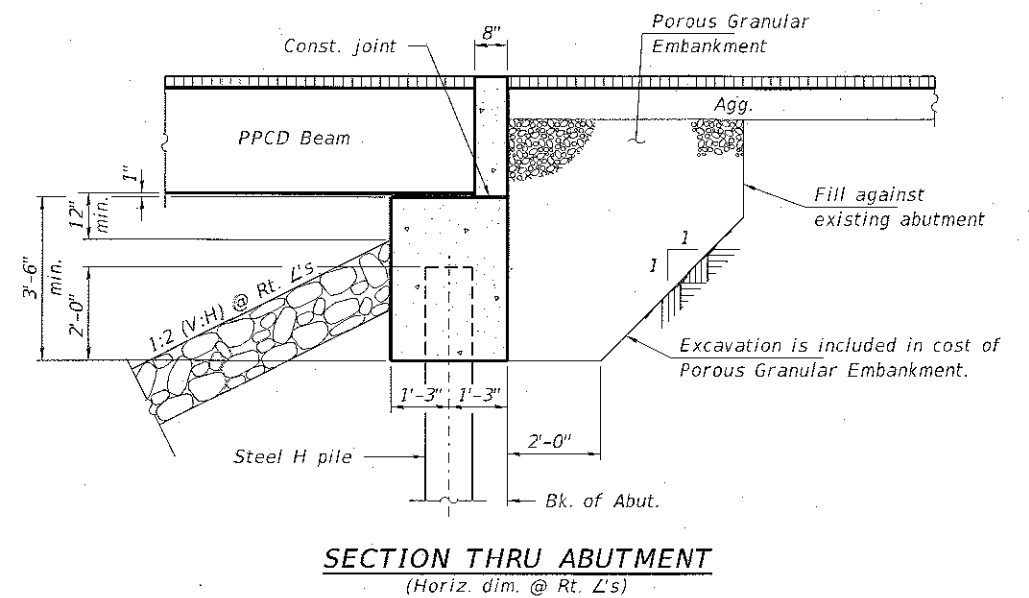
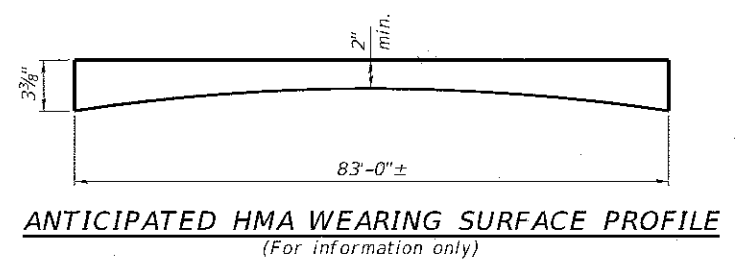
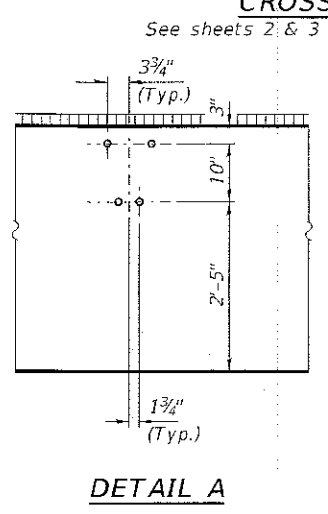
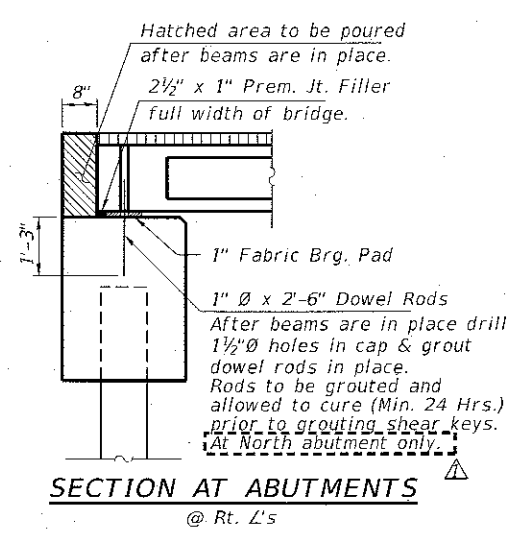
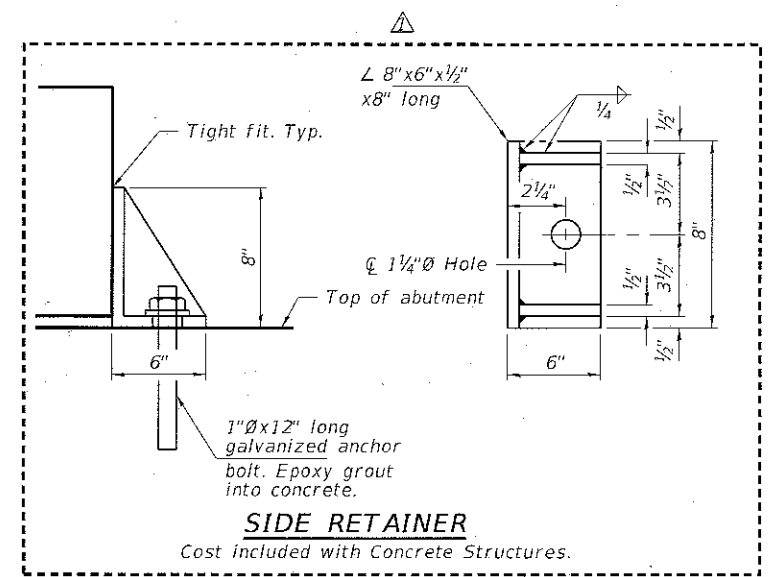
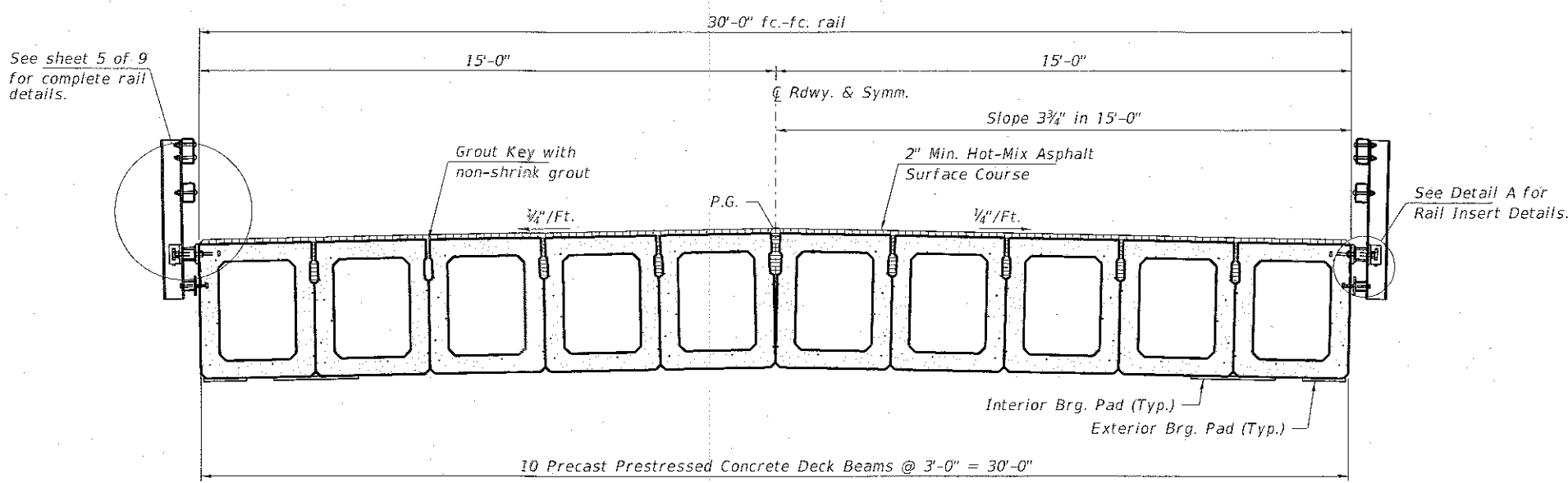
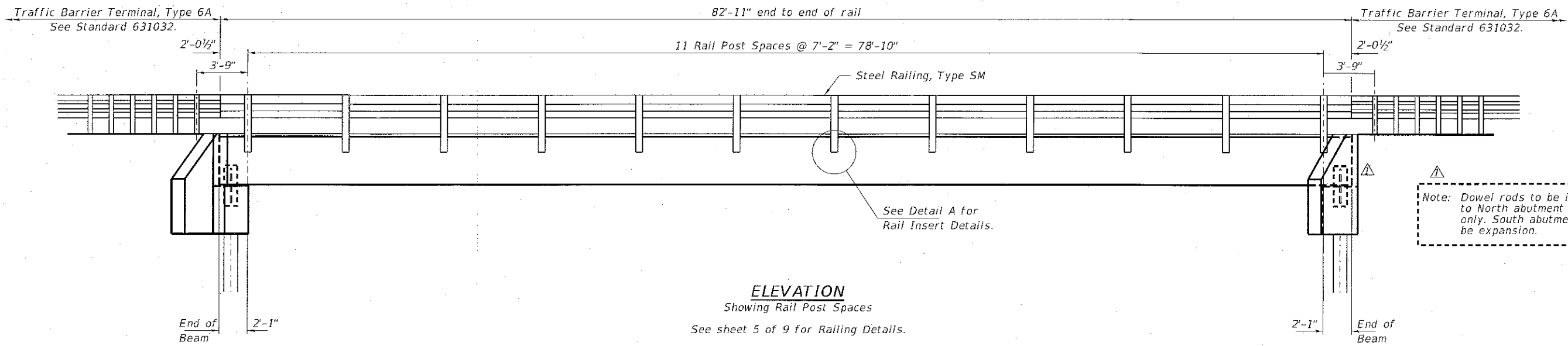
DESIGNED - R.D.H.	REVISED - 05/24/18 S.W.M.
CHECKED - S.W.M.	REVISED -
DRAWN - R.D.H.	REVISED -
CHECKED - D.A.B.	REVISED -

STATE OF ILLINOIS
GALLATIN COUNTY HIGHWAY DEPARTMENT

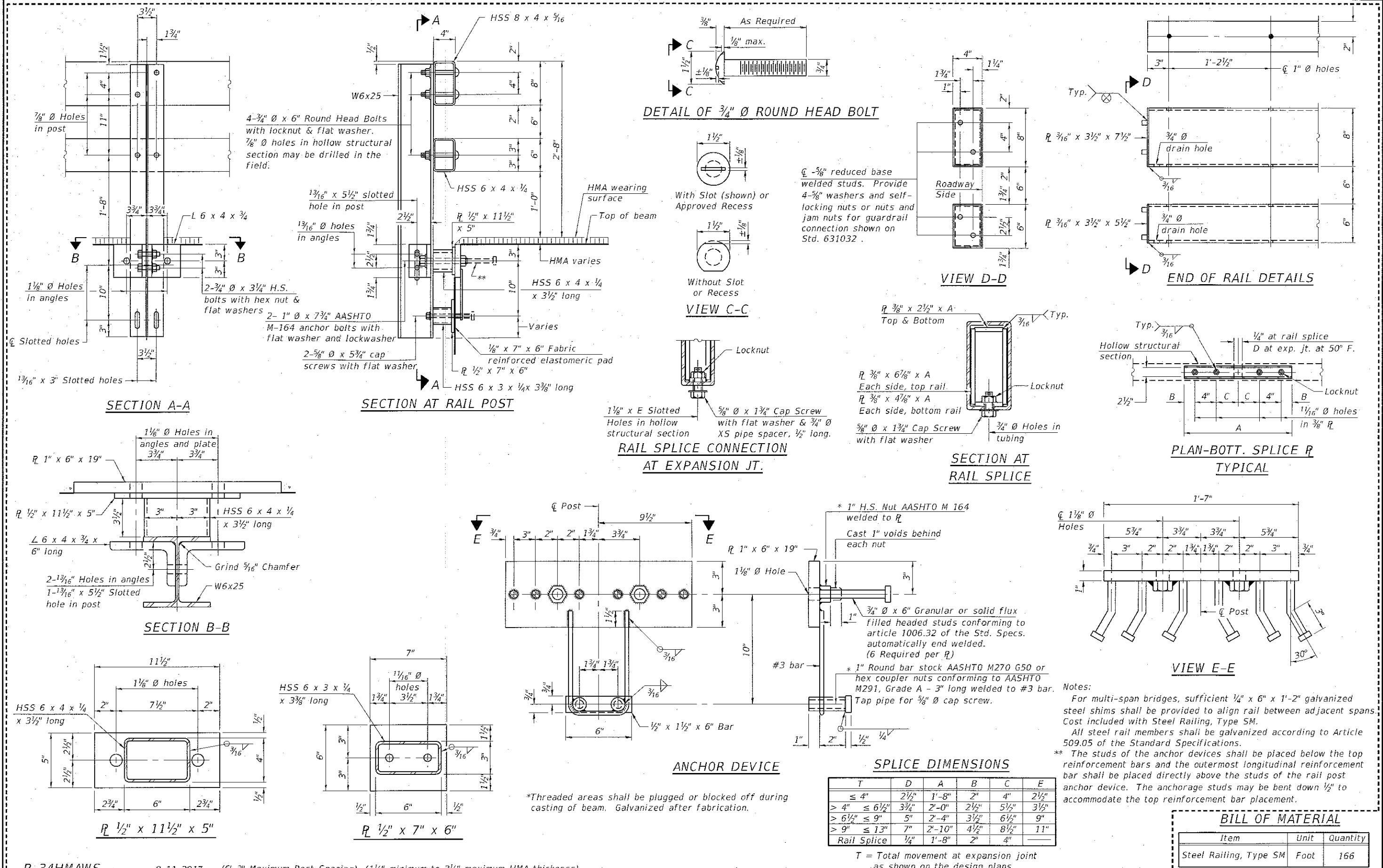
42" x 36" PPC DECK BEAM DETAILS
STRUCTURE NO. 030-3138

SHEET NO. 3 OF 9 SHEETS

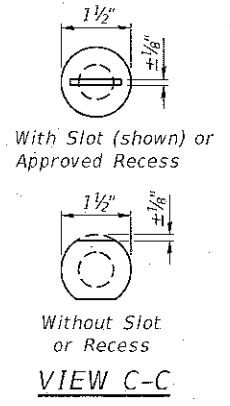
F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
888	15-00081-00-BR	GALLATIN	24	18
SHAWNEETOWN-NEW HAVEN ROAD			CONTRACT NO. 99804	
ILLINOIS FED. AID PROJECT 17J(824)				



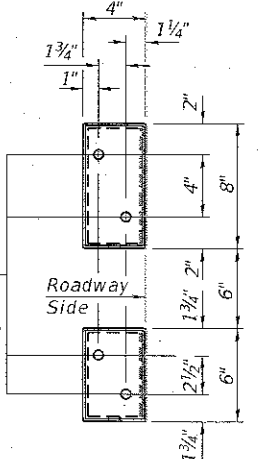
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HAMPTON, LENZINI AND RENWICK, INC. 3888 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62779 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184-000999	PLOT SCALE =	CHECKED - S.W.M.	REVISED -	SHEET NO. 4 OF 9 SHEETS		SHAWNEETOWN-NEW HAVEN ROAD		CONTRACT NO. 99604		
	PLOT DATE = 5/29/2018	DRAWN - R.D.H.	REVISED -			ILLINOIS		FED. AID PROJECT L7J(R)24		
		CHECKED - D.A.B.	REVISED -							



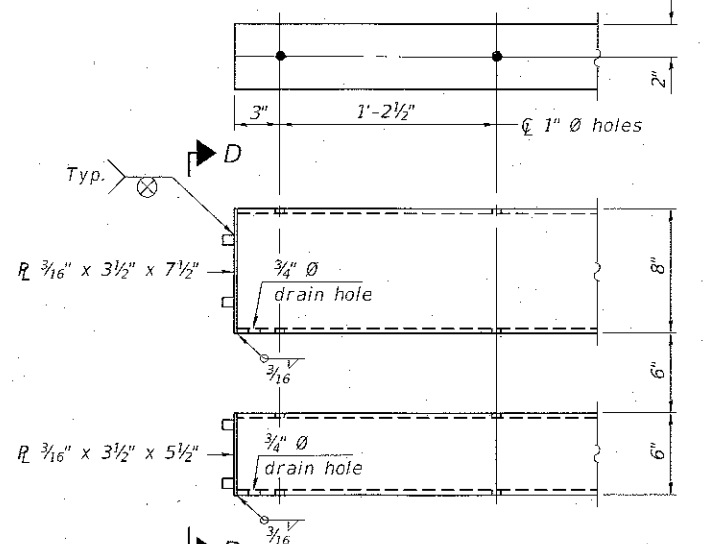
DETAIL OF 3/4" Ø ROUND HEAD BOLT



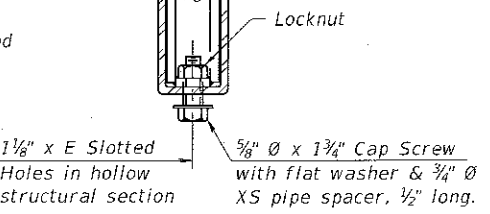
VIEW D-D



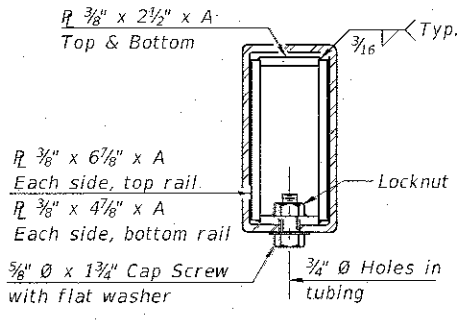
END OF RAIL DETAILS



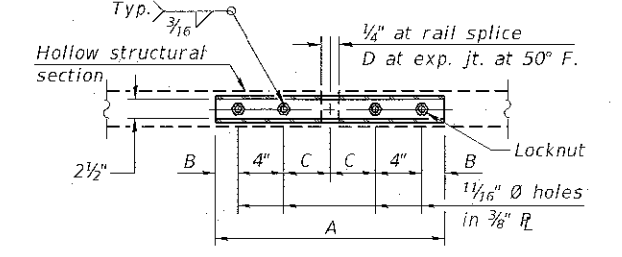
RAIL SPLICE CONNECTION AT EXPANSION JT.



SECTION AT RAIL SPLICE

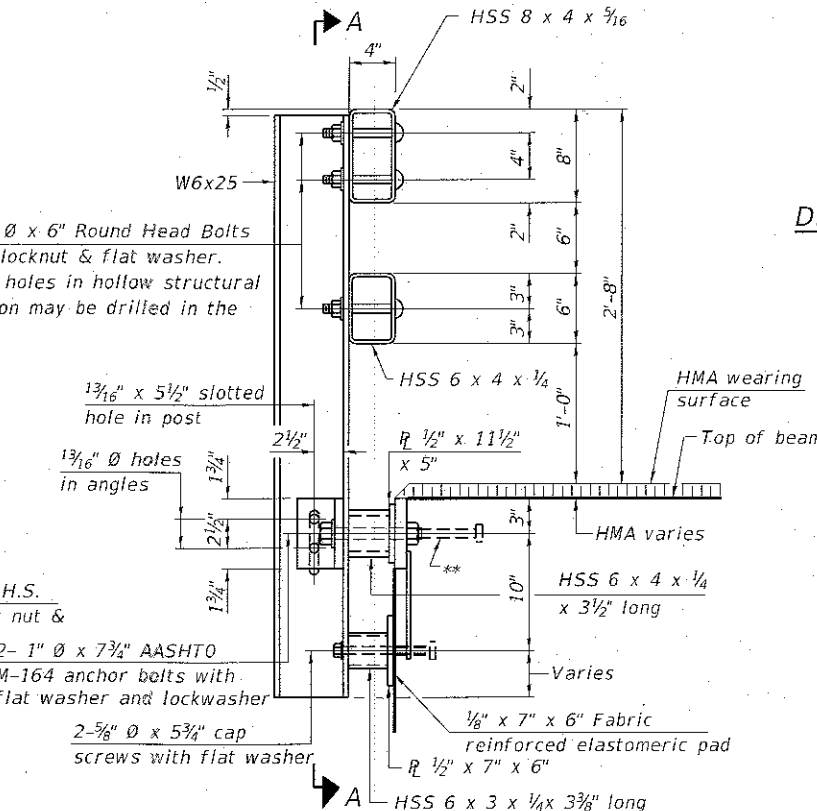
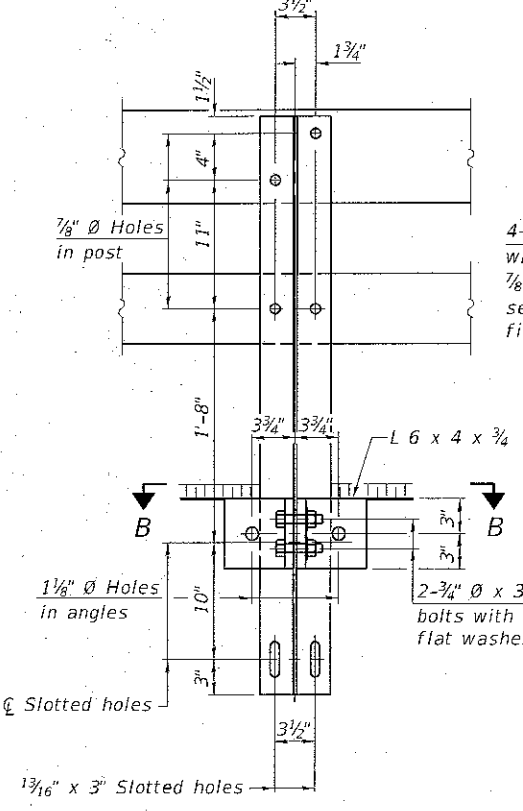


PLAN-BOTT. SPLICE R TYPICAL

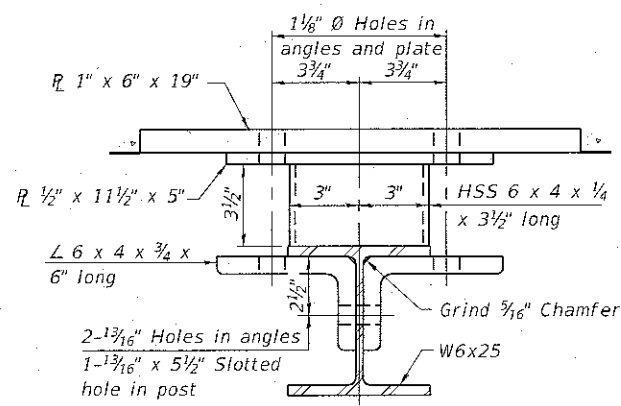


SECTION A-A

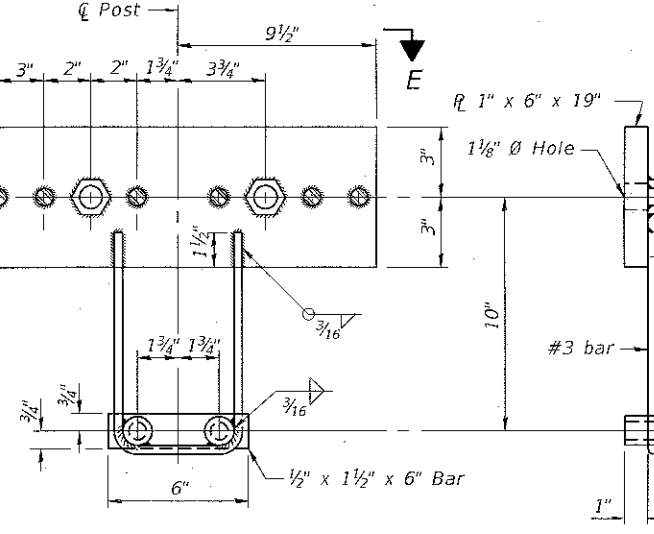
SECTION AT RAIL POST



SECTION B-B



ANCHOR DEVICE



SPLICE DIMENSIONS

T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	

T = Total movement at expansion joint as shown on the design plans.

Notes:
 For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type SM.
 All steel rail members shall be galvanized according to Article 509.05 of the Standard Specifications.
 ** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device. The anchorage studs may be bent down 1/2" to accommodate the top reinforcement bar placement.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	166

R-34HMAWS 8-11-2017 (6'-3" Maximum Post Spacing) (1/4" minimum to 3/8" maximum HMA thickness)

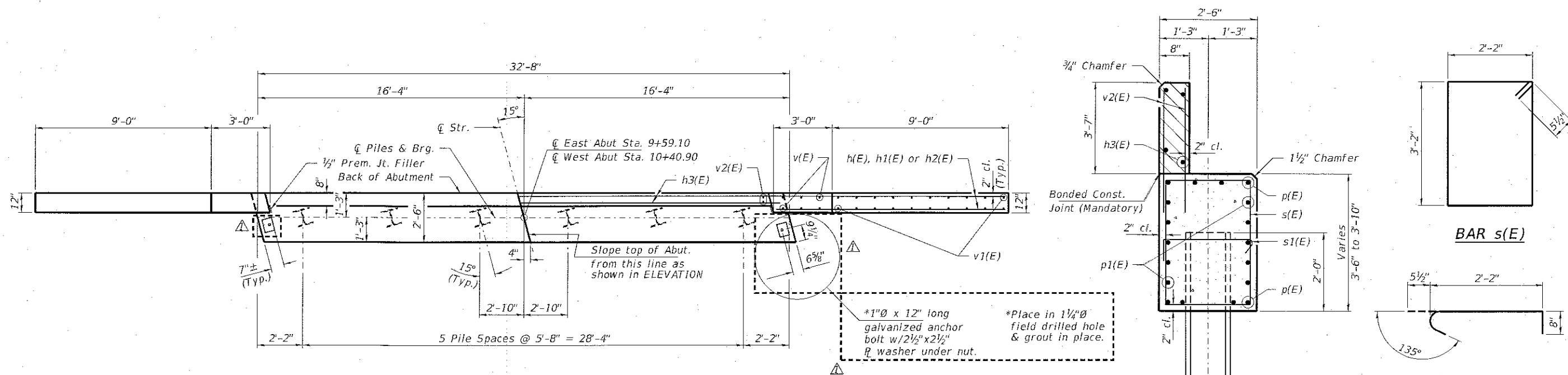
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ILLINOIS PROFESSIONAL DESIGN FIRM L.S. # 05-000000	PLOT DATE = 5/29/2018	DRAWN = R.D.H.	REVISED =
		CHECKED = D.A.B.	REVISED =

STATE OF ILLINOIS
 GALLATIN COUNTY HIGHWAY DEPARTMENT

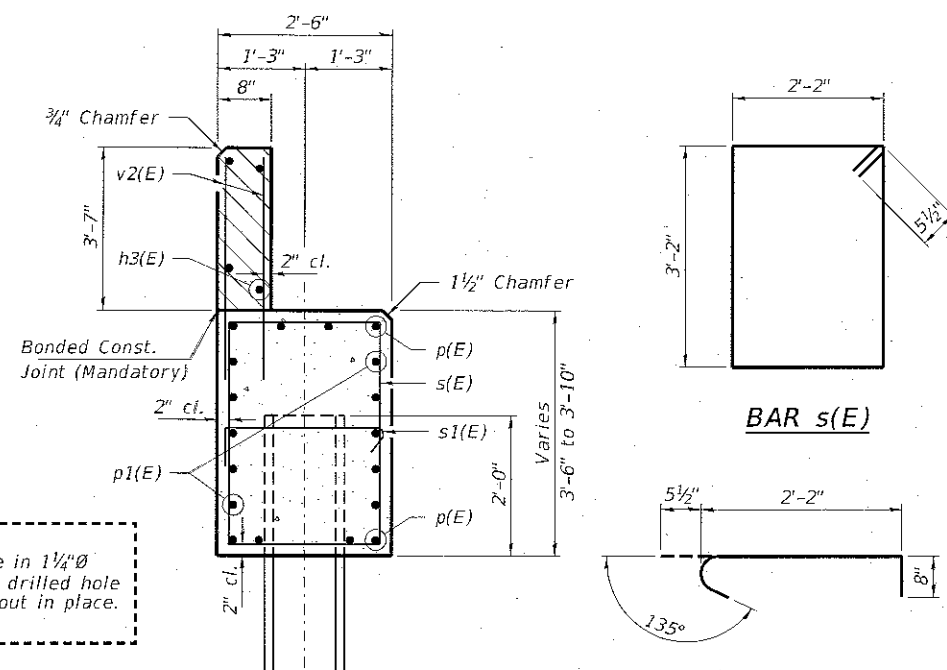
STEEL RAILING, TYPE SM WITH HMA WEARING SURFACE
 STRUCTURE NO. 030-3138

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
888	15-00081-00-BR	GALLATIN	24	20
SHAWNEETOWN-NEW HAVEN ROAD			CONTRACT NO. 99604	
ILLINOIS FED. AID PROJECT 17J(824)				

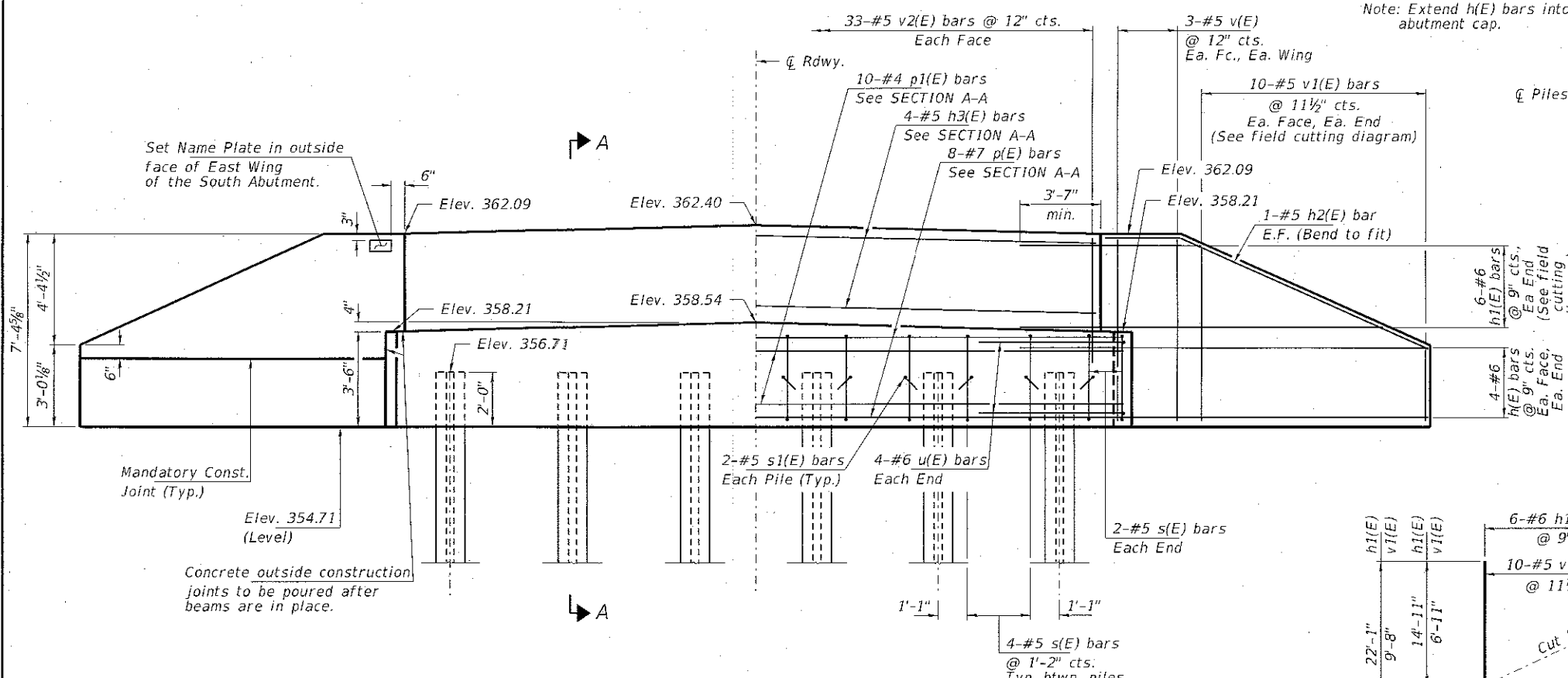
SHEET NO. 5 OF 9 SHEETS



PLAN



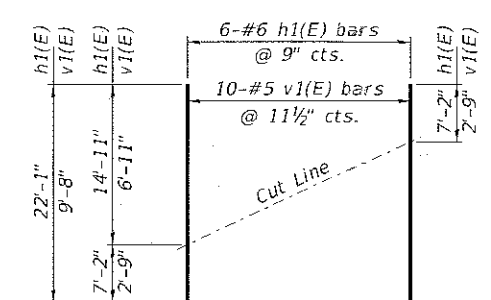
SECTION A-A



ELEVATION

PILE DATA

Type ----- Steel HP12x53
 No. Req'd. (2 Abuts.) ----- 12
 Factored Resistance Available (Rf) ----- 230 Kips/Pile
 Nominal Required Bearing (Rn) ----- 419 Kips/Pile
 Est. Length ----- 130 Ft/Pile



FIELD CUTTING DIAGRAM

Order h1(E) and v1(E) full length. Cut as shown and use remainder of bars in opposite face.

BILL OF MATERIAL - 2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	32	#6	15'-5"	—
h1(E)	24	#6	22'-1"	—
h2(E)	8	#5	12'-7"	—
h3(E)	8	#5	32'-4"	—
p(E)	16	#7	32'-4"	—
p1(E)	20	#4	32'-4"	—
s(E)	48	#5	11'-7"	□
s1(E)	24	#5	3'-4"	┌
u(E)	16	#6	12'-2"	—
v(E)	24	#5	7'-0"	—
v1(E)	40	#5	9'-8"	—
v2(E)	132	#5	5'-7"	—
Concrete Structures			Cu. Yd.	38.0
Reinf. Bars, Epoxy Coated			Pound	5,670
Steel Piles HP10x42			Foot	1,560
Name Plates			Each	1