

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9th	05-00142-00-BR	COLES	16	1

INDEX OF SHEETS

- 1 COVER SHEET
- 2 SUMMARY OF QUANTITIES /GENERAL NOTES
- 3 REMOVAL PLAN
- 4 PLAN AND PROFILE
- 5 UTILITIES
- 6-15 BRIDGE PLANS
- 16 CROSS SECTIONS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

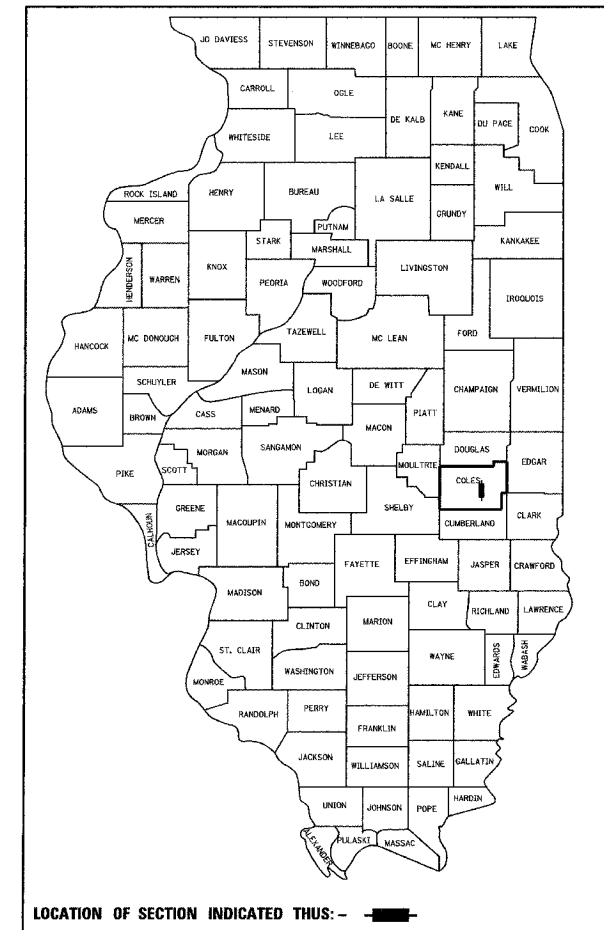
PLANS FOR PROPOSED
HIGHWAY BRIDGE PROGRAM

SECTION 05-00142-00-BR

CITY OF MATTOON
FAU 7698 (9th ST.)
COLES COUNTY

JOB NO. C-97-040-07

PROJECT NO. BRM-5042(15)



LOCATION OF SECTION INDICATED THUS: - ■ -

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123

APPROVED October 26 2007
Don W. Clark
MAYOR CITY OF MATTOON

PASSED 11-2 2007
Mark E. Dwiggin
DISTRICT SEVEN ENGINEER OF
LOCAL ROADS AND STREETS

Releasing For
Bid Based on
Limited Review 11-2 2007
Christie M. Reed
DEPUTY DIRECTOR OF HIGHWAYS
REGION FOUR ENGINEER
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

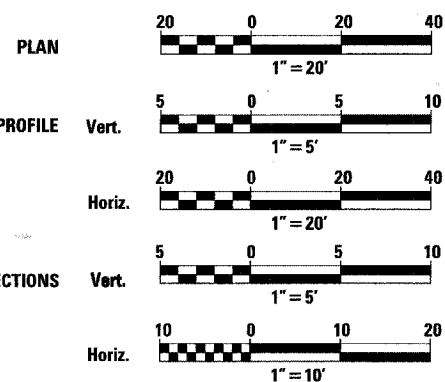
PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

STANDARDS

- 000001-05 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 420401-06 BRIDGE APPROACH PAVEMENT
- 421001-02 BAR REINFORCEMENT FOR CRC PAVEMENT
- 515001-02 NAME PLATE FOR BRIDGES
- 542301-01 PRECAST REINFORCED CONCRETE FLARED END SECTION
- 602401-01 MANHOLE, TYPE A
- 602406-02 MANHOLE, TYPE A 1.8 m (6') DIAMETER
- 602416 MANHOLE, TYPE A 2.4 m (8') DIAMETER
- 602701-01 MANHOLE STEPS
- 604001-02 FRAME AND LIDS, TYPE 1
- 606001-03 CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
- 609006-03 BRIDGE APPROACH PAVEMENT (DRAIN DETAIL)
- 664001-01 CHAIN LINK FENCE
- 701001-01 OFF-ROAD OPERATIONS, 2L, 2W, MORE THAN 4.5 m (15') AWAY
- 701006-02 OFF-ROAD OPERATIONS, 2L, 2W, 4.5 m (15') TO 600 mm (24") FROM PAVEMENT EDGE
- 701301-02 LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
- 701501-04 URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED
- 701901 TRAFFIC CONTROL DEVICES
- B.L.R. 21-7 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
- 780001-01 TYPICAL PAVEMENT MARKINGS

FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

SCALE IN FEET



ADT-CURRENT 5600 DESIGN 7200
CLASS-URBAN MINOR ARTERIAL
DESIGN SPEED-30 MPH

CONTRACT NO. 95505

THE UPCHURCH GROUP HILLSIDE, IL. (708) 449-2321
architects engineers surveyors MATTOON, IL. (217) 236-3177

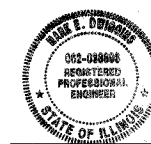
R 7E, 3 P.M.



LOCATION MAP



TOTAL LENGTH OF PROJECT = 180 FT. = 0.034 MILES
NET LENGTH OF PROJECT = 180 FT. = 0.034 MILES



MARK DWIGGINS, P.E. LICENSE EXPIRATION DATE 11-30-07

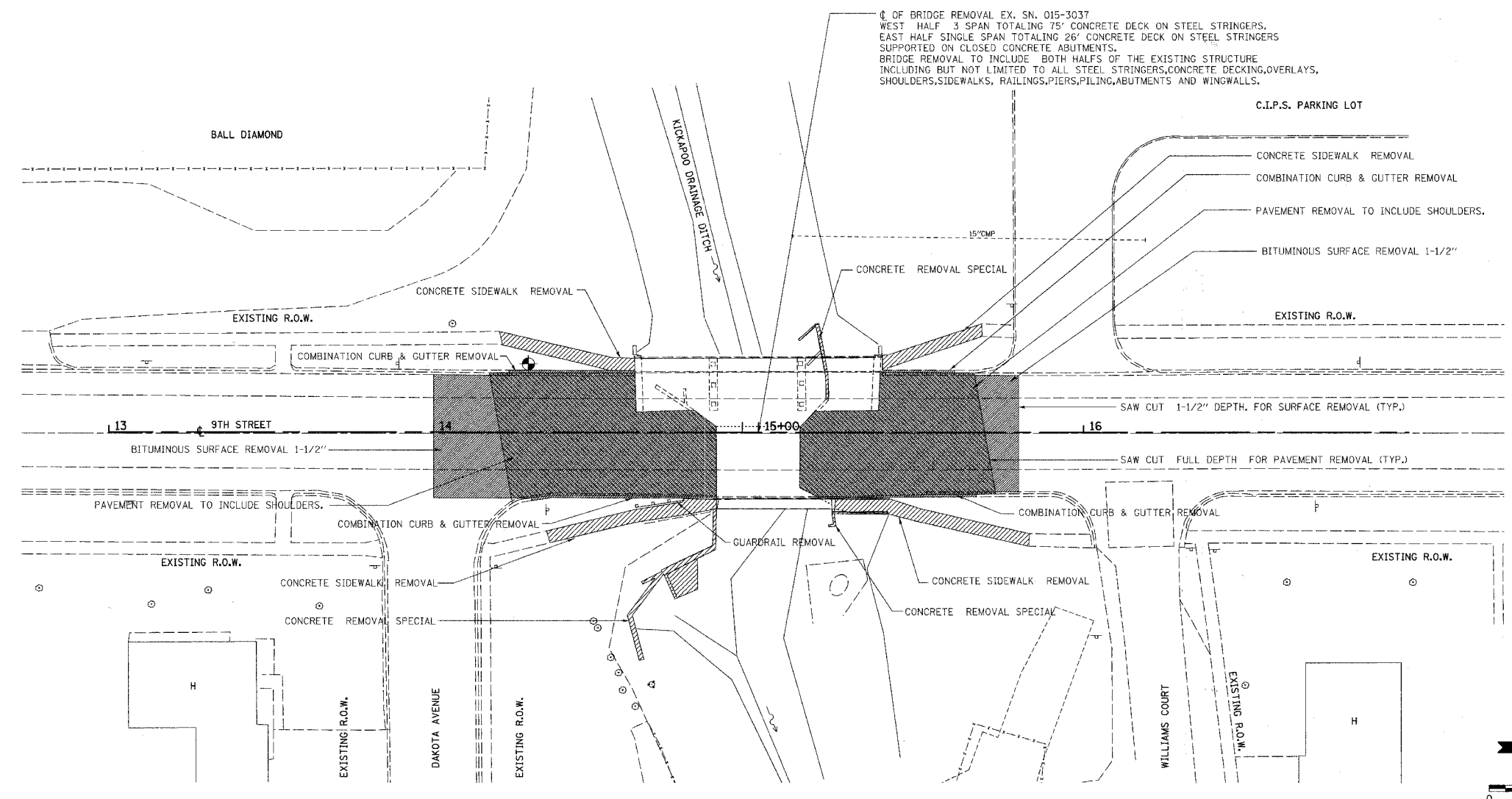
END SECTION 05-00142-00-BR
STA. 15+80

PROPOSED STRUCTURE #015-6339
STA. 14+95, 48'-0" WIDE x 77'-6" LONG, THREE SPAN PRECAST, PRESTRESSED CONCRETE DECK BEAM BRIDGE, 17" DEPTH, 10° SKEW.
EXISTING STRUCTURE #015-3037

BEGIN SECTION 05-00142-00-BR
STA. 14+00

COVER ALB 12-11-06 4:1

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9th	05-00142-00-BR	COLES	16	3
STA. 14+00			TO STA.15+80	



PAVEMENT REMOVAL	
LOCATION	SQ.YD.
14+20.40 to 14+87.00	245.50
15+12.80 to 15+70.00	204.50
TOTAL	450.00

CONCRETE SIDEWALK REMOVAL	
LOCATION	SQ.FT.
14+21, 28' LT	202.75
14+35, 30' RT	244.25
15+83, 31' RT	164.50
15+69, 30' LT	123.00
TOTAL	734.50

GUADRAIL REMOVAL	
LOCATION	FT.
14+62, 23' RT to 14+77, 21' RT	16
TOTAL	16

HMA SURFACE REMOVAL 1-1/2"	
LOCATION	SQ.YD.
14+00 to 14+20.4	87
15+70 to 15+80	41
TOTAL	128

COMBINATION CURB & GUTTER REMOVAL	
LOCATION	FT.
14+23, 17.5' LT to 14+61.5, 17.5' LT	38.5
14+30, 19.5' RT to 14+86, 19.5' RT	56.0
15+38, 17.5' LT to 15+60, 17.5' LT	22.0
15+52, 18' RT to 15+68, 18' RT	16.0
TOTAL	132.50

CONCRETE REMOVAL SPECIAL	
LOCATION	CU.YD.
14+65, 69' RT to 14+87, 23.5' RT	42
15+21, 28' RT to 15+40, 25' RT	13
15+13, 28' LT to 15+22, 10' LT	19
TOTAL	74

REVISIONS	
NAME	DATE

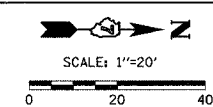
ILLINOIS DEPARTMENT OF TRANSPORTATION
REMOVAL PLAN
 9th St. Over Kickapoo Creek
 SECTION 05-00142-00-BR
 CITY OF MATTOON STA. 14+95
 STRUCTURE NO. 015-6339

SCALE: N.T.S. DRAWN BY
 DATE CHECKED BY

THE UPCHURCH GROUP HILLSIDE, IL. (708) 449-2321
 architects engineers surveyors MATTOON, IL. (217) 235-3177

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9TH 05-00142-00-BR		COLES	16	5
STA. 14+00	TO STA. 15+80			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

BENCHMARK
SMALL SPIKE IN LARGE P.P.
NEAR SW CORNER OF BRIDGE
ELEVATION = 707.67

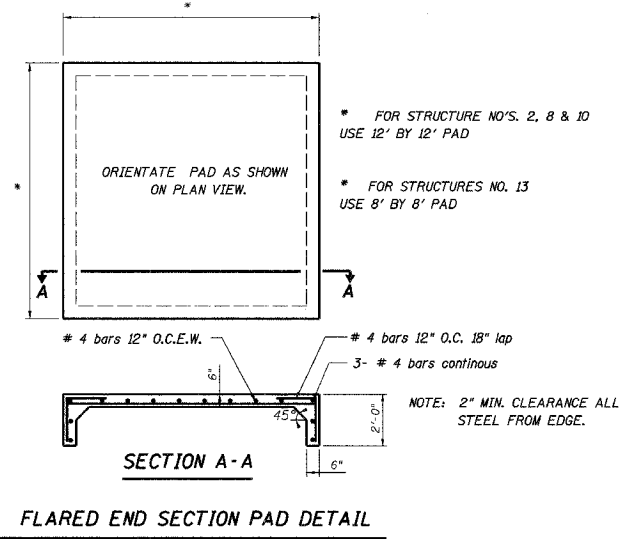


PT.	LOCATION	DESCRIPTION	LID OR GRATE	INLET INVERT	OUTLET INVERT
1	14+28.00, 53.30' LT	MH TY A 8' DIA TY1 F&CL	704.60	695.32	692.24
2	14+62.00, 35.66' LT	60" FLAR END SEC			692.00
3	14+09.88, 16.25' LT	MH TO BE ADJ	704.67(E), 70 . (P)		
4	14+09.56, 5.66' LT	MH TY A 4' DIA TY1 F&CL	705.00	702.20	701.50
5	14+55.65, 6.27' LT	MH TO BE REM	705.33		695.03
6	14+18.00, 1.29' RT	MH TY A 4' DIA TY1 F&CL	705.18	696.08	693.22
7	14+42.79, 21.70' RT	MH TY A 6' DIA TY1 F&CL	705.40	694.57	692.40
8	14+75.3, 48.5' RT	48" FLAR END SEC			692.00
9	14+63.7, 49.5' RT	54" COLLAR		692.00	692.00
10	14+79.3, 62.4' RT	54" FLAR END SEC			692.00
11	15+62.19, 16.14' LT	MH TO BE ADJ	705.42(E), 706.19(P)		
12	15+28.00, 37.80' RT	MH TY A 5' DIA TY1 F&CL	704.70	696.55	692.13
13	15+14.25, 37.80' RT	36" FLAR END SEC			692.00
14	15+39.50, 15.90' LT	TYPE C INLET 609006-02	705.49	703.49	703.27
15	15+45.00, 16.06' RT	TYPE C INLET 609006-02	705.52	703.78	703.49
16	14+45.00, 15+94' LT	TYPE C INLET 609006-02	705.10	703.10	702.91
17	14+41.00, 16.36' RT	TYPE C INLET 609006-02	705.12	703.39	703.10

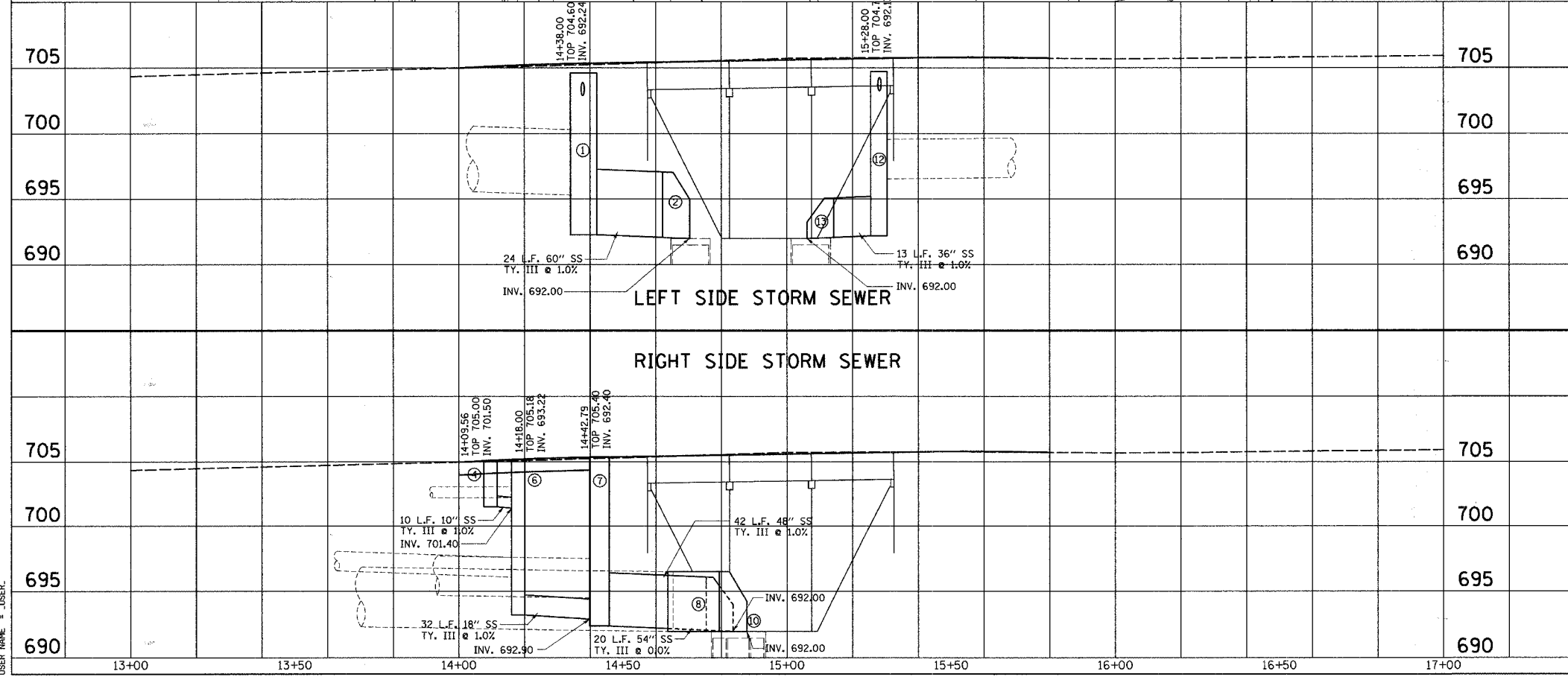
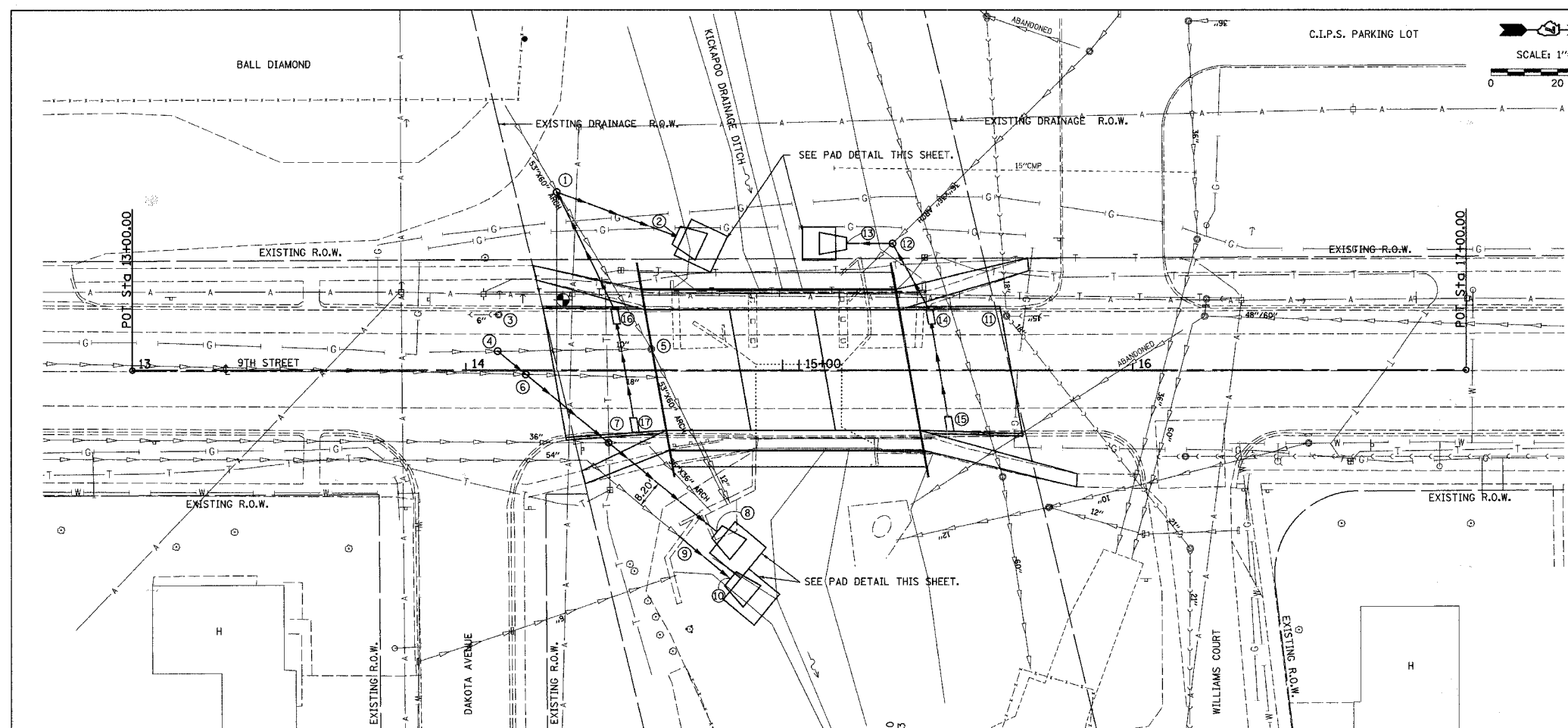
STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	LOW STR. MATERIAL C.Y.	INVERT ELEVATION		STORM SEWERS TYPE III (RCCP)						
			UPPER END	LOWER END	12" L.F.	18" L.F.	36" L.F.	48" L.F.	54" L.F.	60" L.F.	
1	2	-	693.24	693.00						38	
4	6	2	701.50	701.40	10						
6	7	53.5	694.22	693.90		32					
7	8	33.5	693.40	693.00				42			
9	10	-	692.00	692.00					20		
12	13	-	693.13	693.00			13				
15	14	3.8	703.78	703.49	29						
14	12	1.6	703.49	703.27	23						
17	16	3.8	703.39	703.10	29						
16	1	1.6	703.10	702.91	39						
TOTALS			100		130	32	13	42	20	38	

STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	STORM SEWERS SCHEDULE REMOVAL			
		10" L.F.	18" L.F.	36" X 36"	53" X 60"
1	OUTLET				
4	5	47			107
6	53" X 60"		42		
7	OUTLET			40	
12	OUTLET			14	
TOTALS		47	42	54	107

- NOTES
- ALL STORM SEWERS SHALL BE CLASS A RCCP.
 - ALL MANHOLES SHALL BE TYPE A.
 - OMIT THE TOE END BLOCK ON ALL FLARED END SECTIONS SEE PAD DETAIL THIS SHEET.



PT.	LOCATION	DESCRIPTION	PAD SIZE	CLASS SI CONC. CUYD	REINFORCEMENT BARS LBS
2	14+62.00, 35.66' LT	60" FLAR END SEC	12X12	4.4	434
8	14+75.3, 48.5' RT	48" FLAR END SEC	12X12	4.4	434
10	14+79.3, 62.4' RT	54" FLAR END SEC	12X12	4.4	434
13	15+14.25, 37.80' RT	36" FLAR END SEC	8X8	2.4	256
TOTAL				15.6	1558



PLAN
DATE: _____ BY: _____
REVISIONS:
NO. DESCRIPTION
1. _____

PROFILE
DATE: _____ BY: _____
REVISIONS:
NO. DESCRIPTION
1. _____

PLOT DATE = 10/25/2007
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PLOTTER = HP DesignJet 500 / 7 IN.
USER NAME = JUSER

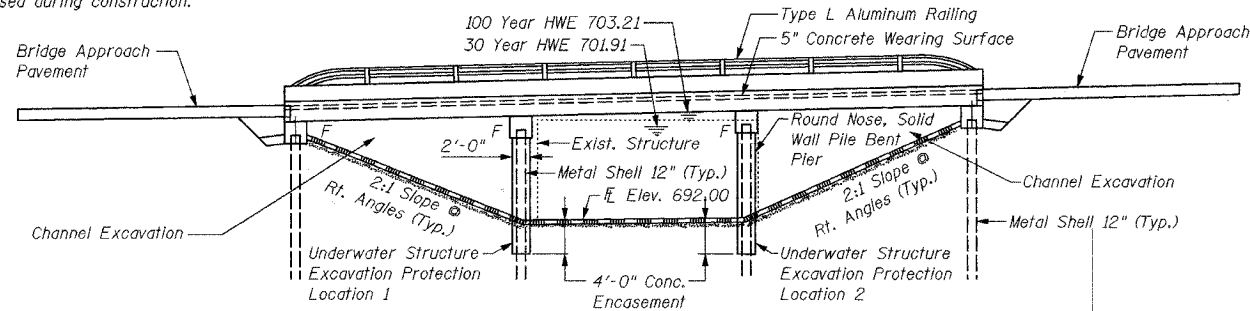
RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9th	05-00142-00-BR	COLES	16	6
STA. 14+00			TO STA. 15+80	

Sheet 1 of 10 Sheets

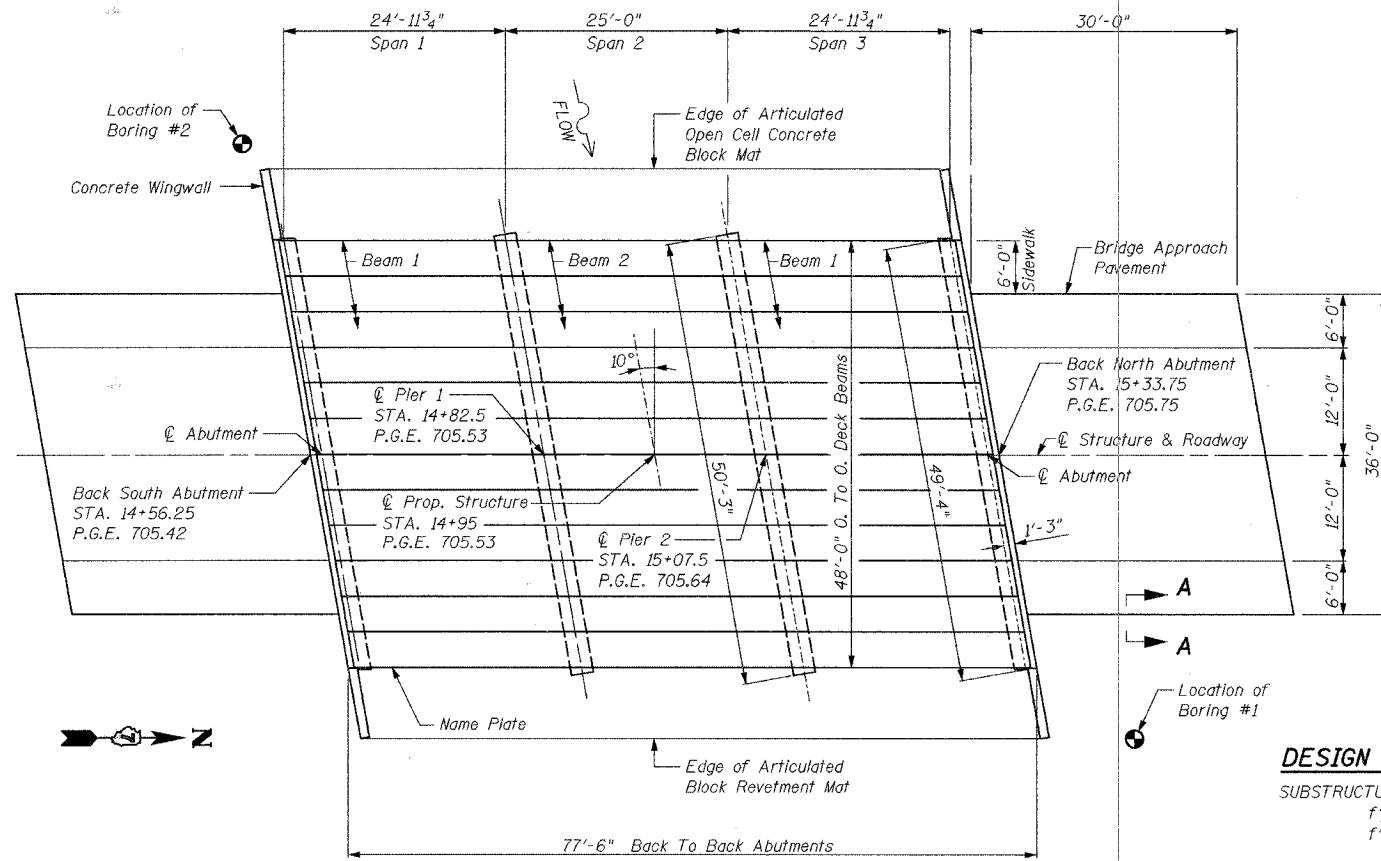
Benchmark: Spike in power pole near southwest corner of bridge. Elevation 707.67

Existing Structure: S.N. 015-3037 to be removed. The existing structure was built as a single span, concrete slab bridge on steel stringers with closed concrete abutments. The existing structure was 22'-0" out to out and 27'-0" back to back of abutments. The existing structure was widened by 22'-0" as Section 41-B-CS in 1962. The addition was built as a three span concrete deck with steel stringers and open abutments.

Road shall be closed during construction. No salvage.



ELEVATION
Scale: 1" = 10'



PLAN
Scale: 1" = 10'

KICKAPOO CREEK
BUILT 20__ BY
CITY OF MATTOON
SEC. 05-00142-00-BR
PROJECT NO. BRM-5042(15)
STATION 14+95
STR. NO. 015-6339 LOADING HS20

LETTERING FOR NAME PLATE
(SEE STD 515001)

WATERWAY INFORMATION

Drainage Area = 3.0 Sq. Mi.		Low Grade Elev. 703.5 ft @ Sta. 14+95								
Flood	Freq. Yr.	Q cfs	Opening Sq. Ft.		Nat. H.W.E.		Head - ft.		Headwater Elev. - ft.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	30	1847	231	492	701.91	0.5	0	702.39	701.95	
Base	100	2463	280	586	703.21	1.2	0	704.43	703.23	
Overtopping										
Max. Calc.	500	3422	280	625	704.93	0.2	0.1	705.15	704.97	

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	S. Abut.	Pier 1	Pier 2	N. Abut.
	700.55	688.00	688.00	700.88

DESIGN STRESSES

SUBSTRUCTURE, SUPERSTRUCTURE
 $f'_y = 60,000$ p.s.i. (Reinforcement)
 $f'_c = 3,500$ p.s.i.

P.P.C. DECK BEAMS
 $f'_y = 60,000$ p.s.i. (Reinforcement)
 $f'_c = 5,000$ p.s.i.
 $f'_{cl} = 4,000$ p.s.i.
 $f'_s = 270,000$ p.s.i. ($\frac{1}{2}$ " ϕ strands)
 $f'_{sl} = 189,000$ p.s.i. ($\frac{1}{2}$ " ϕ strands)

DESIGN LOADING

HS 20-44

DESIGN SPECIFICATION

2002 A.A.S.H.T.O., Standard Specification for Highway Bridges

SEISMIC DATA

Seismic Performance Category (SPC) = A
 Bedrock Acceleration Coefficient (A) = 0.056
 Site Coefficient (S) = 1.0

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment (Special)	Cu. Yds.		58	58
Pipe Underdrains for Structures 4"	Lin. Ft.		150	150
Articulated Block Revetment Mat	Sq. Yds.		551	551
Filter Fabric	Sq. Yds.		551	551
Coarse Aggregate Backfill (Special)	Cu. Yds.		18	18
Removal of Existing Structure	Each	1		1
Channel Excavation	Cu. Yds.		704	704
Structure Excavation	Cu. Yds.		146	146
Concrete Structures	Cu. Yds.		114.5	114.5
Concrete Superstructure	Cu. Yds.	45.0		45.0
Bridge Deck Grooving	Sq. Yds.	288		288
Protective Coat	Sq. Yds.	444		444
Concrete Wearing Surface	Sq. Yds.	305		305
Reinforcement Bars (Epoxy Coated)	Lbs.	12835	10680	23515
Aluminum Railing, Type L	Lin. Ft.	151		151
Name Plate	Each	1		1
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	3644		3644
Furnishing Metal Shell Piles 12 inch	Lin. Ft.		1340	1340
Driving Piles	Lin. Ft.		1340	1340
Test Pile Metal Shell	Each		2	2
Concrete Sealer	Sq. Ft.		3035	3035
Underwater Structure Excavation Protection Location-1	Each		1	1
Underwater Structure Excavation Protection Location-2	Each		1	1

GENERAL NOTES

- The contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at substructures specified or approved by the engineer before ordering the remainder of the piles.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (II Modified).
- Reinforcement bars designated (E) shall be epoxy coated.
- Concrete Sealer shall be applied to the designated areas of the abutments and piers.
- Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the engineer.

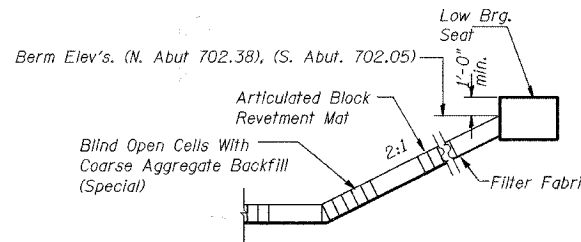
INDEX OF SHEETS

- General Plan and Elevation
- Deck Details
- Superstructure Details
- Type L Aluminum Railing
- Deck Beam 1 Details
- Deck Beam 2 Details
- Abutment Details
- Pier Details
- Soil Boring #1 Logs
- Soil Boring #2 Logs



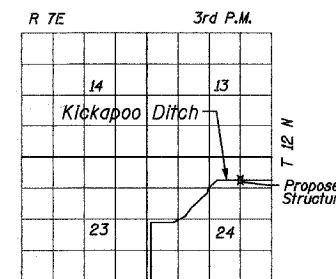
SECTION A-A

The curb shall be poured monolithic with the approach slab.



SLOPE WALL DETAIL

Not to Scale



LOCATION SKETCH

This structure has been designed to be stable for scour conditions in accordance with the FHWA Technical Advisory - T 5140.23, "Evaluating scour at Bridges" and hydraulic engineering circular 18 - EVALUATING SCOUR AT BRIDGES

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 the requirements of the current AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES



MARTIN J. SILVESTER
STRUCTURAL ENGINEER
LICENSE EXP. DATE: 11-30-08

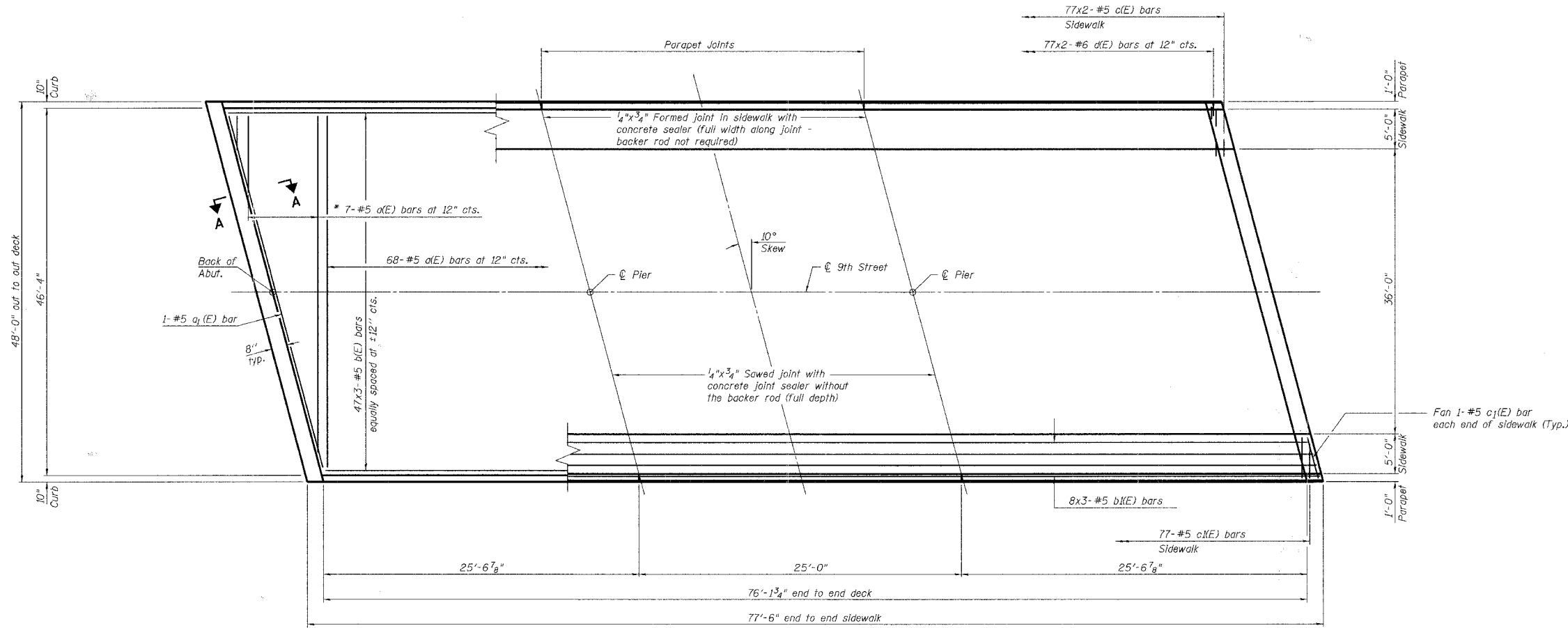
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
GENERAL PLAN AND ELEVATION
 9th St. Over Kickapoo Creek
 SECTION 05-00142-00-BR
 CITY OF MATTOON STA. 14+95
 STRUCTURE NO. 015-6339

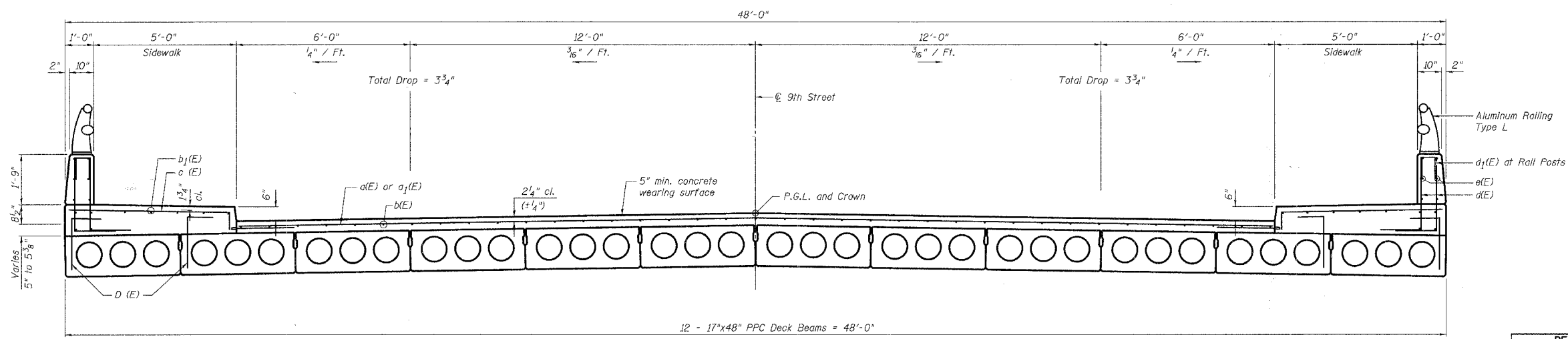
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 DATE CHECKED BY ---

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9th	05-00142-00-BR	COLES	16	7
STA. 14+00		TO STA. 15+80		

* Cut bars in field to fit skew and use the remainder of bars at the other end of deck.



PLAN



CROSS SECTION

MINIMUM BAR LAP

#5 bar = 1'-8"

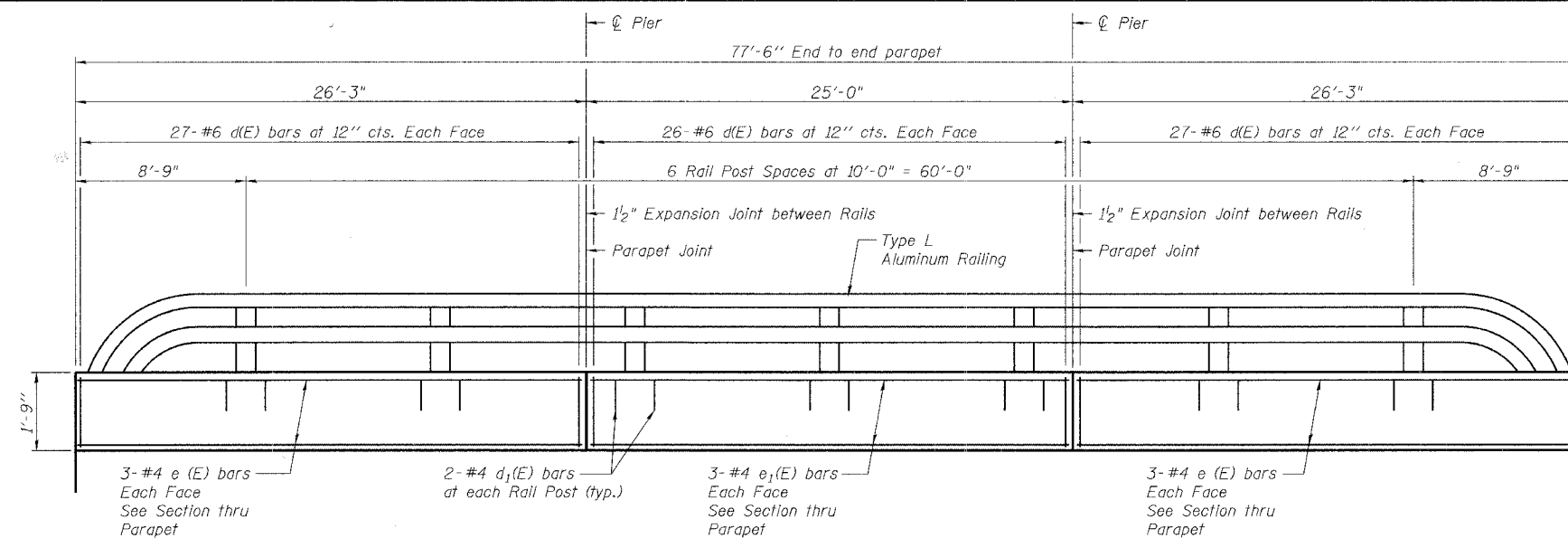
Notes:
See Sheet 3 of 10 for superstructure details and Bill of Material.
Bars indicated thus 47 x 3-#5 etc. indicates 47 lines of bars with 3 lengths per line.
See Sheet 3 of 10 for parapet reinforcement.

REVISIONS	
NAME	DATE

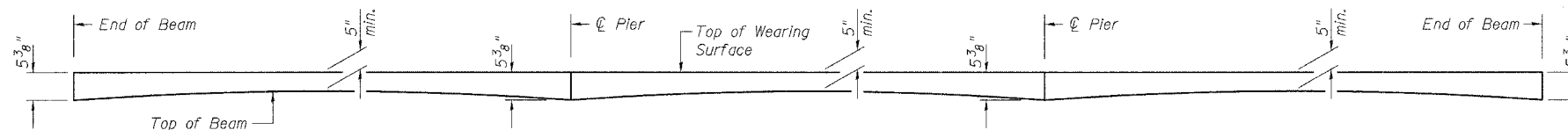
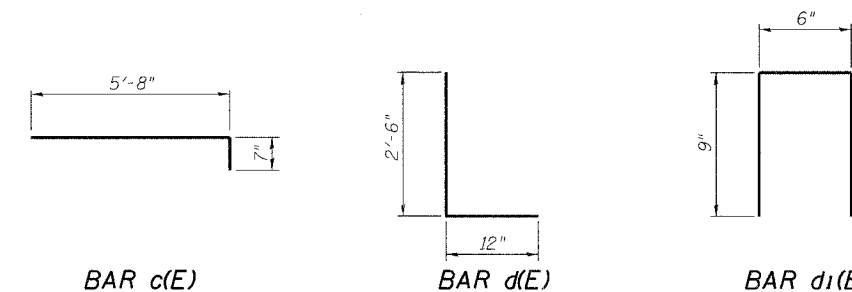
ILLINOIS DEPARTMENT OF TRANSPORTATION
DECK DETAILS
9th St. Over Kickapoo Creek
SECTION 05-00142-00-BR
CITY OF MATTOON STA. 14+95
STRUCTURE NO. 015-6339

SCALE: N.T.S. DRAWN BY
DATE CHECKED BY

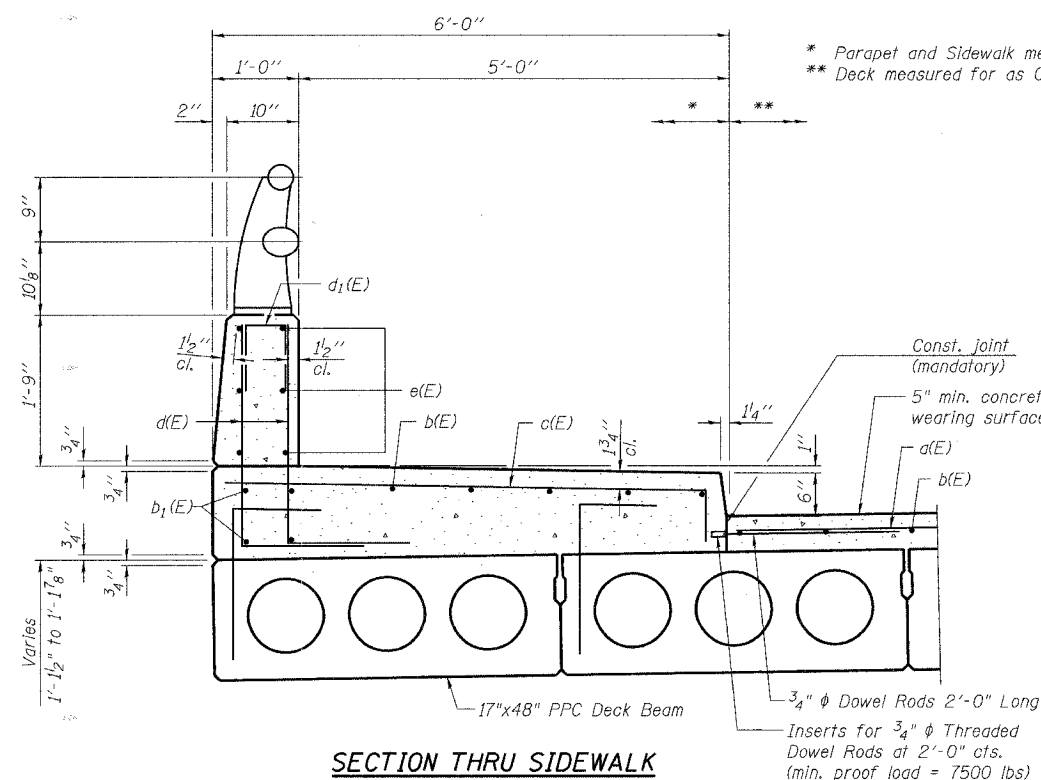
RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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STA. 14+00		TO STA. 15+80		



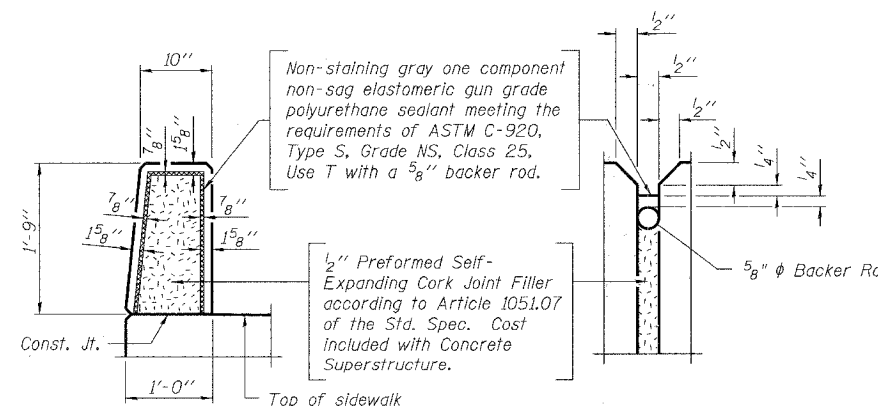
INSIDE ELEVATION OF PARAPET



REINFORCED CONCRETE WEARING SURFACE PROFILE



SECTION THRU SIDEWALK



PARAPET JOINT DETAILS

**SUPERSTRUCTURE
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape	
a(E)	75	#5	46'-0"	—	
a1(E)	2	#5	46'-8"	—	
b(E)	141	#5	26'-5"	—	
b1(E)	48	#6	27'-0"	—	
c(E)	158	#5	6'-3"	—	
d(E)	308	#6	3'-6"	L	
d1(E)	28	#4	2'-0"	Π	
e(E)	24	#4	26'-0"	—	
e1(E)	12	#4	25'-4"	—	
Reinforcement Bars, Epoxy Coated				Pound	12835
Concrete Superstructure				Cu. Yds.	45.0
Concrete Wearing Surface				Sq. Yds.	305

NOTES

The curb inserts and threaded dowel rods may be either epoxy coated or galvanized and the cost shall be included with Concrete Superstructure.

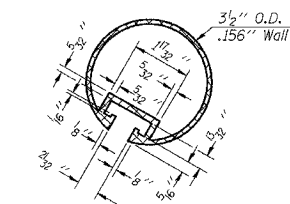
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE DETAILS
9th St. Over Kickapoo Creek
SECTION 05-00142-00-BR
CITY OF MATTOON STA. 14+95
STRUCTURE NO. 015-6339

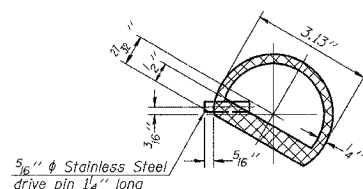
SCALE: N.T.S.
DATE

DRAWN BY
CHECKED BY

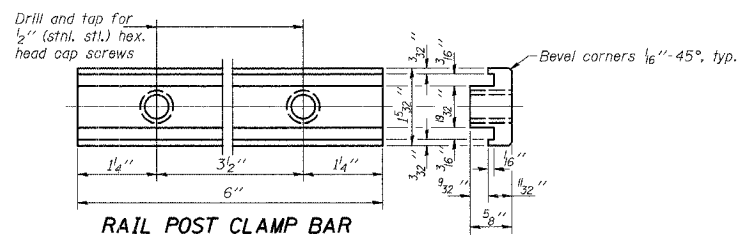
RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9th	05-00142-00-BR	COLES	16	9
STA. 14+00		TO STA.15+80		



SECTION THRU TOP RAIL

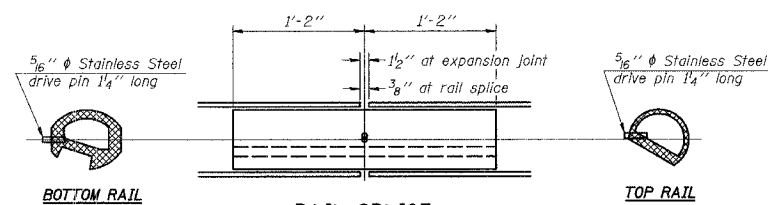


SECTION THRU SPLICE



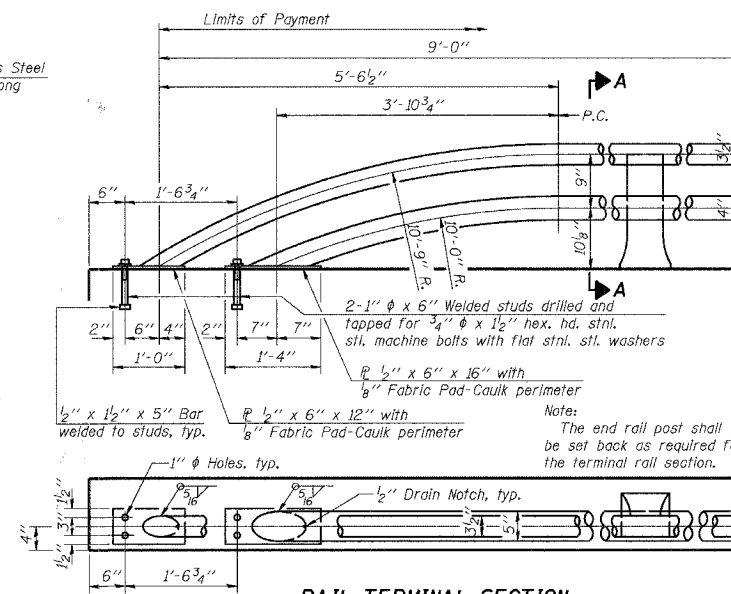
RAIL POST CLAMP BAR

For Top Rail

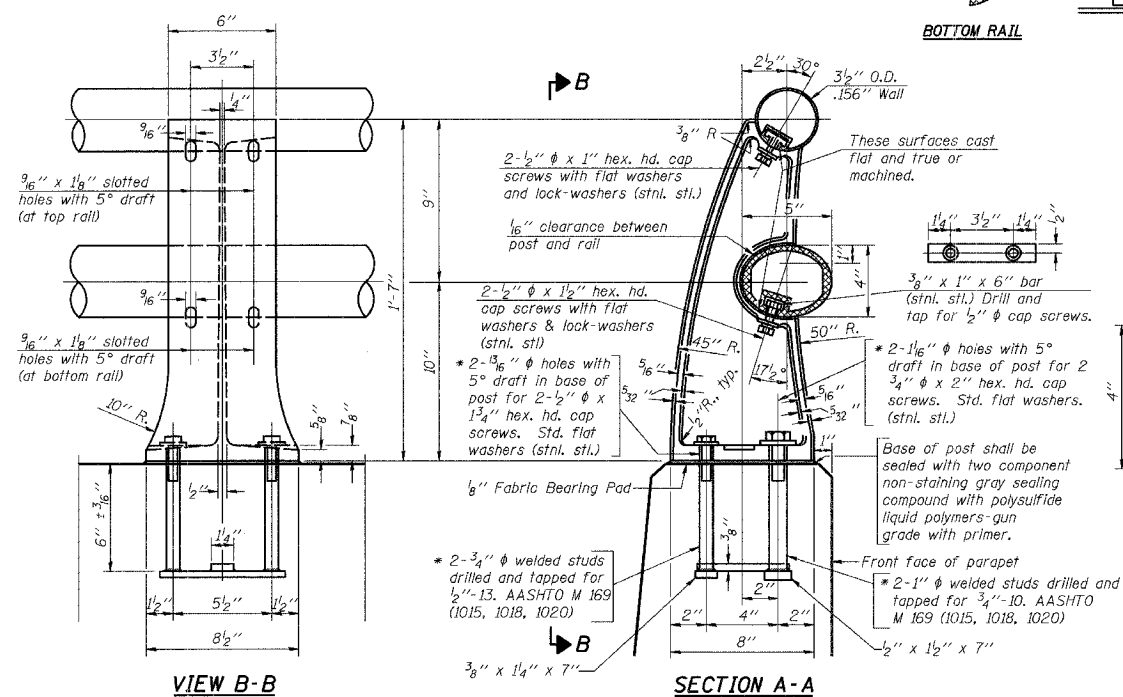


RAIL SPLICE

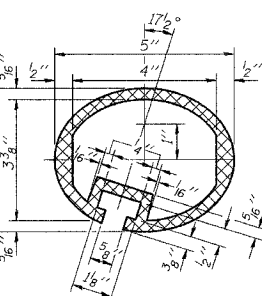
Notes:
 All Posts shall be normal to parapet.
 All Aluminum Alloy Extruded Rail shall be supplied in modular lengths of 30 feet, except at the end of bridge or over open joints in bridge deck where the rail shall be attached to a minimum of 2 posts. If the rail is on a horizontal curve of 2300 Foot radius or less, the modular lengths may be reduced but shall be attached to a minimum of 2 posts.
 All joints in rail shall be spliced per detail.
 Provide 1-1/2" and 2-1/16" Aluminum Shims for 25% of the Posts.
 Rail elements shall be parallel to Grade-high spots will be ground and low spots shimmed.
 Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for ALUMINUM RAILING, TYPE L.
 Aluminum alloy rail shall conform to ASTM B 221 alloy 6061-T6 or 6351-T5 with min. yield 35 ksi, min. tensile 38 ksi, and elongation of 10% in 2 inches.



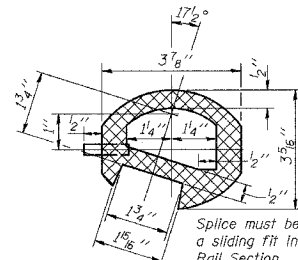
RAIL TERMINAL SECTION



RAIL POST DETAILS



SEC. THRU ELLIPTICAL RAIL SECTION



SEC. THRU SPLICE

* In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and epoxy grouting stainless steel anchor rods of the same diameter and grade as the specified cap screws. Embedment shall be according to the manufacturer's specifications.

BILL OF MATERIAL

Item	Unit	Quantity
Aluminum Railing, Type L	Foot	151

TYPE L ALUMINUM RAILING

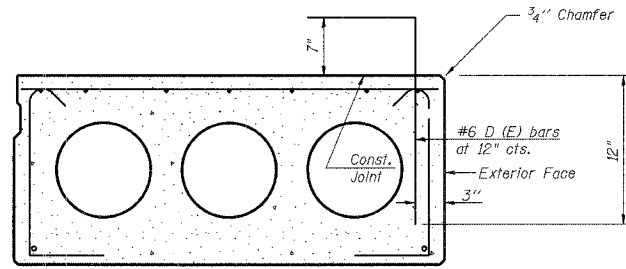
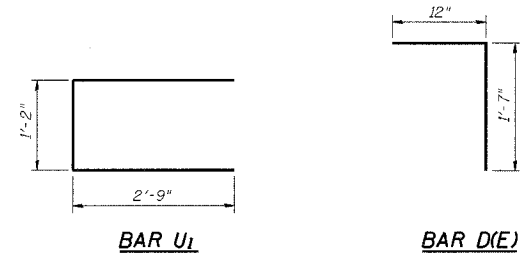
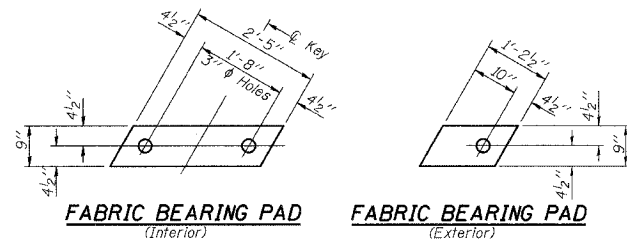
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 TYPE L ALUMINUM RAILING
 9th St. Over Kickapoo Creek
 SECTION 05-00142-00-BR
 CITY OF MATTOON STA. 14+95
 STRUCTURE NO. 015-6339

SCALE: N.T.S.
 DATE

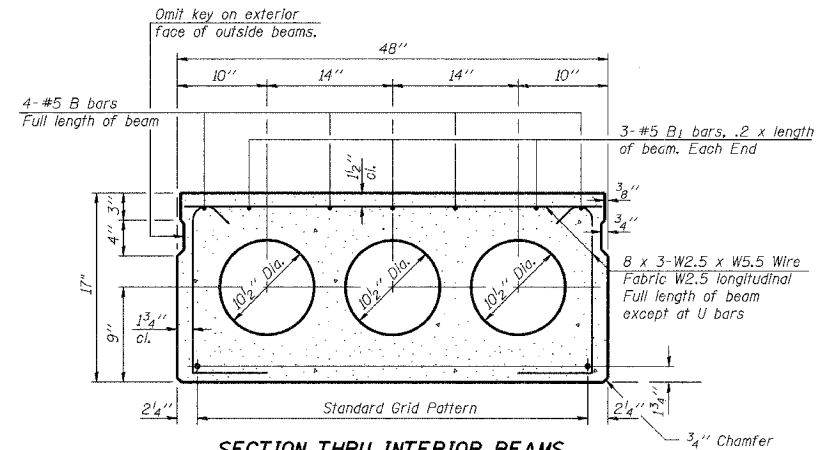
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RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9th	05-00142-00-BR	COLES	16	10
STA. 14+00		TO STA.15+80		



SECTION THRU EXTERIOR BEAMS

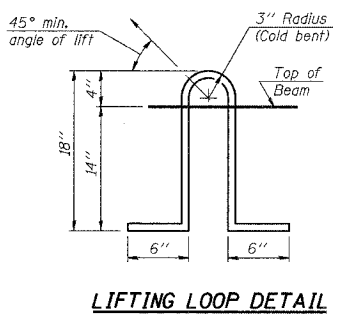
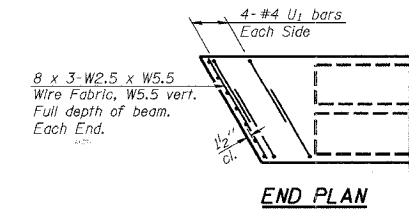
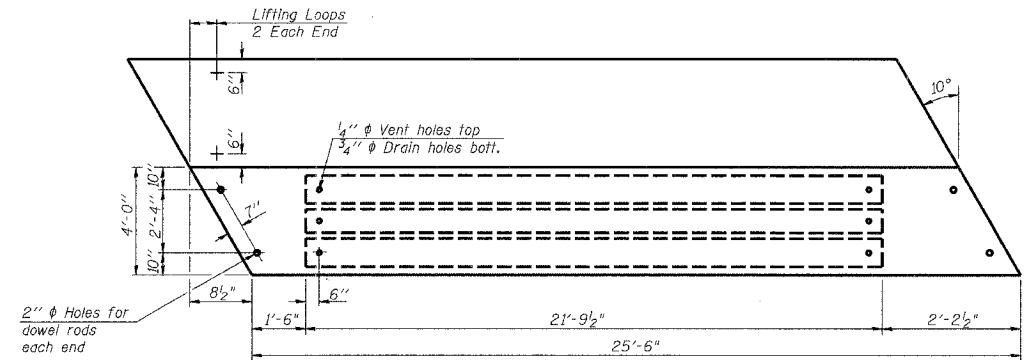
See Section Thru Interior Beams for strand pattern, dimensions and bar call outs. D (E) bars shall be placed in the two exterior beams each side of superstructure.



SECTION THRU INTERIOR BEAMS

1/2" Strands, Each Strand Stressed to 30,900 Lbs.
 9 - Strands 1 3/4" up

Note:
 Place strands symmetrically about C of beam.



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. Lifting loops shall be 2 - 1/2" phi-270 ksi strands, as shown.
 Non prestressing steel shall conform to AASHTO M-31, M-42 or M-53 Grade 60.
 The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.
 Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.
 Corrosion Inhibitor, as covered in Art. 1020.05(b)(12) of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
 Required Release Strength, f'ci, shall be 4,000 p.s.i.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
B	96	#5	25'-2"	—
B1	144	#5	5'-0"	—
Bx(E)	4	#5	25'-2"	—
D (E)	208	#6	2'-7"	┘
U1	384	#4	6'-8"	┘
Precast Prestressed Conc. Deck Bms.		Sq. Ft.	2,448	

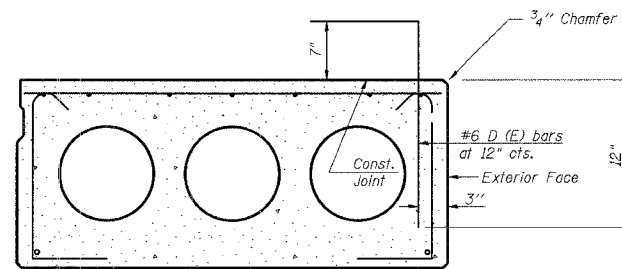
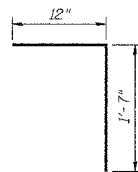
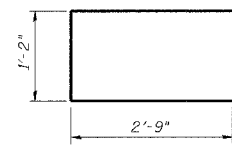
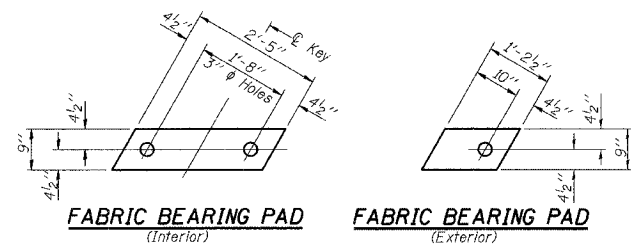
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
DECK BEAM 1 DETAILS
 9th St. Over Kickapoo Creek
 SECTION 05-00142-00-BR
 CITY OF MATTOON STA. 14+95
 STRUCTURE NO. 015-6339

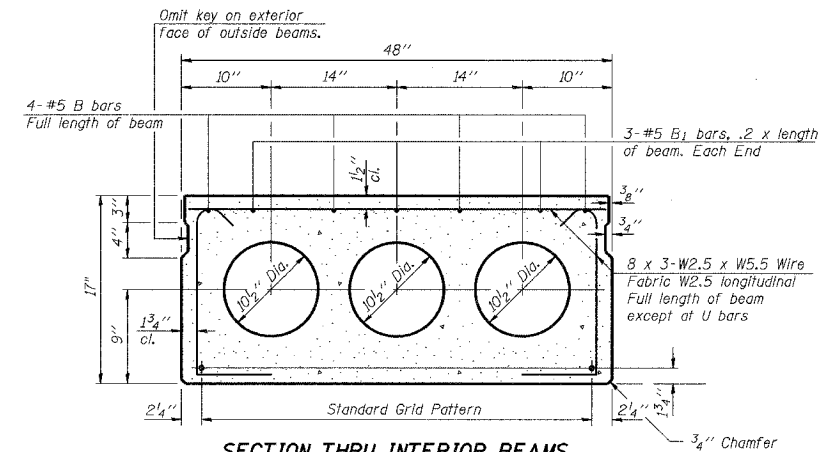
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 USER NAME = JUSER

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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STA. 14+00		TO STA. 15+80		

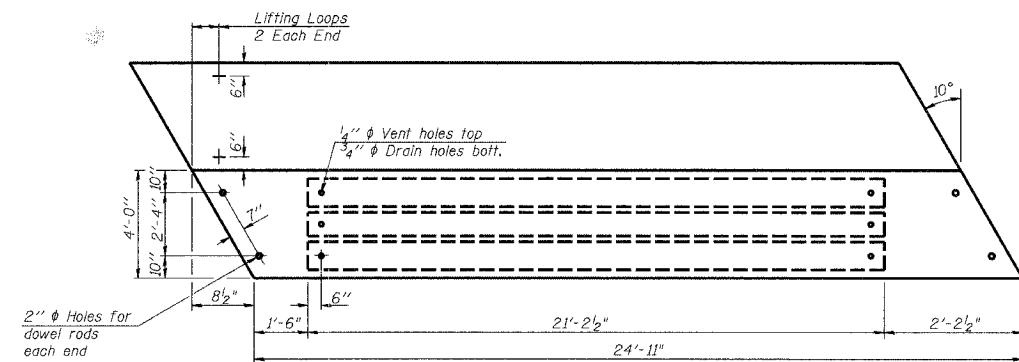


SECTION THRU EXTERIOR BEAMS
 See Section Thru Interior Beams for strand pattern, dimensions and bar call outs. D (E) bars shall be placed in the two exterior beams each side of superstructure.

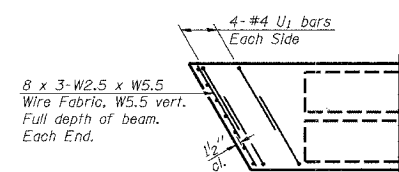


SECTION THRU INTERIOR BEAMS
 1/2" Strands, Each Strand Stressed to 30,900 Lbs.
 9 - Strands 1 3/4" up

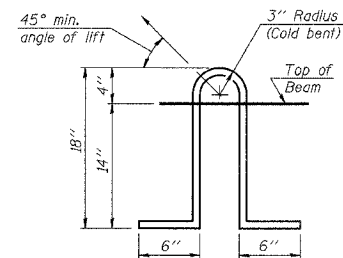
Notes:
 Place strands symmetrically about center of beam.



PLAN



END PLAN



LIFTING LOOP DETAIL

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. Lifting loops shall be 2 - 1/2" #270 ksi strands, as shown.
 Non prestressing steel shall conform to AASHTO M-31, M-42 or M-53 Grade 60.
 The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.
 Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.
 Corrosion Inhibitor, as covered in Art. 1020.05(b)(12) of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
 Required Release Strength, f'ci, shall be 4,000 p.s.i.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
B	48	#5	24'-7"	—
B1	72	#5	5'-0"	—
B(E)	2	#5	24'-7"	—
D (E)	100	#6	2'-7"	7
U1	192	#4	6'-8"	□
Precast Prestressed Conc. Deck Bms.		Sq. Ft.	1196	

REVISIONS	
NAME	DATE

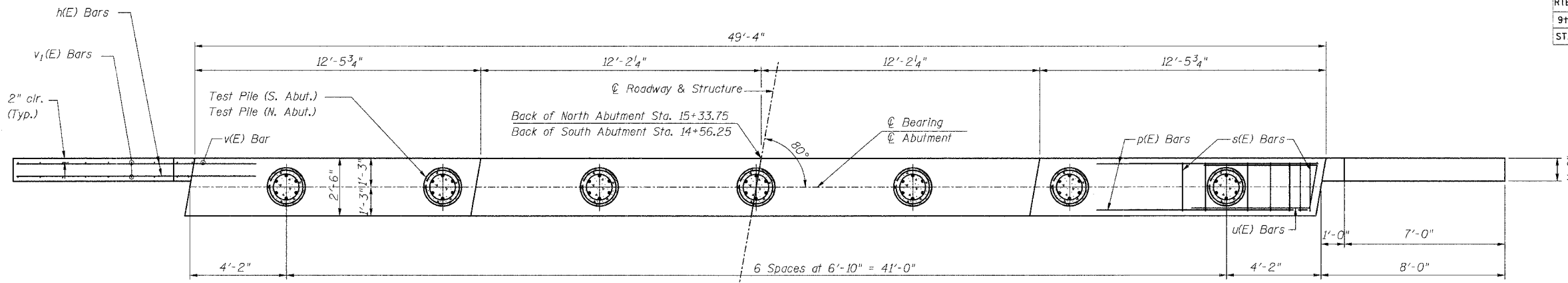
ILLINOIS DEPARTMENT OF TRANSPORTATION
DECK BEAM 2 DETAILS
 9th St. Over Kickapoo Creek
 SECTION 05-00142-00-BR
 CITY OF MATTOON STA. 14+95
 STRUCTURE NO. 015-6339

SCALE: N.T.S. DRAWN BY
 DATE CHECKED BY

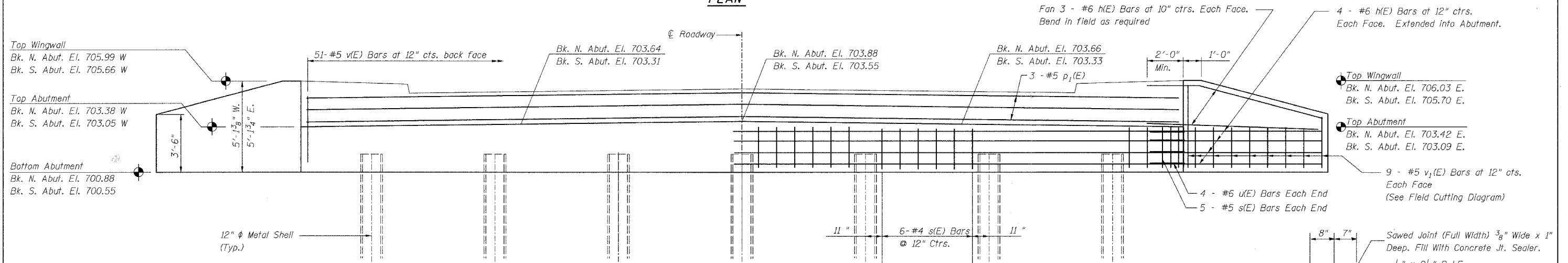
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 USER NAME = JGBER

THE UPCHURCH GROUP HILLSIDE, IL. (708) 449-2321
 architects engineers surveyors MATTOON, IL. (217) 235-3177

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9th	05-00142-00-BR	COLES	16	12
STA. 14+00		TO STA.15+80		

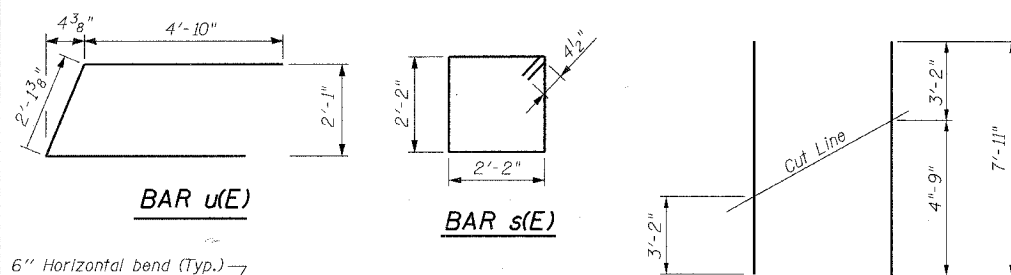


PLAN



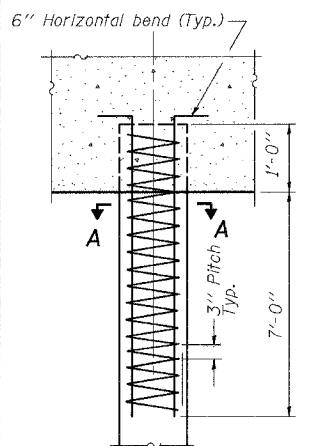
ELEVATION

(Looking in direction of increasing station)



FIELD CUTTING DIAGRAM

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



DETAIL OF REINFORCEMENT FOR METAL SHELLS AT ABUTMENTS

The cost of Reinforcement is included with furnishing piles.

BILL OF MATERIAL
(INCLUDES BOTH ABUTMENTS AND FOUR WINGS)

Bar	No.	Size	Length	Shape
h(E)	56	#5	10'-6"	
p(E)	14	#7	53'-0"	
p ₁ (E)	6	#5	49'-0"	
s(E)	92	#4	9'-5"	
u(E)	16	#5	12'-3"	
v(E)	102	#5	4'-0"	
v ₁ (E)	36	#5	7'-11"	
v ₂ (E)	102	#5	3'-7"	
Concrete Structures		Cu.Yd.	30.4	
Reinforcement Bars, Epoxy Coated		Lb.	4210	
Furnishing Metal Shell Piles 12"		Ft.	510	
Driving Piles		Ft.	510	
Test Pile Metal Shells		Each	2	
Structure Excavation		Cu.Yd.	101	
Concrete Sealer		Sq.Ft.	345	

All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101)

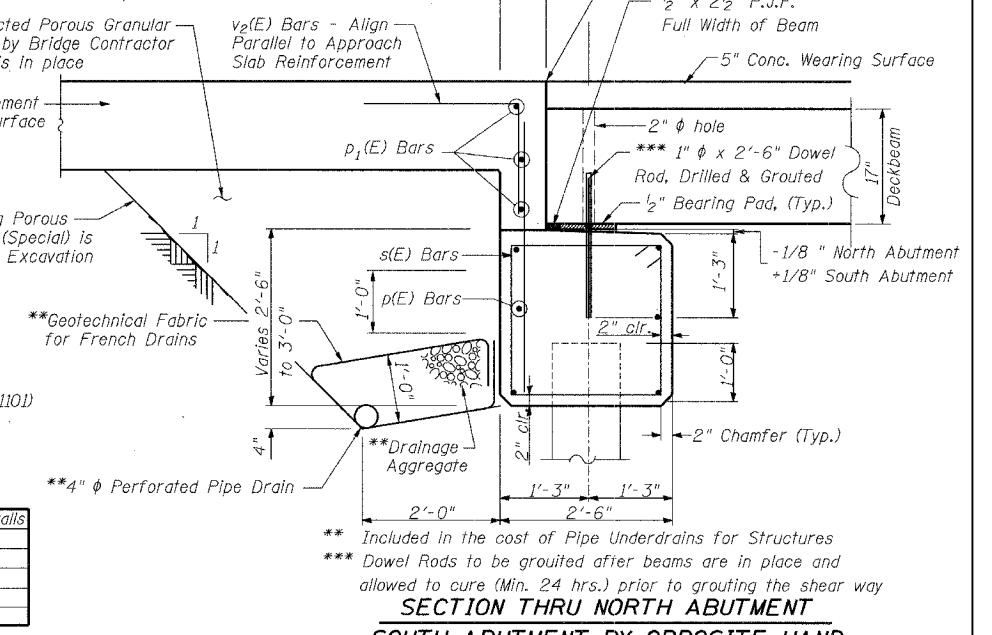
PILE DATA

Type & Size: Metal Shell - 12 in. dia x 0.250 in. walls
No. Required: 14*
Nominal Required Bearing: 270 kips
Allowable Resistance Available: 90 kips
Est. Length (S. Abut.): 47 Ft.
Est. Length (N. Abut.): 38 Ft.

*Includes one Test Pile at North Abutment and one Test Pile at South Abutment

NOTES

The metal shell piles shall be according ASTM A 252 Grade 3
When test piles are specified, the following note shall be added:
The test pile(s) shall be driven to 110% of the normal required bearing indicated in the pile data information.
Concrete Sealer shall be applied to all exposed areas of abutments.



SECTION THRU NORTH ABUTMENT SOUTH ABUTMENT BY OPPOSITE HAND

REVISIONS	
NAME	DATE

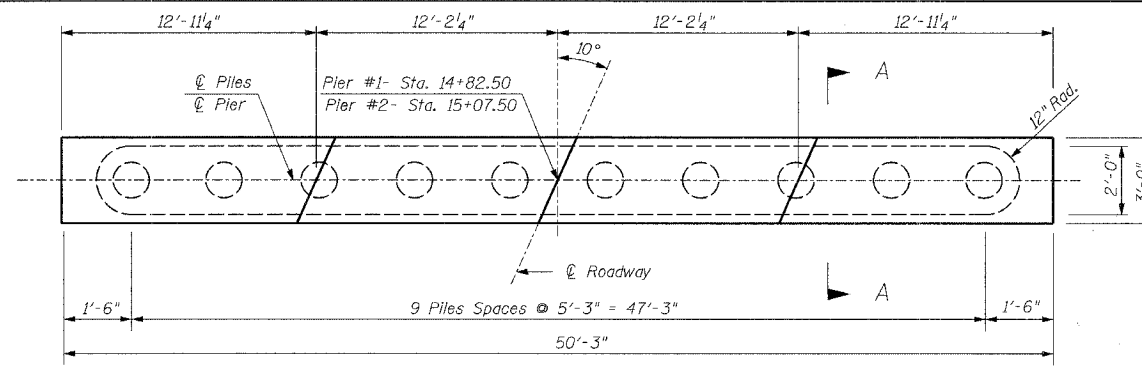
ILLINOIS DEPARTMENT OF TRANSPORTATION
ABUTMENT DETAILS
9th St. Over Kickapoo Creek
SECTION 05-00142-00-BR
CITY OF MATTOON STA. 14+95
STRUCTURE NO. 015-6339

SCALE: N.T.S.
DATE

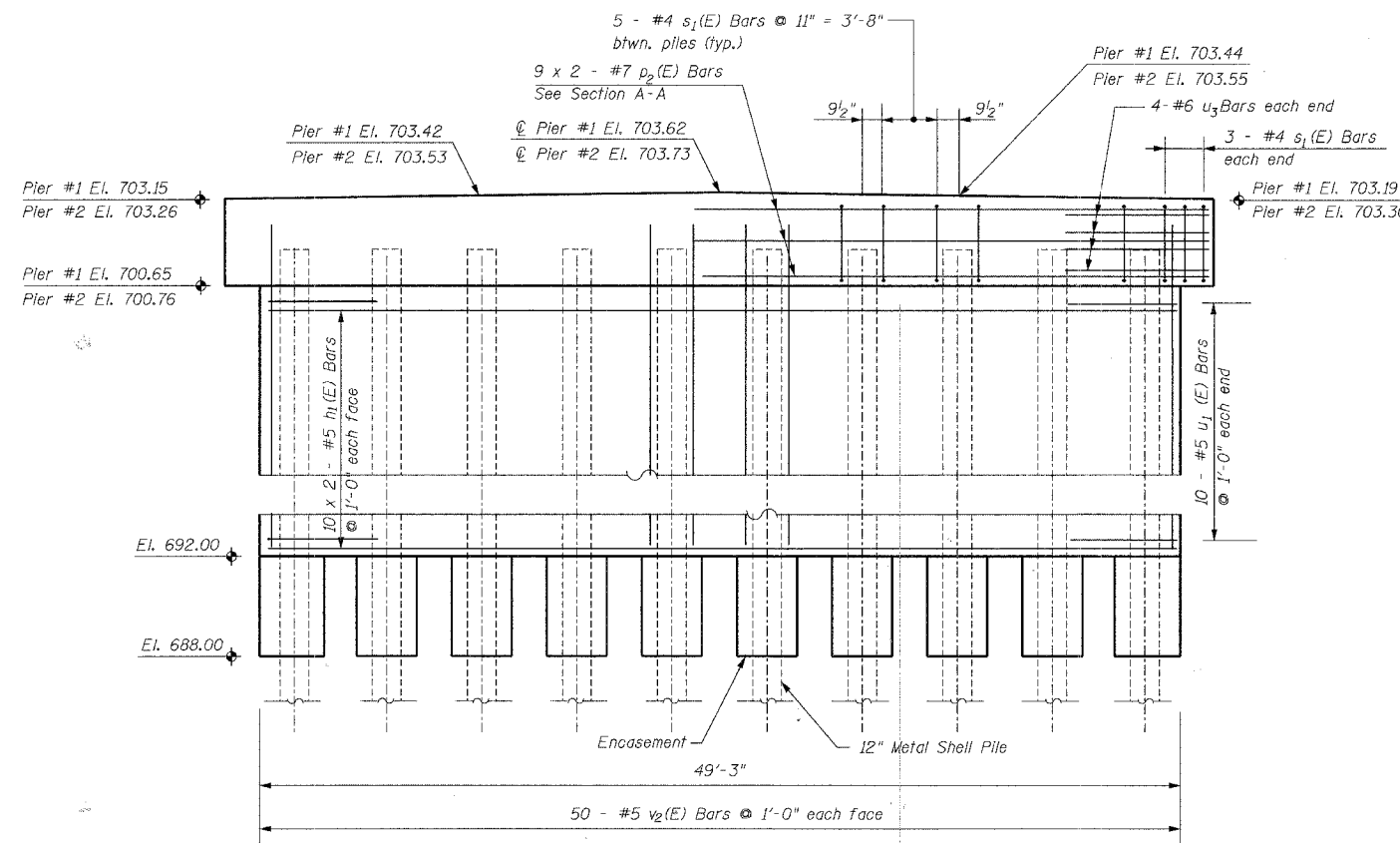
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RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9th	05-00142-00-BR	COLES	16	13
STA. 14+00			TO STA.15+80	

Sheet 8 of 10 Sheets

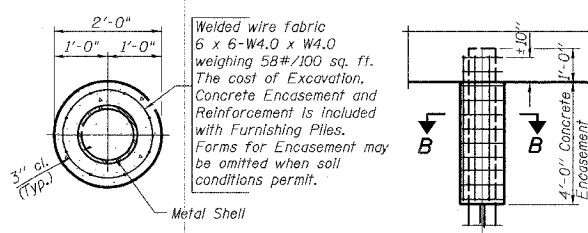


PLAN



ELEVATION

(Looking in direction of Increasing Station)

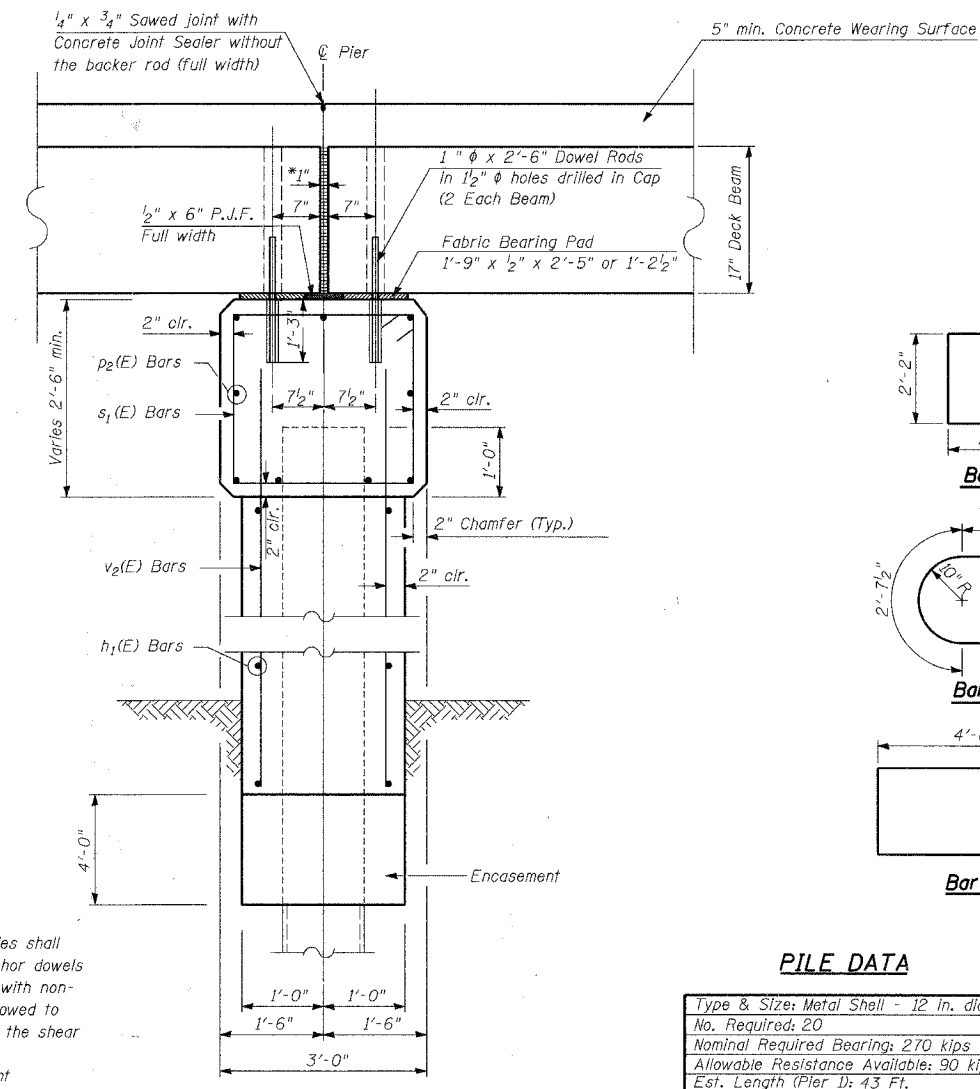


SECTION B-B

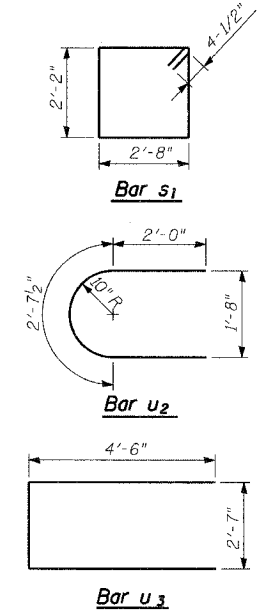
PILE ENCASEMENT DETAIL

BILL OF MATERIAL
(INCLUDES BOTH PIERS)

Bar	No.	Size	Length	Shape
h ₁ (E)	80	#5	24'-6"	—
p ₂ (E)	18	#7	26'-4"	—
s ₁ (E)	102	#4	10'-5"	□
u ₁ (E)	40	#5	6'-8"	U
u ₂ (E)	16	#6	11'-7"	U
v ₂ (E)	200	#5	10'-6"	—
Concrete Structures			Cu.Yd.	84.1
Reinforcement Bars,			Lbs.	6,470
Epoxy Coated				
Furnishing Metal Shell Piles 12"			Ft.	830
Driving Piles			Ft.	830
Structure Excavation			Cu.Yd.	45
Underwater Structure Excavation			Each	1
Protection Location 1 (Pier 1)				
Underwater Structure Excavation			Each	1
Protection Location 2 (Pier 2)				
Concrete Sealer			Sq.Ft.	2690



SECTION A-A



PILE DATA

Type & Size: Metal Shell - 12 in. dia x 0.250 in. walls
No. Required: 20
Nominal Required Bearing: 270 kips
Allowable Resistance Available: 90 kips
Est. Length (Pier 1): 43 Ft.
Est. Length (Pier 2): 40 Ft.

Notes:
After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
All horizontal dimensions are at right angles to beam ends.
The metal shell piles shall be according to ASTM A252 Grade 3.
Reinforcement bars indicated thus 9 x 2-#7 etc. indicates 9 lines of bars with 2 lengths per line.
Space cap reinforcement to miss dowel rods.
Concrete Sealer shall be applied to all exposed areas of piers.

* 1" Jt. shall be filled with non-shrink grout. 1" dimension may vary to accommodate tolerance in beam lengths.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
PIER DETAILS
9th St. Over Kickapoo Creek
SECTION 05-00142-00-BR
CITY OF MATTOON STA. 14+95
STRUCTURE NO. 015-6339

SCALE: N.T.S. DRAWN BY ALB
DATE CHECKED BY

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CONTRACT NO. 95505			
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS
9th	05-00142-00-BR	COLES	16
STA. 13+50.00		TO STA. 16+00.00	
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		

