STATE OF ILLINOIS

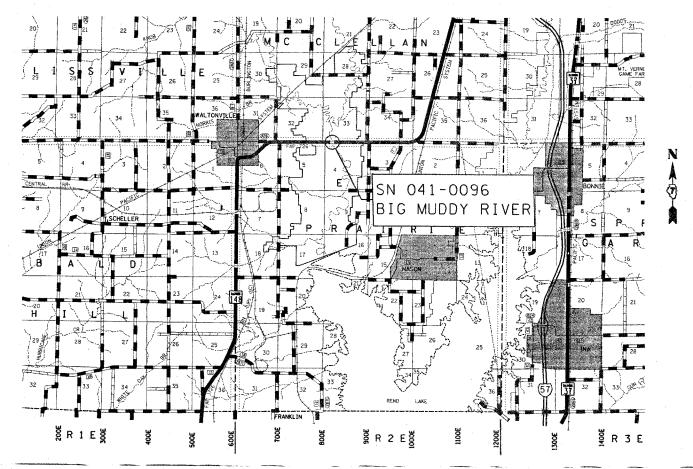
**DEPARTMENT OF TRANSPORTATION** 

**DIVISION OF HIGHWAYS** 

**PROPOSED** HIGHWAY PLANS

**FAP ROUTE 726 (IL 148)** D-7 JOINT REPAIR 2005-1 **JEFFERSON COUNTY** 

C-97-094-04



ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS

SEE SHEET 2 FOR INDEX OF SHEETS

JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION 1-800-892-0123

ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

CONTRACT NO. 74073

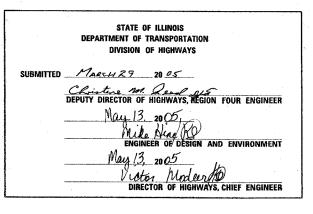
2004 ADT = 2650

GROSS LENGTH = 646.7 FT NET LENGTH = 646.7 FT

CONTRACT NO. 74073 COUNTY TOTAL SHEET NO. SECTION JEFFERSON 10 1 . D-7 JOINT REPAIR' 2005-1

D-97-054-04





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# GENERAL NOTES

This section shall be constructed in accordance with the plans; the STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, adopted January 1, 2002; the SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS, adopted January 1, 2005; and the SPECIAL PROVISIONS included in the proposal.

This project is located south of Mt. Vernon on IL. Route 148 in Jefferson County. The project includes the following structure: Structure Number 041-0096 over the Big Muddy River.

The work included in this project consists of the removal and replacement of the existing neoprene expansion joints, pavement striping, and all other work necessary to complete this

The reflective lense of all raised reflective markers located between the stop bars and the end of the approach pavements shall be removed prior to stage I construction. This work will be paid for at the contract unit price for RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL. Replacement of the bi-directional amber reflectors at the completion of stage 2 will be paid for at the contract unit price for REPLACEMENT REFLECTOR.

The quantities of paint pavement marking line were computed as follows:

Feet (yellow) 1798 Feet (white) 1942 Feet (Total)

SECTION COUNTY TOTAL SHEET SHEETS NO. JEFFERSON LO 726 TO STA. FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

CONTRACT NO. 74073

. D-7 JOINT REPAIRS 2005-1

#### INDEX OF SHEETS

#### SHEET NO. DESCRIPTION

COVERSHEET

000001-04

GENERAL NOTES & INDEX OF SHEETS

SUMMARY OF QUANTITY

QUANTITY SCHEDULES

GENERAL PLAN AND ELEVATION STAGE CONSTRUCTION DETAILS

7-8 EXPANSION JOINT DETAILS

NEOPRENE EXPANSION JOINTS 10 BAR SPLICER ASSEMBLY DETAIL

THE FOLLOWING STANDARDS ARE A PART OF THESE PLANS AND ARE INCLUDED AFTER SHEET NO. 10:

STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

001001 AREAS OF REINFORCEMENT BARS

001006 DECIMAL OF AN INCH AND OF A FOOT 701006-02

OFF-ROAD OPERATIONS, 2L 2W, 15. TO 24" AWAY, SPEEDS > 45 MPH

701011-01 OFF-ROAD MOVING OPERATIONS, 2L 2W, DAY ONLY, FOR

SPEEDS > 45 MPH

701201-02 LANE CLOSURE, 2L 2W, DAY ONLY, ON-ROAD TO 600 MM

OFF-ROAD, SPEEDS > 45 MPH

701301-02 LANE CLOSURE, 2L 2W, SHORT TIME OPERATIONS

LANE CLOSURE, 2L 2W, MOVING DAY ONLY OPERATIONS 701311-02

701316-03 LANE CLOSURE, 2L 2W, BRIDGE REPAIR, FOR

SPEEDS > 45 MPH

701326-02

LANE CLOSURE, 2L 2W, PAVEMENT WIDENING, FOR SPEEDS > 45 MPH

702001-05 TRAFFIC CONTROL DEVICES

720001 SIGN PANEL MOUNTING DETAILS

720006 SIGN PANEL ERECTION DETAILS

780001-01 TYPICAL PAVEMENT MARKINGS

TYPICAL APPLICATIONS OF RAISED REFLECTIVE PAVEMENT 781001-02

MARKERS

886001 DETECTOR LOOP INSTALLATIONS 886006 TYPICAL LAYOUT FOR DETECTION LOOPS

ILLINOIS DEPARTMENT OF TRANSPORTATION

**GENERAL** NOTES

SCALE: VERT. HORIZ.

DRAWN BY CHECKED BY

steffenmk 3/29/2005 c:\projects\74073d\d05404pa.dgn \$\emptyrearrow{\empt

CONTRACT NO. 74073
COUNTY TOTAL SHEET NO. F.A.P. SECTION COUNTY SHEETS

726 • JEFFERSON NO.

STA. TO STA.

FED. ROAD DIST. NO. RLINOIS FED. AID PROJECT

				1	* D-7 JOINT REPA	IRS 2005-1
	SUMMARY OF QUANTITIES			CONS	TRUCTION TYPE	CODE
CODE NO	ITEM	UNIT	TOTAL QUANTITIES	5FTY-2A		
50102400	CONCRETE REMOVAL	CU YD	34. 1	34. 1		
50300155	NEOPRENE EXPANSION JOINT 2 1/2"	FOOT	68	68		
50300160	NEOPRENE EXPANSION JOINT 4"	FOOT	34	34	•	
50300255	CONCRETE SUPERSTRUCTURE	CU YD	34.3	34. 3		
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	6296	6296		
51500200	RELOCATING NAME PLATES	EACH	1	1		
67100100	MOBILIZATION	L SUM	. 1	1		
70100100	TRAFFIC CONTROL AND PROTECTION, STANDARD 701316	∘EACH	1	1		
70100450	TRAFFIC CONTROL AND PROTECTION. STANDARD 701201	L SUM	1	1		
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	4	4		
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1	+4c	
70300100	SHORT-TERM PAVEMENT MARKING	FOOT	. 57 .	57		
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	5940	5940		
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	1386	1386		
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1942	1942		
*78100300	REPLACEMENT REFLECTOR	EACH	8	8	•	
78300100	PAVEMENT MARKING REMOVAL	SQ FT	637	637		
X0322050	RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL	EACH	8	8	-	
Z0002600	BAR SPLICERS	EACH	40	40	* * * * * * * * * * * * * * * * * * *	
		-				
		-				

\* SPECIALTY ITEMS

REVISIO	NS.	THE INDIC DEPARTME	ENT OF TRANSPORTATION		
NAME	DATE	ILLINOIS DEPARTME	ENT OF TRANSPORTATION		
		SUN	<b>IMARY</b>		
			OF		
		QUA	NTITIES		
		SCALE: VERT.	DRAWN BY		
<del></del>		DATE	CHECKED BY		

CONTRACT NO. 74073

COUNTY SHEETS NO.

"FEFERSON NO. 14 RTE. SECTION 726 • STA. TO STA. FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

\* D-7 JOINT REPAIRS 2005-1

BRIDGE REPAIR SCHEDULE

	LENGTH	CONCRETE REMOVAL	CONCRETE SUPERSTRUCTURE	REINFORCEMENT BARS, EPOXY COATED	BAR SPLICERS	NEOPRENE EXPANSION JOINT 2 1/2"	NEPORENE EXPANSION JOINT 4"
041-0096	FEET	CU FT	CU FT	POUND	EACH	FEET	FEET
Stage I Stage II	646.7	17.07 17.07	17. 14 17. 14	3148 3148	40	34 34	17 17
TOTAL	646.7	34.1	34.3	6296	40	68	34

PAVEMENT	MARKING	SCHEDIII	F

	PAINT PAVEMENT MARKING - LINE 4"	PAVEMENT MARKING REMOVAL	TEMPORARY PAVEMENT MARKING - LINE 4"	SHORT TERM PAVEMENT MARKING	WORK ZONE PAVEMENT MARKING REMOVAL	RAISED REFLECTOR PAVEMENT MARKER, REFLECTOR REMOVAL	. –
041-0096	FEET	SQ FT	FEET	FEET	SQ FT	EACH	EACH
TOTAL	1942	637	5940	57	1386	8	8

ILLINOIS DEPARTMENT OF TRANSPORTATION

QUANTITY SCHEDULES

SCALE: VERT. HORIZ.

DRAWN BY CHECKED BY

ILLINOIS DEPARTMENT OF TRANSPORTATION **GENERAL PLAN** AND ELEVATION STR #041-0096

34.1

34. 1

6296

40

68

34

SCALE: VERT.

DATE

FOOT

FOOT

CU YD

POUND

FACH

EACH

DRAWN BY

CONTRACT NO. 74073

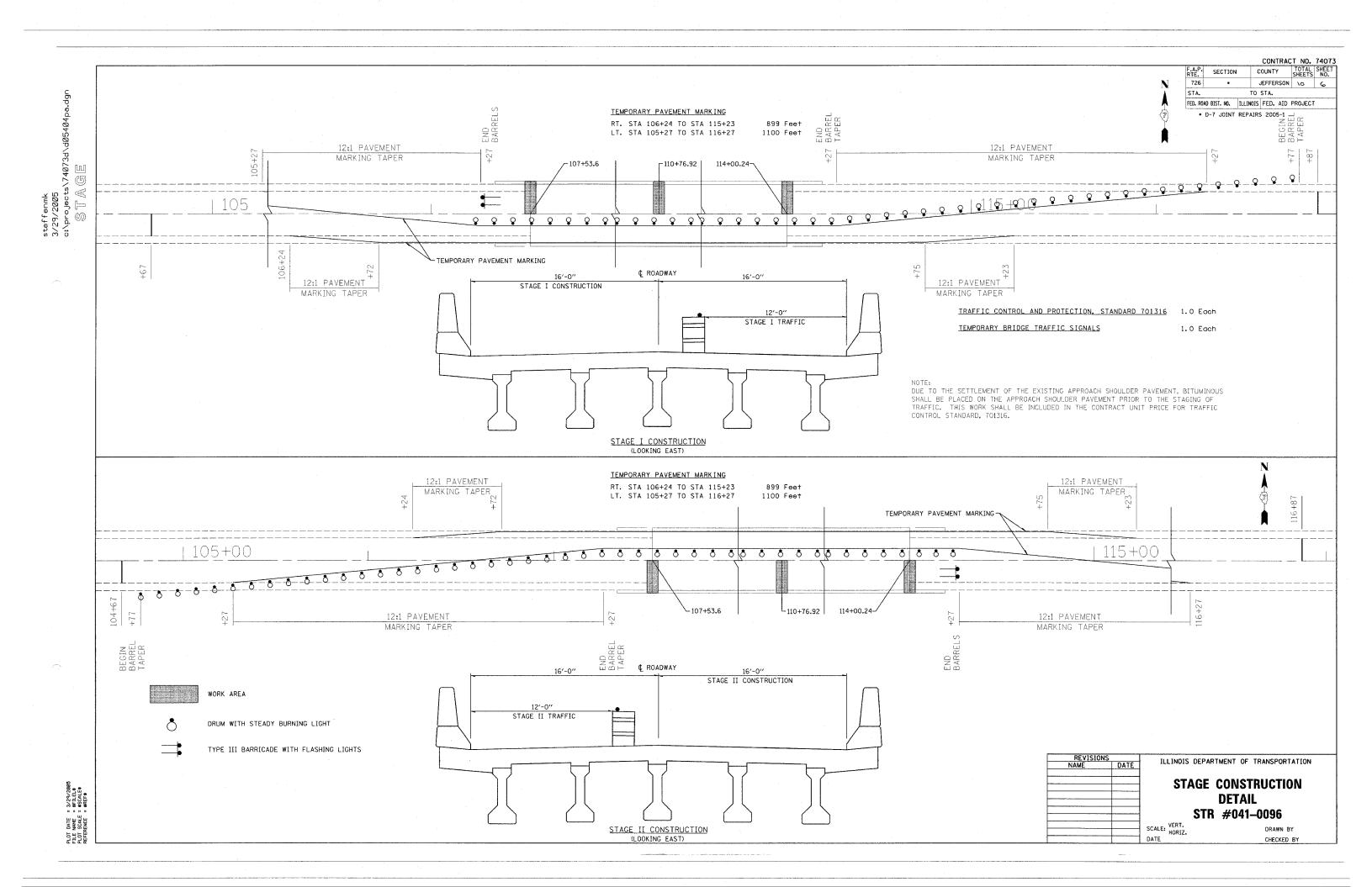
JEFFERSON 10

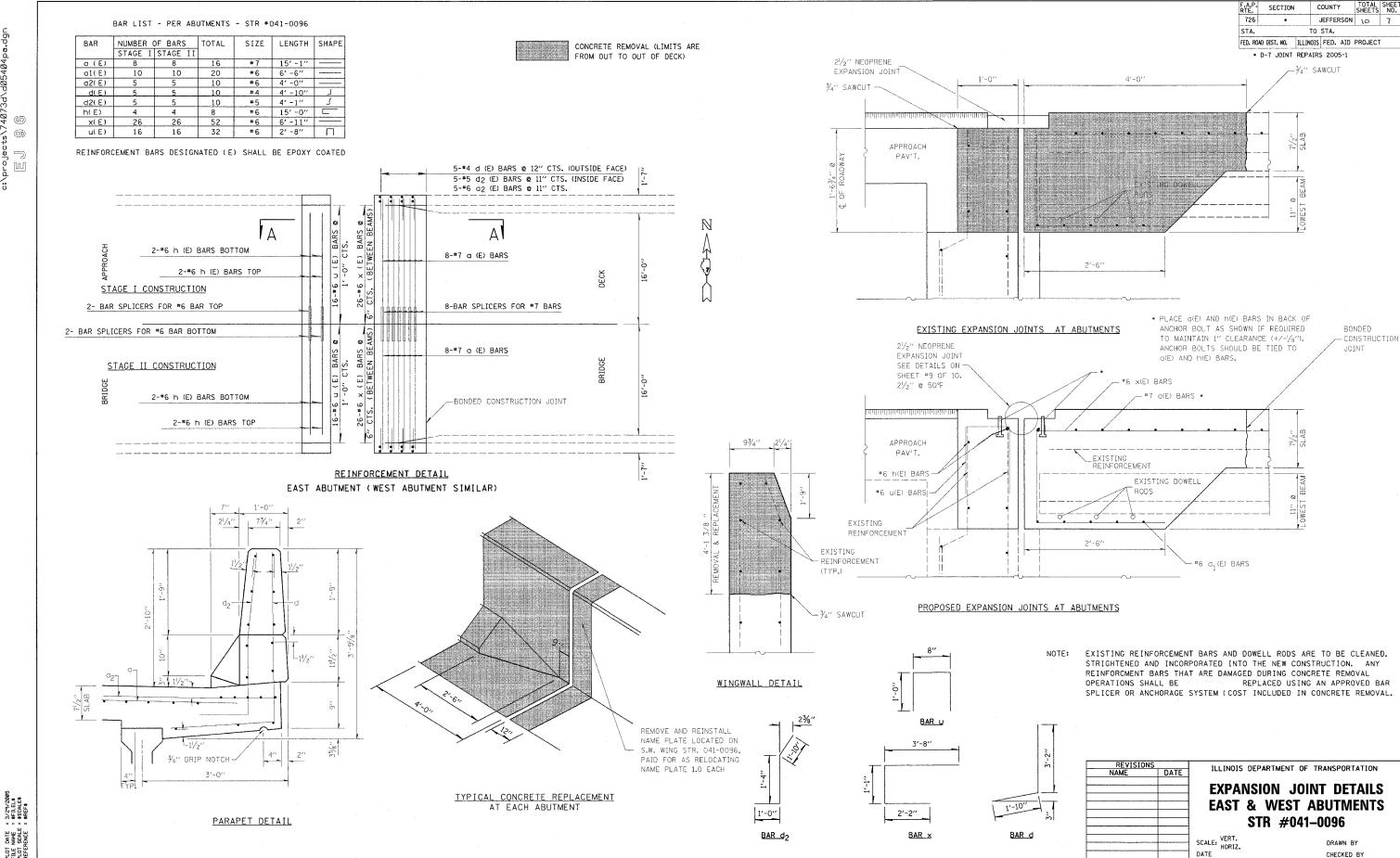
COUNTY

TO STA. FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT \* D-7 JOINT REPAIRS 2005-1

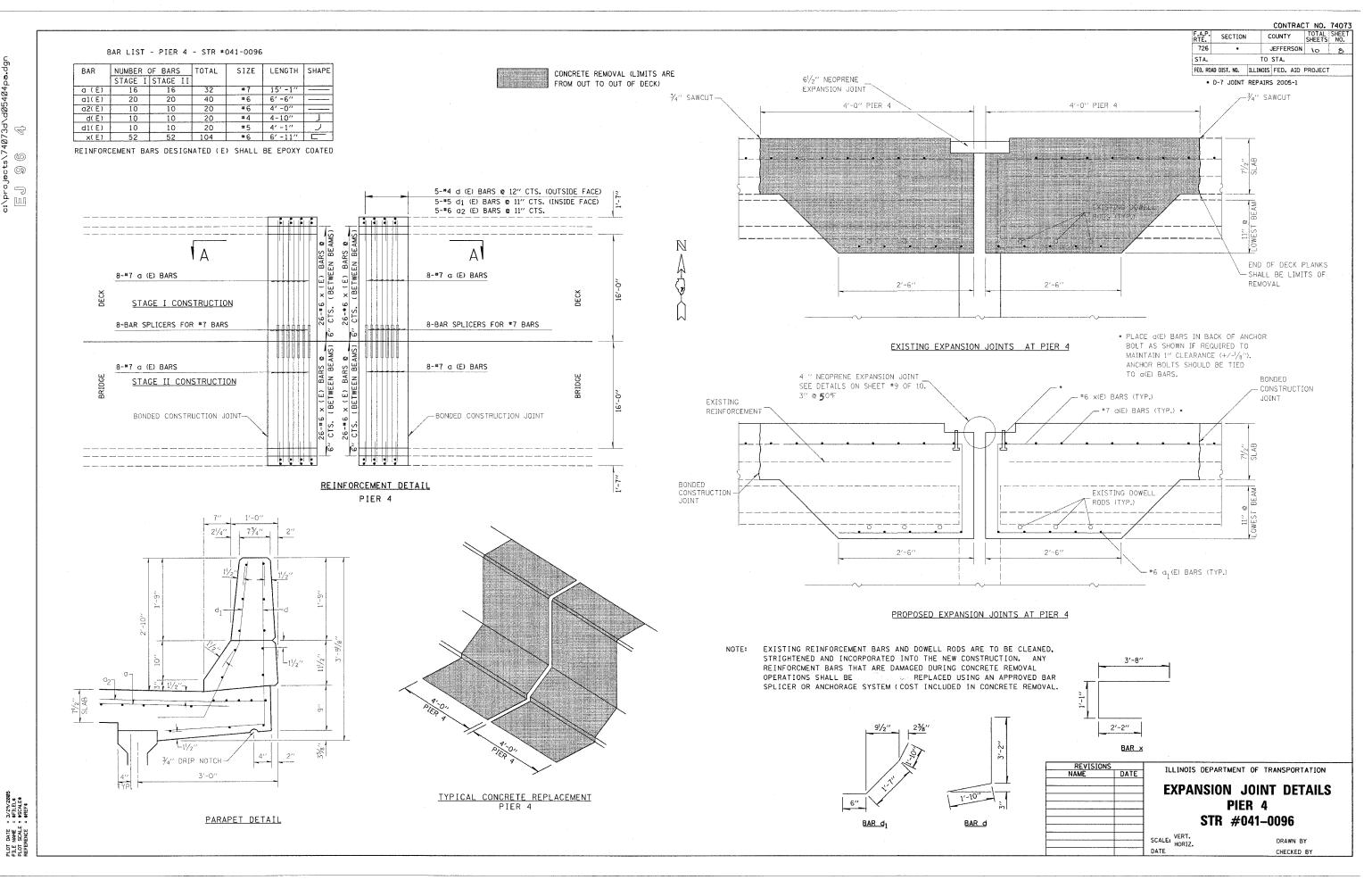
SECTION

STA.





CONTRACT NO. 74073



"C" at 50°F "D" at 50°1 oint Size 1'2" Min. 1<sup>3</sup>4′′ Min. .21/2" Min.

#### INSTALLATION NOTES

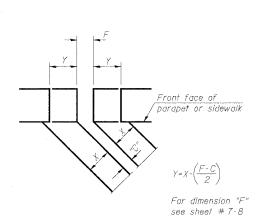
- Install continuous seal in roadway, parapet, curb, and sidewalk.
- Install anchor blocks as indicated.

Threaded Anchor Studs with Washers

Maximum spacing of anchor bolts shall be 12" centers.

## SKEW LIMITATIONS

The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews. For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed according to dimension "D", might require modifications to insure a minimum clearance of  $I_2^{\prime\prime\prime}$  from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at ±12" cts.



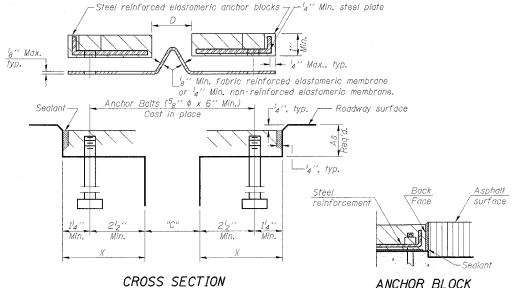
FORMING BLOCKOUT SKETCH

AT PARAPET

For skews greater than 50°

Cast in place

AT PARAPET



ANCHOR BLOCK WITH ASPHALT SURFACE

CONTRACT NO. 74073 COUNTY TOTAL SHEETS SECTION JEFFERSON 10 9 STA. TO STA. FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

\* D-7 JOINT REPAIRS 2005-1

## GENERAL NOTES

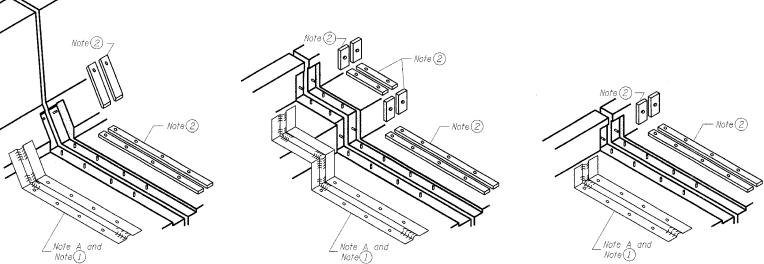
Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane.

The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

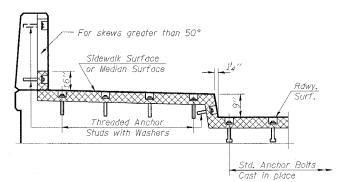
The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

Joint openings shall be adjusted according to Article 503.10(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.

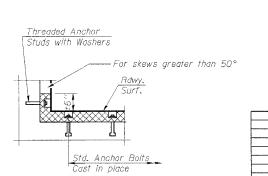
The parapet and roadway membrane shall be made continuous by an approved vulcanizing process. Lapping will not be permitted.



AT SIDEWALK OR MEDIAN

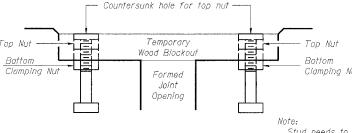


AT SIDEWALK OR MEDIAN TYPICAL END TREATMENTS



AT WALL

AT WALL



Stud needs to be threaded lower to allow for use of clamping nut.

Anchor studs should be stainless RECOMMENDED BLOCKOUT DETAIL

> CONTINUOUS SEAL TYPE NEOPRENE EXPANSION JOINTS

ILLINOIS DEPARTMENT OF TRANSPORTATION CONTINUOUS SEAL TYPE **NEOPRENE EXPANSION JOINTS** STR #041-0096

DATE NAME SCALE SCALE

EJ-CS

10-22-04

Std. Anchor Bolts Cast in place

AT CURB

Threaded anchor

studs with washers

SCALE: VERT. DATE

DRAWN BY

CONTRACT NO. 74073

RTE. SECTION			OUNTY	TOTAL	SHEET NO.	
726 *			JEFFERSON	10	10	
STA.		TO	STA.			1
FED. ROA	D DIST. NO.	ILLINOIS	FED. AID	PROJECT		1

\* D-7 JOINT REPAIRS 2005-1

## **NOTES**

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.

Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length. All reinforcement bars shall be lapped and fied to the splicer rods or dowel bars. Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.

Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

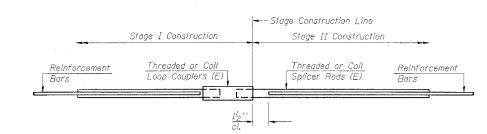
- Minimum Capacity = 1.25 x fy x  $A_t$  (Tension in kips)
- (Tension in kips) Minimum \*Pull-out Strength = 1.25 x  $fs_{allow}$  x  $A_t$ 2

Where fy = Yield strength of lapped reinforcement bars in ksi.

fs<sub>allow</sub>= Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)  $A_t$  = Tensile stress area of lapped reinforcement bars. \* = 28 day concrete

	BAR SPLICER ASSEMBLIES					
		Strength Requirements				
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length		Min. Pull-Out Strength kips - tension			
#4	1'-8''	14.7	5.9			
#5	2'-0''	23.0	9.2			
#6	2'-7''	33.1	13.3			
#7	3′-5′′	45.1	18.0			
#8	4'-6''	58.9	23.6			
#9	5′-9′′	75.0	30.0			
#10	7′-3′′	95.0	38.0			
#11	9'-0''	117,4	46.8			

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."



# STANDARD

	,	E.&W. ABUTMENTS	8	#6
#7 16 DIED /	ti.	ABUTMENTS	16	#7
", 10   11L/\ 7		PIER 4	16	# 7

ILLINOIS DEPARTMENT OF TRANSPORTATION
ILLINOIS DEFARIMENT OF TRANSPORTATION
BAR SPLICER
ASSEMBLY DETAILS
MOSCIVIDLY DETAILS
STR #041-0096
0111 # 041-0030
COLLE VERT.

SCALE: HORIZ. DATE

DRAWN BY CHECKED BY

— The diameter of this part is equal or larger than the The diameter of this part diameter of bar spliced. is the same as the diameter of the bar spliced.

ROLLED THREAD DOWEL BAR

\*\* ONE PIECE

-- Wire Connector

WELDED SECTIONS

# BAR SPLICER ASSEMBLY ALTERNATIVES

\*\* Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.

Bridge Deck

Threaded or Coil

Loop Couplers (E)

<u>"B"</u> INSTALLATION AND SETTING METHODS

Washer Face

- Stage Construction Line

Foam Plugs

Threaded or Coil

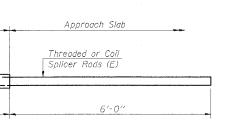
Splicer Rods (E)

<u>"A "</u>

Template

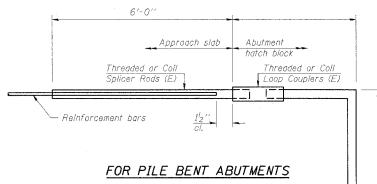
Forms-

"A": Set bar splicer assembly by means of a template bolt. "B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms. (E): Indicates epoxy coating.



# FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar Min. Capacity = 23.0 kips - tension Min, Pull-out Strength = 9.2 kips - tensio o. Required =



Bar Splicer for #5 bar Min. Capacity = 23.0 kips - tension Min. Pull-out Strength = 9.2 kips - tension No. Required =

DATE NAME SCALE ENCE

BSD-1

10-22-04

Reinforcement

Bars