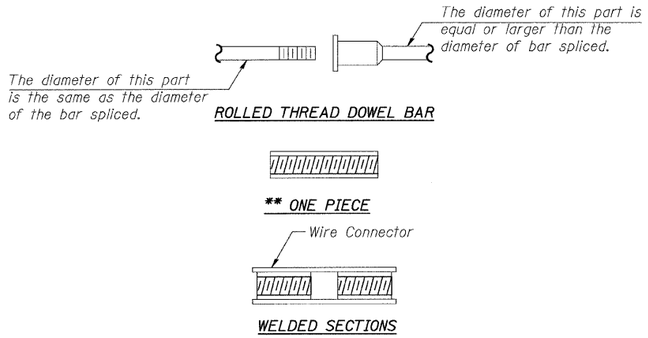
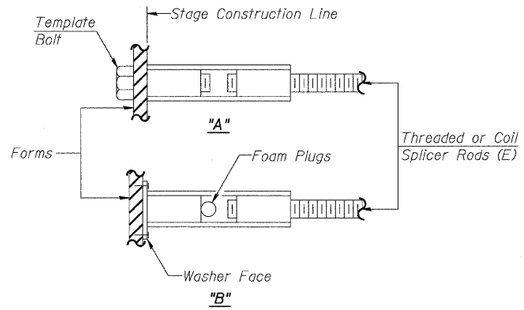
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BAR SPLICER ASSEMBLY ALTERNATIVES

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



INSTALLATION AND SETTING METHODS

"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.

SUPERSTRUCTURE

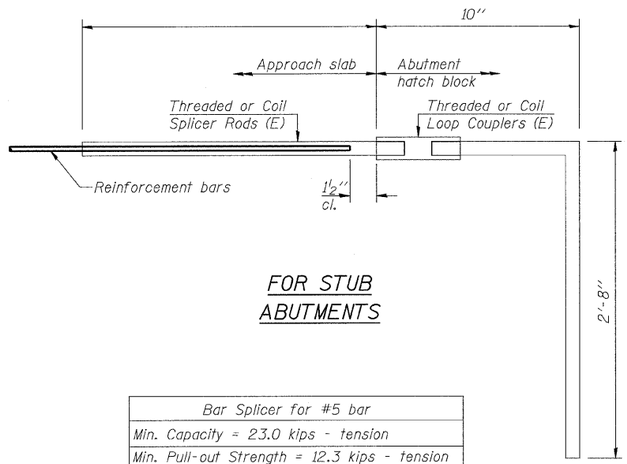
Bar Size	No. Assemblies Required	Location
#5	652	Spans 1-5, Stage I
#5	652	Spans 1-5, Stage II
#5	207	Spans 6, Stage I
#5	207	Spans 6, Stage II
#5	327	Spans 7-8, Stage I
#5	327	Spans 7-8, Stage II
#5	284	Spans 9-10, Stage I
#5	284	Spans 9-10, Stage II
#5	8	South Abut. Edge Beam, Stage I
#5	8	South Abut. Edge Beam, Stage II
#5	8	Span 5 Edge Beam, Stage I
#5	8	Span 5 Edge Beam, Stage II
#5	16	Span 6 Edge Beams, Stage I
#5	16	Span 6 Edge Beams, Stage II
#5	8	Span 7 Edge Beam, Stage I
#5	8	Span 7 Edge Beam, Stage II
#5	8	Span 8 Edge Beam, Stage I
#5	8	Span 8 Edge Beam, Stage II
#5	8	Span 9 Edge Beam, Stage I
#5	8	Span 9 Edge Beam, Stage II
#5	8	North Abut. Edge Beam, Stage I
#5	8	North Abut. Edge Beam, Stage II
#4	25	South Approach Slab, Stage I
#5	46	South Approach Slab, Stage I
#5	40	South Approach Footing, Stage I
#4	25	South Approach Slab, Stage II
#5	46	South Approach Slab, Stage II
#5	40	South Approach Footing, Stage II
#4	25	North Approach Slab, Stage I
#5	46	North Approach Slab, Stage I
#5	40	North Approach Footing, Stage I
#4	25	North Approach Slab, Stage II
#5	46	North Approach Slab, Stage II
#5	40	North Approach Footing, Stage II

SUBSTRUCTURE

Bar Size	No. Assemblies Required	Location
#5	12	South Abutment
#6	8	South Abutment
#5	12	North Abutment
#6	8	North Abutment
#5	8	Pier 5 Cap
#7	10	Pier 5 Cap
#8	10	Pier 5 Crashwall
#6	40	Pier 5 Crashwall
#5	8	Pier 6 Cap
#7	10	Pier 6 Cap
#9	10	Pier 6 Crashwall
#6	40	Pier 6 Crashwall
#5	8	Pier 8 Cap
#7	10	Pier 8 Cap
#9	10	Pier 8 Crashwall
#8	24	Pier 8 Crashwall

STUB ABUTMENTS

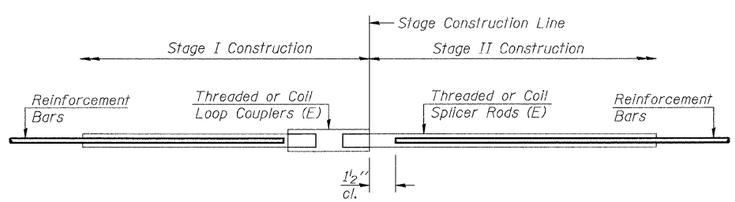
Bar Size	No. Assemblies Required	Location
#5	50	South Abutment
#5	50	North Abutment



FOR STUB ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 100

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-2"	23.0	12.3
#6	3'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	6'-4"	58.9	31.3
#9	8'-0"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



STANDARD

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 tied 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:

① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$

② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_t$

Where f_y = Yield strength of lapped reinforcement bars in ksi.
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

DESIGNED	MJB/MAJ
CHECKED	JFS
DRAWN	MSJ/MLB
CHECKED	MJB

BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 058-0014

Foth
Foth Infrastructure & Environment, LLC
1610 Broadmoor Drive
Champaign, IL 61821
Phone: 217-352-4169 Fax: 217-352-0085
Illinois Registration Number 184.004913

SHEET NO. 49
49 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
710	(50Z-VB)BR	MACON	79	75
		CONTRACT NO. 74215		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		