

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | | |
|-----------------------|----------|------------------|--------------|-------|--------------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET | SHEET NO. 33 |
| FAP 769 | 110B-2 | MACOUPIN | 98 | 73 | 38 SHEETS |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | | | |

Contract #72813

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

| 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'-0" | 23.0 | 12.3 |
| #6 | 2'-7" | 33.1 | 17.4 |
| #7 | 3'-5" | 45.1 | 23.8 |
| #8 | 4'-6" | 58.9 | 31.3 |
| #9 | 5'-9" | 75.0 | 39.6 |
| #10 | 7'-3" | 95.0 | 50.3 |
| #11 | 9'-0" | 117.4 | 61.8 |

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

The diameter of this part is the same as the diameter of the bar spliced.

ROLLED THREAD DOWEL BAR



** ONE PIECE

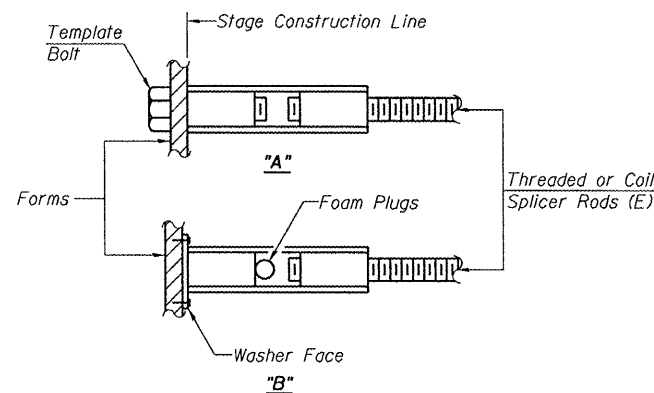
Wire Connector



WELDED SECTIONS

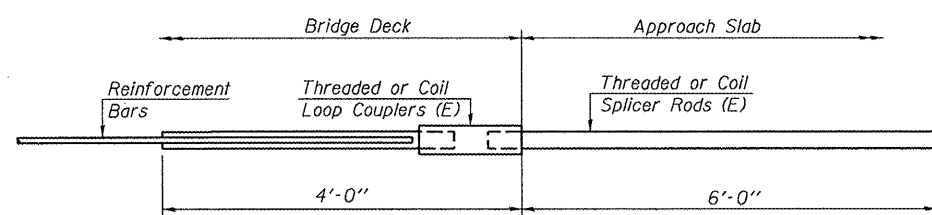
BAR SPLICER ASSEMBLY ALTERNATIVES

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



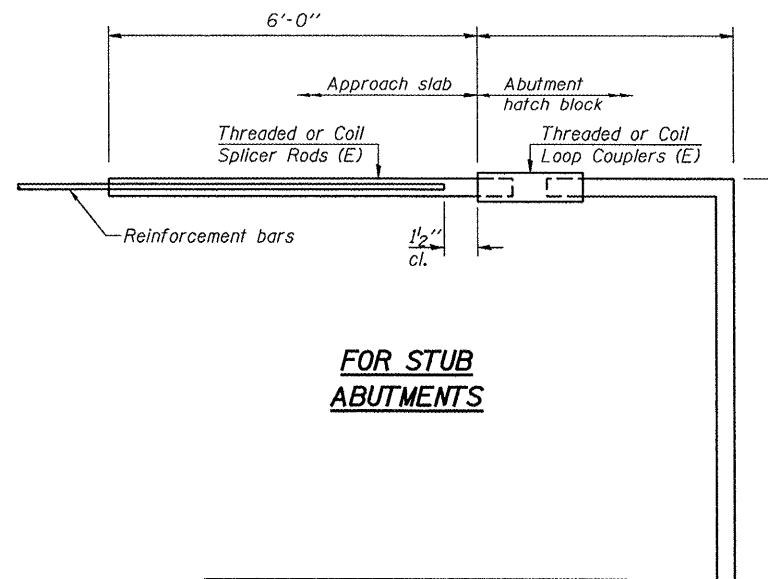
INSTALLATION AND SETTING METHODS

"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.



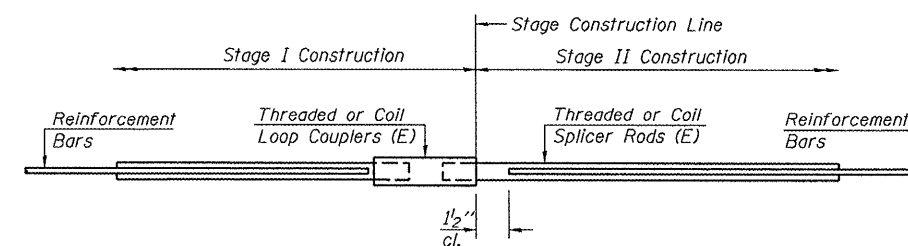
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

| | |
|--|--|
| Bar Splicer for #5 bar | |
| Min. Capacity = 23.0 kips - tension | |
| Min. Pull-out Strength = 12.3 kips - tension | |
| No. Required = 72 | |



FOR STUB ABUTMENTS

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



STANDARD

| Bar Size | No. Assemblies Required | Location |
|----------|-------------------------|--------------|
| #5 | 934 | Deck |
| #4 | 12 | Diaphragms |
| #6 | 22 | Diaphragms |
| #5 | 324 | Substructure |
| #7 | 18 | Substructure |
| #8 | 18 | Substructure |
| #9 | 32 | Substructure |

BAR SPLICER ASSEMBLY DETAILS

F.A.P. ROUTE 769 - SEC. 110B-2

MACOUPIN COUNTY

STATION 104+41.00

STRUCTURE NO. 059-0509

| | |
|----------|----------------|
| DESIGNED | Tom Kurtenbach |
| CHECKED | Jay Edwards |
| DRAWN | OSCKY M. LEACH |
| CHECKED | TK/JE |

June 17, 2008

EXAMINED *Thomas J. Domagalick*
ENGINEER OF BRIDGE DESIGN

PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

BSD-1

11-1-06