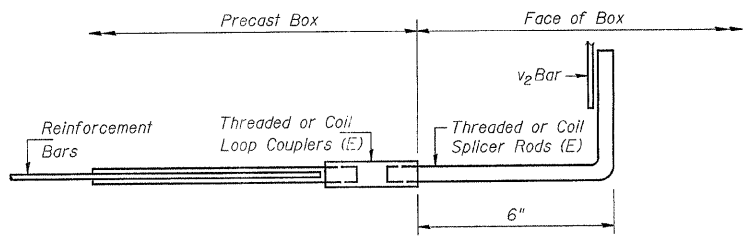


F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP734	98-00480-00-BR 03-00522-00-TL	WINNEBAGO	62	34
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT				

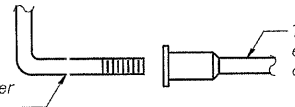


SPLICER DETAIL

PRECAST BOX CULVERTS

Bar Size	No. Assemblies Required	Location
#4	8	Bottom of Bottom Slab

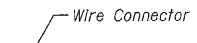
The diameter of this part is the same as the diameter of the bar spliced.



ROLLED THREAD DOWEL BAR



ONE PIECE

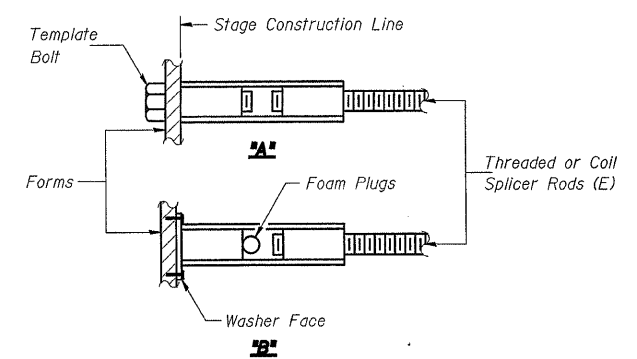


WIRE CONNECTOR

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.

NOTES

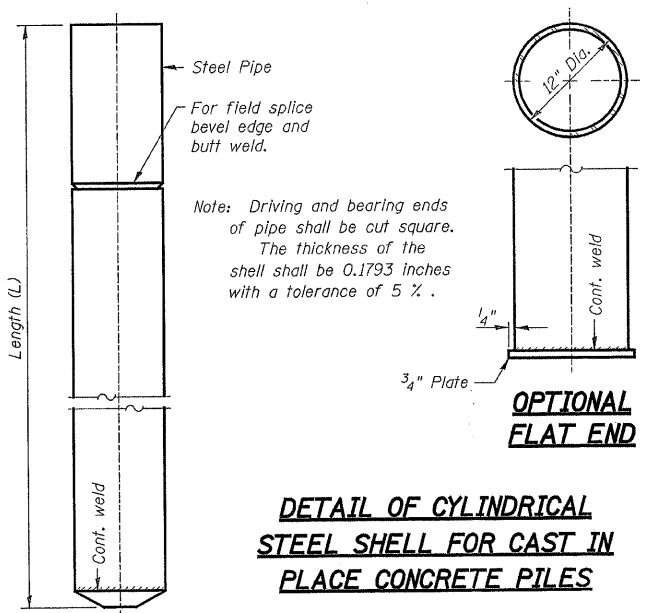
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
 Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
 All reinforcement bars shall be lapped and tied to the 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:

- Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$
- Minimum *Pull-out Strength (Tension in kips) = $1.25 \times f_{sallow} \times A_t$

Where f_y = Yield strength of lapped reinforcement bars in ksi.
 f_{sallow} = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)
 A_t = Tensile stress area of lapped reinforcement bars.
 * = 28 day concrete

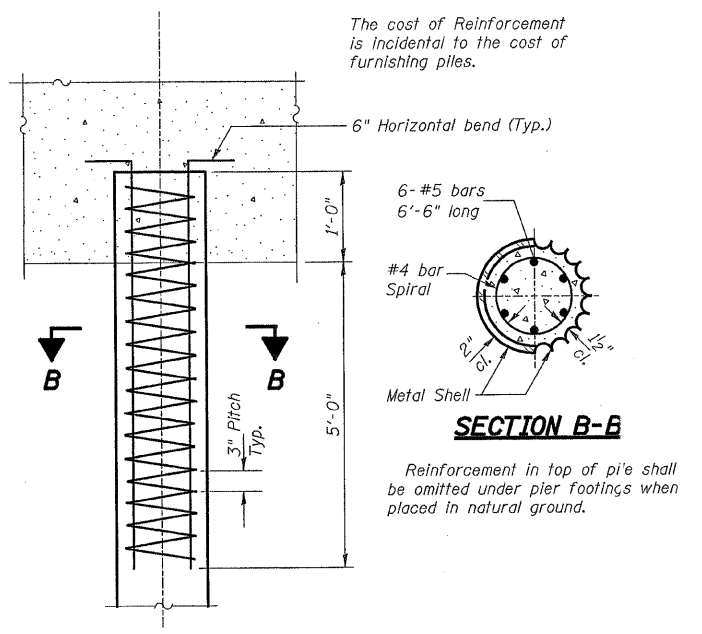
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-6"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The costs for furnishing and installation of bar splicer assemblies shall be included in the contract unit price per FOOT for PRECAST CONCRETE BOX CULVERT 11' X 11'



DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES

OPTIONAL FLAT END



DETAIL OF REINFORCEMENT FOR METAL SHELLS

SECTION B-B

Reinforcement in top of pile shall be omitted under pier footings when placed in natural ground.