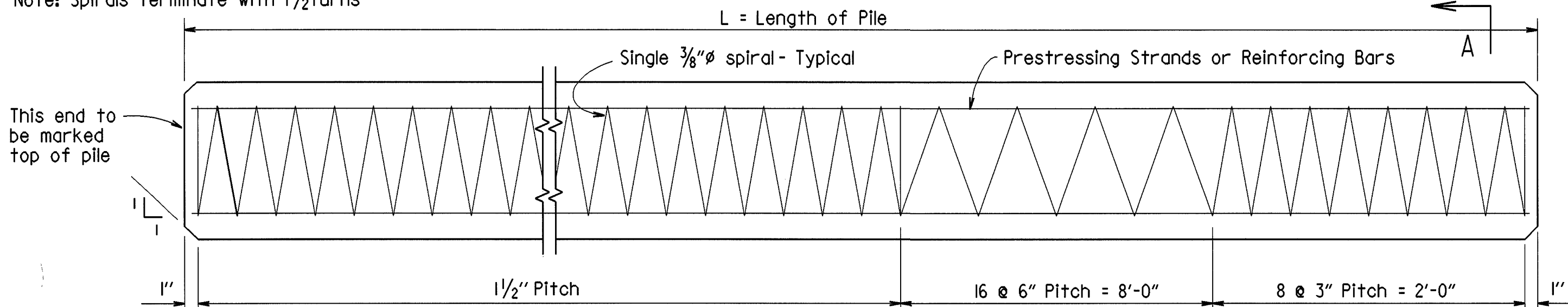


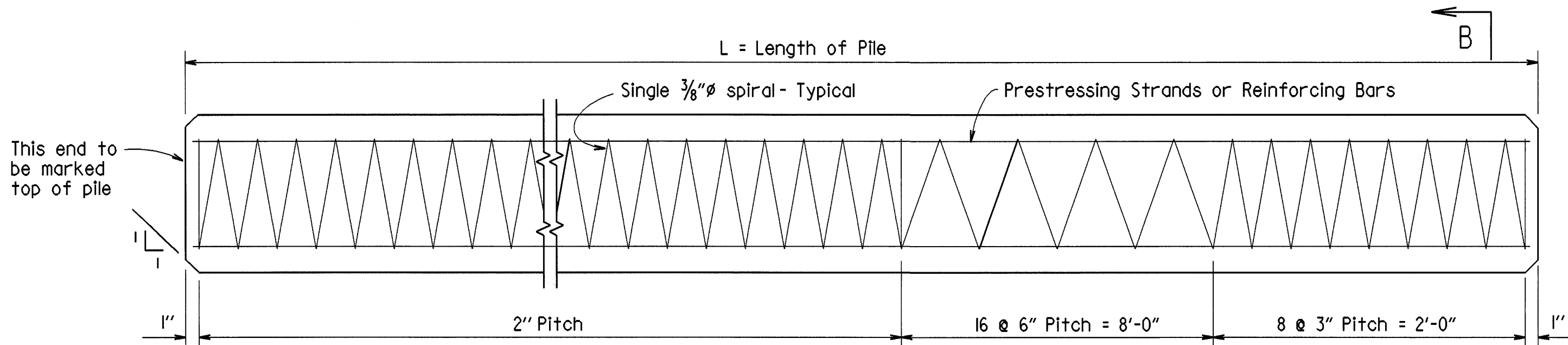
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110387	47	96
06978 - CONC. PILES - 46127								

Note: Spirals terminate with 1 1/2 turns

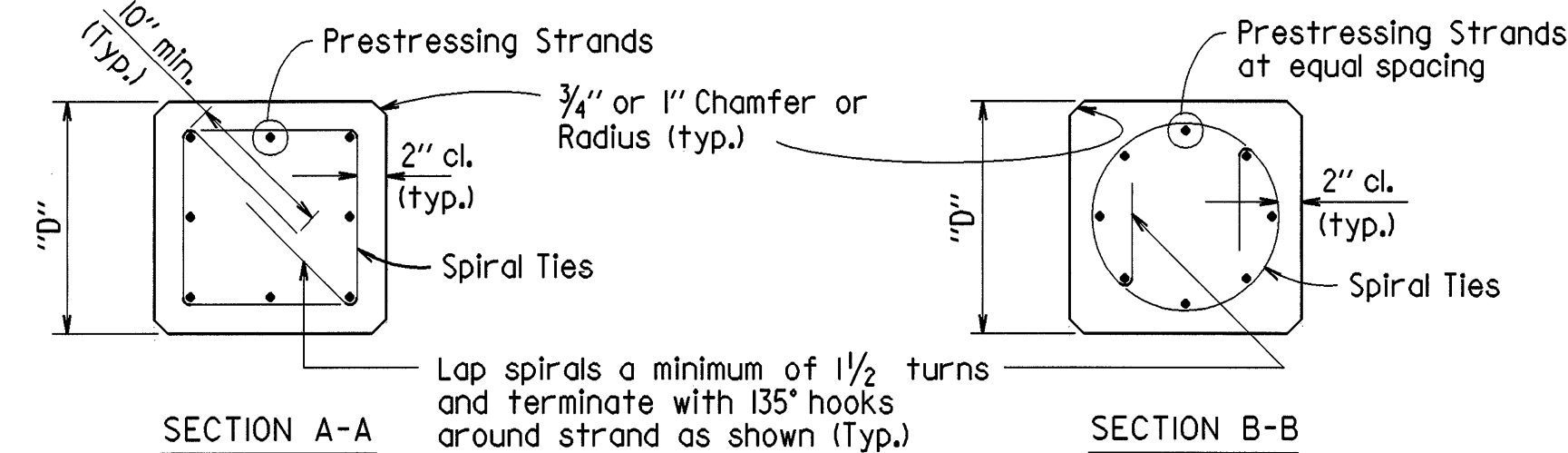


For anchorage of pile to bent, see Bent Details.

SPIRAL TIE SPACING FOR SQUARE REINFORCING PATTERN



SPIRAL TIE SPACING FOR ROUND REINFORCING PATTERN



PRESTRESSED CONCRETE PILES

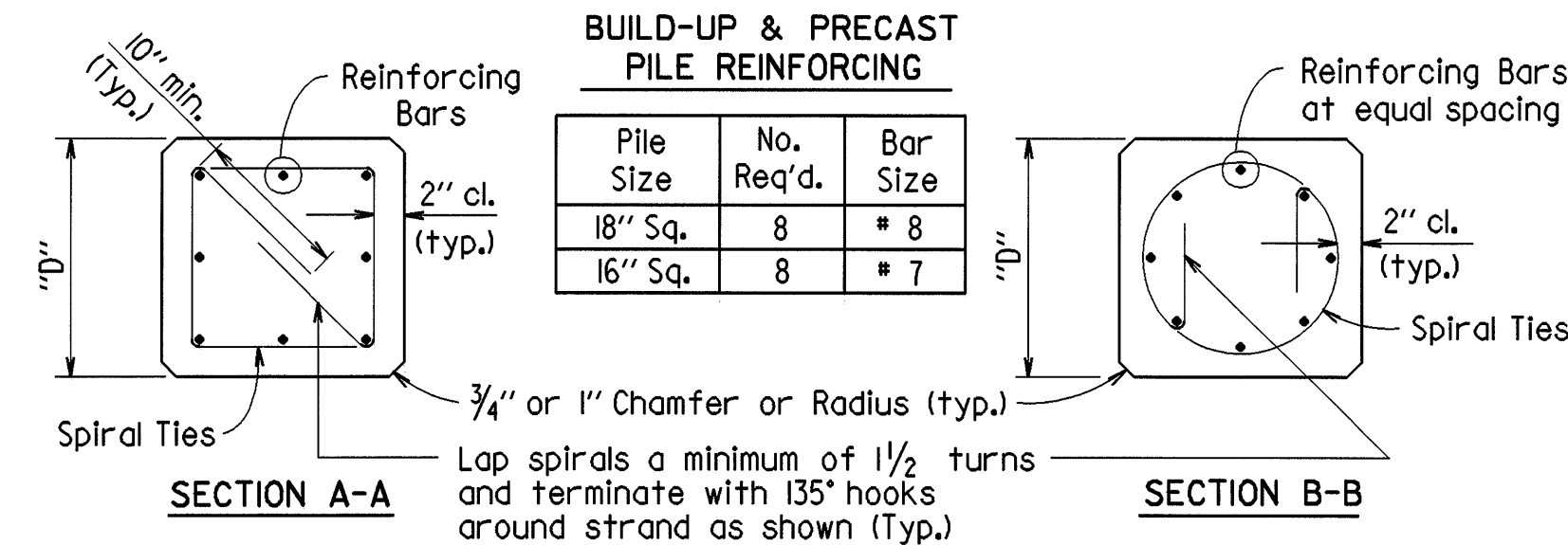
Note: Strand location shall be symmetrical about the axis of the pile with no more than one strand difference between any two adjacent sides. Circular spiral ties are required for an odd number of strands.

PRESTRESSED PILE PROPERTIES

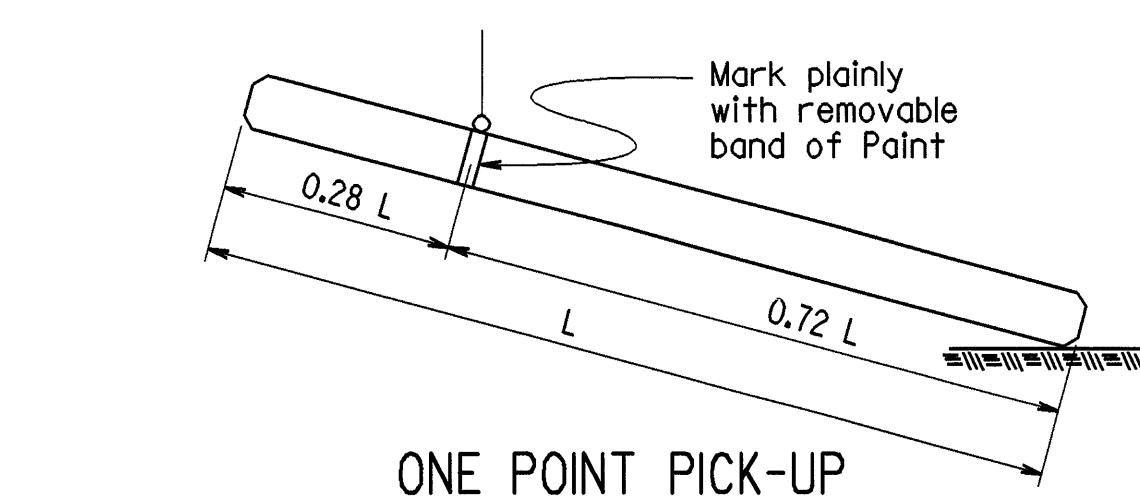
	Grade	Strand Diameter	No. of Strands * per Size "D"		Minimum Ultimate Tensile Strength Per Strand (Lbs.)	Initial Prestressing Force Per Strand (Lbs.)
			16" Sq.	18" Sq.		
Stress Relieved	250	7/16"	12	16	27,000	18,900
		1/2"	10	12	36,000	25,200
	270	7/16"	12	14	31,000	21,700
		1/2"	8	10	41,300	28,900
Low Relaxation	250	7/16"	11	13	27,000	20,200
		1/2"	8	10	36,000	27,000
	270	7/16"	9	11	31,000	23,300
		1/2"	7	9	41,300	31,000

* Number based on initial prestress force of "B" x Ultimate Tensile Stress, Prestress Losses, and min. 700 psi Unit Prestress on concrete after Losses.

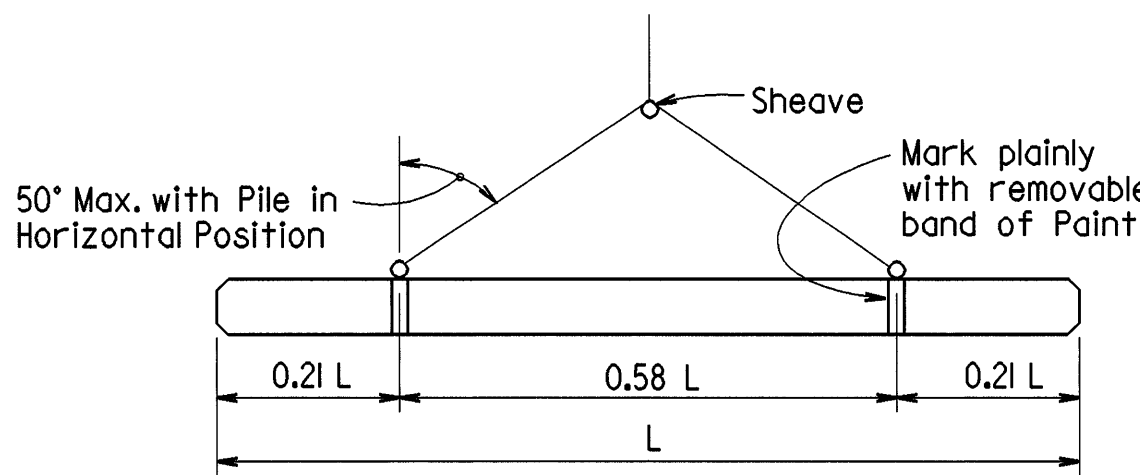
"B" 0.75 Low Relaxation
0.70 Stress - Relieved



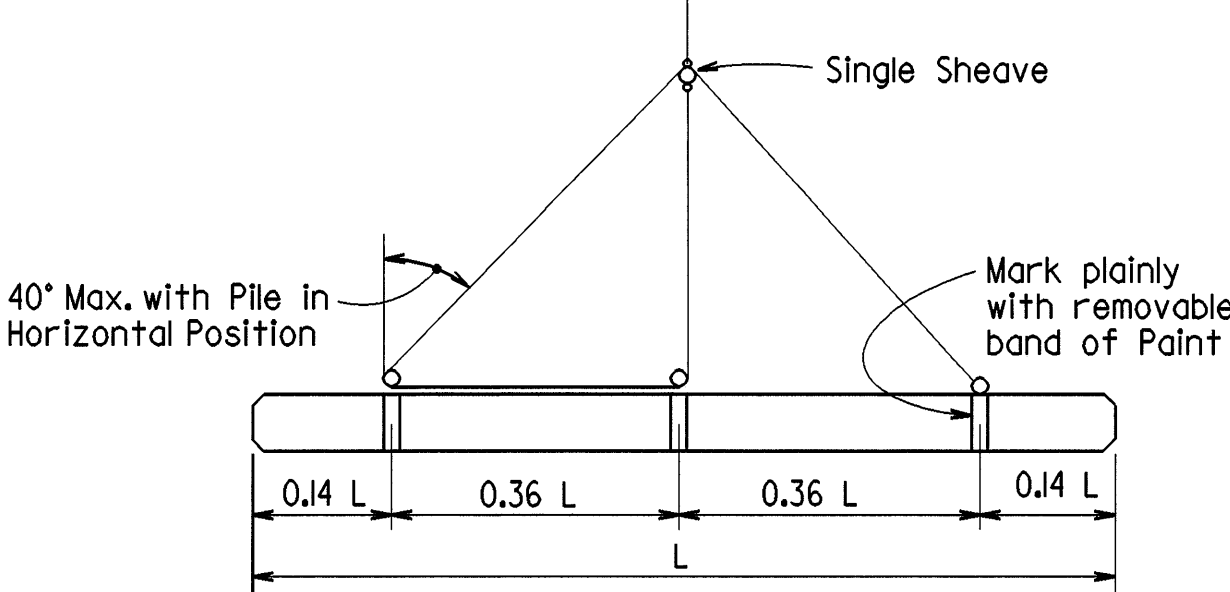
PRECAST CONCRETE PILES & PILE BUILD-UP



ONE POINT PICK-UP



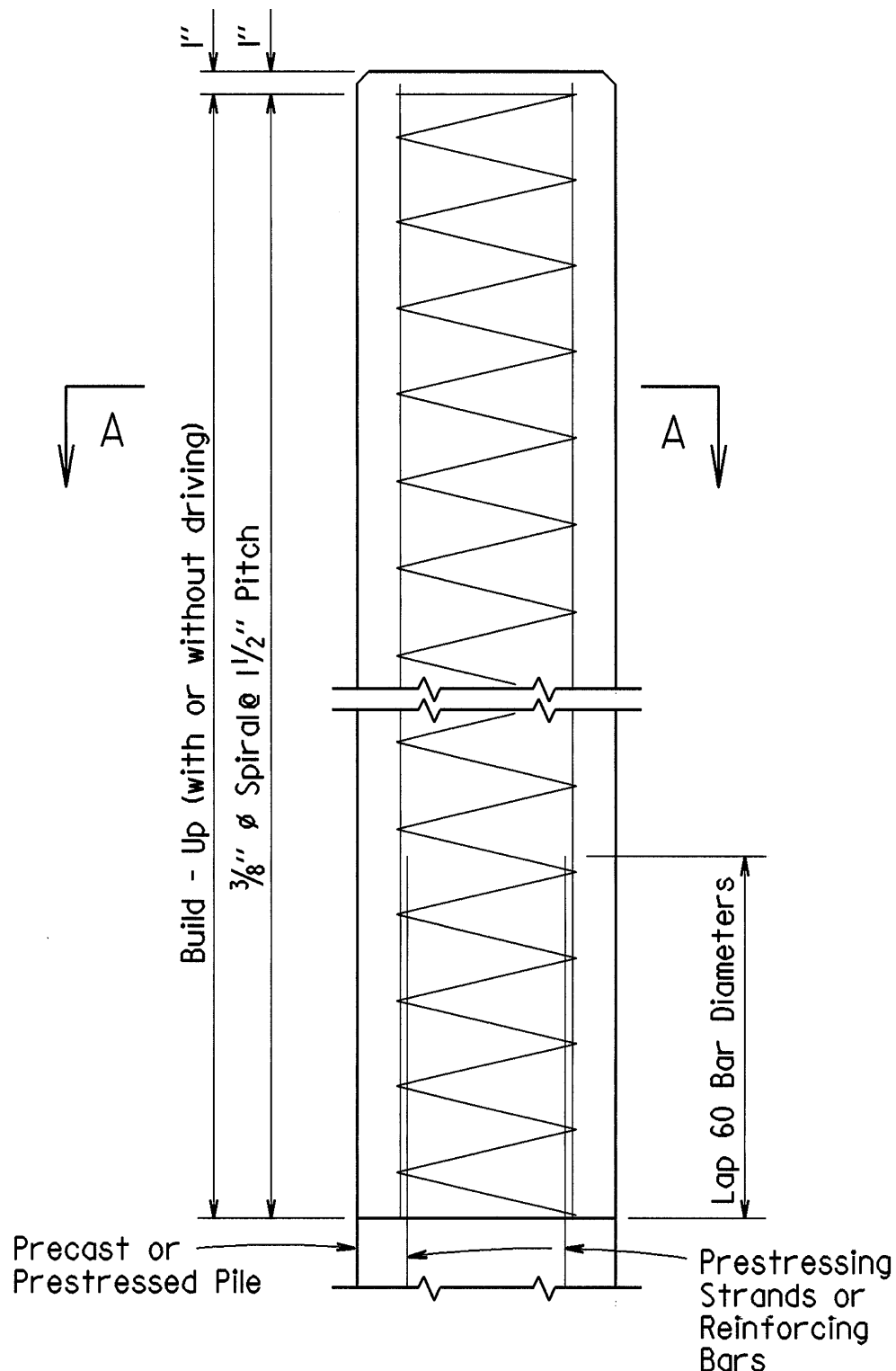
TWO POINT PICK-UP



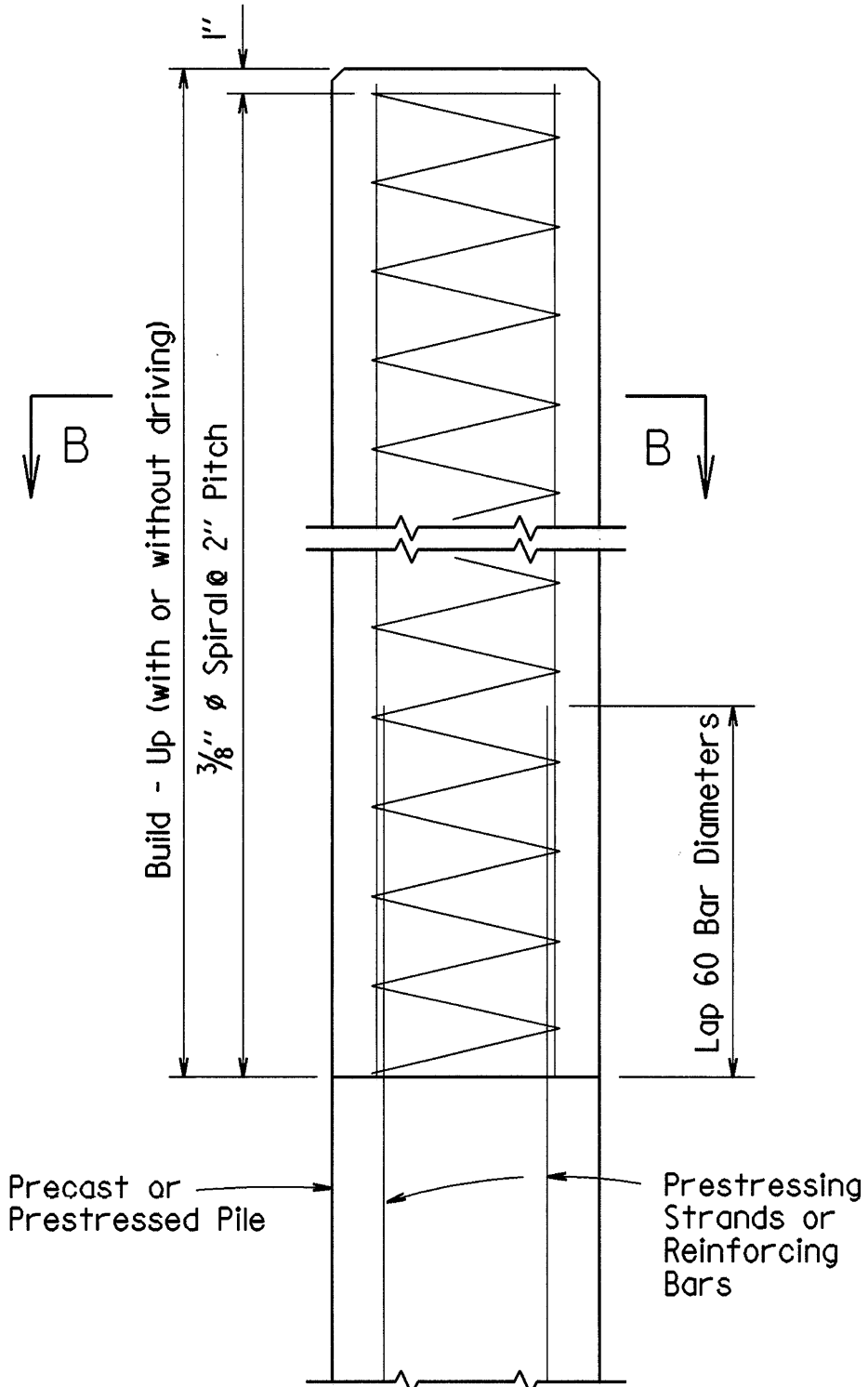
THREE POINT PICK-UP

MAXIMUM PICKUP LENGTHS L

Type of Pick - Up	Prestressed		Precast	
	16" Sq.	18" Sq.	16" Sq.	18" Sq.
One - Point	59'	63'	51'	55'
Two - Point	84'	90'	74'	79'
Three - Point	117'	126'	103'	111'



BUILD-UP FOR SQUARE REINFORCING PATTERN



BUILD-UP FOR ROUND REINFORCING PATTERN

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2003 Edition, with applicable Supplemental Specifications and Special Provisions.

DESIGN SPECIFICATIONS: AASHTO 2002 with current Interim Specifications.

SEISMIC PERFORMANCE CATEGORY: B

The contractor may use prestressed piles or precast piles. Either type will be measured and paid for at the contract unit price bid for "Concrete Piling".

SPIRAL REINFORCING: Spiral reinforcing shall be steel wire meeting the requirements of AASHTO M32 or M225 or shall be plain round steel bars meeting the requirements of AASHTO M31or M53, Gr. 60.

MANUFACTURE, TRANSPORTATION AND STORAGE: See Section 802 "Concrete for Structures" of the Standard Specifications.

FORMS: For forming exterior of piles, the use of steel forms on concrete founded casting beds is required unless otherwise approved by the Engineer. Side forms may have a maximum drift on each side not exceeding 1/4" per foot.

TOLERANCES: Pile ends shall be plane surfaces and perpendicular to axis of pile with a maximum tolerance of 1/8" per foot transversely.

The maximum sweep (deviation from straightness measured along two perpendicular faces of the pile, while not subject to bending forces) shall not exceed 1/8" in 10 Ft.

Shipment of piles from the plant site or pile driving will not be permitted until the required minimum compressive strength is reached, and in no case less than 10 days after pouring the concrete. Prestressed piles may be removed from the casting bed to nearby storage any time after transfer of stress.

BUILD-UPS: To provide for Build-Ups of piles where authorized by the Engineer, concrete shall be cut back to expose the strands for a distance sufficient to provide a lap of 60 diameters of the reinforcing bars required for build-up. Reinforcing of build-ups shall be the reinforcing shown for precast piles.

INSTALLATION, MEASUREMENT AND PAYMENT: See Section 805 "Piling" of the Standard Specifications.

COARSE AGGREGATE: Maximum size of coarse aggregate shall be 3/4".

NOTES FOR PRESTRESSED PILES

CONCRETE: Concrete in Precast Prestressed Piles shall be Class S (AE) and shall have a Minimum Compressive Strength (f'c) of 5000 psi at 28 days. Compressive strength at transfer of the Prestressing Force shall be not less than 4000 psi. Concrete in Build-Ups shall have a minimum Compressive Strength of 4000 psi.

PRESTRESSING REINFORCING: Seven wire stress relieved or low relaxation strands shall conform to the general requirements of AASHTO M203. Broken wires within individual strands will be permitted up to 2% of the total number of wires in each pile, providing that there is not more than one broken wire per strand. Two or more broken wires per strand will be cause for replacement of the strand, even though the two broken wires are within the 2% limitation.

NOTES FOR PRECAST PILES

All concrete shall be Class S (AE) and shall have a minimum compressive strength (f'c) of 4000 psi at 28 days.

All longitudinal reinforcing bars shall be deformed bars and shall conform to the requirements of AASHTO M31 or M53, GR. 60.



BRIDGE ENGINEER

DETAILS OF CONCRETE PILES WALNUT LAKE

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 7-22-03 FILENAME: B110387.CPI
CHECKED BY: GYA DATE: 7-23-03 SCALE: 1" = 1'-0"

DESIGNED BY: STD DATE:

BRIDGE NO. 06978

DRAWING NO. 46127