

NOTES

CONCRETE DESIGN DATA : $f'_c = 5,000$ PSI ; $f_c = 2,000$ PSI

IMPACT IN HANDLING = 50%

IN DRIVING PILES, A METHOD APPROVED BY THE ENGINEER SHALL BE USED, WHEREBY THE HEAD OF THE PILE IS NOT DAMAGED.

PROPOSED DEVICES FOR LIFTING PILES, RECESS DETAILS, AND PATCHING MATERIAL SHALL BE DETAILED IN SHOP DRAWINGS. AFTER ATTACHMENTS HAVE BEEN REMOVED, OPENINGS SHALL BE REPAIRED SUCH THAT THE APPEARANCE OF THE PILE IS UNIFORM.

THE CONTRACTOR SHALL USE THE FOLLOWING STRAND TYPE:

| SIZE | GRADE | NUMBER OF STRANDS | AREA | ULTIMATE STRENGTH | APPLIED PRESTRESS FORCE |
|------|----------|-------------------|-------|-----------------------|-------------------------|
| 1/2" | 270 L.R. | 12 | 0.153 | 41,300* PER STRAND | 30,980* PER STRAND |

STRANDS SHALL BE EQUALLY SPACED AS SHOWN IN THE "TYPICAL SECTION".

A CIRCULAR STRAND PATTERN SHALL NOT BE PERMITTED.

THE SLIP-FORM METHOD OF CASTING PILES WILL NOT BE PERMITTED.

IF STRAND STRESS IS RELIEVED BY BURNING, THE STRANDS SHALL BE BURNED IN OPPOSITE PAIRS AS INDICATED IN THE TYPICAL PATTERN SHOWN. FOR ANY NUMBER OF STRANDS BURN IN OPPOSITE PAIRS AND SYMMETRICAL ABOUT BOTH VERTICAL AND HORIZONTAL AXES, STRANDS 1-1 SHALL BE BURNED BEFORE 2-2, ETC. NOT MORE THAN 4 STRANDS, SAY 5-5 AND 6-6, MAY BE BURNED AT ANY ONE SECTION BEFORE THESE SAME PAIRS OF STRANDS ARE BURNED AT BOTH ENDS OF THE BED AND BETWEEN EACH PAIR OF PILES IN THE BED.

BUILD-UPS SHALL BE OF 'CLASS A' CONCRETE WITH 20% ADDITIONAL CEMENT. NO DRIVING OF THE BUILT-UP PILE WILL BE PERMITTED UNTIL THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF 3,000 P.S.I. AND UNTIL A PERIOD OF SEVEN DAYS HAS ELAPSED SINCE CASTING OF THE BUILD-UP.

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE PILE SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 3500 PSI.

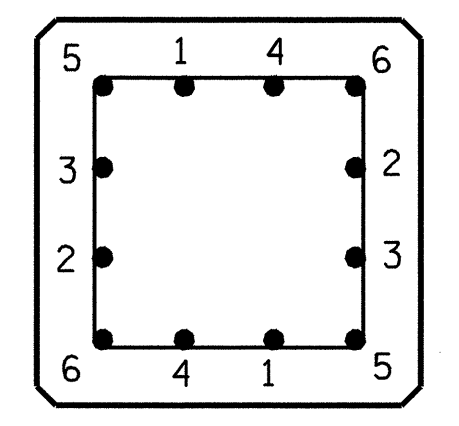
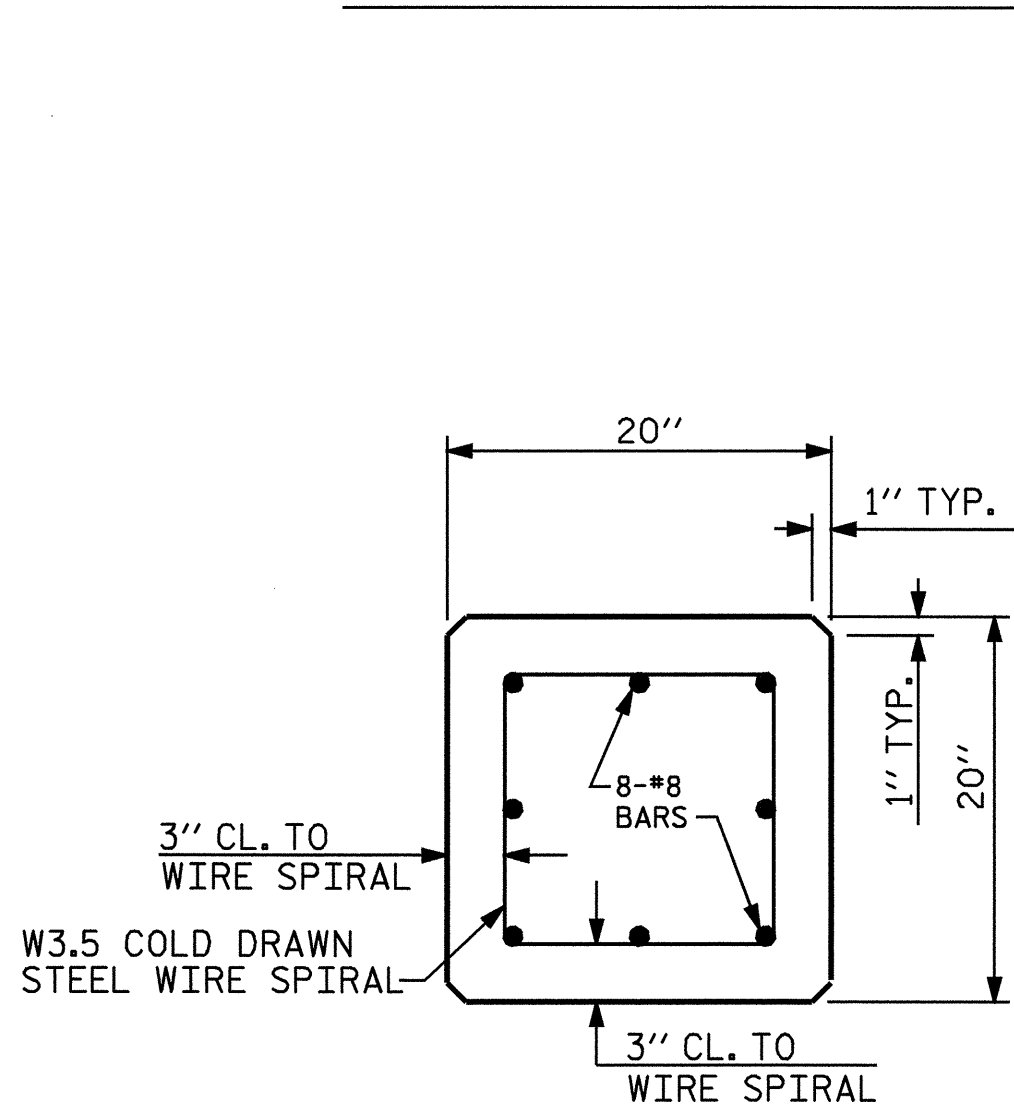
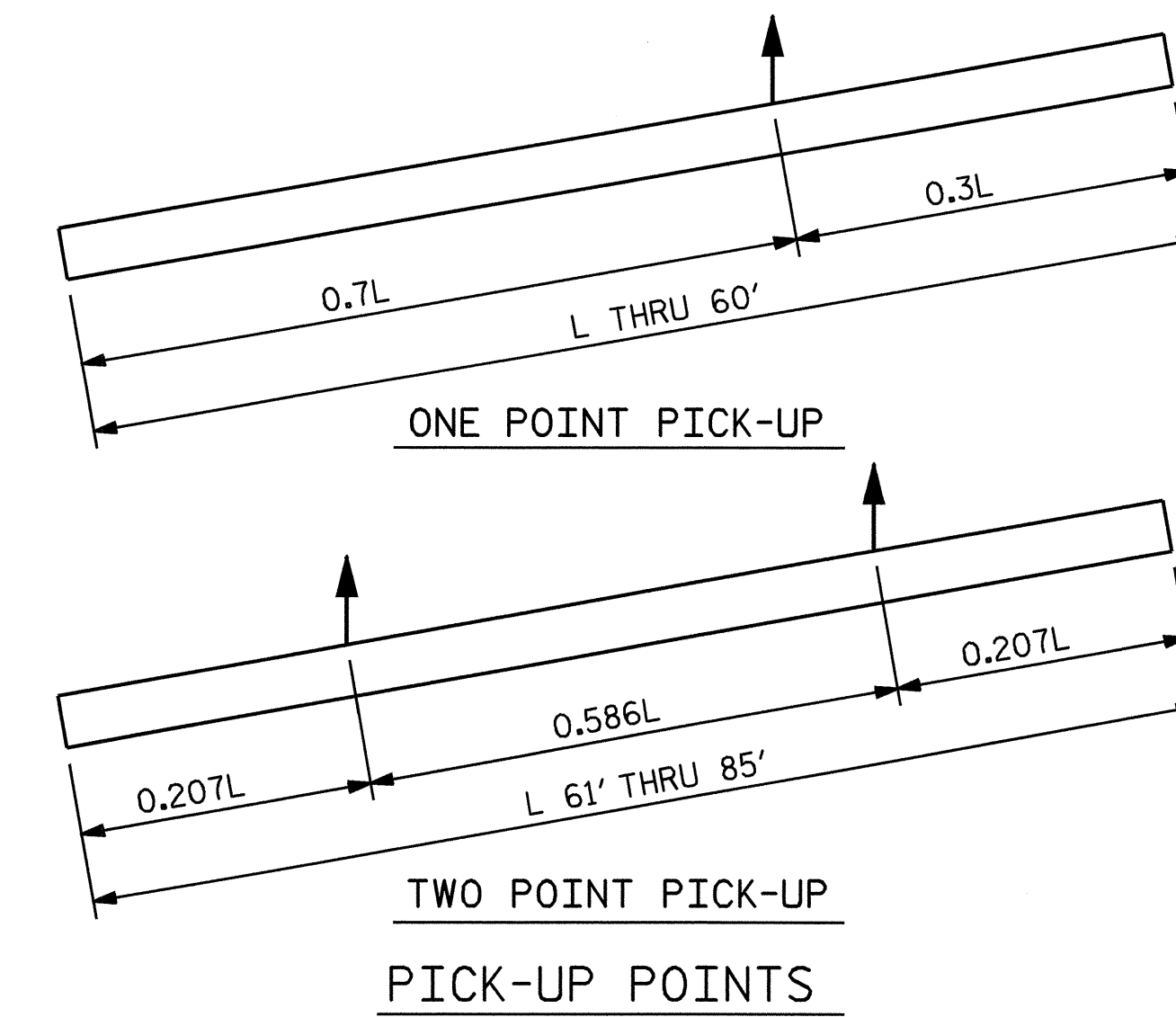
THE WATER/CEMENT RATIO FOR CONCRETE PILES SHALL NOT EXCEED 0.40.

PRESTRESSED CONCRETE PILES SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR. SEE SPECIAL PROVISIONS FOR CALCIUM NITRITE CORROSION INHIBITOR.

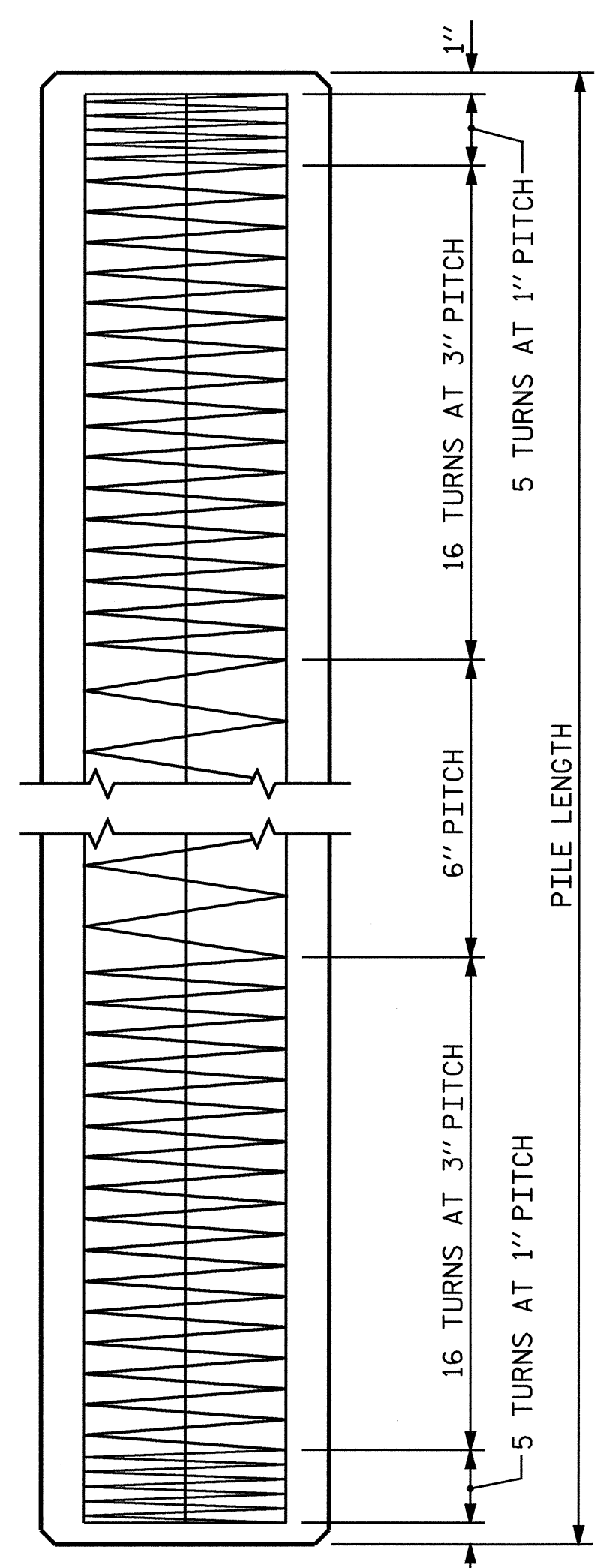
FOR STEEL PILE TIPS, SEE SPECIAL PROVISIONS.

FOR STEEL PILE SPLICERS, SEE SPECIAL PROVISIONS.

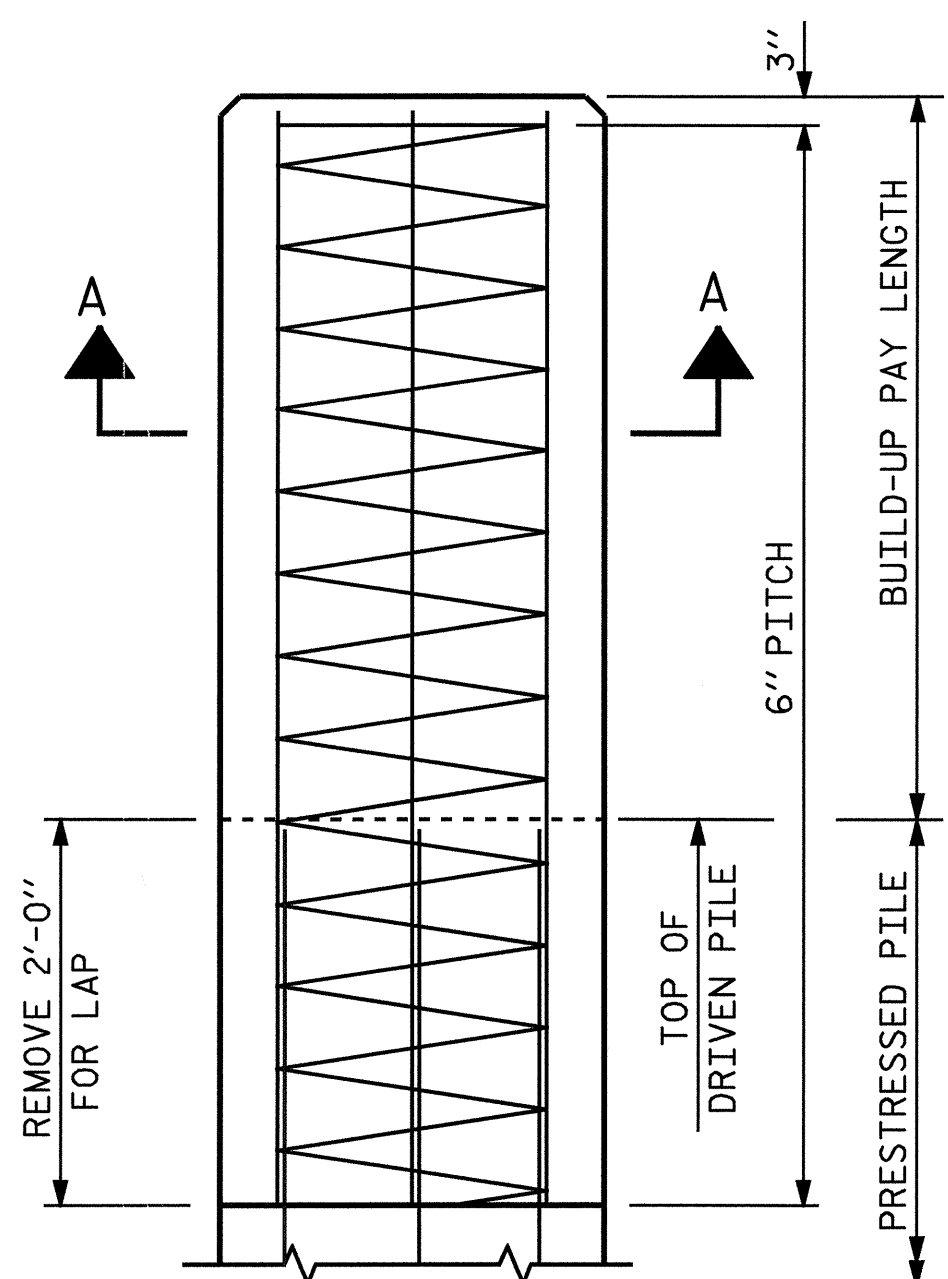
FOR PRESTRESSED CONCRETE PILES, SEE SPECIAL PROVISIONS.



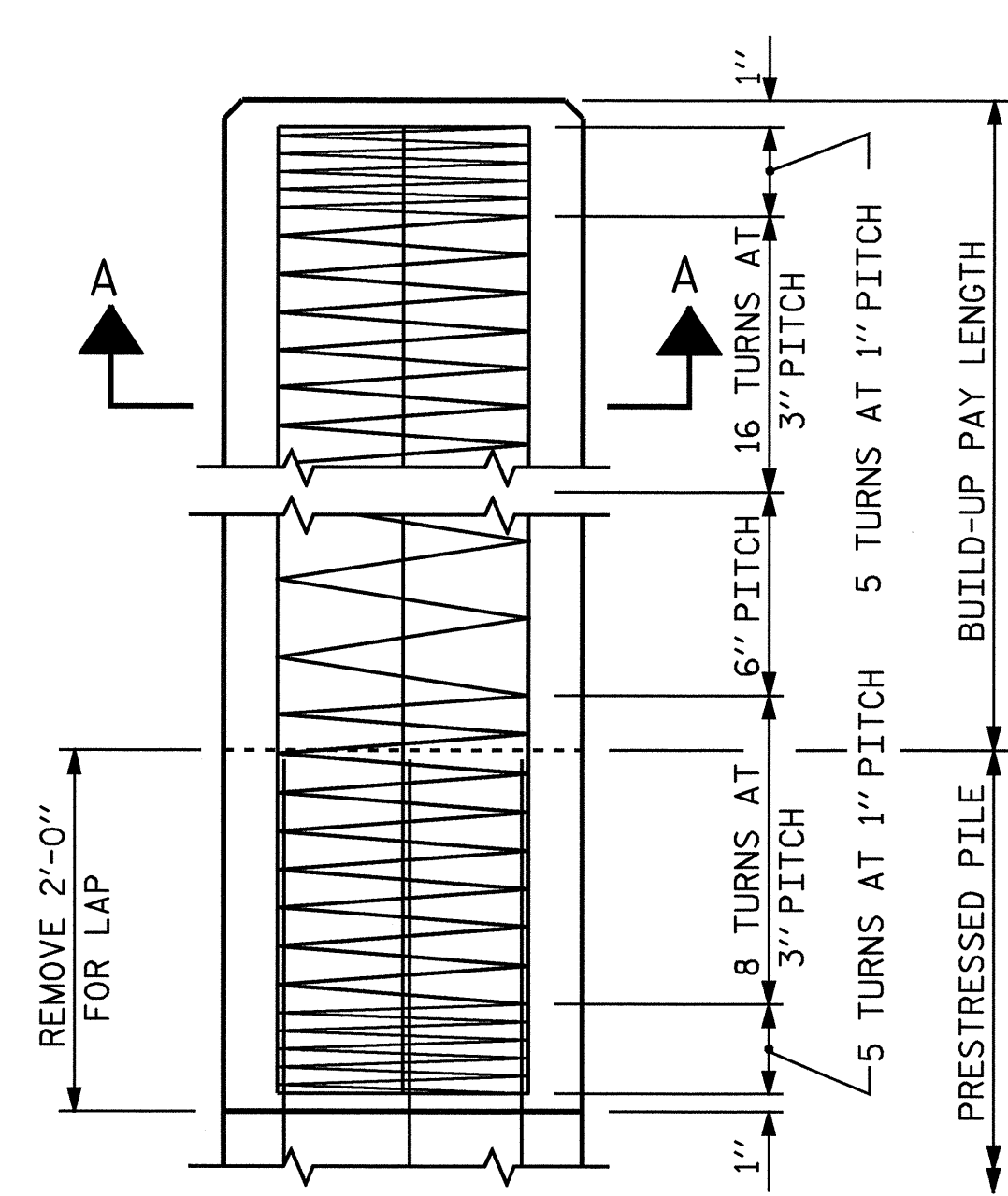
TYPICAL PATTERN FOR BURNING STRANDS



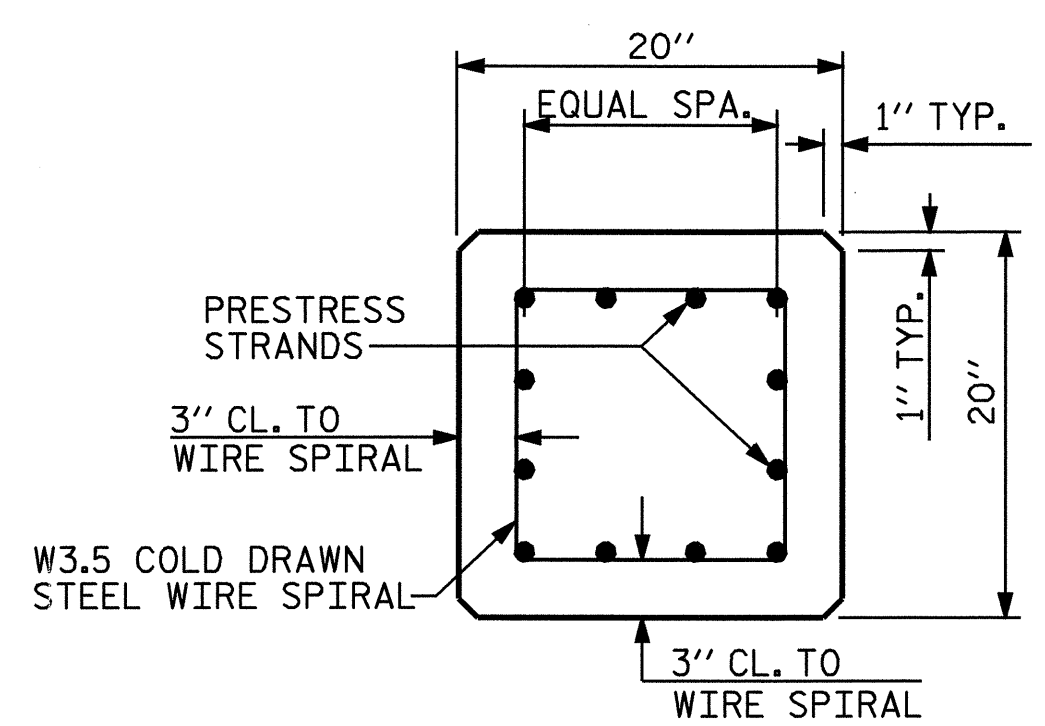
ELEVATION



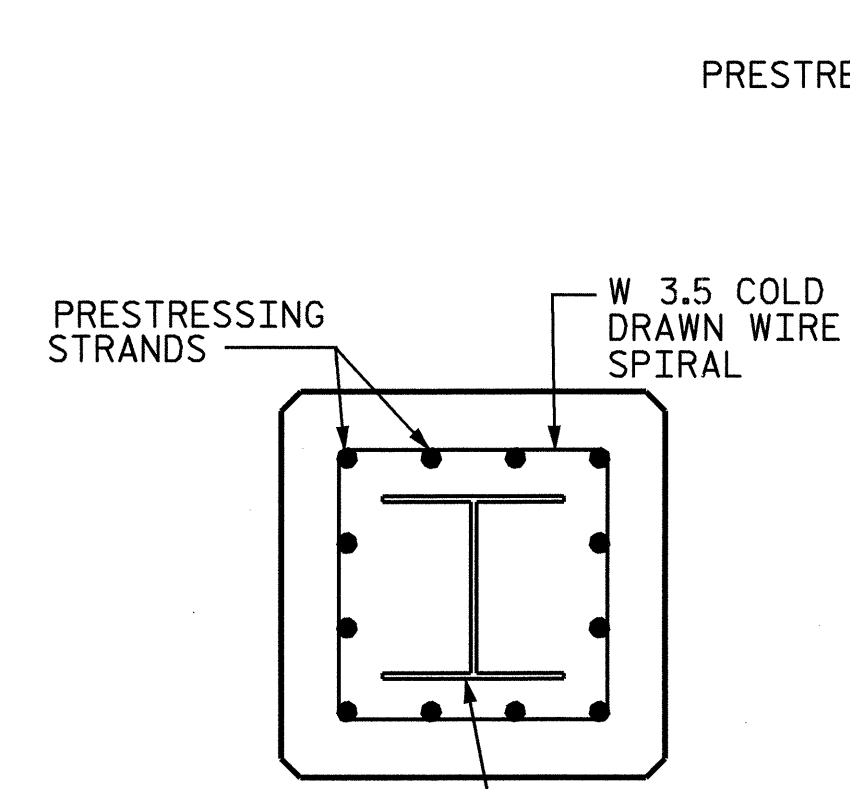
BUILD-UP WITHOUT DRIVING



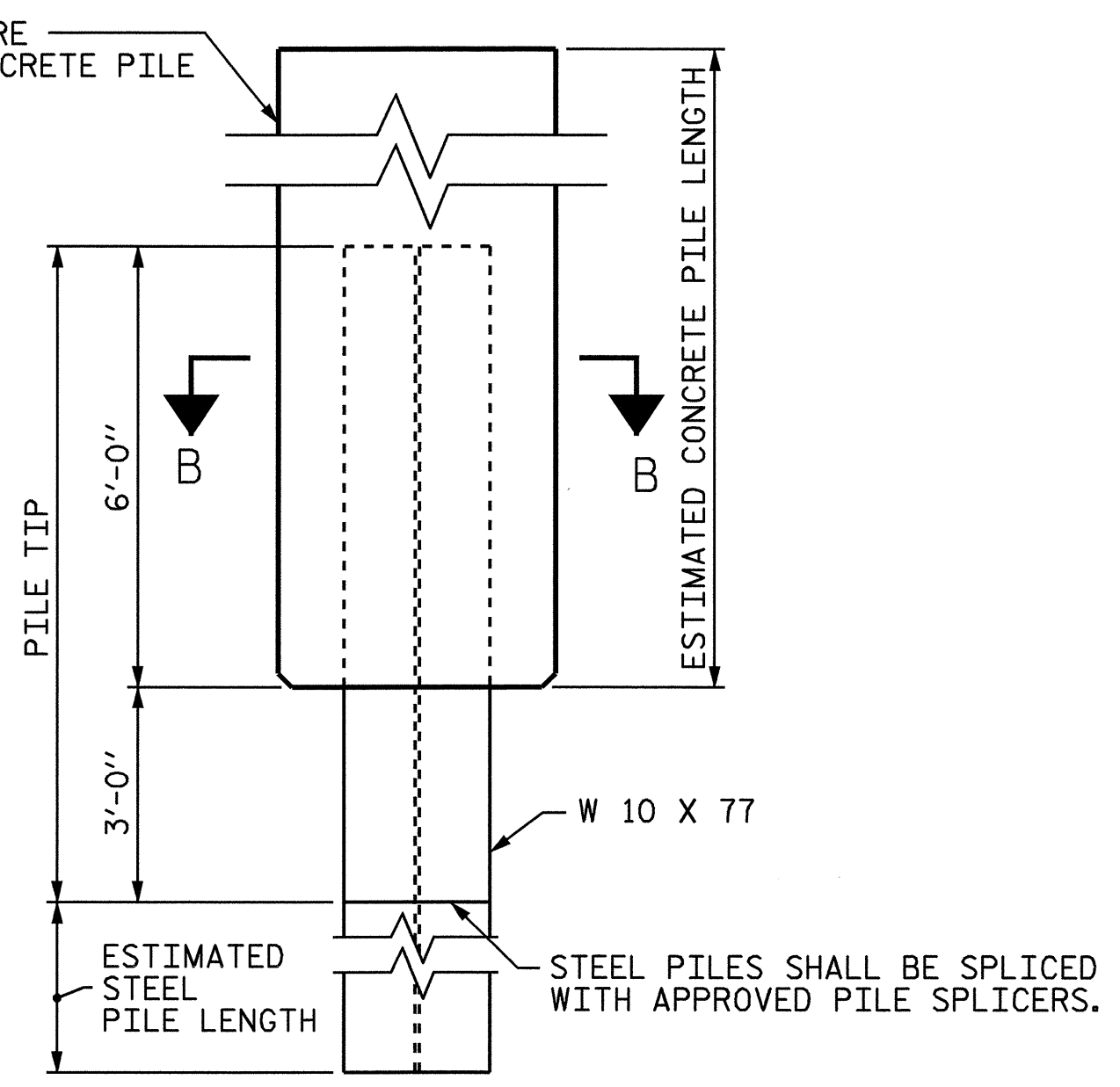
BUILD-UP WITH DRIVING



TYPICAL SECTION



SECTION B-B FOR 20" SQUARE PRESTRESSED CONCRETE PILE



ELEVATION

COMPOSITE PILE DETAILS

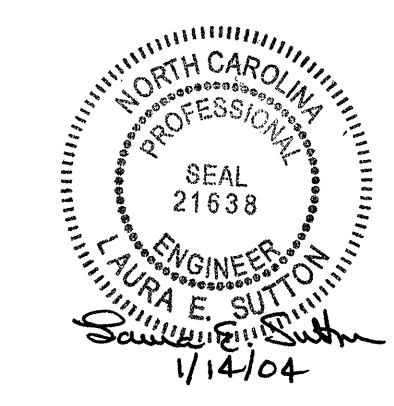
| LENGTH | QUANTITIES FOR ONE 20" SQUARE PILE | | | | | |
|--------|------------------------------------|---------------|--------------------|--------|--------------------|---------|
| | CONCRETE CU. YDS. | PILE WT. TONS | ONE PICK-UP POINTS | | TWO PICK-UP POINTS | |
| | | | 0.3L | 0.7L | 0.207L | 0.586L |
| 25'-0" | 2.56 | 5.18 | 7'-6" | 17'-6" | | |
| 30'-0" | 3.07 | 6.22 | 9'-0" | 21'-0" | | |
| 35'-0" | 3.58 | 7.26 | 10'-6" | 24'-6" | | |
| 40'-0" | 4.09 | 8.29 | 12'-0" | 28'-0" | | |
| 45'-0" | 4.61 | 9.33 | 13'-6" | 31'-6" | | |
| 50'-0" | 5.12 | 10.36 | 15'-0" | 35'-0" | | |
| 55'-0" | 5.63 | 11.40 | 16'-6" | 38'-6" | | |
| 60'-0" | 6.14 | 12.44 | 18'-0" | 42'-0" | | |
| 65'-0" | 6.65 | 13.47 | | | 13'-5 1/2" | 38'-1" |
| 70'-0" | 7.17 | 14.51 | | | 14'-6" | 41'-0" |
| 75'-0" | 7.68 | 15.55 | | | 15'-6 1/2" | 43'-11" |
| 80'-0" | 8.19 | 16.58 | | | 16'-6 1/2" | 46'-11" |
| 85'-0" | 8.70 | 17.62 | | | 17'-7" | 49'-10" |

PROJECT NO. B-3626
CARTERET COUNTY
 STATION: 20+29.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**STANDARD
 20" SQUARE PRESTRESSED
 CONCRETE PILE**

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|-----------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-19 |
| 1 | | | 3 | | | TOTAL SHEETS 23 |
| 2 | | | 4 | | | |



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ASSEMBLED BY : J.L. WALTON DATE : 6/26/03
 CHECKED BY : S.H. SOCKWELL DATE : 7/3/03
 DRAWN BY : WJH 1/89 REV. 6/1/94 EEM/GRP
 CHECKED BY : CRK 3/89 REV. 8/16/99 RAL/LES