Blunt-end ligation with PCR addition of indexes

NT Uni_p5 and NT Uni_p7 (these are the Nextera transposes sequences, so their matching sequencing primers will be in the Illumina sequencing kits):

TCGTCGGCAGCGTCAGATGTGTATAAGAGACAG
CAGAGCACCCGAGCCTCTACACATATTCTCTGTC

(so this can't be an A-tailed - the extra "A" isn't in the sequencing primer and would cause base diversity issues during sequencing)

Now add the metagenomics primers (Hyb_F01_i5 with "ATCACG" and Hyb_R21_i7 with "CGAAAC" (rev comp) in this example) which get incorporated AFTER CYCLE 1:

Cycle 1 - only Hyb_R21_i7 hybridizes and extends to form the reverse compliment of the top strand:

TCGTCGGCAGCGTCAGATGTGTATAAGAGACAG <insert>
CTGTCTCTTATACACATCTCCGAGCCCACGAGAC <insert> CAGAGCACCCGAGCCTCTACACATATTCTCTGTC <insert>
GACAGAGAAATATGTAGACTCGACGACGCTCTG
GGCTCGGGGTGCTCTG CAAAGC TAGACGATAACGGCAGAAGACGAC <-- reverse primer binds in cycle 1

Cycle 2 - the newly-formed top strand now has the compliment to the forward primer which can now prime:

AATGATACGGCGACCACCGAGATCTACAC ATCACG TCGTCGGCAGCGTCAGATGTGTATAAGAGACAG <insert>
TCGTCGGCAGCGTCAGATGTGTATAAGAGACAG <insert>
CTGTCTCTTATACACATCTCCGAGCCCACGAGAC <insert> CAGAGCACCCGAGCCTCTACACATATTCTCTGTC <insert>
GACAGAGAAATATGTAGACTCGACGACGCTCTG
GGCTCGGGGTGCTCTG CAAAGC TAGACGATAACGGCAGAAGACGAC <-- made in cycle 1

GGCTCGGGGTGCTCTG CAAAGC TAGACGATAACGGCAGAAGACGAC <-- reverse primer

this is all happening upside-down to the other strand in cycle 1