Step-1

In order to satisfy law of inertia both the matrices A and $C^T A C$ have same size.

If A is not a square matrix then the size of matrices A and $C^T A C$ are not the same

Step-2

For example,

If C is a 2×3 matrix and A is 2×2 matrix, then the size of the matrix $C^T A C$ is 3×3. Thus the size of matrix A and matrix $C^T A C$ are not same.

Hence, if C is $\boxed{\text{Not square}}$, then A and $C^T A C$ $\boxed{\text{do not}}$ satisfy the law of inversion.

Therefore, the answer is $\boxed{\text{No}}$.