The theoretical calculation of the video frame size in bytes can be done based on the NV12 format specifications. NV12 is a YUV format where the Y (luma) component is stored in a full-resolution plane, and the U and V (chroma) components are subsampled horizontally and vertically by a factor of 2.

Here's how you can calculate the theoretical video frame size for NV12:

- Determine the dimensions of the video frame:
- Width (W): The width of the frame in pixels.
- Height (H): The height of the frame in pixels.
- Calculate the size of the Y plane (Y component):
- Y Plane Size = W x H
- Calculate the size of the UV plane (U and V components):
- U Plane Size = (W / 2) x (H / 2)
- V Plane Size = (W / 2) x (H / 2)
- Calculate the total size of the NV12 frame:
- Frame Size = Y Plane Size + U Plane Size + V Plane Size

For example, if you have a video frame with a width of 176 pixels and a height of 144 pixels, you can calculate the theoretical frame size as follows:

- Width (W) = 176
- Height (H) = 144
- Y Plane Size = 176 x 144 = 25,344 bytes
- U Plane Size = (176 / 2) x (144 / 2) = 6,336 bytes V Plane Size = (176 / 2) x (144 / 2) = 6,336 bytes
- Frame Size = 25,344 + 6,336 + 6,336 = 38,016 bytes

So, the theoretical size of the NV12 video frame with a width of 176 pixels and a height of 144 pixels is 38,016 bytes. This is consistent with your calculation.