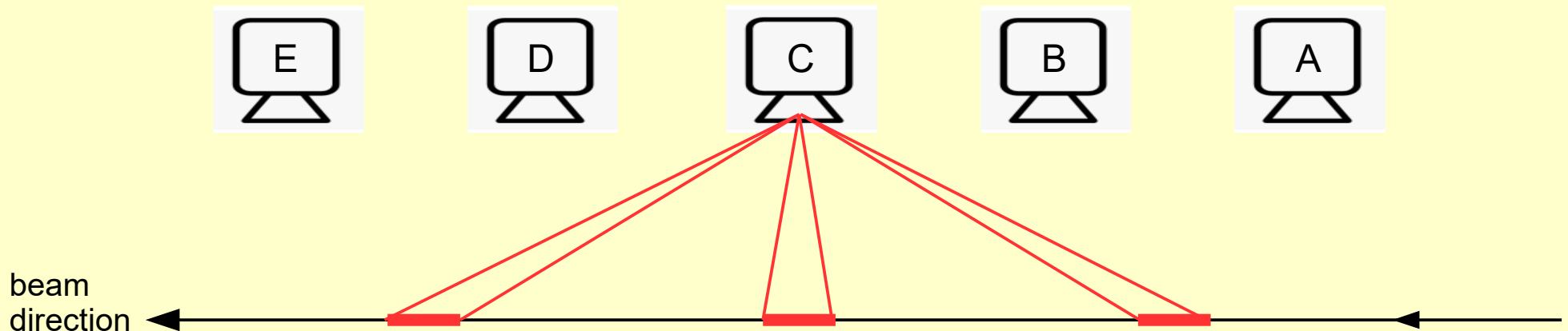


Photo Gallery of e-Hall beamline and Darklight experiment area

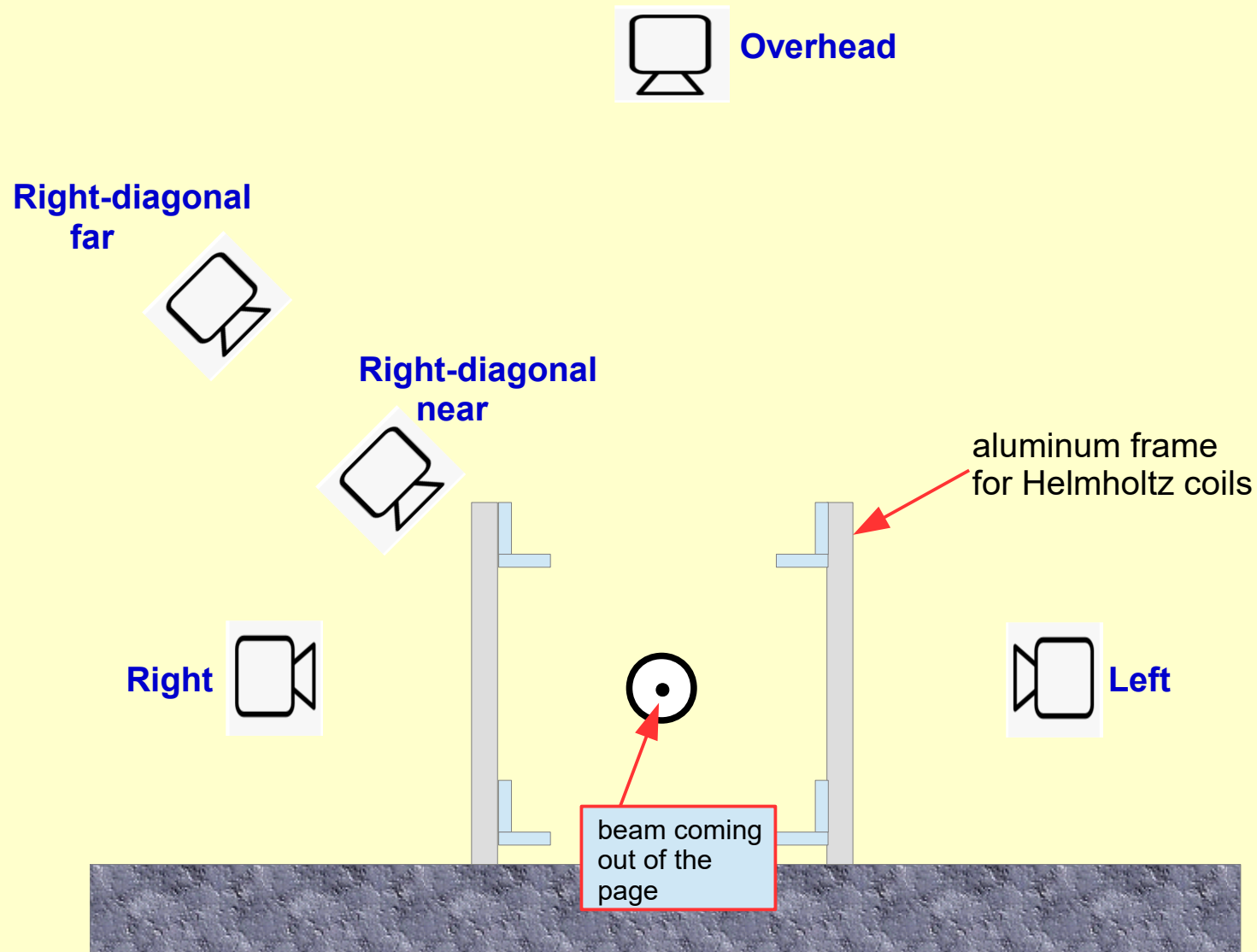
December 20, 2021

This set of photos was taken on December 20, 2021, to give a detailed picture of the environment around the current (downstream) and future (upstream) locations of the Darklight target chamber. Many structures, such as pipes and cable trays, which are not shown in the CAD drawings, are visible in these photos. Many photos have some combination of a tape measure and a home-made meter stick, to allow dimensions to be inferred.

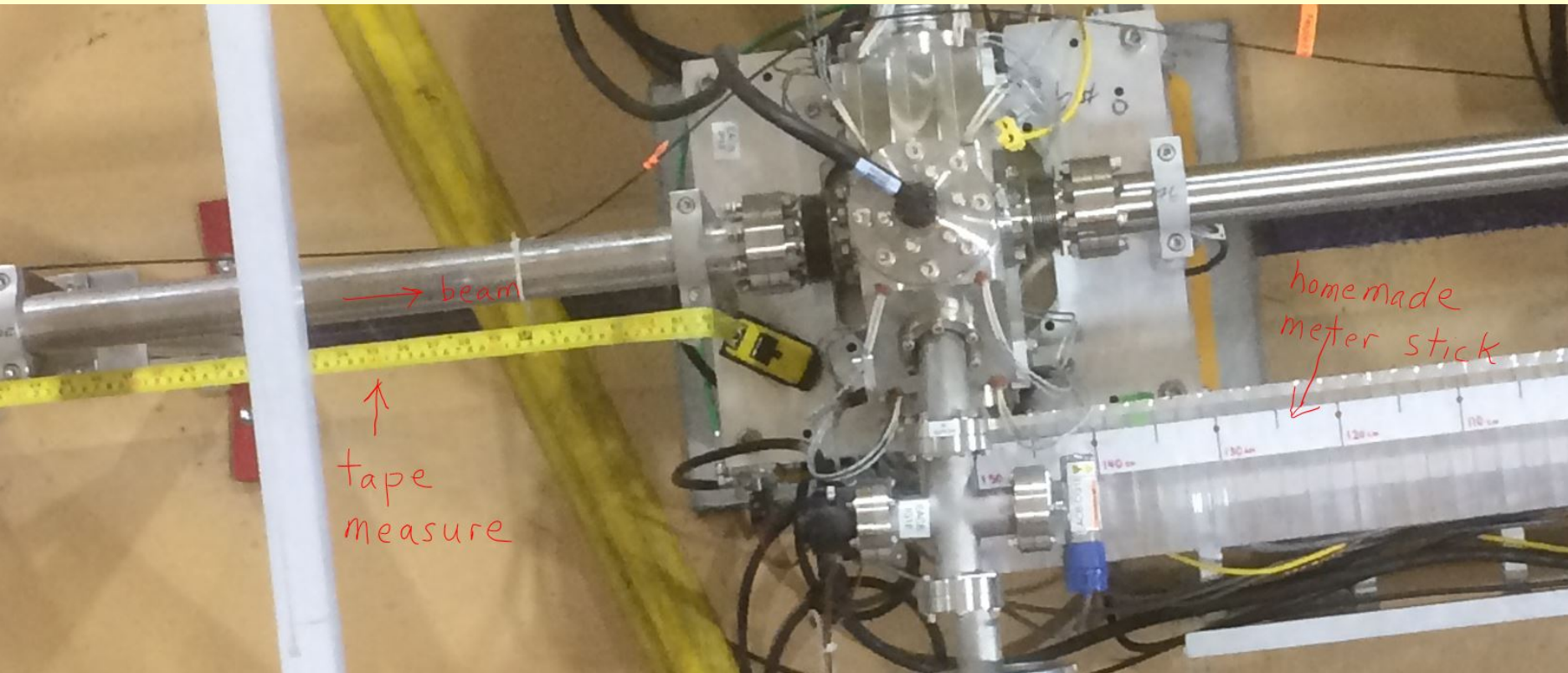
To avoid foreshortened views of objects far from the centre of each frame (see red lines below), photos were taken at 5 different locations (A to E) along the beamline. The most uniform linear scale will be obtained when the object in question is directly beneath the camera.



At each of the 5 locations, photos were taken from 5 different orientations, as shown below. Photos from the “Overhead” position were taken with a cellphone camera and a selfie stick while standing on the nearby elevated platform.



Two different rulers were placed at beam height to give a measure of the linear scale: a tape measure (imperial/metric), and a home-made meter stick with markings at 5 cm and 10 cm separations, as shown below:



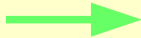
A sequence of pictures was also taken with the rulers placed on the floor, instead of at beam height, to allow parallax-free measurements of distances of objects on or near the floor, e.g. cable trays.

The following list tabulates the set of 55 photos:

- 01 Locations A B C D E on the overhead platform at which the overhead photos were taken
- 02 Longitudinal view of beamline with corresponding locations A B C D E marked
- 03 Longitudinal view of beamline without annotations
- 04 **Overhead** view, upstream half of beamline, with annotations
- 05 **Overhead** view, downstream half of beamline, with annotations

- 07-11 **Overhead** views, locations A-E, with tape measure upstream and meter stick downstream
- 12-16 **Overhead** views, locations A-E, with meter stick upstream and tape measure downstream
- 17-21 **Overhead** views, locations A-E, no rulers, unimpeded view
- 22-26 **Right** views, locations A-E, no rulers
- 27-31 **Right diagonal close** views, locations A-E, no rulers
- 32-36 **Right diagonal far** views, locations A-E, no rulers
- 37-41 **Left** views, locations A-E, no rulers
- 42-46 **Right** views, locations A-E, rulers on the floor instead of on the beampipe

- 47, 48 Tape measure showing the **height of the beampipe** from the floor
- 49, 50 Two views of the Darklight target chamber in its (Dec 2021) **downstream position**
- 51, 52 Two views of the future **upstream position** of the Darklight target chamber
- 53-56 Pictures showing the heights of the bottom and top **Helmholtz coils** from the floor

For orientation, most photos have a green arrow  indicating the beam direction.