

## Campbell River Gun Club Range 600 Yard Rebuild Information

The following Pages will show the progress and condition of the Gun range at the end of November 2022.

We faced major challenges in building the range to the new building standards published by the RCMP Please check out this link for the standards

<https://nfa.ca/wp-content/uploads/2015/09/RCMP-ATI-Response-Range-Design-and-Construction-Guidelines-Jan-17-2014.pdf>

In short, the range has to be built to make it impossible to create ground strikes resulting in ricochets. The geometry is such that from the shooting position intended for the range, the range bottom can not be seen. What can't be seen can't be shot at is the philosophy. We encountered the challenge to build the backstop of the 600 yard range high enough to adhere to the design standards. 6 meter plus, required a shelf on the front side of the backstop for the excavator to work from, to build up the top. The top has to be 1.5 meter wide at 6 meters high. The height is similar to a 2 story building with a flat roof. The back and front has to have an angle so the material stays in place even during rainy conditions this results in an angle of about 40 degrees. Thousands of cubic meters of material had to be trucked in place from where the excavator could lift it up to the top edge of the backstop. The club used two donated excavators and donated gravel trucks and had the use of a articulated 30 cubic unit to accomplish this. Without the equipment and the operators that made uncounted trips from between the 300 to the 500 yard range to move the material to the 600 yard backstop this huge wall could not have been built. The excavator operators seemed to perform miracles by piling all the material into a very high and solid backstop. We needed every bit of expertise this very experienced operators contributed to the project. The material we moved lowered the bottom of the range after the 300 yard backstop so we could build the other backstops to get the geometry right. Drainage ditches had to be established along the new range bottom and in front of the individual backstops. The access road had to be relocated and its base lowered to be invisible from the shooting position.

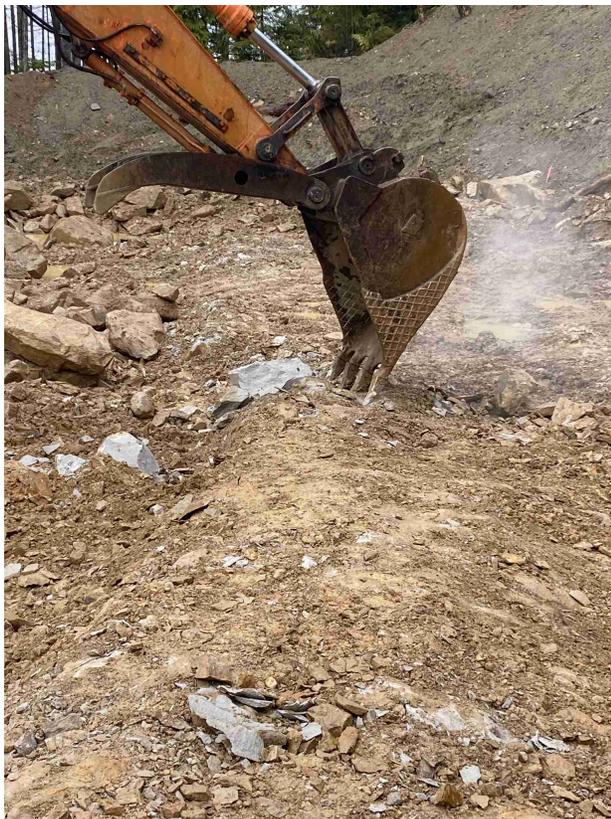


Unfortunately all this efforts where not enough to build the backstop to the height required. The challenge was to gain 4 feet in height across the 600 yard range. This was measured from a sight line from the shooting position over top of the 300 yard backstop to the bottom of the 600 yard backstop. We had to lower the 300 yard backstop and then could contemplate the lowering of the base at he 600 yard. This base starts in a solid sandstone ridge. We rented a D8 with ripper blade to attack this ridge but found out soon that is was to solid even for the large equipment. Blasting was contemplated and funds set aside to hire a blaster to do it. It ended up not to be possible because of the vicinity of the Gold River highway and the necessary permits to blast there. Don had the brilliant idea to do a “slow blast” using expanding grout in holes across the sand stone ridge. Several work parties drilled 350 plus, 3 foot deep holes, with jackhammers, at about 12 inch spacing right along the sandstone ridge in several rows. John was in charge of mixing the grout. We filled all the holes with the slurry.



The instructions called for 24 hours for the job of the grout to be done. We went and checked the progress and were very disappointed since the sandstone was still solid and the 270 excavator could not move it. The weather was unseasonably cold at the time. We waited for another two days and what we found was a totally shattered sandstone ridge that could be dismantled like peeling pages of a book. Large clean slabs of sandstone were taken out and used as fill to level the base of the 600 meter range. It turned out as flat as a parking lot and well over 4 feet lower than before. This effort with a large work party made the 600 range possible. Now the geometry of the range could be formed, the backstop heights adjusted and the road to be finalized. The side berms needed a bit of work so did the drainage to the 300 Yard front of the backstop. Wet weather was a challenge way into the season.

We still had to lower the section between the 300 and the 500 yard range by about 4 feet to make the geometry work. The 300 yard backstop is as low as it can be and material behind it can't be above the sight line to the 600. We needed many thousand of cubic meters of fill to build the dynamic shooting bays and the 25 meter Pistol range. A major trucking effort started by taking the material from the 600 range and transport it to the dynamic ranges where the second excavator started to build the backstops and the side berms required.



## Argonaut Range Condition Nov. 24. 2022 600 yard range

This is an aerial picture of the gun range under construction in July 2022. North direction is on the upper frame. There are natural ravines behind the 100 yard and the behind the 500 yard backstops. The road will pass the LH side of the range building and change in front of the 100 yard (white line). It will cross the range behind the 25 meter backstop (the red line) to go close to the RH side berm to pass through the ravine on the shallow side. It then continues as it shows in the picture. It will pass to the LH side again behind the 300 yard backstop and pass through the shallow part of this ravine at the 500 yard to reach the 600 yard backstop.



View in the the shooting direction black and blue barrels are the 5 meter ground baffle. The first backstop is at 25 meters  
Bottom shows side berm at 25 meters



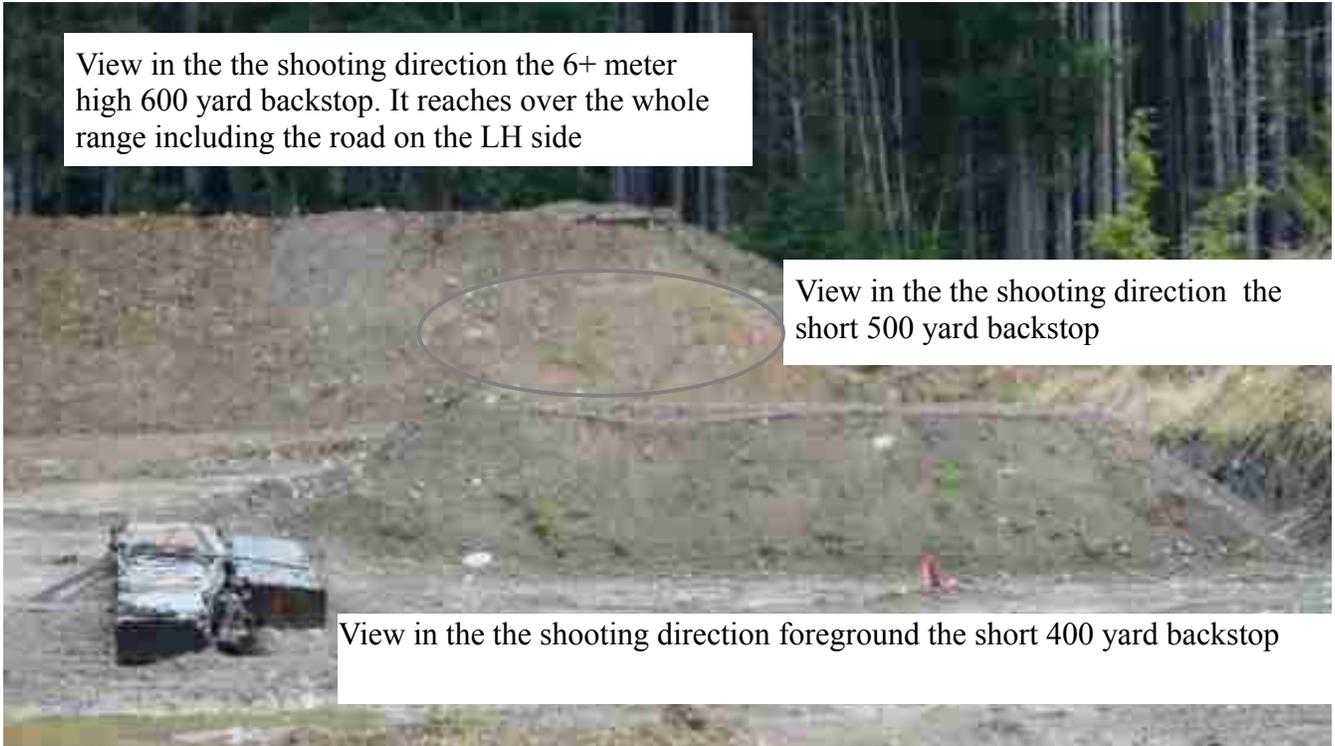
View in the the shooting direction 100 yards backstop  
Bottom shows corner of 100 yards backstop and side berm



View in the the shooting direction 200 yards backstop  
Bottom shows side berm at 200 yards



View in the the shooting direction the 6+ meter high 600 yard backstop. It reaches over the whole range including the road on the LH side

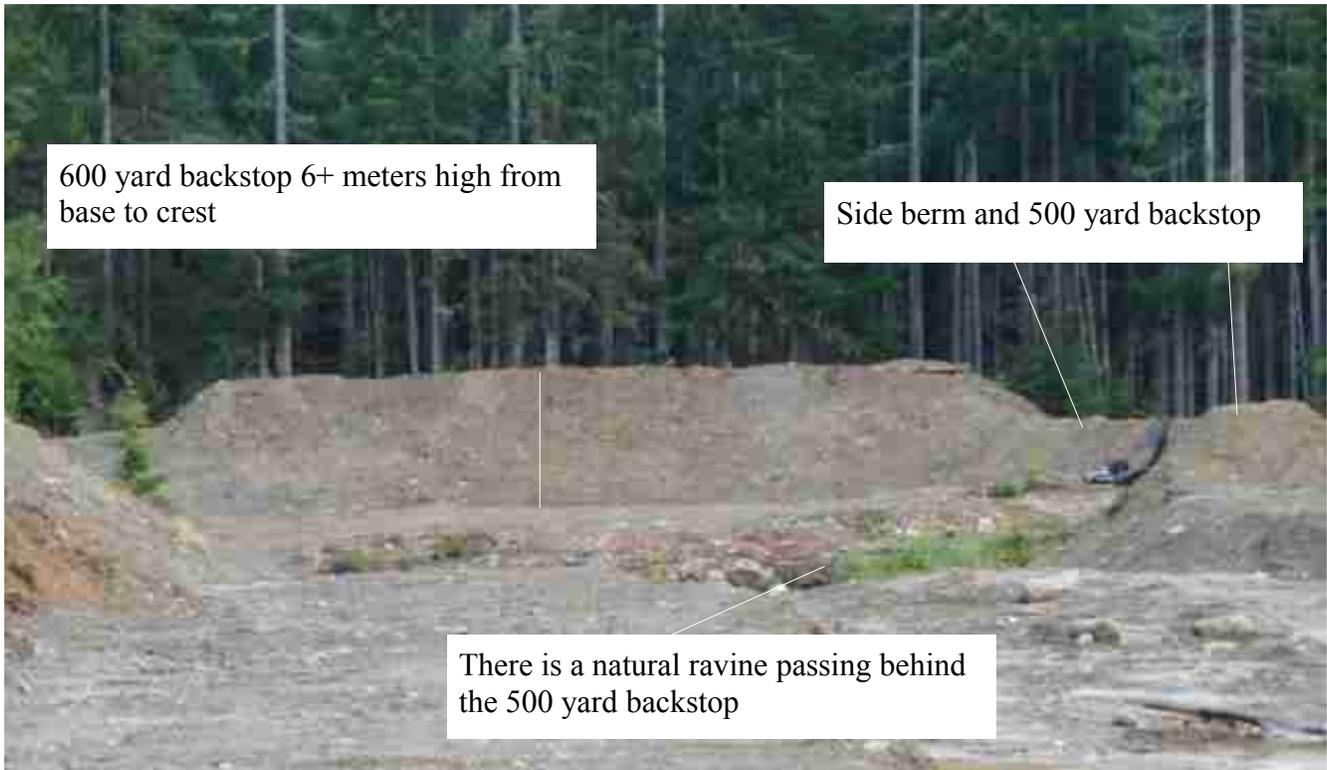


View in the the shooting direction the short 500 yard backstop

View in the the shooting direction foreground the short 400 yard backstop

RH side berm from the 300 yards towards the 600 yard backstop





We had the use of equipment to move all the material and form the range geometry. A D6 articulated rock truck and Greg's two excavators. A 200 and a 270 Hitachi. These pictures show the range with the old road position during the transporting of material to the dynamic bays

The range also needed a ground baffle 5 meters forward of the shooting line. The very defined top of this baffle prevents a view of the ground between the shooting position and the first back stop at 25 meters. The top of the baffle is covered with a layer of wood cut at an angle to prevent ricochets from the top of the baffle. The top can't be seen from the shooting position. It was decided to design this range for bench rest shooting. It will also serve as a sighting in range for all other long arms. The shooting position will be seating at a shooting table. The barrels are filled with sand are provide a bullet prove wall in accordance with the range design rules.



We found out that there was a draining ditch in front of the ground baffle at the 600 range to prevent the water draining from the roof to wash out the foundation of the baffle. We dug a ditch installed drainpipe and wrapped it with environmental fabric and gravel. Joh used the donated bobcat to bring in the gravel.

