



# NZDA-BOP TECT Park 300m Range

## RANGE STANDING ORDERS

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Cross reference to the NZ Police Shooting Range Manual Section 7 RSO Headings

NZ Police Manual Serial	NZDA BOP RSO Section
1	1.3 Range Complex Name (1,2)
2	1.3 Range Complex Name (1,2)
3	1.11 Authorisation of Range Standing Orders (3, 35)
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A	7 Annex A – Location And Ammunition Danger Area (A, B)
B	8 Annex B - Ammunition Safety Template Long Sections
C	9 Annex C - RSO Summary Sheet
D	10 Annex D - Range Design Statement

Document Issue Record			
This Issue	Status	Originated	Reviewed
13/11/24	To FSA for certification	G M Hammond	Committee
<b>Past issues</b>			
12/6/23	Updated for certification.	G M Hammond	
21/6/22	For committee review	G M Hammond	Committee
15/6/2019	For certification issued 18/2/2021	G M Hammond	P Miles
18/7/22	Final review by Range Certifier	G M Hammond	
20/7/22	For implementation	G M Hammond	
1/8/22	A.3.4.4 & A.3.4.5 changed	G M Hammond	
26/8/22	Uploaded to website	G M Hammond	P Miles
12/8/24	Updated: A.6.6.4 B.3.6 2.1-ROP-GroupScore 2.2-ROP-GroupScore 2.3-ROP-Group	G M Hammond	
14/10/24	DRAFT with RSO separated out	G M Hammond	
21/10/24	For issue to FSA	G M Hammond	
22/10/24	Section 2 revised	G M Hammond	
28/11/24	To committee for approval	G M Hammond	

## **1 ADMINISTRATION**

### **1.1 RELATED DOCUMENTS**

These Range standing Orders shall be read in conjunction with the Range Manual.

### **1.2 QUICK REFERENCE SUMMARY**

A quick reference summary sheet that condenses the most important rules and requirements into a single page is contained in the annex

### **1.3 RANGE COMPLEX NAME (1,2)**

This range complex is known as the NZDA BOP Branch TECT Park 300m Range

### **1.4 RANGE DESCRIPTION (4)**

The NZDA-BOP Branch TECT Park 300m range is a metric outdoor open rifle range with a fixed firing line, and fixed target lines at 25m, 50m, 100m, 200m and 300m.

### **1.5 RESPONSIBILITY (5)**

The NZDA-BOP Branch is the Shooting Range Operator responsible for the control and management of this range. The Range Manager is responsible for the administration, management and maintenance of this range complex.

### **1.6 COMPLIANCE WITH RANGE STANDING ORDERS (6)**

All range users must be familiar with and comply with these Range Standing Orders and the Range Manual. Failure to comply with these Range Standing Orders could result the members in loss of access to this range, and/or expulsion from the NZDA-BOP club (as well as potentially their firearms licence being revoked by the Police).

### **1.7 RANGE LOCATION (7)**

The range is located at the end of Ngawaro Road, within the TECT Park, which is located on State Highway 36 (Pyes Pa Road, Tauranga) approximately 29 km from Tauranga and 27 km from Rotorua. The range has a fixed firing position, and fixed target lines at 25m, 50m, 100m, 200m and 300m.

NZTopo50 Coordinates of firing point are BE36 579,5271N : 1,874,757E and the 300m target line is approx. 579,4991N : 1,874,817E

### **1.8 AMENDMENT TO RANGE STANDING ORDERS (34)**

The Shooting Range Operator must review and approve any proposed amendment. If approved, the Shooting Range Operator is to submit the amendment to the Clubs and Ranges Team at Te Tari Pūreke - Firearms Safety Authority for review. If approved, the Shooting Range Operator can include the amendment in the RSOs with a new effective date and distribute accordingly. All previous copies of the RSOs are no longer valid.

### **1.9 DISTRIBUTION LIST (36)**

Copies of this RSO shall be distributed as follows:

1. NZDA National Office
2. NZ Police (once certified under the new regulations)
3. On-range copy
4. Website copy

### **1.10 RANGE MAINTENANCE PLAN (29)**

Refer to the Range Manual for the current maintenance program.

### **1.11 AUTHORISATION OF RANGE STANDING ORDERS (3, 35)**

These Range Standing Orders are approved by the NZDA BOP Branch Inc and are effective from 12 November 2024.

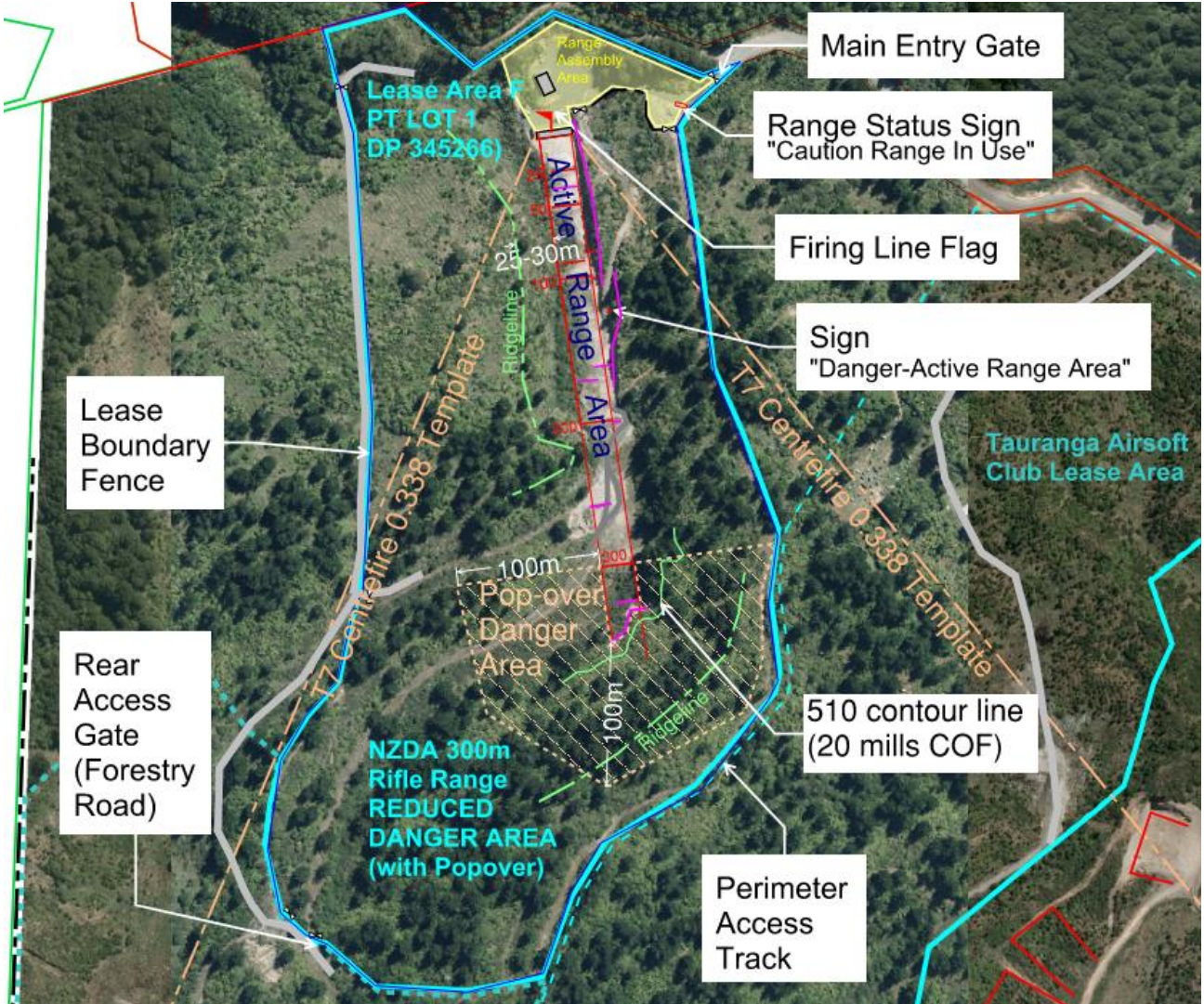
## 2 RANGE DESIGN AND RESTRICTIONS

### 2.1 DESIGN STATEMENT AND RANGER AREA (D)

Refer to the design statement in the appendix for full details of the range design methodology.

### 2.2 RANGE LAYOUT AND RANGE DANGER AREA (A)

This range is a reduced danger area range, that relies on topographic, man-made features (such as the range floor baffles) and strict control of the shooter and firearm to capture all projectiles fired. The reduced danger area (extent of our lease) is approximately 16.5 ha, which extends 100-180m immediately beyond the 300m target line as shown below:



Refer to annex 7 and 8 for the full ammunition danger area template and long-section drawings.

## 2.3 CONE OF FIRE (24)

The approved Cones of Fire for this range are:

Allowable Shooting Position	Cone of Fire
Offhand, kneeling, seated, prone and bench	20 milliradians (2m radius at 100m target) (4m radius at 200m target) (6m radius at 300m target)
Precision benchrest shooting with front and rear supports (Controlled by Restricted Operating Procedures in the annex) Group & score shooting with wind flags at designated positions	6 milliradians at 100m (0.6m radius) 3 milliradians at 200m (0.6m radius) 6 milliradians at 300m (0.9m radius)
Group & score shooting with individual shooter wind flags, <u>without</u> a moving target backer system	1.5 milliradians at 100m (0.15m radius) 1.125 milliradians at 200m (0.225m radius) 1.125 milliradians at 300m (0.337 radius)
Group & score shooting with individual shooter wind flags, <u>with</u> a moving target backer system	1.5 milliradians at 100m (0.15m radius) 0.75 milliradians at 200m (0.15m radius)

## 2.4 RESTRICTIONS

### 2.4.1 Allowable Firearms:

- Rimfire and Centrefire Rifles of any cartridge up-to and including 0.338in Lapua with a muzzle energy no greater than 7000 Joules.
- Air Rifles of any calibre.
- Black Powder rifles up to and including 0.75in calibre with a muzzle velocity no greater than 2000fps.
- Shotguns up to and including 12gauge with a muzzle velocity no greater than 2000fps that are fitted with rifle sights shooting rifled slugs.

Allowable firearms include non-prohibited firearms under an A-category firearms licence, and prohibited firearms and restricted weapons where the licenced firearm holder has an appropriate endorsement for the particular prohibited firearm.

*Advisory Note: Listed below is a range of projectile weights, velocities and energy to determining if a firearm may exceed these restrictions:*

Projectile Weight (grains)	Velocity (M/s)	fps	Energy (Joules)	Foot Pounds
180	884	2900	4557	3361
200	975	3200	6165	4547
250	930	3050	7000	5163
300	853	2800	7080	5222
400	731	2400	6936	5116

### 2.4.2 Firearms NOT ALLOWED:

The following firearms are prohibited from use on this range; Fully automatic firearms, Pistols, paintball and airsoft guns.

### 2.4.3 Approved Ammunition (13)

Ammunition specific to cartridges chambered for allowable firearms defined in section 2.4.1 above are approved subject to the following restrictions:

#### Allowable Projectiles:

Centrefire: Lead, jacketed lead-core, monolithic copper alloy.

Rim-fire: Lead, jacketed lead-core, sintered copper alloy.

Shotgun: Solid lead slugs only

#### Projectiles NOT ALLOWED

Tracer and incendiary are strictly prohibited. Also prohibited are projectiles with a core of steel or hardened material or depleted uranium and those with a discarding jacket/sabot.

#### 2.4.4 Air Danger Height (28)

The air danger height is 152.4m (500 feet). Intrusion within the air danger height shall be controlled by the Officer on Duty (controlling the shooting) stopping firing if an aircraft enters the air danger height for the duration of the intrusion.

### **3 SAFETY**

#### **3.1 RANGE INDUCTION**

3.1.1 All shooters shall complete a range induction before they can shoot on the range. Refer to the Range Manual for induction requirements.

#### **3.2 RANGE SAFETY APPOINTMENTS (11)**

3.2.1 An Officer on Duty must be on duty whenever a range is in use. The Officer on Duty is to be a person approved by the NZDA-BOP Branch who holds a firearms licence and is appropriately trained in shooting range safety management.

3.2.2 "Authorised Range User" means a paid-up member of the NZDA-BOP branch that has purchased an Annual Range Ticket and passed the required range induction process. Authorised Range Users are approved to act as the Officer on Duty when the range is in use and be responsible for control of shooting and range safety. Authorised Range Users must be either a National Qualified, or NZDA BOP Club Range Officer. Refer to the Range Manual for range officer minimum qualifications.

3.2.3 Authorised Range Users may use the range for their personal use subject to the following requirements:

- Up to 6 Authorised Range Users may shoot concurrently if they elect one person to act as the Range Officer to control the shooting (this person may also participate in shooting).
- If more than 6 Authorised Range Users are participating, shooting must be controlled by a National Qualified Range Officer who is not shooting.
- Nationally Qualified Range Officers can only supervise a maximum of 6 visitors when conducting a private shoot.

3.2.4 Shooters who are not Authorised Range Users can only shoot under the control of a Nationally Qualified Range Officer.

#### **3.3 WARNING FLAGS – DANGER SIGNS (9)**

3.3.1 The following warning sign and flag are used to indicate the ranges operation:

- The main gate range status sign "Caution Range in Use". This sign shall be displayed when the range is open for use.
- The red firing line flag. This shall be hoisted when the range is open for use.

3.3.2 Range Clearance (22).

The last shooter to leave the range shall ensure the range gate caution sign is closed, and the firing line warning flag is lowered.

3.3.3 The following warning signage is fixed to the perimeter fence around the range danger area:

- Solid panel warning flags fixed to all angle changes on the perimeter fence line.
- Warning signs fixed to fence at approximately 50 m centres

#### **3.4 RANGE SAFETY RULES (12)**

The following safety rules must be complied with on the range:

- 3.4.1 Shooters may only enter or leave their firing position under direct instruction from the Range Officer who is in control of the firing line.
- 3.4.2 Only one firearm should be made ready on the firing line at any one time to avoid the risk of loading the wrong cartridge, or leaving a firearm loaded when switching.
- 3.4.3 All firearms are to be removed from the firing line before anyone goes downrange.  
The firearms handling and temporary storage in the firing line building is as follows:
- All firearms on firing line are to be removed from the firing line and placed in the firearm racks before Range Officer gives instruction for anyone to go downrange to check targets. ( Ok for other gear to be left on the firing line).
  - Firearms should be handled by the barrel/fore end with the muzzle pointed vertically.
  - Shooters who finish shooting before end of detail can hold hand up for Range Officer to check the firearm for a safety indicator, and come off the firing line and store firearm in racks.
  - RO shall give a clear instruction "RANGE IS SAFE" after all firearms have been removed from firing line at end of each shooting detail before anyone can go downrange.
- 3.4.4 A safe handling zone is provided for making adjustments to firearms. NO AMMUNITION is allowed in the safe handling zone.
- 3.4.5 Firearms must remain in firearm racks while people are down range except when in the safe handling zone.
- 3.4.6 All persons going downrange shall take a target tag with them.
- 3.4.7 Domestic Animals (32)  
No dogs are allowed on the firing line, active or danger range area when the range is open. Any dogs in the assembly area must be on leashes or tied up, and under the control of their owner.
- 3.4.8 Children (Minors) (30)  
Children and minors MUST always be under direct adult supervision.
- 3.5 EYE AND HEARING PROTECTION (18)**
- 3.5.1 Suitable eye protection is strongly recommended.
- 3.5.2 Hearing protection is mandatory for all persons within 20m of the firing mound when live firing is in progress.
- 3.6 HEALTH AND HYGIENE (20, 31)**
- 3.6.1 There is the potential for lead contamination on shooting ranges, so it is recommended that hands are washed before eating food.
- 3.6.2 Medical (19)  
The first aid kit is in the firing line structure on southern side of the entrance doorway.
- 3.6.3 Accident/Incident Procedure (20)  
In the event of an accident/incident, the following is to occur:
- All shooting is to cease immediately.
  - All firearms that are in use must be made safe / unloaded.
  - Ensure that immediate first aid is provided and assess the need for evacuation of the casualty to the nearest medical facility or onsite recovery by emergency services.
  - Make a record of all people present and complete the accident information form in the range manual.
  - Notify the SRO
  - Notify the Police if a firearm or ammunition was involved.
  - Advise the TECT Park Manager or Ranger
- 3.6.4 Fire precautions and procedures (21)  
The TECT Park has fire and emergency procedures which are posted on the firing line back wall.

## **4 CONTROL OF SHOOTING**

### **4.1 CONDITIONS OF USE (10, 12)**

4.1.1 Hours of Use: Shooting is limited to between the hours of 7am and 10 pm 7 days per week.

4.1.2 Range Register: The forename and first letter of the surname of the shooter and the date shall be recorded in the range register each time they use the range.

*Advisory Note: A range register is provided to record shooters using the range when this information is not recorded by a separate shooter registration process at organised events, or when multiple shooters enter the facility under one access tag. Non-shooters are not required to be recorded.*

#### 4.1.3 Range Commands

There is a set of standard range commands for use when specific match commands are not provided. These commands are posted on large signboards at both ends of the firing line, and listed in the Range Officer Cue Card that is included in the range manual.

#### 4.1.4 Approved Range Users and Priority of Use (8)

This range is for Authorised Range Users, and the following other shooting clubs use on their allocated days under their memorandums of understandings:

- Tauranga Precision Rifle Association

#### 4.1.5 Unauthorised Access and Use of The Range (23)

Any shooter who does not have a range access tag that has been issued to them and is not under the control of a Nationally Qualified Range Officer is not an Authorised Range User and therefore should not be using this range.

All Authorised Range Users are encouraged to actively monitor the correct use of the range and have the right to request any shooter to show evidence of their authorisation to use the range. This proof will usually be by showing their access tag.

Where someone is found to be on the range without authorisation, any Authorised Range User has the right to request they stop shooting immediately and leave the range. The unauthorised access should be reported to the Range Manager, and if possible, the unauthorised person's name and contact details should be recorded.

## **4.2 SPECIFIC SAFETY RULES FOR THE USE OF THE RANGE/RANGE COMPLEX (12)**

### 4.2.1 Allowable Shooting Practices (12):

Only deliberate practices are allowed on this range. All shots must be fired **DELIBERATELY ONE AT A TIME**. Non-aimed shots are **NOT PERMITTED**. This is particularly relevant to semi-auto firearms under rapid-fire situations. All shooting is to be at static targets only.

The following shooting range limits apply unless there is a restricted operating procedure that overrules them:

- Offhand shooting is limited up to and including the 100m target line.
- Kneeling and seated position shooting is limited up to and including the 200m target line.
- Shooting shotguns with rifled slugs is limited up to and including the 100m target line, with barrels fitted with rifle sights or scoped sights.

### 4.2.2 Control of Actions, Bolts and Magazines: Irrespective of the above general shooting rules, because this is a reduced danger area range the following special rules also apply:

For all firearms:

- An empty chamber indicator (ECI) **MUST** be always inserted in the chamber except when the Range Officer allows the shooter onto the firing point and gives permission to remove the ECI.
- A round can only be fully chambered when the firearm is on the shoulder and pointing at the target.

*Advisory Notes: Where the shooter has difficulty fully chambering a round with the firearm on the shoulder, (such as break open actions or stiff cycling bolts) the Range Officer has the discretion to allow a shooter to load a round and close the bolt while holding the firearm in a practical position (at the hip if standing, alongside and in front of the body in other positions). Whilst doing this fingers **MUST** remain outside the trigger guard and the firearm **MUST** continue to point downrange at the target at ALL times. After loading and all the while still pointing the firearm at the target, the firearm can be brought to the shoulder, target acquired and then the finger may be placed inside the trigger guard.*



- The firearm must be in a safe state before changing shooting positions. An empty chamber, a round in the chambers with bolt open, or chambered round with safety on are considered a "safe State".
- The chamber must be emptied before the firearm ceases to be pointed at the target.
- The action must be **independently confirmed clear** before the shooter is allowed off the firing point.

For firearms with non-removable bolts (semi-automatic, lever, pump, break open etc):

- The bolt may be closed on an empty chamber when the Range Officer allows the shooter onto the firing point and gives permission to remove the empty chamber indicator

For firearms with fixed magazines:

- Fixed magazines must be independently confirmed clear before the shooter is allowed off the firing point.
- Fixed magazines must be emptied before the firearm is removed from the firing line.

For firearms with removable magazines:

- Magazines must be unloaded prior to leaving the firing line, but magazines may remain filled on the firing line when the firearm is in the storage racks between matches.

#### 4.2.3 Black Powder Muzzle Loading Firearms

The range does not provide any special loading areas for black powder muzzle loading firearms, so the use of these will only be permitted with written permission from the Range Manager (generally for demo purposes only such as the HUNTS course training).

#### 4.2.4 Inability to Achieve Cone of Fire (25)

If a shooter cannot achieve the approved cone of fire, the shooter must be stood down from the detail and the firearm checked for zero. Only if the zeroing is successful can that shooter resume the event with that firearm. Further coaching and supervision may be required.

#### 4.2.5 Checking Firearm Zero

All firearms with an unknown sight zero should be checked by shooting them first at close range (25m) before shooting at 100m or more.

#### 4.2.6 Test Firing (27)

Test firing covers situations where the operation of the firearm is in question and the firearm requires testing under live fire conditions to confirm it is operating correctly and is safe. This might be where a firearm has been repaired by a qualified armourer or gunsmith, and the owner wants to 'test fire' it in a safe environment.

Test firing of rifles or ammunition can only be done with the approval of the Range Manager. If a test rig is used for bench testing ammunition, targets must be aligned so that all shots fall within the confines of the bullet catchers/backstop.

#### 4.2.7 Ricochets

This range is designed to capture all shots fired within the reduced range danger area without ricochet. If a ricochet is heard, all shooting must stop immediately, and the cause of the ricochet must be investigated by the shooter to ensure no further ricochets occur. Any ricochet should be reported to the Range Manager.

## 5 TARGETS AND DOWNRANGE EQUIPMENT

### 5.1 SOFT TARGETS (14)

Soft targets are approved for use on this range. Soft targets must be located onto the fixed target backers 25m, 50m, 100, 200m or 300m target lines. (Refer to the Design Statement for definition of soft/hard targets).

Shooters shall only shoot at the numbered target position on the target backers that corresponds with their firing line numbered position. Targets must be placed vertically, and centred on the target board, not placed at the extreme edges i.e. top and bottom.

Targets ARE NOT to be located between the fixed target lines Free standing target holders are PROHIBITED

Any other type of targets not described above must be approved by the Range Manager before use.

## **5.2 TARGET CONTENT**

NZDA is a hunting organisation and promotes safe and socially accepted shooting practices. The use of targets that contain a human silhouette as the aiming point are therefore discouraged unless they are appropriate for the style of shooting being undertaken e.g military/service matches. The Chief Range Officer on duty has sole discretion on what targets are acceptable.

## **5.3 STEEL PLATE (HARD) TARGETS (15)**

Falling Plate (Silhouette) targets are limited to .22 Long rifle rimfire cartridge and may only be used up to 100m under the control of a Nationally Qualified Range Officer.

Shooters shall only shoot at the silhouettes directly in front of their numbered shooting position on the corresponding numbered position at the target backer.

Refer to the Range Manual for restricted operating procedures that covers setup and use.

## **5.4 MOVING TARGETS (16)**

Moving targets are not permitted on this range.

## **5.5 MINIMUM SAFE ENGAGEMENT DISTANCES (17)**

All targets shall be engaged from the firing line

## **5.6 DOWNRANGE EQUIPMENT**

- 5.6.1 The use of any temporary or portable objects placed in the active downrange area such as target cameras, acoustic sensors, chronograph equipment, wind flags or moving backer systems must be approved by the Range Manager and their setup must be in accordance with the relevant Restricted Operating Procedure that are provided for in the Range Manual.

# **6 LEGAL OBLIGATIONS**

## **6.1 UN-LICENCED SHOOTER (26)**

Any unlicensed shooter attending must have a licence holder supervising them whilst on the firing line. The unlicensed shooters are required to wear a hi-viz vest to enable easy identification.

## **6.2 FIREARMS AND AMMUNITION STORAGE AND SECURITY**

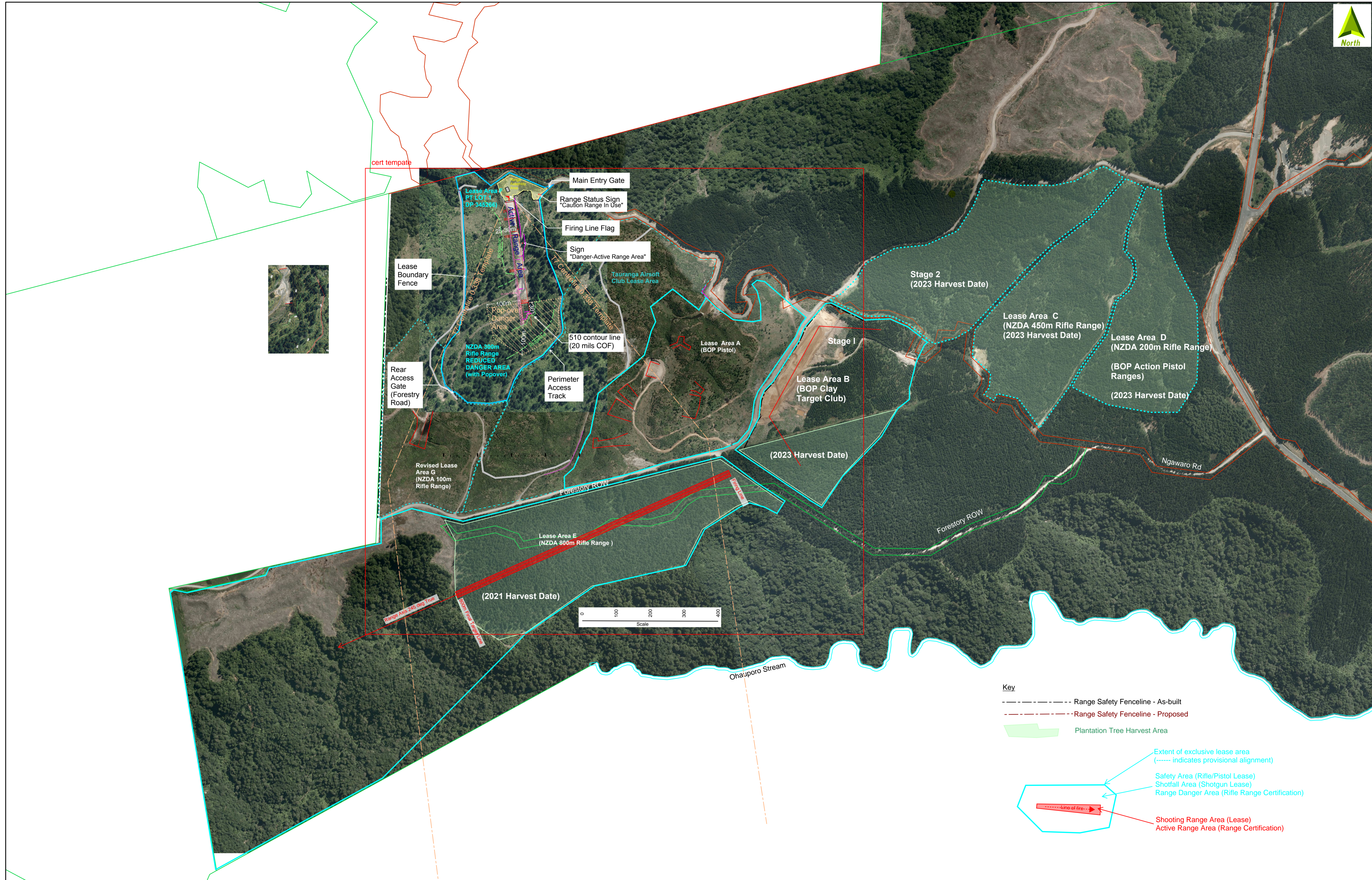
- 6.2.1 Range users are reminded of their responsibility under the Arms Amendment Regulations 2021 (Section 19) regarding security of firearms and ammunition. If you are on the range by yourself, and need to go downrange, you need to secure your firearms as you see fit to meet your obligations under the Act and regulations.

Any live ammunition that may be damaged, or that has miss-fired must not be left unsecured on the range, and **MUST NOT** be put in the brass recycling bins.

## **6.3 FIT AND PROPER**

- 6.3.1 The Arms Legislation Act 2020 section 24A expands on the circumstances where the Police may find a person is **NOT** a "Fit and Proper" to be in possession of a firearm. What this means is that a member's non-compliance with our range standing orders could be justification for the Police to revoke their firearms licence and/or confiscate their firearms.

- 7 ANNEX A – LOCATION AND AMMUNITION DANGER AREA (A, B)**
- 8 ANNEX B - AMMUNITION SAFETY TEMPLATE LONG SECTIONS**
- 9 ANNEX C - RSO SUMMARY SHEET**
- 10 ANNEX D - RANGE DESIGN STATEMENT**



**Key**

- Range Safety Fenceline - As-built
- Range Safety Fenceline - Proposed
- Plantation Tree Harvest Area
- Extent of exclusive lease area (----- indicates provisional alignment)
- Safety Area (Rifle/Pistol Lease)
- Shotfall Area (Shotgun Lease)
- Range Danger Area (Rifle Range Certification)
- Shooting Range Area (Lease)
- Active Range Area (Range Certification)

Project: **NZDA BOP Branch TECT Park 300 m Rifle Range**

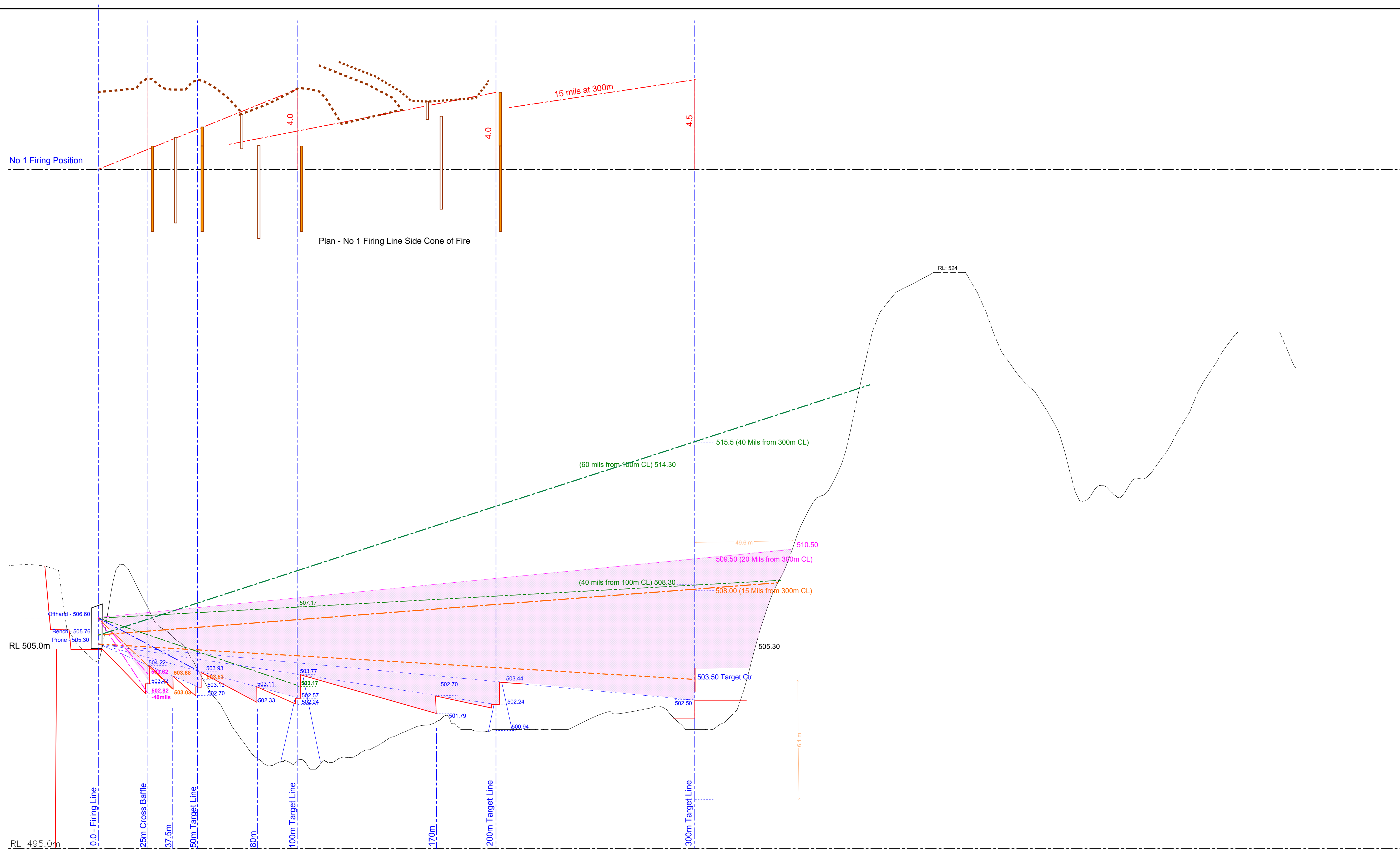
Title: **Range Layout and Ammunition Danger Area**

Rev	Date	Status
-	11/11/2022	
a	14/10/24	

Job Ref: **4955**

Scale: **1:5000 @ A1**

Dwg No.: **4955-DWG-01-01a**



SECTION A  
 SCALE 1: 1000 H  
 1: 100 V

Project: NZDA BOP Branch TECT Park 300 m Rifle Range

Title: Ammunition Danger Area Template

Rev	Date	Status
-	11/11/2022	

Job Ref:	4955
Scale:	as shown
Dwg No.:	4955-DWG-01-02



**NZDA-BOP TECT Park 300m Rifle Range  
Range Standing Orders**



**Permitted firearms for this range**

All types of rimfire and centrefire rifles that a licensed firearm holder is legally allowed to own and use subject to their specific endorsements.

Type	Allowed	Restrictions
Bolt		✓ -Rimfire/Centrefire rifles upto & including 338in Lapua with muzzle energy <=7000 Joules.
Lever		✓ -Air Rifles of any calibre. -Black Powder rifles upto & including 0.75in calibre with muzzle velocity <=2000 fps
Pump		✓ -Shotguns with rifle sights upto & including 12gauge with muzzle velocity <=2000fps
Break open Falling block Rolling Bloc		✓ -Shotguns with rifle sights upto & including 12gauge with muzzle velocity <=2000fps
Semi-Auto		✓ Rimfire - no restrictions Centrefire - only with endorsement
Shotgun		✓ Solid lead slugs only 100m max range
Pistol		✗ NOT PERMITTED

**Restrictions and Conditions of Use**

- ✦ ALL shooters MUST read and comply with the Range Standing Orders.
- ✦ Record name in the register
- ✦ More than 1 shooter, someone must be designated the RO
- ✦ More than 6 shooters must be controlled by non shooting NRO
- ✦ Empty chamber indicator flags are MANDATORY.
- ✦ A round can only be fully chambered when the rifle is pointing at the target.
- ✦ Offhand shooting limited to 100m, Kneeling and seated limited to 200m
- ✦ All firearms MUST be in the racks before ANYONE goes downrange
- ✦ All persons to take a tag when going downrange
- ✦ Range Status Sign to be set (Active/Safe) before going downrange
- ✦ Visitors shooting MUST be supervised by NRO
- ✦ Hearing Protection is MANDATORY
- ✦ All rifles with an unknown sight zero MUST be checked by shooting them first at 25m before shooting at 100m or more.
- ✦ If you hear a ricochet, YOU MUST STOP SHOOTING IMMEDIATELY

**Permitted targets for this range**

- ✦ Paper target
- ✦ Targets MUST be fixed on the 25, 50, 100, 200 or 300m target backers
- ✦ Steel silhouette target RESTRICTED to 22 RF under control of NRO

**Warning Signage**

- ✦ Fold down sign at main gate
- ✦ Flag at entrance to firing line

## NZDA-BOP 300m Range Design Statement

Updated: 10/10/2024

### 1. DESIGN STANDARDS

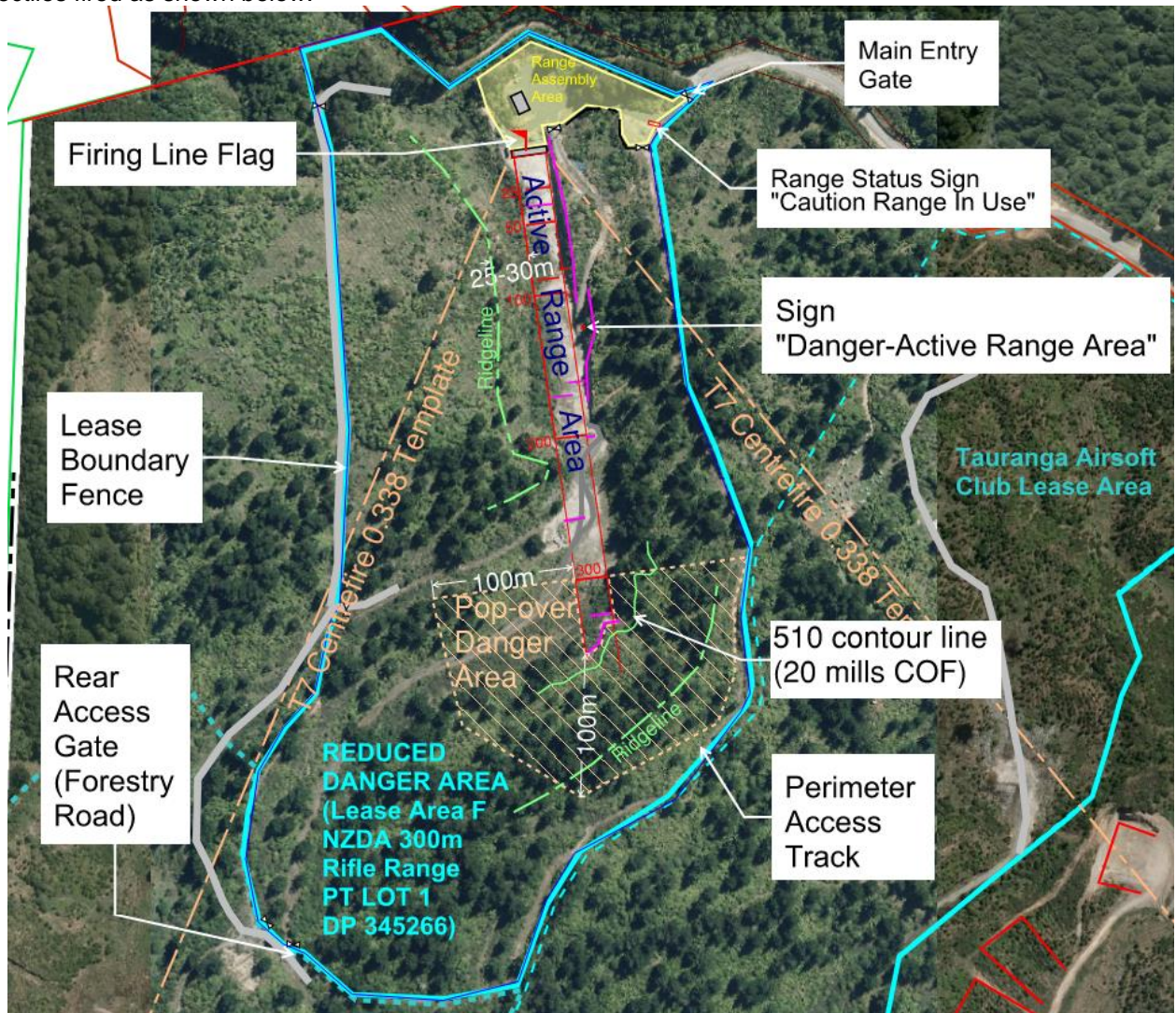
The following reference documents have been used for the design of this range:

Organisation/Publisher	Document Title	Version/Date
New Zealand Deerstalkers Association	Manual of Range Design, Construction and Inspection Guidelines	2000
Royal Canadian Mounted Police	Canadian Range Construction and Design Guidelines	Sept 1999
NZ Police	Shooting Range Manual	V1.1 June 2022
Defence Safety Authority	DSA 03.OME Part 3 Volume 2 - Defence Code of Practice (DCOP) and Guidance Notes for Ranges	V1.0 May 2020

### 2. FIREARM AND CARTRIDGE RESTRICTIONS

#### 2.1 Ammunition Danger Area

This range has been designed for the NZ Police Shooting Range Manual T7 Centrefire Rifle 0.338 Inch Ammunition Danger Area Template with a Reduced Danger Area (RDA) that relies on a combination of topographic features, man-made features (range floor baffles) and strict control of the shooter and firearm to capture all projectiles fired as shown below:



The reduces danger area is contained within the boundary of the NZDA Lease Area F, which also contains a pop-over danger area from the ridgeline immediately behind the 300m target line to the south-eastern lease boundary.

## 2.2 Cartridge and Projectile Restrictions

The NZ police shooting range manual appendix 4 provides a list of ammunition danger area templates in which the notes section provides guidance of some commercial cartridges and projectile combinations that are included within each of the ammunition danger area templates, however there is no guidance on included cartridges or projectiles for the T7 0.338 inch template.

The Canadian Range Construction and Design Guideline appendix E - Template Table of Equivalents has therefore been used to provide the following cross reference table of danger area templates and included cartridges:

NZ Police Templates		Canadian Design Manual	
Template	Suitable Firearms	Template Group	Included Cartridges
T1	Rimfire rifles and pistols		No direct equivalent
T2	Centrefire pistols up to .50 cal		No direct equivalent
T3	Muzzle loading and percussion rifles		No direct equivalent
T4	Centrefire rifles up to .223 inch/5.56mm (<=55g projectile)	.223 Remington	.223 rem, 7.62x39, .22 hornet, .222 rem, .22-250, .25-20, .223 Rem Mag, .25-35, .30 Rem, .256 Win, .303 savage, .50-90, .32 Win, .32-20, .35 Rem, .44-40, .38-55, .444, .38-40, .44, .30 M1, .375 Win, 0.348 Win, .45-70, .361, .458 Win, .356 Win, 6mm, 22 sav HP, .30-40, .25 Rem
T5	Centrefire rifles up to .223 inch/5.56mm (<=69g projectiles)		
T6	Centrefire rifles up to 8mm (.308/7.62mm)	.308 Winchester	.308 Win, 6.5x61, .30-36, 7x57, 7mm-08m 7x57R, 6.5x55, 6.5x50, 6.5x54, 6.5x52, 6.5x57, 6.5x53R, .250 sav, 6.5x58R, .257 Rob, 307 Win, .303, 8mm mouser, .350 Rem, .270 Win, .300 Sav, .258 Win
T7	Centrefire rifles .338 inch	.338 Lapua Mag	.338 Lapua mag, .300 H & H mag, 7mm RMm .338 Win Mag, .300 Win Mag, .340 Weatherby Mag, .300 Weatherby Mag, .358 Norma Mag, .308 Norma Mag, .350 Rem Mag, .375 H & H mag, .378 Weatherby Mag
T8	Centrefire rifles .50 inch	.50 Browning	.50 Browning

Therefore, the range of cartridges listed in the Canadian design manual .338 Lapua Magnum template ground are approved for use on this range, subject to not exceeding a maximum muzzle energy of 7000 joules (5163 ft-lbf) that has been set to manage damage to the bullet catchers and backstops.

There is an advisory note in section A.2.3.5 of the RSO that provides a range of projectile weights, velocities and energy to determining if a firearm may exceed these restrictions.

Tracer, incendiary and projectiles with a core of steel or hardened material or depleted uranium and those with a discarding jacket/sabot are to be prohibited.

## 3. CONE OF FIRE

The initial design of this range prepared in 2011 provided for the following variable Cones of Fire (CoF) depend on the shooting position:

Previous Cones of Fire		
Allowable Shooting Position	Cone of Fire	Max Target Range
Standing offhand	40 milliradians (Radius of 4.0m at 100m target)	100m
Kneeling/sitting	20 milliradians (Radius of 4.0m at 200m target)	200m
Prone and bench shooting	15 milliradians (Radius of 4.5m at 300m target 3.0m @ 200m, 1.5m @ 100m)	300m



When the range was re-certification in 2014 the standing offhand position's CoF was revised to 30 mils.

With this 2022 revision of the Range Standing Orders, the CoF has been revised to be in accordance with the new NZ Police Shooting Range Design Manual for a centrefire rifles, plus an additional tighter CoF has been included for precision benchrest style events as shown below:

Allowable Shooting Position	Cone of Fire
Offhand, kneeling, seated, prone and bench	20 milliradians (2m radius at 100m target) (4m radius at 200m target) (6m radius at 300m target)
Precision benchrest shooting with front and rear supports (Controlled by Restricted Operating Procedures in the annex) Group & score shooting with wind flags at designated positions	6 milliradians at 100m (0.6m radius) 3 milliradians at 200m (0.6m radius) 6 milliradians at 300m (0.9m radius)
Group & score shooting with individual shooter wind flags, <u>without</u> a moving target backer system	1.5 milliradians at 100m (0.15m radius) 1.125 milliradians at 200m (0.225m radius) 1.125 milliradians at 300m (0.337 radius)
Group & score shooting with individual shooter wind flags, <u>with</u> a moving target backer system	1.5 milliradians at 100m (0.15m radius) 0.75 milliradians at 200m (0.15m radius)

#### 4. RANGE FLOOR BAFFLES

The target lines at 25m, 50m, 100m, 200m and 300m plus intermediate range floor cross baffles at 35m, 75m, 175m and 260m are positioned in alignment from the prone position to the top/bottom of subsequent target lines to prevent any projectile fired from within the CoF from striking the range floor that could result in a ricochet.

#### 5. TARGET LINES

Permanent target lines have been constructed at 25, 50, 100, 200 and 300m. The target lines have a vertical face and level soft timber crest board to prevent ricochet.

Target lines are aligned down the range so a line of sight from the prone shooting position projects from the top of the that each successive target line crest board to the bottom of the next target board, which presents a vertical barrier shielding the range floor from bullet strike.

#### 6. BULLET CATCHERS

Two staggered rows of 200 litre plastic drums filled with shredded rubber are located immediately in front of the target lines as bullet catchers.

#### 7. TARGET BACKERS

Ply target backers have been constructed in front of the bullet catchers on all target lines to control the location of target.

#### 8. TARGETS

Targets are categorised as either soft or hard depending on the materials as follows:

- A soft target is typically constructed of penetrable materials such as but not limited to paper, cardboard, core-flute and thin plywood.
- A hard target presents a hard impact surface that can induce ricochet such as steel, or a substantial thickness of natural or synthetic material that is not easily penetrated such as timber, rock, concrete, plastic etc.

Soft targets are approved for use on this range. Soft targets must be located onto the fixed target backers 25m, 50m, 100, 200m or 300m target lines.

Hard targets are LIMITED to 22 rimfire silhouette operated under the restricted operating procedure included in the range manual.

## **9. BACKSTOP**

The hill immediately behind the 300 m target line acts as the backstop for all target lines.

This hill has sufficient height to capture all projectiles fired within the CoF as shown on the safety template long section.

The hillside face behind the 300m target line has been benched out to provide vertical faces.

The backstop height does not have to allow for ricochet from ground floor strike as the target lines and cross baffles prevent any potential for ground floor strike.

## **10. POPOVER DANGER AREA**

There is a popover danger area between the backstop region of the hill and the extent of the reduced danger area (lease boundary) of at least 100m.

## **11. CONTROL OF SHOOTER**

The following aspects for control of the shooter are required for the ranges reduced danger area.

1. All shooters shall complete a range induction before they can shoot on the range
2. The use of empty chamber indicator (ECI) is mandatory, and these must be always in the chamber until the Range Officer instructs that they may be removed for firing.
3. The rifle must be pointing downrange at the target before being loaded
4. All targets must be located on the target line backers.
5. All shots should be falling on or near the target on the target backing board. If for any reason shots are not landing on the target backer board, both the firearms sight-in zero and the shooters competence must be assessed before further shooting.
6. The firearm must be in a safe state before changing shooting positions