UNITED STATES MARINE CORPS
WEAPONS TRAINING BATTALION
MARINE CORPS INSTALLATIONS EAST-MARINE CORPS BASE
PSC BOX 20059
CAMP LEJEUNE NC 28542-0059

IN REPLY REFER TO:
3500
S-3
6 Feb 13

From: Commanding Officer, Weapons Training Battalion
To: Commanding General, Marine Corps Installation East-Marine Corps Base, Camp Lejeune, (Attn: AC/S, T&O)
Via: Range Control Officer, Marine Corps Installation East-Marine Corps Base, Camp Lejeune, North Carolina

Subj: REQUEST FOR DEVIATION AND WAIVERS TO POLICY ON THE STONE BAY RIFLE RANGE COMPLEX

Ref: (a) MCO 3570.1C
(b) DA PAM 385-63
(c) BO P3570.1C
(d) MCO 3591.2K
(e) 2013 North Carolina State Hunting Regulations

Encl: (1) 10 degree Maximum Range Data for:
a. AA11 7.62mm Long Range Sniper Ammo
b. AB43 .300 Win. Mag. MARSOC Sniper Ammo
c. .260 caliber 142 grain Match Round
d. 30-06 168 grain Match Round
e. 6.5 x 284 142 grain Match Round
(2) Silhouette Ballistics 10 degree angle data
(3) Examples of authorized Angle Limiting Devices
(4) Under Aged and Civilian Hold Harmless Agreement
(5) Combined Operational Risk Management (ORM)

1. Purpose. Weapons Training Battalion, Stone Bay Rifle Range Complex requests deviation and waivers to the references for the following: deviation to reduce surface danger area for .300 caliber weapons and below, waiver for utilizing authorized angle limiting devices, and waiver for authorization to allow civilians to shoot at the Stone Bay Rifle Range Complex.

2. Request for Deviation to reduce Surface Danger Area for .300 Caliber Weapons and below

a. Issue. The Stone Bay Rifle Range Complex, Surface Danger Zone (SDZ), currently requires coordination through Range Control and the closing of the ME and MF training areas, when firing ammunition contained in enclosure (1). This would create a conflict between Stone Bay Rifle Range Complex and units requiring the use of ME/MF training areas.

b. Discussion

(1) Per enclosure (2), distance X is the maximum range the round can travel, if it does not strike any type of impact media. Distance X for AA11 is 5136 meters, and distance X for the .300 Win Mag is 6167 meters. This would take the round past the 37 Northing gridline, requiring the closing of the ME/MF training areas. Ballistic Charts show that if the muzzle of the weapons is restricted to 10 degrees or less, all rounds will impact prior to the 35 Northing.

(2) Data obtained from Sierra Ballistics (Enclosure 2) shows that the maximum distance the 7.62 round travels when fired at ten degrees is 3435 meters. Data obtained from Sierra Ballistics (Enclosure 2) shows that the maximum distance the .300 Win Mag round travels when fired at ten degrees is 4076 meters. When using this distance on all the ranges aboard Stone Bay, all rounds will fall short of the 35 Northing grid line located south of the S. Verona Loop road (Enclosure 1). The AB43 round would only be authorized from the 1000 yard line on Hathcock, the 600 yard lines on Alpha, Bravo, and Charlie ranges, and from the shooting tower on Dodge City. Additionally, the National Rifle Association holds matches on the Stone Bay Range Complex firing the .260, 30-06, and the 6.5 x 284, all which fall within the 35 Northing while using an authorized Angle Limiting Device (ALD) (Enclosure 3).

(3) Stone Bay Range Complex routinely host NRA sanctioned matches firing the following rifle calibers: 6mm, 7mm, .260, 30-06, 6.5mm, 7.62mm, and .300. As different bullet weight and powder combinations contribute to both the muzzle velocity and maximum distance the round can travel, the Silhouette Ballistic Program is used to confirm that Distance X does not exceed the 35 Northing @ 10 degrees elevation, which would put the round outside the complex SDZ. The NRA shooting team is currently required to provide silhouette Ballistic Charts on all new combinations of the above rounds, prior to firing, for approval by the WTBN Gunner to ensure Distance X @ 10 degrees stays below the 35 Northing Verona Loop Road South.

c. Recommendation

(1) Grant the request to deviate from existing surface danger zone requirements for all under the following conditions:

(a) Units will limit the elevation of the shooters' rifles using approved ALD's displayed in Enclosure 3.

(a) Units will limit the elevation of the shooters' rifles using approved ALD's displayed in Enclosure 3.

(b) All steel shooting will be verified and approved by Weapons Training Battalion Gunner prior to use.

(2) Given use of authorized ADL's (Enclosure 3), and the modified distance X, the likelihood of a round traveling out past the 35 Northing is mitigated, thereby reducing the risk of a round impacting in the MF/ME training areas. Therefore, Weapons Training Battalion request that the Surface Danger Zone be reduced to the 35 gridline, which is south of South Verona Loop, and is safe. This would also eliminate the need to close South Verona Loop Road and LZ Condor.

3. Request for waiver to policy on the Stone Bay Range Complex for Utilizing Authorized Angle Limiting Devices

a. Issue. Currently, Angle Limiting Devices (ALD's) are limited to the first device in Enclosure 3. Weapons Training Battalion requests the addition of the Cosign Indicator, the Slope Doper, and the Locking Hogs Saddle, also located in Enclosure 3.

b. Discussion. The Slope Doper (Enclosure 3) is put on the forward stock or barrel and it displays what the current angle of the weapon is. The Slope Doper is used by the RSO to ensure the angle of the weapon, prior to firing. The Cosine indicator works exactly the same as the slope doper, except it is permanently mounted to the weapon. The Cosine Indicator allows the shooter is continually monitor the angle of the weapon. The Cosine indicator has numbers ranging from 99-26, each sequential number equaling 5 degrees. Example: the red line on 98 above or below the 0 on the left side, would equal +10 or -10 degrees. Additionally the red line on 99 above or below the 0 on the right side would be +5 or -5 degrees.

The Hogs Saddle is a vice that fits on a tripod that allows the shooter to lock the weapon in place keeping the weapon pointed at the target. The Hogs Saddle aids the shooter in the kneeling and standing positions to maintain less than 10 degrees.

c. Recommendation:

(1) Grant the request to include the additional ALD's under the following conditions:

(a) Units will demonstrate proficiency to the Battalion Gunner with all ALD's, which are requested for each range.

(b) All shooting with an ALD will require one-on-one supervision, between the PSO and the shooter.

(c) Mandate the use of the Hogs Saddle while conducting positional shooting (any shooting not in the prone).

4. Request waiver to policy on the Stone Bay Range Complex Authorization for civilians to shoot on Stone Bay Range Complex

a. Issue. Stone Bay annually hosts several base approved events (Hunter Safety, Rod and Reel Club, Division & Intramural Matches), and these events are attended by civilians and retired military in the local community as well as DOD dependants, some of which are under the age of 18. Currently these personnel are not authorized in writing by Marine Corps Base, Camp Lejeune to utilize live fire ranges on base, but by North Carolina state law, are authorized to hunt, (with a Hunter Safety Certificate) on and off base, with supervision.

b. Discussion. Weapons Training Battalion Stone Bay continually is requesting clarification and approval for Civilians and underage DOD dependents to shoot due to current Base regulations which conflict with State and current Marine Corps Competition Orders. Currently junior shooting teams associated with the Marine Corps Competition in Arms program reference (d) are allowed to fire on Marine Corps Ranges under the age of 18. North Carolina State Law, per reference (e) allows minors, with no age restriction, to complete a Hunter Safety Education course and hunt while accompanied by an adult. The live fire portion of the Base Game Warden's Hunter Education course is conducted annually here on Stone Bay. Weapons Training Battalion Stone Bay requests authorization to allow these groups to shoot on the ranges with the following stipulations:

(1) All under age, civilian, and non-active duty personnel will be required to sign a "Hold Harmless Agreement" per Enclosure (4).

(2) All personnel covered by this waiver must be associated with a base authorized or sponsored event conducted by a Base club or Base tenant.

(3) The Commanding Officer, Weapons Training Battalion Stone Bay would reserve the right to further restrict under age

personnel from firing, proportional to their ability to hold and fire a weapon safely.

(4) OIC's and RSO's would still require a Base Range Certification, Weapons Training Battalion Certification, and must provide Corpsman and additional safety personnel as required.

(5) Weapons Training Battalion S-3 will be required to review all courses of fire, provide additional safety personnel as required, and provide additional safety instruction prior to any unit firing on Weapons Training Battalion Stone Bay range complex.

(6) CO Weapons Training Battalion Stone Bay is ultimately responsible for the safe conduct, proper supervision, and the providing of properly trained safety personnel and safety training of all events aboard Weapons Training Battalion.

c. Recommendation

(1) Approve the waiver for Civilian, Retired Personnel and Under Age personnel to fire aboard Stone Bay Range Complex under the following conditions:

(a) All under age, civilian, and non-active duty personnel will be required to sign a "Hold Harmless Agreement" Enclosure (4).

(b) All personnel covered by this waiver must be associated with a base authorized or sponsored event conducted by a Base club or Base tenant.

(c) The Commanding Officer of Weapons Training Battalion Stone Bay would reserve the right to further restrict under age personnel from firing, proportional to their ability to hold and fire a weapon safely.

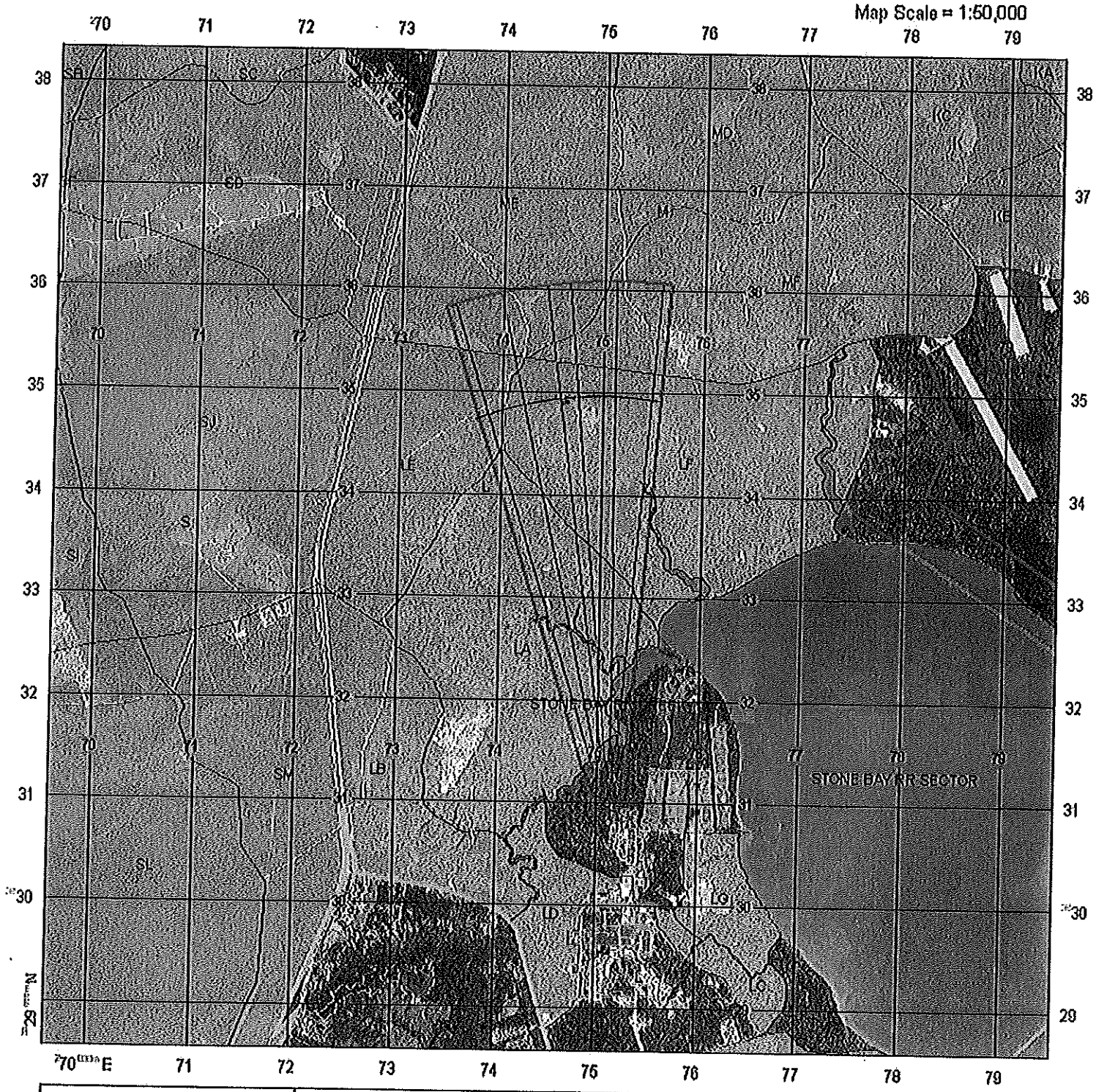
(d) OIC's and RSO's would still require a Base Range Certification, Weapons Training Battalion Certification, and must provide Corpsman and additional safety personnel as required.

5. Point of contact is Gunner J. D. Miller at 910-440-2705 or email at joseph.d.miller@usmc.mil.

C. A. VALLEJO

Weapon Type: SMALL ARMS

Weapon Caliber: 7.62mm:Spec Ball M118 Long Range



Range Manager Signature Authority:	Date:		
Approving Authority:	Date: MOD SDZ	300 WIN MAG	Steel tower only

Created By: Dave Lynch Date: 01/20/2012 Unit:Range Management Phone:(910) 451-5772 Email:David.wlynch@usmc.mil

SDZ Name: Dodge City7.62mm_Spec Ball M11
Installation: CLNC RDD
Range Name: Dodge City
Min Target Dist: 160.07 m
Max Target Dist: 160.94 m
Direct Fire
Ground Target

Distance X: 5,288.00 m
Distance Y: 5,137.00 m
Distance W: 1,545.00 m
Area A: 100.00 m
Dispersion Angle: 5.0 deg
Ricochet Angle: 5.0 deg
Angle A: 30.0 deg

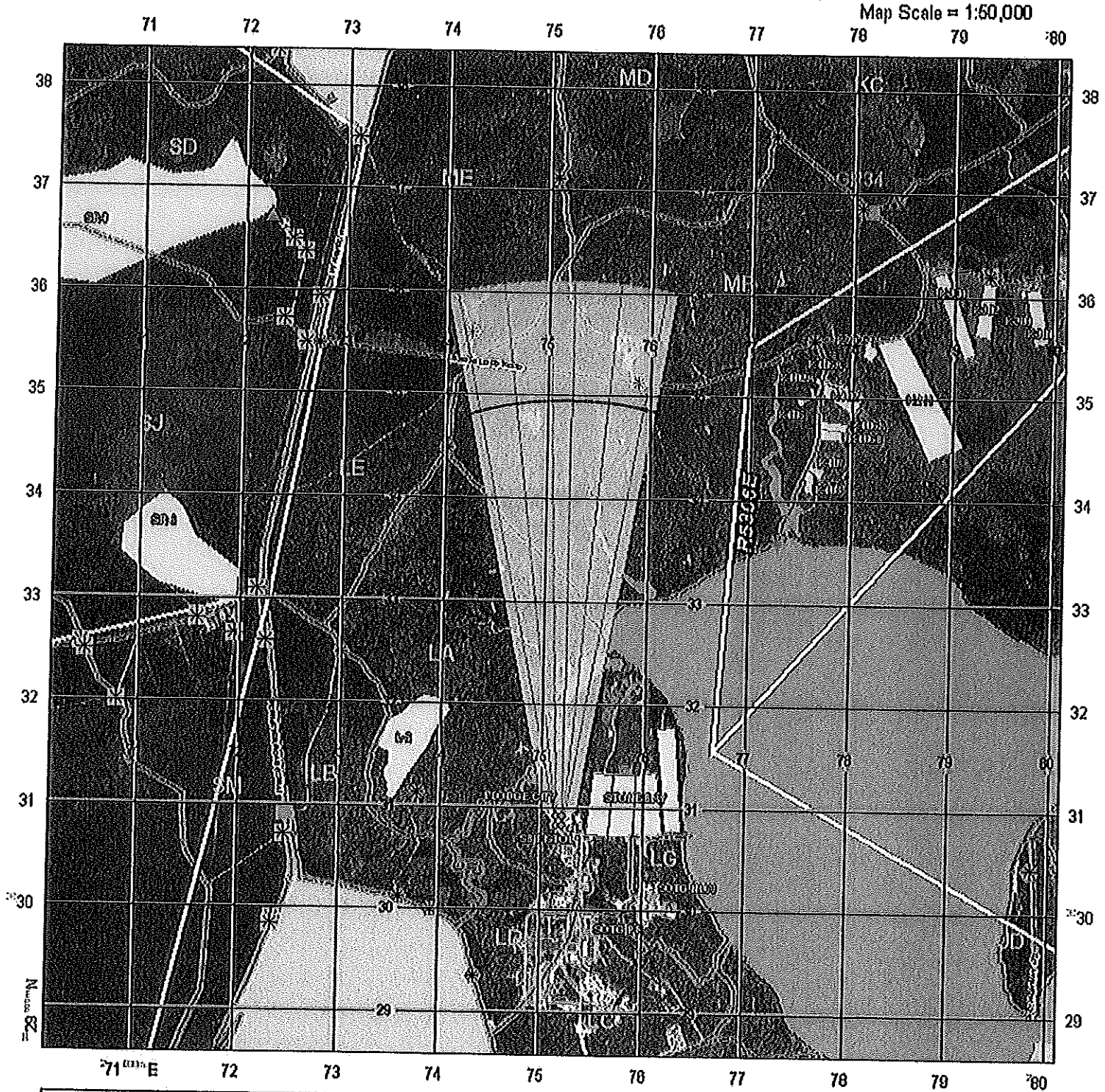
Angle P: 43.8 deg
Angle Q: 41.3 deg
Vertical Hazard: 752.00 m
FP: 18STD7512930806
FP: 18STD7513430806
TP: 18STD7510630984
TP: 18STD7511730986

ENCLOSURE (1)

Weapon Type: SMALL ARMS

Weapon Caliber: 7.62mm:Spec Ball M118 Long Range

Map Scale = 1:50,000



Range Manager Signature Authority:	Date:		
Approving Authority:	Date: MOD SDZ	.300 WIN MAG	

Created By: David Lynch Date: 01/16/2012 Unit: Range Management Phone: (910) 451-5772 Email:david.wlynch@usmc.mil

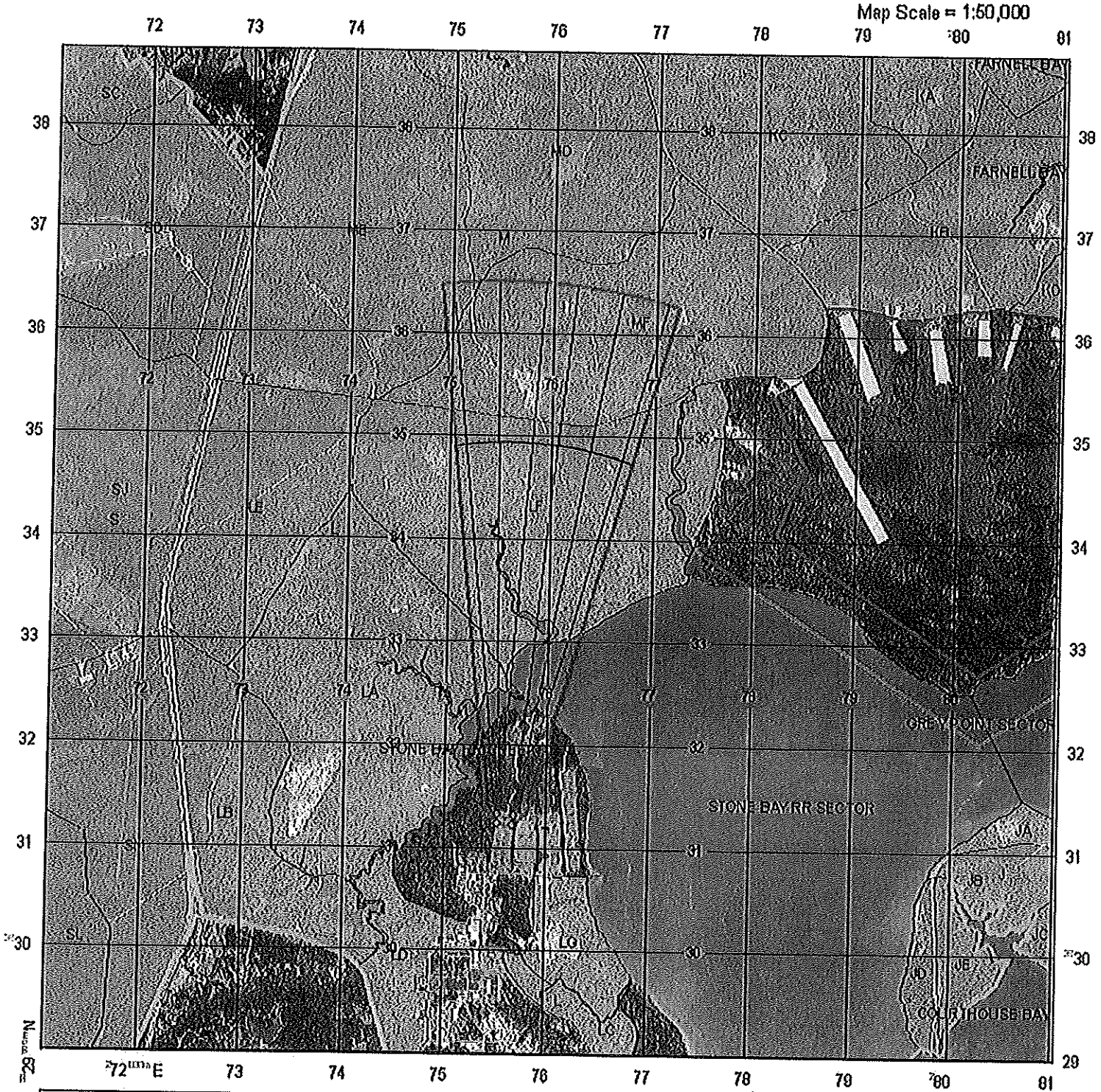
SDZ Name: 7.62mm_Spec Ball M118 MPR 2012	Distance X: 6,288.00 m	Angle P: 43.8 deg
Installation: CLNC RDD	Distance Y: 6,137.00 m	Angle Q: 41.3 deg
Range Name: Multipurpose Range	Distance W: 1,545.00 m	Vertical Hazard: 762.00 m
Min Target Dist: 87.18 m	Area A: 100.00 m	FP: 18STD7516230824
Max Target Dist: 89.17 m	Dispersion Angle: 5.0 deg	FP: 18STD7521030825
Direct Fire	Ricochet Angle: 5.0 deg	TP: 18STD7515930912
Ground Target	Angle A: 30.0 deg	TP: 18STD7521130914

ENCLOSURE (1)

Weapon Type: SMALL ARMS

Weapon Caliber: 7.62mm:Spec Ball M118 Long Range

Map Scale = 1:50,000



Range Manager Signature Authority:	Date:		
Approving Authority:	Date: MOD SDZ	1,300 win MKG	600 yd ONLY

Created By: Dave Lynch Date: 01/20/2012 Unit: Range Management Phone:(910) 451-5772 Email:David.wlynch@usmc.mil

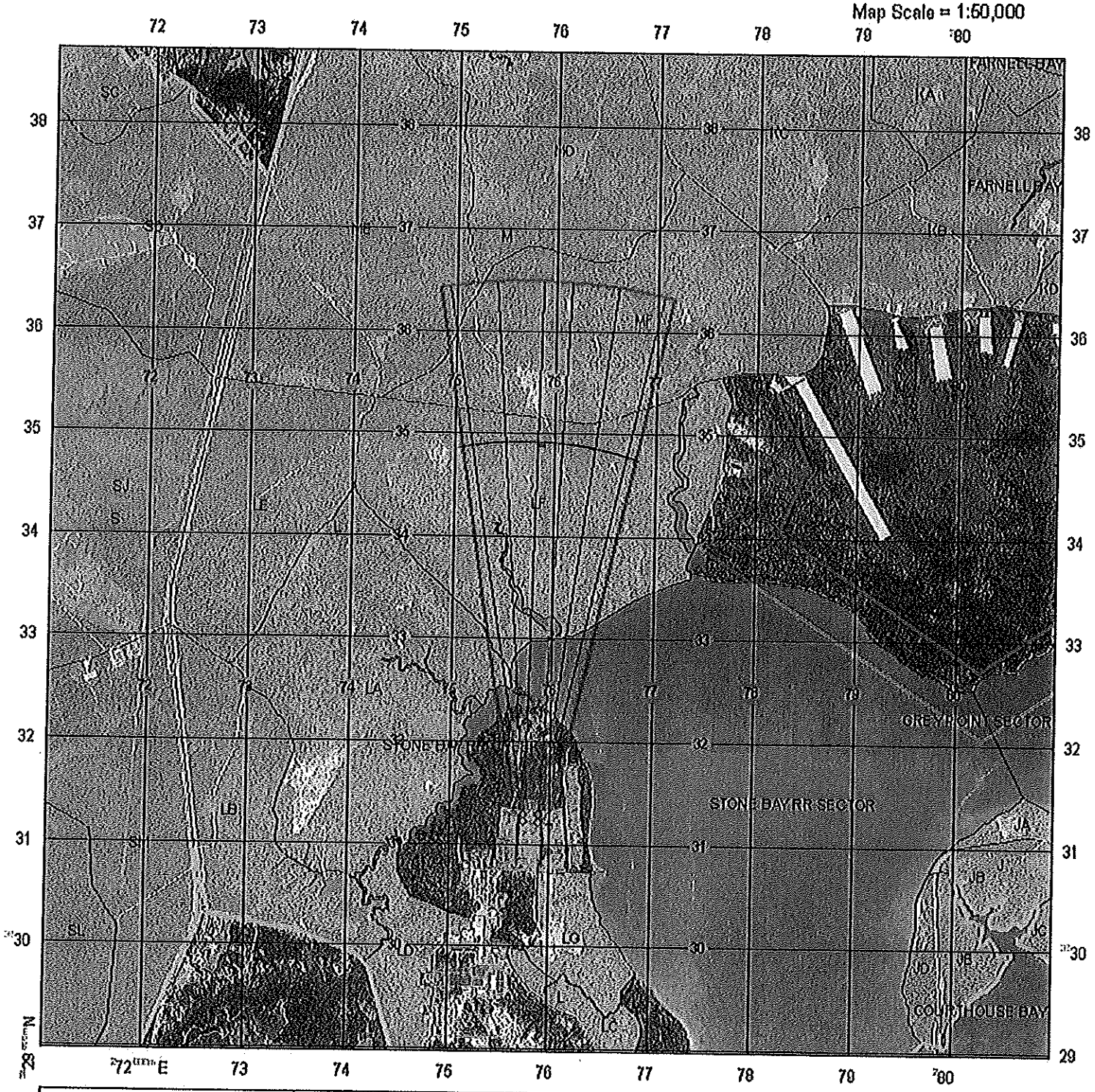
SDZ Name: Arange 7.62mm_Spec Ball M118	Distance X: 5,288.00 m	Angle P: 43.8 deg
Installation: CLNC RDD	Distance Y: 5,137.00 m	Angle Q: 41.3 deg
Range Name: Alpha Range	Distance W: 1,545.00 m	Vertical Hazard: 752.00 m
Min Target Dist: 95.62 m	Area A: 100.00 m	FP: 18STD7552131227
Max Target Dist: 99.07 m	Dispersion Angle: 5.0 deg	FP: 18STD7567131213
Direct Fire	Ricochet Angle: 6.0 deg	TP: 18STD7552931326
Ground Target	Angle A: 30.0 deg	TP: 18STD7566231308

ENCLOSURE (1)

Weapon Type: SMALL ARMS

Weapon Caliber: 7.62mm:Spec Ball M118 Long Range

Map Scale = 1:50,000



Range Manager Signature Authority:	Date:		
Approving Authority:	Date: MOD SDZ	.300 Win Mag	600 yrd Only

Created By: Dave Lynch Date: 01/20/2012 Unit:Range Management Phone:(910) 451-5772 Email:David.wlynch@usmc.mil

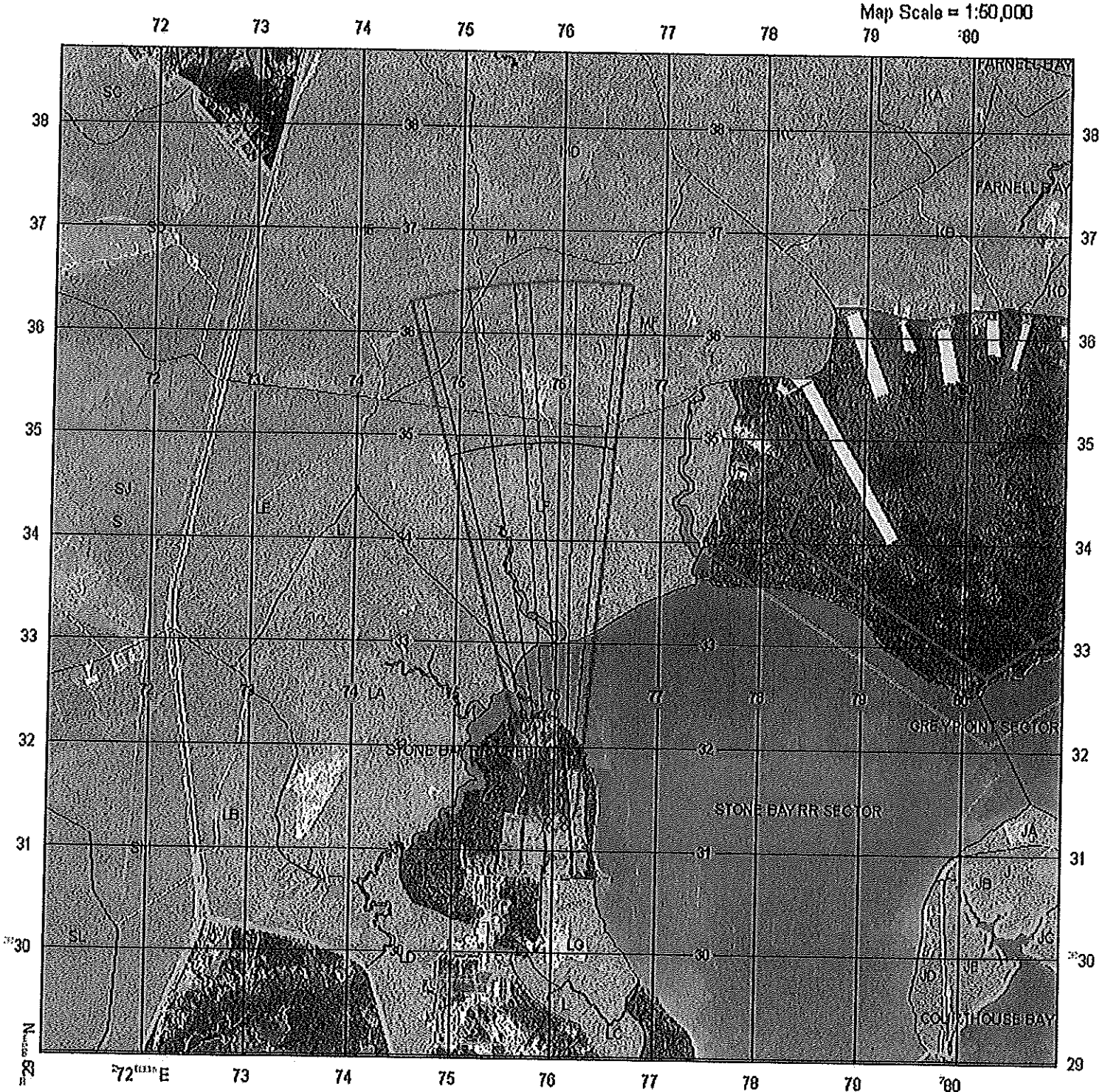
SDZ Name: B Range7.62mm_Spec Ball M118 L	Distance X: 5,288.00 m	Angle P: 43.8 deg
Installation: CLNC RDD	Distance Y: 5,137.00 m	Angle Q: 41.3 deg
Range Name: Bravo Range	Distance W: 1,545.00 m	Vertical Hazard: 752.00 m
Min Target Dist: 73.20 m	Area A: 100.00 m	FP: 18STD7574031211
Max Target Dist: 78.96 m	Dispersion Angle: 5.0 deg	FP: 18STD7588831202
Direct Fire	Ricochet Angle: 5.0 deg	TP: 18STD7574231284
Ground Target	Angle A: 30.0 deg	TP: 18STD7589231281

ENCLOSURE (1)

Weapon Type: SMALL ARMS

Weapon Caliber: 7.62mm:Spec Ball M118 Long Range

Map Scale = 1:50,000



Range Manager Signature Authority:	Date:		
Approving Authority:	Date: MOD SDZ	.300 win Mag	600 yrd ONLY

Created By: Dave Lynch Date: 01/20/2012 Unit:Range Management Phone:(910)451-5772 Email:David.wlynch@usmc.mil

SDZ Name: C Range7.62mm_Spec Ball M118 L
Installation: CLNC RDD
Range Name: Charlie Range
Min Target Dist: 70.98 m
Max Target Dist: 72.10 m
Direct Fire
Ground Target

Distance X: 5,288.00 m
Distance Y: 5,137.00 m
Distance W: 1,545.00 m
Area A: 100.00 m
Dispersion Angle: 5.0 deg
Ricochet Angle: 5.0 deg
Angle A: 30.0 deg

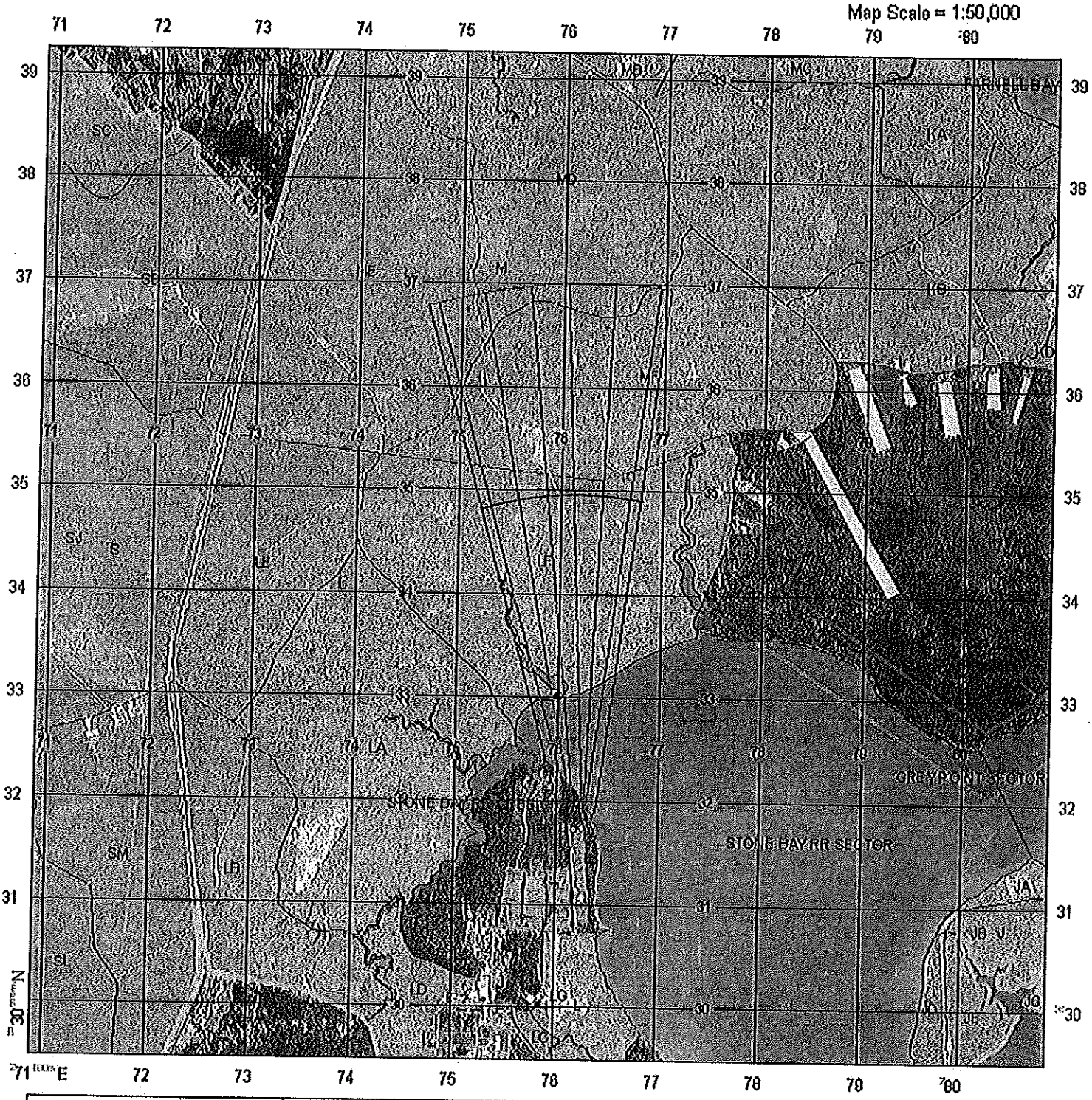
Angle P: 43.6 deg
Angle Q: 41.3 deg
Vertical Hazard: 752.00 m
FP: 18STD7596531207
FP: 18STD7611131218
TP: 18STD7595931279
TP: 18STD7610531288

ENCLOSURE (1)

Weapon Type: SMALL ARMS

Weapon Caliber: 7.62mm:Spec Ball M118 Long Range

Map Scale = 1:50,000



Range Manager Signature Authority:	Date:		
Approving Authority:	Date: Mon SDZ	.300 win Mag	1000 yrd ONLY

Created By: Dave Lynch Date: 01/20/2012 Unit: Range Management Phone:(910) 451-5772 Email:David.wlynch@usmc.mil

SDZ Name: 7.62mm_Spec Ball M118hathcock	Distance X: 5,288.00 m	Angle P: 43.8 deg
Installation: CLNC RDD	Distance Y: 5,137.00 m	Angle Q: 41.3 deg
Range Name: Hathcock Sniper Range	Distance W: 1,545.00 m	Vertical Hazard: 762.00 m
Min Target Dist: 27.78 m	Area A: 100.00 m	FP: 18STD7618931718
Max Target Dist: 28.88 m	Dispersion Angle: 5.0 deg	FP: 18STD7626031725
Direct Fire	Ricochet Angle: 5.0 deg	TP: 18STD7618631745
Ground Target	Angle A: 30.0 deg	TP: 18STD7625931753

ENCLOSURE (1)

Silhouette Ballistics - Maximum Range Data Table
Maximum Range Distances Are In Meters and Kilometers
Height of Gun to Impact Area = .305 Meters
Camp LeJeune - CW04 Gunner Joseph D. Miller

Gun Brand: Camp LeJeune Prone Matches
Gun Caliber: 308 Federal Gold Metal
Gun Model: Prone Match Rifle
Muzzle Velocity: 2600 fps @ 75 °F
Sierra 175 Grain MatchKing HPBT - Hollow Point Boat Tail
Ballistic Coefficient C1: .505 at 2600 fps and Above
Ballistic Coefficient C2: .496 to 1800 fps
Ballistic Coefficient C3: .485 to 0 fps
Altitude: 40 Barometer: 29.53 Temperature: 75°F RH: 78% Slope: 0°

Firing Angle Deg.	Maximum Altitude Bullet	Time Max Alt.	Speed At Max. Altitude	Max. Dist. Meters	Max. Dist. km	Time Max Dist.	Bullet Impact Speed	Bullet Impact Angle	Wind-Drift cm or m 16 Km/h 90°
0.0	.305 m	0.00	792 m/s	189	0.19	0.26	688 m/s	-0.195	.1 cm
1.0	7 m	1.04	474 m/s	1110	1.11	2.27	327 m/s	-1.856	3.9 cm
2.0	21 m	1.76	368 m/s	1585	1.58	3.88	270 m/s	-4.003	8.4 cm
3.0	39 m	2.35	323 m/s	1936	1.94	5.27	243 m/s	-6.069	1.261 m
4.0	60 m	2.89	298 m/s	2229	2.23	6.63	224 m/s	-8.151	1.662 m
5.0	84 m	3.40	282 m/s	2483	2.48	7.72	210 m/s	-10.227	2.047 m
6.0	111 m	3.88	269 m/s	2710	2.71	8.86	199 m/s	-12.354	2.425 m
7.0	139 m	4.35	259 m/s	2916	2.91	9.95	190 m/s	-14.498	2.796 m
8.0	170 m	4.80	250 m/s	3102	3.10	11.01	183 m/s	-16.642	3.157 m
9.0	203 m	5.24	242 m/s	3275	3.27	12.03	176 m/s	-18.792	3.511 m
10.0	237 m	5.66	235 m/s	3435	3.43	13.03	171 m/s	-20.970	3.864 m
11.0	274 m	6.08	229 m/s	3583	3.58	14.01	166 m/s	-23.146	4.212 m
12.0	311 m	6.48	223 m/s	3720	3.72	14.96	163 m/s	-25.280	4.553 m
13.0	351 m	6.88	217 m/s	3849	3.85	15.90	159 m/s	-27.403	4.889 m
14.0	391 m	7.26	212 m/s	3970	3.97	16.81	157 m/s	-29.485	5.219 m
15.0	434 m	7.64	208 m/s	4083	4.08	17.70	154 m/s	-31.606	5.543 m
16.0	477 m	8.01	203 m/s	4189	4.19	18.59	153 m/s	-33.536	5.869 m
17.0	522 m	8.38	199 m/s	4288	4.29	19.45	151 m/s	-35.467	6.182 m
18.0	567 m	8.74	195 m/s	4382	4.38	20.30	150 m/s	-37.363	6.495 m
19.0	614 m	9.09	191 m/s	4469	4.47	21.15	149 m/s	-39.251	6.811 m
20.0	662 m	9.44	188 m/s	4551	4.55	21.99	148 m/s	-41.084	7.123 m
21.0	711 m	9.78	184 m/s	4627	4.63	22.81	148 m/s	-42.826	7.430 m
22.0	761 m	10.11	181 m/s	4697	4.70	23.63	148 m/s	-44.638	7.736 m
23.0	812 m	10.45	177 m/s	4763	4.76	24.43	148 m/s	-46.160	8.036 m
24.0	864 m	10.78	174 m/s	4824	4.82	25.23	148 m/s	-47.748	8.338 m
25.0	916 m	11.10	171 m/s	4879	4.88	26.01	149 m/s	-49.244	8.631 m
26.0	969 m	11.41	168 m/s	4931	4.93	26.79	149 m/s	-50.706	8.924 m
27.0	1023 m	11.73	165 m/s	4979	4.98	27.55	150 m/s	-52.111	9.214 m
28.0	1078 m	12.04	163 m/s	5021	5.02	28.30	150 m/s	-53.420	9.497 m
29.0	1133 m	12.35	160 m/s	5060	5.06	29.05	151 m/s	-54.707	9.780 m
30.0	1189 m	12.65	157 m/s	5093	5.09	29.77	152 m/s	-55.910	10.055 m
31.0	1245 m	12.94	155 m/s	5124	5.12	30.50	153 m/s	-57.098	10.332 m
32.0	1302 m	13.24	152 m/s	5150	5.15	31.21	153 m/s	-58.220	10.604 m
33.0	1359 m	13.53	150 m/s	5172	5.17	31.91	154 m/s	-59.293	10.870 m
34.0	1416 m	13.82	147 m/s	5191	5.19	32.61	155 m/s	-60.330	11.135 m
35.0	1474 m	14.10	145 m/s	5205	5.20	33.29	156 m/s	-61.332	11.398 m
36.0	1532 m	14.38	142 m/s	5216	5.22	33.98	157 m/s	-62.303	11.659 m
37.0	1591 m	14.66	140 m/s	5224	5.22	34.64	158 m/s	-63.226	11.914 m
38.0	1649 m	14.93	137 m/s	5226	5.23	35.30	159 m/s	-64.111	12.164 m
39.0	1708 m	15.20	135 m/s	5226	5.23	35.95	159 m/s	-64.972	12.415 m
40.0	1767 m	15.46	133 m/s	5222	5.22	36.59	160 m/s	-65.812	12.660 m
41.0	1826 m	15.73	130 m/s	5216	5.22	37.22	161 m/s	-66.624	12.900 m
42.0	1885 m	15.99	128 m/s	5203	5.20	37.84	162 m/s	-67.388	13.143 m
43.0	1943 m	16.24	126 m/s	5186	5.19	38.47	163 m/s	-68.116	13.385 m
44.0	2002 m	16.49	123 m/s	5163	5.16	39.08	164 m/s	-68.820	13.625 m
45.0	2061 m	16.74	121 m/s	5136	5.14	39.69	165 m/s	-69.492	13.863 m

Wednesday, February 08, 2012
LeJeune 308_175.lgf

Primer: Factory
Scope Height: 1.75 Inches
Powder Brand: H 4350 SE
Powder Charge Weight: 43 Grains
Type of Sight Settings: Minutes Of Angle
Range Altitude Used To Zero Gun: 40 Above Sea Level In Feet
Zeroing Barometeric Pressure: 29.53 InHg
Zeroing Temperature: 75°F
Zeroing Relative Humidity: 78 %
High Temperature MV Correction: .15
Low Temperature MV Correction: .15

ENCLOSURE (9)

Silhouette Ballistics - Maximum Range Data Table
Maximum Range Distances Are In Meters and Kilometers
Height of Gun to Impact Area = .300 Meters
Camp LeJeune - CW04 Gunner Joseph D. Miller

Gun Brand: Camp LeJeune Prone Matches
Gun Caliber: 308 Federal Gold Metal
Gun Model: Prone Match Rifle
Muzzle Velocity: 2950 fps @ 75 °F
Sierra 2009 155 Grain Palma MatchKing HPBT - Hollow Point Boat Tail
Ballistic Coefficient C1: .504 at 2700 fps and Above
Ballistic Coefficient C2: .470 to 1800 fps
Ballistic Coefficient C3: .430 to 1500 fps
Ballistic Coefficient C4: .380 to 0 fps
Altitude: 40 Barometer: 29.53 Temperature: 75°F RH: 78% Slope: 0°

Firing Angle Deg.	Maximum Altitude Bullet	Time Max Alt.	Speed At Max. Altitude	Max. Dist. Meters	Max. Dist. km	Time Max Dist.	Bullet Impact Speed	Bullet Impact Angle	Wind-Drift cm or m 16 Km/h 90°
0.0	.300 m	0.00	899 m/s	212	0.21	0.25	771 m/s	-0.172	.1 cm
1.0	8 m	1.11	489 m/s	1251	1.25	2.47	307 m/s	-2.139	4.8 cm
2.0	24 m	1.83	360 m/s	1708	1.71	4.13	251 m/s	-4.581	10.0 cm
3.0	44 m	2.40	312 m/s	2036	2.04	5.53	223 m/s	-6.939	1.458 m
4.0	67 m	2.92	287 m/s	2304	2.30	6.79	205 m/s	-9.277	1.888 m
5.0	92 m	3.41	270 m/s	2532	2.53	7.98	191 m/s	-11.656	2.302 m
6.0	120 m	3.88	257 m/s	2734	2.73	9.10	180 m/s	-14.063	2.703 m
7.0	149 m	4.32	246 m/s	2914	2.91	10.17	171 m/s	-16.473	3.088 m
8.0	181 m	4.75	237 m/s	3077	3.08	11.21	163 m/s	-18.928	3.469 m
9.0	214 m	5.16	229 m/s	3226	3.23	12.22	157 m/s	-21.366	3.839 m
10.0	249 m	5.56	222 m/s	3362	3.36	13.19	152 m/s	-23.798	4.201 m
11.0	285 m	5.95	215 m/s	3487	3.49	14.12	148 m/s	-26.146	4.550 m
12.0	323 m	6.33	209 m/s	3604	3.60	15.06	145 m/s	-28.554	4.903 m
13.0	362 m	6.70	204 m/s	3711	3.71	15.98	142 m/s	-30.928	5.250 m
14.0	403 m	7.06	198 m/s	3812	3.81	16.88	140 m/s	-33.224	5.593 m
15.0	444 m	7.42	194 m/s	3904	3.90	17.75	138 m/s	-35.475	5.929 m
16.0	487 m	7.76	189 m/s	3990	3.99	18.61	137 m/s	-37.628	6.259 m
17.0	531 m	8.10	185 m/s	4070	4.07	19.46	136 m/s	-39.731	6.584 m
18.0	575 m	8.43	181 m/s	4145	4.14	20.28	135 m/s	-41.728	6.903 m
19.0	621 m	8.76	177 m/s	4214	4.21	21.10	135 m/s	-43.680	7.219 m
20.0	668 m	9.08	174 m/s	4279	4.28	21.90	134 m/s	-45.518	7.530 m
21.0	715 m	9.40	170 m/s	4338	4.34	22.69	134 m/s	-47.306	7.836 m
22.0	763 m	9.71	167 m/s	4393	4.39	23.46	134 m/s	-48.987	8.136 m
23.0	812 m	10.02	164 m/s	4445	4.44	24.24	135 m/s	-50.632	8.436 m
24.0	862 m	10.32	161 m/s	4491	4.49	24.99	135 m/s	-52.167	8.728 m
25.0	912 m	10.62	158 m/s	4534	4.53	25.73	136 m/s	-53.665	9.020 m
26.0	963 m	10.91	155 m/s	4573	4.57	26.47	136 m/s	-55.092	9.306 m
27.0	1014 m	11.20	152 m/s	4609	4.61	27.19	137 m/s	-56.435	9.589 m
28.0	1066 m	11.48	149 m/s	4640	4.64	27.91	137 m/s	-57.737	9.868 m
29.0	1119 m	11.76	146 m/s	4669	4.67	28.61	138 m/s	-58.964	10.144 m
30.0	1172 m	12.04	144 m/s	4694	4.69	29.30	139 m/s	-60.157	10.413 m
31.0	1225 m	12.31	141 m/s	4715	4.72	29.98	139 m/s	-61.276	10.680 m
32.0	1279 m	12.58	139 m/s	4733	4.73	30.66	140 m/s	-62.363	10.946 m
33.0	1333 m	12.85	137 m/s	4746	4.75	31.34	141 m/s	-63.376	11.213 m
34.0	1387 m	13.11	134 m/s	4755	4.75	32.01	142 m/s	-64.356	11.478 m
35.0	1441 m	13.37	132 m/s	4760	4.76	32.68	143 m/s	-65.274	11.740 m
36.0	1496 m	13.63	130 m/s	4762	4.76	33.34	144 m/s	-66.168	12.002 m
37.0	1551 m	13.88	127 m/s	4760	4.76	33.98	145 m/s	-66.995	12.256 m
38.0	1606 m	14.13	125 m/s	4755	4.76	34.63	146 m/s	-67.811	12.512 m
39.0	1661 m	14.38	123 m/s	4747	4.75	35.26	147 m/s	-68.566	12.760 m
40.0	1716 m	14.62	121 m/s	4735	4.73	35.88	148 m/s	-69.306	13.007 m
41.0	1771 m	14.86	118 m/s	4720	4.72	36.49	149 m/s	-70.003	13.249 m
42.0	1826 m	15.10	116 m/s	4702	4.70	37.09	150 m/s	-70.690	13.492 m
43.0	1881 m	15.33	114 m/s	4680	4.68	37.68	150 m/s	-71.328	13.723 m
44.0	1936 m	15.56	112 m/s	4656	4.66	38.27	151 m/s	-71.966	13.958 m
45.0	1990 m	15.78	110 m/s	4628	4.63	38.84	152 m/s	-72.562	14.184 m

Tuesday, May 08, 2012
LeJeune 308_155.igf

Primer: Factory
Scope Height: 1.75 Inches
Powder Brand: Varget
Powder Charge Weight: 45 Grains
Type of Sight Settings: Minutes Of Angle
Range Altitude Used To Zero Gun: 40 Above Sea Level In Feet
Zeroing Barometeric Pressure: 29.53 inHg
Zeroing Temperature: 75°F
Zeroing Relative Humidity: 78 %
High Temperature MV Correction: .15
Low Temperature MV Correction: .15

ENCLOSURE (2)

Silhouette Ballistics - Maximum Range Data Table
Maximum Range Distances Are In Meters and Kilometers
Height of Gun to Impact Area = .305 Meters
Camp LeJeune - CW04 Gunner Joseph D. Miller

Gun Brand: Camp LeJeune Prone Matches
Gun Caliber: 260 Federal Premium Gold Metal
Gun Model: Prone Match Rifle
Muzzle Velocity: 2760 fps @ 76 °F
Sierra 142 Grain MatchKing HPBT - Hollow Point Boat Tail
Ballistic Coefficient C1: .595 at 2850 fps and Above
Ballistic Coefficient C2: .580 to 2400 fps
Ballistic Coefficient C3: .575 to 2050 fps
Ballistic Coefficient C4: .550 to 0 fps
Altitude: 40 Barometer: 29.53 Temperature: 76°F RH: 78% Slope: 0°

Firing Angle Deg.	Maximum Altitude Bullet	Time Max Alt.	Speed At Max. Altitude	Max. Dist. Meters	Max. Dist. km	Time Max Dist.	Bullet Impact Speed	Bullet Impact Angle	Wind-Drift cm or m 16 Km/h 90°
0.0	.305 m	0.00	838 m/s	201	0.20	0.26	739 m/s	-0.182	.1 cm
1.0	8 m	1.11	510 m/s	1266	1.27	2.43	343 m/s	-1.867	4.1 cm
2.0	24 m	1.88	392 m/s	1797	1.80	4.17	278 m/s	-4.138	9.0 cm
3.0	44 m	2.51	338 m/s	2161	2.16	5.64	250 m/s	-6.303	1.355 m
4.0	69 m	3.07	310 m/s	2499	2.50	6.97	232 m/s	-8.427	1.781 m
5.0	96 m	3.60	292 m/s	2775	2.78	8.22	218 m/s	-10.564	2.191 m
6.0	126 m	4.11	279 m/s	3021	3.02	9.40	207 m/s	-12.684	2.686 m
7.0	158 m	4.59	268 m/s	3244	3.24	10.55	198 m/s	-14.843	2.975 m
8.0	192 m	5.06	259 m/s	3448	3.45	11.66	191 m/s	-17.002	3.357 m
9.0	229 m	5.51	251 m/s	3636	3.64	12.72	184 m/s	-19.135	3.728 m
10.0	267 m	5.95	244 m/s	3811	3.81	13.76	179 m/s	-21.275	4.095 m
11.0	308 m	6.38	238 m/s	3974	3.97	14.78	175 m/s	-23.396	4.454 m
12.0	350 m	6.80	232 m/s	4125	4.12	15.78	171 m/s	-25.526	4.813 m
13.0	393 m	7.21	226 m/s	4267	4.27	16.76	168 m/s	-27.600	5.164 m
14.0	439 m	7.62	221 m/s	4400	4.40	17.72	165 m/s	-29.666	5.514 m
15.0	485 m	8.02	217 m/s	4526	4.53	18.66	163 m/s	-31.686	5.857 m
16.0	533 m	8.40	212 m/s	4643	4.64	19.59	162 m/s	-33.652	6.196 m
17.0	583 m	8.79	208 m/s	4754	4.75	20.50	160 m/s	-35.557	6.530 m
18.0	634 m	9.16	204 m/s	4858	4.86	21.39	159 m/s	-37.416	6.858 m
19.0	686 m	9.54	200 m/s	4957	4.96	22.27	158 m/s	-39.224	7.183 m
20.0	739 m	9.90	196 m/s	5049	5.05	23.14	158 m/s	-40.974	7.504 m
21.0	793 m	10.26	193 m/s	5135	5.13	23.99	157 m/s	-42.647	7.819 m
22.0	849 m	10.61	190 m/s	5216	5.22	24.83	157 m/s	-44.282	8.131 m
23.0	905 m	10.96	186 m/s	5291	5.29	25.68	157 m/s	-45.900	8.448 m
24.0	963 m	11.31	183 m/s	5361	5.36	26.50	157 m/s	-47.418	8.755 m
25.0	1021 m	11.65	180 m/s	5427	5.43	27.31	158 m/s	-48.891	9.059 m
26.0	1080 m	11.99	177 m/s	5488	5.49	28.11	158 m/s	-50.309	9.358 m
27.0	1140 m	12.32	174 m/s	5543	5.54	28.91	159 m/s	-51.662	9.657 m
28.0	1200 m	12.65	171 m/s	5594	5.59	29.70	159 m/s	-52.984	9.957 m
29.0	1262 m	12.97	169 m/s	5639	5.64	30.49	160 m/s	-54.256	10.255 m
30.0	1324 m	13.29	166 m/s	5680	5.68	31.27	161 m/s	-55.467	10.548 m
31.0	1386 m	13.61	163 m/s	5715	5.71	32.04	162 m/s	-56.635	10.841 m
32.0	1449 m	13.92	161 m/s	5747	5.75	32.79	163 m/s	-57.742	11.127 m
33.0	1513 m	14.23	158 m/s	5773	5.77	33.54	164 m/s	-58.819	11.413 m
34.0	1577 m	14.53	155 m/s	5796	5.80	34.29	165 m/s	-59.862	11.698 m
35.0	1642 m	14.83	153 m/s	5814	5.81	35.02	166 m/s	-60.840	11.976 m
36.0	1706 m	15.13	150 m/s	5827	5.83	35.74	167 m/s	-61.793	12.254 m
37.0	1772 m	15.43	148 m/s	5836	5.84	36.45	168 m/s	-62.711	12.527 m
38.0	1837 m	15.72	145 m/s	5842	5.84	37.16	169 m/s	-63.590	12.796 m
39.0	1903 m	16.01	143 m/s	5842	5.84	37.85	170 m/s	-64.441	13.063 m
40.0	1969 m	16.29	141 m/s	5839	5.84	38.53	171 m/s	-65.254	13.325 m
41.0	2034 m	16.57	139 m/s	5831	5.83	39.21	172 m/s	-66.048	13.585 m
42.0	2100 m	16.85	136 m/s	5819	5.82	39.87	173 m/s	-66.812	13.842 m
43.0	2166 m	17.12	134 m/s	5803	5.80	40.53	174 m/s	-67.550	14.094 m
44.0	2231 m	17.40	131 m/s	5783	5.78	41.17	175 m/s	-68.269	14.344 m
45.0	2297 m	17.66	129 m/s	5759	5.76	41.80	176 m/s	-68.963	14.586 m

Wednesday, February 08, 2012
LeJeune 260_142.lgf

Primer: Factory
Scope Height: 1.75 Inches
Powder Brand: Factory
Powder Charge Weight: 45 Grains
Type of Sight Settings: Minutes Of Angle
Range Altitude Used To Zero Gun: 40 Above Sea Level In Feet
Zeroing Barometeric Pressure: 29.53 InHg
Zeroing Temperature: 75°F
Zeroing Relative Humidity: 78 %
High Temperature MV Correction: .15
Low Temperature MV Correction: .15

ENCLOSURE (a)

Silhouette Ballistics - Maximum Range Data Table
Maximum Range Distances Are In Meters and Kilometers
Height of Gun to Impact Area = .305 Meters
Camp LeJeune - CW04 Gunner Joseph D. Miller

Gun Brand: Camp LeJeune Prone Matches
Gun Caliber: 30-06 Federal Gold Metal
Gun Model: Prone Match Rifle
Muzzle Velocity: 2700 fps @ 75 °F
Sierra 168 Grain MatchKing HPBT - Hollow Point Boat Tail
Ballistic Coefficient C1: .462 at 2600 fps and Above
Ballistic Coefficient C2: .447 to 2100 fps
Ballistic Coefficient C3: .424 to 1600 fps
Ballistic Coefficient C4: .405 to 0 fps
Altitude: 40 Barometer: 29.53 Temperature: 75°F RH: 78% Slope: 0°

Firing Angle Deg.	Maximum Altitude Bullet	Time Max Alt.	Speed At Max. Altitude	Max. Dist. Meters	Max. Dist. km	Time Max Dist.	Bullet Impact Speed	Bullet Impact Angle	Wind-Drift cm or m 16 Km/h 90°
0.0	.305 m	0.00	822 m/s	195	0.19	0.26	702 m/s	-0.189	.1 cm
1.0	7 m	1.04	459 m/s	1095	1.09	2.28	310 m/s	-1.988	4.3 cm
2.0	21 m	1.72	352 m/s	1533	1.53	3.85	257 m/s	-4.192	8.9 cm
3.0	38 m	2.29	310 m/s	1858	1.86	5.19	230 m/s	-6.343	1.312 m
4.0	59 m	2.81	287 m/s	2126	2.13	6.42	211 m/s	-8.495	1.714 m
5.0	82 m	3.30	271 m/s	2357	2.36	7.58	197 m/s	-10.703	2.103 m
6.0	107 m	3.76	258 m/s	2562	2.56	8.68	186 m/s	-12.931	2.481 m
7.0	134 m	4.21	248 m/s	2747	2.75	9.73	177 m/s	-15.176	2.849 m
8.0	164 m	4.64	239 m/s	2915	2.91	10.76	169 m/s	-17.470	3.212 m
9.0	195 m	5.05	231 m/s	3067	3.07	11.75	163 m/s	-19.754	3.567 m
10.0	227 m	5.46	224 m/s	3209	3.21	12.71	158 m/s	-22.051	3.916 m
11.0	261 m	5.85	218 m/s	3339	3.34	13.64	153 m/s	-24.325	4.257 m
12.0	297 m	6.24	212 m/s	3460	3.46	14.56	150 m/s	-26.582	4.592 m
13.0	334 m	6.61	206 m/s	3572	3.57	15.46	147 m/s	-28.805	4.924 m
14.0	372 m	6.98	201 m/s	3677	3.68	16.34	144 m/s	-31.039	5.255 m
15.0	412 m	7.33	196 m/s	3775	3.77	17.21	142 m/s	-33.199	5.579 m
16.0	452 m	7.69	192 m/s	3865	3.87	18.07	141 m/s	-35.348	5.903 m
17.0	494 m	8.03	188 m/s	3950	3.95	18.91	139 m/s	-37.401	6.222 m
18.0	537 m	8.37	184 m/s	4029	4.03	19.74	138 m/s	-39.415	6.536 m
19.0	580 m	8.70	180 m/s	4102	4.10	20.56	138 m/s	-41.360	6.845 m
20.0	625 m	9.02	176 m/s	4170	4.17	21.35	137 m/s	-43.199	7.148 m
21.0	671 m	9.35	173 m/s	4234	4.23	22.14	137 m/s	-45.007	7.451 m
22.0	717 m	9.66	170 m/s	4293	4.29	22.92	137 m/s	-46.707	7.746 m
23.0	764 m	9.97	166 m/s	4347	4.35	23.68	137 m/s	-48.361	8.038 m
24.0	812 m	10.28	163 m/s	4397	4.40	24.43	138 m/s	-49.928	8.327 m
25.0	860 m	10.58	160 m/s	4443	4.44	25.17	138 m/s	-51.455	8.613 m
26.0	909 m	10.87	157 m/s	4485	4.48	25.90	138 m/s	-52.882	8.891 m
27.0	959 m	11.17	155 m/s	4523	4.52	26.63	139 m/s	-54.285	9.171 m
28.0	1009 m	11.45	152 m/s	4558	4.56	27.33	139 m/s	-55.596	9.444 m
29.0	1060 m	11.74	149 m/s	4589	4.59	28.04	140 m/s	-56.886	9.717 m
30.0	1111 m	12.02	147 m/s	4616	4.62	28.73	141 m/s	-58.087	9.982 m.
31.0	1163 m	12.30	144 m/s	4640	4.64	29.42	142 m/s	-59.261	10.248 m
32.0	1215 m	12.57	142 m/s	4659	4.66	30.08	142 m/s	-60.366	10.506 m
33.0	1267 m	12.84	139 m/s	4678	4.68	30.75	143 m/s	-61.456	10.762 m
34.0	1320 m	13.11	137 m/s	4691	4.69	31.40	144 m/s	-62.470	11.014 m
35.0	1373 m	13.37	134 m/s	4700	4.70	32.05	145 m/s	-63.457	11.269 m
36.0	1426 m	13.63	132 m/s	4705	4.70	32.70	145 m/s	-64.379	11.522 m
37.0	1479 m	13.89	130 m/s	4706	4.71	33.35	147 m/s	-65.279	11.776 m
38.0	1533 m	14.14	127 m/s	4703	4.70	33.98	147 m/s	-66.114	12.021 m
39.0	1587 m	14.39	125 m/s	4697	4.70	34.61	148 m/s	-66.937	12.269 m
40.0	1640 m	14.64	123 m/s	4687	4.69	35.22	149 m/s	-67.701	12.511 m
41.0	1694 m	14.87	121 m/s	4674	4.67	35.83	150 m/s	-68.453	12.749 m
42.0	1747 m	15.12	118 m/s	4657	4.66	36.42	151 m/s	-69.157	12.983 m
43.0	1801 m	15.36	116 m/s	4638	4.64	37.01	152 m/s	-69.834	13.214 m
44.0	1854 m	15.58	114 m/s	4614	4.61	37.60	153 m/s	-70.519	13.446 m
45.0	1907 m	15.81	112 m/s	4588	4.59	38.16	154 m/s	-71.147	13.670 m

Wednesday, February 08, 2012
LeJeune 3006_168.lgf

Primer: Factory
Scope Height: 1.75 Inches
Powder Brand: H 4350 SE
Powder Charge Weight: 50 Grains
Type of Sight Settings: Minutes Of Angle
Range Altitude Used To Zero Gun: 40 Above Sea Level In Feet
Zeroing Barometeric Pressure: 29.53 inHg
Zeroing Temperature: 75°F
Zeroing Relative Humidity: 78 %
High Temperature MV Correction: .15
Low Temperature MV Correction: .15

ENCLOSURE (2)

Silhouette Ballistics - Maximum Range Data Table
Maximum Range Distances Are In Meters and Kilometers
Height of Gun to Impact Area = .305 Meters
Camp LeJeune - CW04 Gunner Joseph D. Miller

Gun Brand: Camp LeJeune Prone Matches
Gun Caliber: 6.5 x 284 Black Hills Gold
Gun Model: Prone Match Rifle
Muzzle Velocity: 2950 fps @ 75 °F
Sierra 142 Grain MatchKing HPBT - Hollow Point Boat Tail
Ballistic Coefficient C1: .695 at 2850 fps and Above
Ballistic Coefficient C2: .580 to 2400 fps
Ballistic Coefficient C3: .575 to 2050 fps
Ballistic Coefficient C4: .550 to 0 fps
Altitude: 40 Barometer: 29.53 Temperature: 75°F RH: 78% Slope: 0°

Firing Angle Deg.	Maximum Altitude Bullet	Time Max Alt.	Speed At Max. Altitude	Max. Dist. Meters	Max. Dist. km	Time Max Dist.	Bullet Impact Speed	Bullet Impact Angle	Wind-Drift cm or m 16 Km/h 90°
0.0	.305 m	0.00	899 m/s	215	0.21	0.26	790 m/s	-0.170	.1 cm
1.0	9 m	1.17	527 m/s	1387	1.39	2.56	343 m/s	-1.956	4.6 cm
2.0	26 m	1.95	399 m/s	1935	1.93	4.37	276 m/s	-4.347	9.9 cm
3.0	48 m	2.59	342 m/s	2327	2.33	5.87	249 m/s	-6.607	1.468 m
4.0	74 m	3.16	312 m/s	2649	2.65	7.23	230 m/s	-8.820	1.914 m
5.0	104 m	3.69	294 m/s	2928	2.93	8.51	217 m/s	-11.026	2.342 m
6.0	135 m	4.20	280 m/s	3177	3.18	9.71	206 m/s	-13.214	2.754 m
7.0	169 m	4.69	269 m/s	3402	3.40	10.88	197 m/s	-15.429	3.160 m
8.0	206 m	5.16	260 m/s	3607	3.61	12.00	190 m/s	-17.635	3.554 m
9.0	244 m	5.61	252 m/s	3797	3.80	13.08	184 m/s	-19.820	3.939 m
10.0	285 m	6.06	245 m/s	3973	3.97	14.13	179 m/s	-21.988	4.316 m
11.0	327 m	6.49	238 m/s	4136	4.14	15.17	174 m/s	-24.166	4.690 m
12.0	371 m	6.91	232 m/s	4289	4.29	16.18	171 m/s	-26.320	5.059 m
13.0	417 m	7.32	227 m/s	4432	4.43	17.17	168 m/s	-28.434	5.421 m
14.0	464 m	7.73	222 m/s	4566	4.57	18.14	165 m/s	-30.519	5.780 m
15.0	513 m	8.13	217 m/s	4692	4.69	19.10	163 m/s	-32.554	6.133 m
16.0	563 m	8.52	213 m/s	4810	4.81	20.04	162 m/s	-34.516	6.480 m
17.0	615 m	8.90	209 m/s	4921	4.92	20.96	161 m/s	-36.441	6.823 m
18.0	668 m	9.28	205 m/s	5025	5.03	21.86	160 m/s	-38.305	7.161 m
19.0	722 m	9.66	201 m/s	5124	5.12	22.75	159 m/s	-40.110	7.493 m
20.0	778 m	10.02	197 m/s	5216	5.22	23.63	158 m/s	-41.841	7.821 m
21.0	834 m	10.38	194 m/s	5303	5.30	24.49	158 m/s	-43.524	8.145 m
22.0	892 m	10.74	190 m/s	5385	5.38	25.34	158 m/s	-45.150	8.465 m
23.0	950 m	11.09	187 m/s	5460	5.46	26.20	158 m/s	-46.741	8.788 m
24.0	1010 m	11.44	184 m/s	5531	5.53	27.04	158 m/s	-48.256	9.105 m
25.0	1070 m	11.78	181 m/s	5596	5.60	27.86	159 m/s	-49.720	9.417 m
26.0	1131 m	12.12	178 m/s	5658	5.66	28.67	159 m/s	-51.114	9.721 m
27.0	1194 m	12.46	175 m/s	5714	5.71	29.48	160 m/s	-52.464	10.030 m
28.0	1257 m	12.78	172 m/s	5764	5.76	30.28	161 m/s	-53.762	10.334 m
29.0	1320 m	13.11	169 m/s	5810	5.81	31.07	161 m/s	-55.015	10.637 m
30.0	1384 m	13.44	167 m/s	5851	5.85	31.86	162 m/s	-56.201	10.938 m
31.0	1449 m	13.76	164 m/s	5886	5.89	32.64	163 m/s	-57.350	11.237 m
32.0	1515 m	14.07	161 m/s	5917	5.92	33.41	164 m/s	-58.453	11.533 m
33.0	1580 m	14.38	159 m/s	5944	5.94	34.17	165 m/s	-59.499	11.825 m
34.0	1647 m	14.69	156 m/s	5966	5.97	34.92	166 m/s	-60.517	12.114 m
35.0	1713 m	14.99	154 m/s	5983	5.98	35.67	168 m/s	-61.490	12.402 m
36.0	1781 m	15.29	151 m/s	5997	6.00	36.39	169 m/s	-62.412	12.681 m
37.0	1848 m	15.59	149 m/s	6006	6.01	37.12	170 m/s	-63.312	12.963 m
38.0	1916 m	15.89	146 m/s	6010	6.01	37.83	171 m/s	-64.170	13.237 m
39.0	1984 m	16.18	144 m/s	6011	6.01	38.54	172 m/s	-65.006	13.511 m
40.0	2052 m	16.46	141 m/s	6006	6.01	39.23	173 m/s	-65.808	13.780 m
41.0	2120 m	16.75	139 m/s	5998	6.00	39.92	174 m/s	-66.577	14.045 m
42.0	2188 m	17.03	137 m/s	5984	5.98	40.59	175 m/s	-67.320	14.306 m
43.0	2256 m	17.30	134 m/s	5968	5.97	41.26	176 m/s	-68.051	14.566 m
44.0	2324 m	17.58	132 m/s	5947	5.95	41.91	177 m/s	-68.744	14.820 m
45.0	2392 m	17.85	130 m/s	5921	5.92	42.56	178 m/s	-69.422	15.070 m

Wednesday, February 08, 2012
LeJeune 6.5x284_142.igf

Primer: Factory
Scope Height: 1.75 Inches
Powder Brand: Factory
Powder Charge Weight: 70 Grains
Type of Sight Settings: Minutes Of Angle
Range Altitude Used To Zero Gun: 40 Above Sea Level In Feet
Zeroing Barometeric Pressure: 29.53 InHg
Zeroing Temperature: 75°F
Zeroing Relative Humidity: 78 %
High Temperature MV Correction: .15
Low Temperature MV Correction: .16

EXHIBIT (a)

Silhouette Ballistics - Maximum Range Data Table
Maximum Range Distances Are In Meters and Kilometers
Height Of Gun Above The Ground = 4 Feet

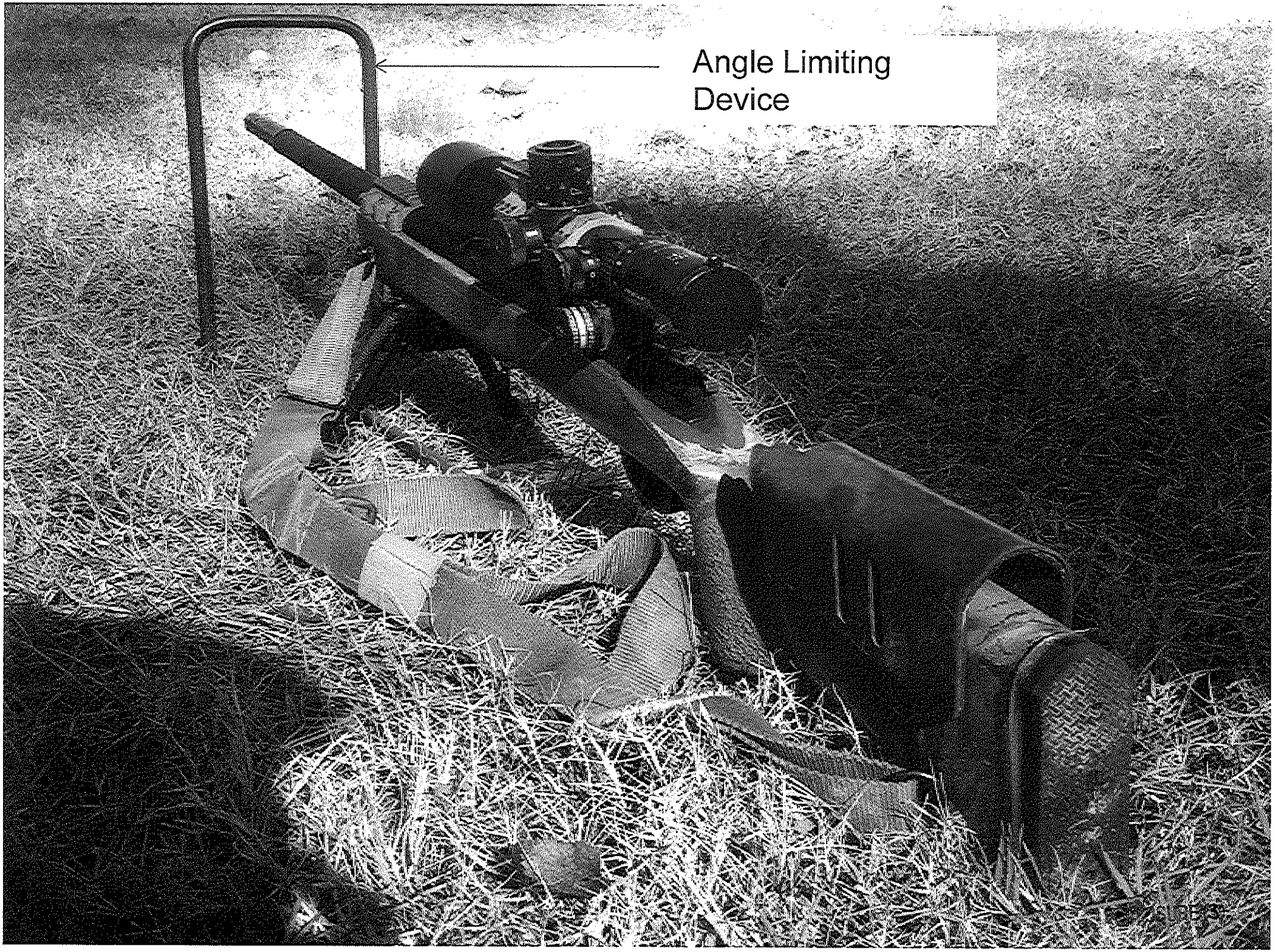
Gun Brand: M24
Gun Caliber: 300 Win Mag
Gun Model: 700
Muzzle Velocity: 2850 fps @ 75 °F
Sierra 220 Grain MatchKing HPBT - Hollow Point Boat Tail
Ballistic Coefficient C1: .6297 at 2100 fps and Above
Ballistic Coefficient C2: .624522 to 1700 fps
Ballistic Coefficient C3: .608 to 1700 fps
Ballistic Coefficient C4: .608 to 0 fps
Altitude: 0 Barometer: 30.00 Temperature: 75°F RH: 67% Slope: 0°

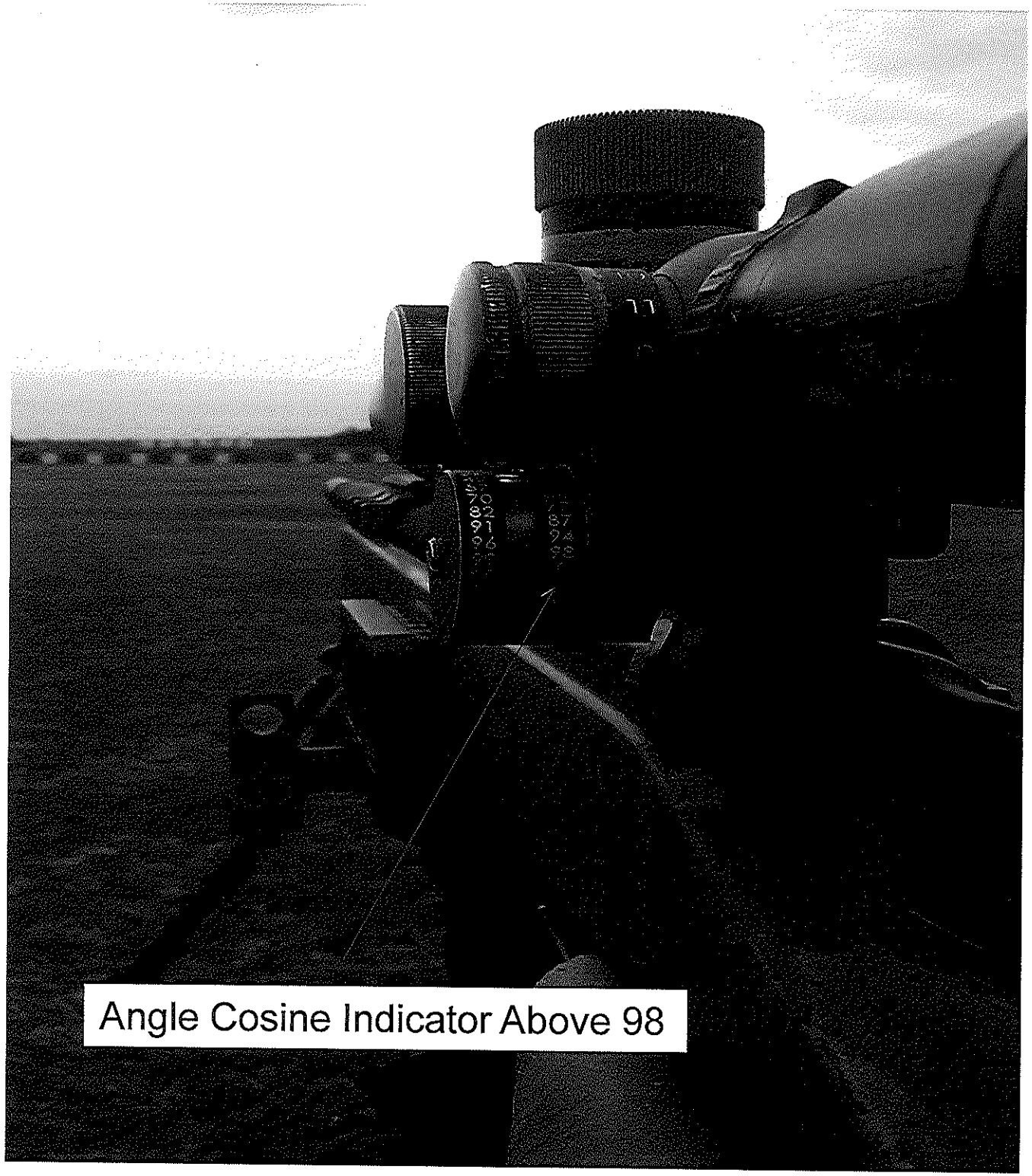
Firing Angle Deg.	Maximum Height Feet	Time To Alt.	Speed At Alt.	Maximum Dist. Meters	Maximum Dist. Kilometers	Time To Dist.	Bullet Impact Speed	Bullet Impact Angle
0.0	4.00 ft	0.00	2849 fps	401	0.40	0.52	2250 fps	-0.380
1.0	30 ft	1.16	1839 fps	1402	1.40	2.60	1149 fps	-1.982
2.0	87 ft	1.96	1341 fps	1957	1.96	4.40	926 fps	-4.288
3.0	161 ft	2.62	1147 fps	2361	2.36	5.92	835 fps	-6.495
4.0	247 ft	3.20	1045 fps	2694	2.69	7.29	775 fps	-8.655
5.0	343 ft	3.74	982 fps	2984	2.98	8.57	730 fps	-10.812
6.0	449 ft	4.26	936 fps	3242	3.24	9.79	695 fps	-12.945
7.0	563 ft	4.75	900 fps	3477	3.48	10.96	666 fps	-15.098
8.0	684 ft	5.24	869 fps	3693	3.69	12.10	643 fps	-17.256
9.0	813 ft	5.70	843 fps	3891	3.89	13.20	623 fps	-19.396
10.0	948 ft	6.15	820 fps	4076	4.08	14.27	606 fps	-21.512
11.0	1090 ft	6.59	799 fps	4248	4.25	15.32	592 fps	-23.614
12.0	1238 ft	7.03	779 fps	4410	4.41	16.34	580 fps	-25.694
13.0	1392 ft	7.45	761 fps	4561	4.56	17.34	570 fps	-27.760
14.0	1550 ft	7.86	745 fps	4704	4.70	18.33	562 fps	-29.790
15.0	1715 ft	8.27	730 fps	4837	4.84	19.31	555 fps	-31.792
16.0	1884 ft	8.67	715 fps	4963	4.96	20.26	550 fps	-33.741
17.0	2057 ft	9.07	701 fps	5082	5.08	21.20	546 fps	-35.629
18.0	2236 ft	9.45	688 fps	5194	5.19	22.13	543 fps	-37.470
19.0	2418 ft	9.83	675 fps	5299	5.30	23.04	540 fps	-39.259
20.0	2605 ft	10.21	663 fps	5397	5.40	23.94	539 fps	-40.986
21.0	2796 ft	10.58	652 fps	5490	5.49	24.82	538 fps	-42.645
22.0	2990 ft	10.95	641 fps	5578	5.58	25.70	538 fps	-44.263
23.0	3188 ft	11.31	630 fps	5659	5.66	26.56	536 fps	-45.822
24.0	3389 ft	11.67	620 fps	5736	5.74	27.41	539 fps	-47.323
25.0	3593 ft	12.02	610 fps	5807	5.81	28.25	540 fps	-48.758
26.0	3801 ft	12.37	600 fps	5874	5.87	29.08	542 fps	-50.155
27.0	4011 ft	12.72	591 fps	5935	5.93	29.90	543 fps	-51.497
28.0	4224 ft	13.05	581 fps	5992	5.99	30.71	545 fps	-52.780
29.0	4439 ft	13.39	572 fps	6041	6.04	31.53	548 fps	-54.044
30.0	4657 ft	13.72	563 fps	6089	6.09	32.32	551 fps	-55.241
31.0	4877 ft	14.05	554 fps	6131	6.13	33.10	554 fps	-56.393
32.0	5099 ft	14.38	546 fps	6167	6.17	33.88	557 fps	-57.495

Wednesday, January 25, 2012
Untitled

Primer: Winchester WLR
Scope Height: 2.75 Inches
Powder Brand: H 1000
Powder Charge Weight: 78.0 Grains
Type of Sight Settings: Minutes Of Angle
Range Altitude Used To Zero Gun: 0 Above Sea Level In Feet
Zeroing Barometeric Pressure: 29.53
Zeroing Temperature: 59 °F
Zeroing Relative Humidity: 78 %
High Temperature MV Correction: .15
Low Temperature MV Correction: .15

ENCLOSURE (2)


Angle Limiting
Device



ENCLOSURE (3)

EXHIBIT (3)


Hog Saddle
Angle Cosine Indicator
Lockdown Screw

UNITED STATES MARINE CORPS

In consideration of the privilege of participating/observing a live-fire exercise at Camp Lejeune, North Carolina, and further recognizing the voluntary nature of my participation in this event, I, the undersigned person, intending to be legally bound, hereby promise to waive for myself, my guardians, heirs, executor, administrators, legal representatives and any other persons on my behalf, any and all rights and claims for damages, demands, and any other actions whatsoever, including those attributable to simple negligence, which I may have against any of the following persons or entities: the United States of America; the Department of Defense; the Department of the Navy; the United States Marine Corps; Marine Corps Base, Camp Lejeune, North Carolina; any and all individuals assigned to or employed by the United States, including but not limited to the Secretary of Defense; the Secretary of the Navy; the Commandant of the Marine Corps; Commanding Officer, Marine Corps Base, Camp Lejeune, North Carolina; in both their official and personal capacities; any medical support personnel assigned thereto; and these persons' or entities' representatives, successors, and assigns which said injuries arise out of my participation in the activities comprising the aforesaid event; as well as any use by me of any Marine Corps Base, Camp Lejeune, North Carolina, or government equipment or facilities in conjunction with and furtherance of such participation by me. I FURTHER VERIFY THAT I HAVE FULL KNOWLEDGE OF THE RISKS ASSOCIATED WITH ATTENDING THIS EVENT, AND UNDERSTAND THAT I WILL BE VIEWING A DEMONSTRATION OF MILITARY EQUIPMENT/PERSONNEL ENGAGED IN SIMULATED COMBAT ACTIVITIES, INCLUDING LOW-FLYING AIRCRAFT, HIGH SPEED TANKS, AND EXPLODING ORDNANCE. I EXPRESSLY, KNOWINGLY, AND VOLUNTARILY ASSUME THE RISKS INVOLVED IN THE PLANNED ACTIVITIES INCLUDING TRANSPORTATION TO AND FROM THE EVENT, AND AGREE TO HOLD THE UNITED STATES HARMLESS FOR ANY RESULTING INJURY. I understand that this assumption of risk shall remain in effect until notice of cancellation is received by the Commanding Officer, Marine Corps Base, Camp Lejeune, North Carolina. I understand that, should I decline to execute this agreement, I will not be permitted to attend the live-fire exercise.

_____
(Signature of Witness)

_____
(Signature) (Date)

_____
(Printed Name)

_____
Signature of Parent/Guardian on behalf

of _____
(Name of Minor)

Date: _____

ENCLOSURE (4)

TRAINING EVOLUTION: Stone Bay Range Complex – Deviation/ ALD/Civilian	**ORGANIZATION:** Weapons Training Battalion (WTBN)	**PREPARED BY:** Gunner J.D. Miller	**DATE:** February 8, 2013

OPERATIONAL PHASE	HAZARD	CAUSES	INITIAL RAC	DEVELOP CONTROLS	RESIDUAL RAC	HOW TO IMPLEMENT	HOW TO SUPERVISE
General	Dehydration	Lack of water, wearing warming layers, excessive training	II/C=3	Ensure Marines have proper gear, ensure Marines drink water, take off necessary warming layers prior to training	II/D=4	Safety brief	Range Blocks / Range personnel will ensure Marines Hydrate and remove warming layers.
General	Fire	Smoking, Shooting outside range fan, errant stray round	II/C=3	Smoking in designated area only, shooters briefed on range left and right lateral limits, shooters allowed to only fire on assigned targets	IV/C=5	Safety brief, coordinate with range control for FDR ratings.	Smoking allowed only behind Ready Benches. Range Personnel will watch muzzle positions during firing
General	Ammunition	Dirty or un-safe ammunition issued. Ammunition damaged during use.	I/C=2	Ammunition inspection on issue. All Lots verified against standing NARs. Ammunition stored properly on range prior to break out.	II/D=4	Safety brief, weapons cleared	Unit Ammunition Chief verifies NARs. Ammunition Technicians inspect at issue. RSO supervises break out and issue.
Live Fire	Fratricide	Marines forward of firing point.	I/C=2	Marines will begin live fire from behind firing line.	II/D=4	Safety Brief	Shooters will be told when to move from yard line to yard line. Coaches will move with the shooters.
Live Fire	Negligent discharge	Marine fails to use proper weapons safety	IV/B=4	Discuss weapons safety rules before live fire. Weapon remains on safe until Marines intend to fire. Marines will be evaluated on weapons handling skills prior to live fire.	IV/C=5	Safety brief	Multiple Range Personnel
Live Fire	Weapons malfunction	Dirty weapon or ammunition. Shooters error	III/B=4	Weapons and ammunition will be inspected. Shooters will be briefed how to clear weapon.	IV/C=5	Safety brief, demonstration,	Multiple Instructors, weapons cleared by student if possible.
Live Fire	Direct fire	Unsafe weapons handling	I/C=2	Point out L/R lateral limits. Shooters fire only on targets with clear line of sight. Shooters will NOT move out of assigned position.	II/D=4	Safety brief. Assign position coaches for each firing point. Clear weapons at the end of firing stage.	Range Instructors to supervise all firing stages. All weapons lined out by Range Personnel.

Live Fire	Hearing Damage/Loss	Marines not using proper hearing protection during all live fire evolutions of training	II/B=3	All Marines will be issued one pair of hearing protection at the beginning of each training day. Prior to firing each Marine will put on/in proper hearing protection.	III/C=4	Safety brief, hearing protection will be readily made available to the Marines.	Staff Non-Fires as well as the Range Personnel will inspect each Marine prior to step off.
Live Fire ALD's	Firing above 10 degrees	Marines not using approved Angle Limiting Devices	II/C=3	All shooters will be briefed on ALD usage - Units must pass ALD usage test prior to being authorized by WTBN Gunner.	III/C=4	One on One instruction when firing with approved ALD's.	WTBN will test and supervise all approved ALD usage one the Stone Bay Range Complex.
Live Fire Civilians	Under Age Civilians, Retired Personnel, NRA competitive personnel firing on Stone Bay Range Complex.	Personnel unfamiliar with weapons systems, safety procedure, military line commands.	II/C=3	Personnel will load weapons only when told to do so, weapons conditions will be reviewed during safety brief. Point out L/R lateral limits. Shooters fire only on targets with clear line of sight. Shooters will NOT move out of assigned position. There will be one on one supervision for all under age personnel firing. Weapons and ammunition will be inspected. Shooters will be briefed how to clear weapon. Discuss weapons safety rules before live fire. Weapon remains on safe until personnel intend to fire. Personnel will be evaluated on weapons handling skills prior to live fire. All Civilian and under age firing events will require a SNCO or civilian equivalent to act as RSO/OIC. All shooters will be briefed on ALD usage - Personnel must pass ALD usage test prior to being authorized by WTBN Gunner. No hand loaded ammunition used on the range can exceed the approved muzzle velocity of ammunition approved in this waiver. Civilian RSO and OIC will have same training qualifications as Military RSO and OIC. Civilian clubs will provide the same standards of medical coverage and capability as required by current Range Regs.	II/C=3	Additional supervision of all events by WTBN personnel will be in place and rehearsed prior to any events taking place.	Range Personnel will inspect all personnel prior to step off and movement down range. WTBN will test and supervise all approved ALD usage on the Stone Bay Range Complex. Under Age Civilians, Retired Personnel, NRA competitive personnel will require WTBN Stone Bay to add additional instructors and supervision to all events of this nature. Hold Harmless Agreement must be on file prior to handling of any weapons.

HAZARD SEVERITY
I-Catastrophic- Death, Permanent disability, major property damage
II-Critical- Permanent partial disability, major system or minor property damage
III-Marginal- Minor injury, minor system or property damage
IV-Negligible- 1st aid, minor system repair

Mishap Probability
A-Frequent
B-Likely
C-Occasional
D-Unlikely

Risk Assessment Code (RAC)
1-Critical
2-Serious
3-Moderate
4-Minor
5-Negligable

RAC ASSESMENT CODE MATRIX

Hazard Severity	MISHAP PROBABILITY			
	A	B	C	D
I	1	1	2	3
II	1	2	3	4
III	2	3	4	5
IV	3	4	5	5

COMMAND REVIEW/ APPROVAL

CO:

OIC:

RSO: