ORDINANCE NO. 31-1988

AN ORDINANCE AMENDING CHAPTER 8 , "CONSTRUCTION REGULATIONS ," OF THE ABILENE CITY CODE, BY AMENDING CERTAIN SECTIONS AS SET OUT BELOW; PROVIDING A SEVERABILITY CLAUSE; AND DECLARING A PENALTY.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ABILENE, TEXAS:

PART 1: That Chapter 8 , "Construction Regulations ," of the Abilene City Code be amended as set out in Exhibit "A," attached hereto and made a part of this ordinance for all purposes.

PART 2: That if any provision or any section of this ordinance shall be held to be void or unconstitutional, such holding shall in no way affect the validity of the remaining provisions or sections of this ordinance, which shall remain in full force and effect.

PART 3: That any person, firm, or corporation violating any of the provisions of this chapter shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punished by a fine of not more than Two Hundred Dollars ($200.00). Each day such violation shall continue, or be permitted to continue, shall be deemed a separate offense. Said ordinance, being a penal ordinance, becomes effective ten (10) days after its publication in the newspaper as provided by Section 19 of the Charter of the City of Abilene.

PASSED ON FIRST READING this 9 day of June, A. D. 19 88 .

PASSED ON SECOND AND FINAL READING this 23 day of June, A. D. 19 88 .

ATTEST:

Patricia Hancock
CITY SECRETARY

Dale Ferguson
MAYOR

APPROVED:

Hans Cangdon
CITY ATTORNEY

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ORDINANCE NO. 31-1988

EXHIBIT "A"

AMEND: Chapter 8 Municipal Code, Construction Regulations, by adding the following:

Article 8 Indoor Shooting Ranges-Design and Construction

8.1 Special Considerations

The range must be totally enclosed.

The length of the range must be sufficiently great that the shooters will never be closer than 35 feet to the bullet trap (as measured by the longest projection of the bullet trap upon the floor) and sufficient for proper door placement as defined later.

The width must be sufficient to provide three-foot minimum width shooting points for ranges with shooting separators and five-foot minimum width points for those without separators. (There is no maximum width.)

The height at the firing line must be eight-foot minimum from floor to ceiling. (The purpose of this requirement is to discourage attempts to build ranges in spaces that cannot be responsibly equipped and supervised.)

There shall be no downrange doors into occupied areas. Downrange shall be understood to be from a point three-foot behind the firing line to the bullet trap. If there is more than one firing line the most distant one from the trap governs.

There may be downrange doors into unoccupied areas if human egress is not possible. (This provides for electrical and plumbing cabinets, etc. Of course, it is prudent that these be protected.)

There may be downrange doors into normally unoccupied areas that permit human egress providing that they are equipped with electrical safety devices that will provide an alarm to the firing line if the area is occupied and that will provide an alarm in the area if any of the ordinary range functions are commenced (turning on target lights, target systems, etc.). (This makes possible the use of storage areas that can only be reached through the range.)

8.3 Windows

There shall be no windows into contiguous areas not controlled by the owner. Downrange windows shall be governed as stipulated for downrange doors.

8.4 Ballistical Security

If the range is situated so that an escaped bullet cannot fall into or pass through occupiable areas there is no ballistical security requirement for the structure separating the range from such areas. The range design manuals of the regular military services shall govern the amount of secure area required in such cases.

Earth separation of three feet or greater is sufficient to eliminate any ballistical security requirement of the structure in that particular direction.

Critical zones must be penetration proof for the heaviest ammunition that might be used on the range fired point blank into it (at 90 degrees to the surface). Bullet traps are required to be installed within the critical zones, in accordance with Section 8.9.

The horizontal critical zone is any surface that a shooter in any shooting point can hit from 45 degrees downrange on either side to 20 degrees behind him on either side.

The vertical critical zone is any surfce that a shooter in any shooting point can hit when facing downrange from straight down to straight up.

8.5 Constructional Requirements

Wall construction

Walls in the critical zone may be standard grade concrete blocks with their cavities filled with crushed rock of 3/4" or smaller screen. Sand is not acceptable. Concrete of any density is acceptable as the fill. Other suitable construction are: 4° of reinforced concrete, 1/4" of mild steel over an appropriate supporting surface, single layer of face brick.

Walls in the secondary zone may be standard grade concrete blocks without filled cavities. Other suitable constructions are: 3" of reinforced concrete, 1/8" of mild steel over an appropriate supporting surface. Wood planking, plywood and gypsum board may be used in sufficient thicknesses to be ballistically equivalent, but may result in excessive maintenance.

Wall baffles may be used in lieu of the above constructions for either zone. When used there is no ballistical security requirement for the walls. (The baffles are vertical steel members angled out from the side walls.) When used the following requirements must be met:

(1) The baffles must shelter the wall so that misdirected shots from all shooting points are interrupted by the baffles before striking the wall.

(2) The baffles must be so angled that no bullet may hit any baffle at a greater angle than 45 degrees.

(3) The baffle steel must be of sufficient thickness that it is not dented by the heaviest ammunition if left bare. Or if covered with a wood surface it must be of sufficient thickness that even if dented its structural integrity is maintained. (Note - see later requirements for wood facings.)

Floor construction

In the critical zone floors shall be reinforced concrete of 4" minimum thickness. The minimum thickness for the other floors is determined by the structural needs of the building and exceeds that required for ballistical security.)

In new construction the floor shall be graded to a downrange floor drain.

Ceiling and roof construction

Exposed slab ceiling or roof must be governed by the same requirements as floors. If the bottom surface of the slab is not smooth the following shall govern.

Ceiling baffles must be provided to protect any item that may interrupt the downrange travel of bullets from an angle of 45 degrees to the vertical ahead of the shooter to the bullet trap.

If the ceiling baffles protect the entire overhead area (each baffle starting its protection where the previous one left off) then there is no ballistical security requirement for the ceiling or roof above.

The baffle construction must otherwise comply with the requirements for wall baffles.

Columns, pilasters, exposed piping and other protuberances downrange shall be protected from damage and prevented from causing ricochets.

Angled steel plates may be used for all protuberances. The requirements for wall baffles shall govern.

Pilasters may be faired to the wall with concrete so that the angle to the wall of the surface of the fairing concrete is 30 degrees or less.

Plumbing (for flushing out the unburned gunpowder.)

In new construction there shall be a floor drain downrange and a hose bib in the range area.

In existing construction the floor drain may be waived if a slop sink is located within 50 feet of the range.

Wood facings are not allowed for protection of surfaces unless they are separated from any hard surface (steel or masonry) behind them by an air space of at least one inch.

8.6 Noise Attenuation

The maximum noise that may escape the range into areas not controlled by the owner if 40 dB.

Sufficient acoustical treatment shall be provided to reduce the sound level from magnum ammunition by 10 dB minimum.

Acoustical materials subject to splaying (i.e., the sprayed on type) shall not be used.

8.7 Ventilation

The permissable exposure to toxic lead products of gunfire shall be governed by current U.S. Department of Labor standards.

There must be positive flow of air past the shooter in a downrange direction, with all exhaust downrange.

The minimum operating temperature shall be 50 degrees Farenheit and the maximum 90 degrees Farenheit.

8.8 Lighting

There shall be general illumination in the firing line area of 30 MFC as measured at the floor. The minimum downrange general illumination shall be 10 MFC at the floor.

At least one circuit must be on dual switches so that it may be turned on from the door.

There shall be emergency lighting that will automatically illuminate if the lights fail. This must be a standby power.

8.9 Equipment Selection

The bullet trap shall be from an established manufacturer of range equipment with five years or more successful experience, and for which evidence is submitted of successful applications in other ranges of the same general type.

The bullet trap shall be an area type: i.e., a trap that covers the entire butts end of the range.

The butts end of the range is defined as the total space between the two side walls and from the floor to the sheltered area created by the ceiling system; or in the case of a flat slab roof, up to that roof.

All ranges shall have physical separation between the shooting points unless positive reasons are established to show that this cannot be provided.

The separators shall be structurally sound and functional for the type of range.

The separators shall be so designed that any misdirected shot 60 degrees to the right or left of a shooter that hits any portion of the stall will be deflected downrange without further interruption to its line of travel that may cause ricochet back towards the shooters.

Target Retrieval System

A mechanical means for transporting the targets between the firing line and the one or more target lines shall be provided.

All portions of the target retrieval system(s) that may be hit by a shooter(s) from an angle of 60 degrees to the vertical to its furthest end are to be armored to prevent damage and suitably angled to redirect the bullets downrange. (This includes the target carrying car, any tracks that may be used, and all supporting hardware.)

If electrically powered the target system shall not have any high voltage (over 50 volt) wiring extending downrange of the firing line; and all metal parts shall be earth grounded.

Any controls beyond the shooting point (i.e., to a rangemaster°s control console) shall be on low voltage circuits.

8.10 Special Requirements

Rifle ranges - (Centerfire rifles, not required for rimfire rifles.) The minimum ballistical security requirements shall be increased to 6" of reinforced concrete in the critical zone and 4" elsewhere. (Applies to all separating surfaces except those backed by earth or an adequate secure area.)