CITY PLANNING COMMISSION AGENDA

ITEM NO: 6

STAFF: ERIN MCCAULEY

FILE NO:
CPC CU 13-00077 – QUASI-JUDICIAL

PROJECT: **WHISTLING PINES WEST – 4750 PEACE PALACE POINT**

APPLICANT: **HAMMERS CONSTRUCTION, INC.**

OWNER: **WHISTLING PINES GUN CLUB WEST, LLC**

PROJECT SUMMARY:

1. Project Description: The project consists of an indoor shooting range on 2.50 acres at 4750 Peace Palace Point **(FIGURE 1)**. The parcel is currently vacant and zoned PIP-2 HS (Planned Industrial Park with Hillside Overlay). The Indoor Sports and Recreation use type is conditional within the PIP-2 zone district.
2. Applicant's Project Statement: **(FIGURE 2)**
3. Planning and Development Department's Recommendation: Approval of the application, subject to the condition that noise levels measured in accordance with City Code Section 9.8.103 shall be demonstrated not to exceed 45dB(A) prior to the issuance of a Certificate of Occupancy.

BACKGROUND:

1. Site Address: 4750 Peace Palace Point
2. Existing Zoning/Land Use: PIP-2 HS (Planned Industrial Park with Hillside Overlay) / Vacant
3. Surrounding Zoning/Land Use: North: PIP-2 HS and R1-6 HS (Planned Industrial Park with Hillside Overlay and Single-Family Residential with Hillside Overlay) / Vacant
   South: PIP-2 (Planned Industrial Park) / Manufacturing
   East: PIP-2 (Planned Industrial Park) / Warehouse
   West: PIP-2 HS (Planned Industrial Park with Hillside Overlay) / Manufacturing
4. Comprehensive Plan/Designated 2020 Land Use: Employment Center
5. Annexation: Pope's Bluff Addition, 1965
6. Master Plan/Designated Master Plan Land Use: Not applicable
7. Subdivision: Garden of the Gods Business Park, Filing No. 12
8. Zoning Enforcement Action: None
9. Physical Characteristics: The property consists of 2.5 acres of undeveloped ground that sits at the base of a substantial slope with a near-vertical sandstone cliff to the north. The site generally slopes from north to south but features steep cut slopes on the northern and northeastern portion of the site. The most recently approved Geologic Hazard Report, as well as previous Reports, mention that the site may have been a dirt fill "borrow" area for other developments within the vicinity in the past.

STAKEHOLDER PROCESS AND INVOLVEMENT:

The pre-application meeting occurred in late January of 2013 and was followed by an informal meeting attended by the applicant, property owner, members of the Pinecliff Homeowners Association, and City staff in March of 2013. The Homeowners Association agreed to keep its members informed, but stated it would most likely remain neutral throughout the process.

At the internal review stage, the site was posted for 10 days and postcards were sent to 13 property owners within 500 ft. **(FIGURE 3)** of the subject property in accordance with standard procedure. The President of the Homeowners Association was also notified, although after the postcards had been sent, by email. As a result of the initial notification, staff received written responses from five (5) neighbors within the comment period listing concerns and requesting additional information **(FIGURE 4)**. Concerns included noise, traffic, property values and safety.

As a result of these enquiries, staff required the applicant to hold a neighborhood meeting.

The neighborhood meeting was held on Tuesday, December 3, 2013 and the site was again posted for 10 days prior to the meeting. Postcards were sent to the original 13 property owners and to four (4) additional neighbors who had provided mailing addresses. Emailed notifications were sent to the Homeowners Association President and to those neighbors who had expressed interest in the project via email; those receiving notifications were encouraged to inform others who may be interested in the project about the upcoming meeting.

Approximately 40 people attended the meeting at which time the applicant presented a brief overview of the project as well as findings of a sound study **(FIGURE 5)** and revised plans. Meeting attendees were originally asked to email any outstanding concerns to City staff by December 13, 2013 but the deadline was extended to December 23, 2013 to allow resubmitted plans, received December 12, 2013, to be reviewed. Staff received responses from 39 properties within the area, 36 in objection **(FIGURE 6)** and three (3) **(FIGURE 7)** in support. Those in objection cited noise, traffic, diminished property values, safety, health hazards, and the proximity to a residential neighborhood as outstanding concerns.

The project was also reviewed by standard buckslip agencies; all comments have been satisfied by the resubmitted documents **(FIGURE 1)**.

ANALYSIS OF REVIEW CRITERIA/MAJOR ISSUES/COMPREHENSIVE PLAN & MASTER PLAN CONFORMANCE:

1. Review Criteria / Design & Development Issues:
   The Indoor Sports and Recreation land use type is a Conditional Use within the PIP-2 Zone District, and therefore must satisfy the Conditional Use review criteria in addition to the Development Plan review criteria. The property is also zoned with the Hillside Overlay and so the Hillside Development Plan criteria must also be met in order for the project to be approved.

   Conditional Use Review Criteria
   When reviewing any Conditional Use, the Code specifies the characteristics of the surrounding neighborhood should be analyzed, specifically "that the value and the qualities of the neighborhood surrounding the conditional use are not substantially injured," when determining whether the use should be allowed. The subject property is unique because it lies within a developed industrial park area, but is overlooked by a developed single-family residential neighborhood.

   Early in the process, staff received concerns from neighboring industrial properties about potential traffic and drainage impacts; to staff's knowledge, those concerns have now been abated. The outstanding concerns have been submitted from residents of the Pinecliff Neighborhood, which is separated from the subject property both by distance and elevation, lying approximately 500 ft. to the north of the property and approximately 300 ft. above the property in elevation. Concerns fit into the following categories, but appear in full form in **FIGURE 6**:

   - Noise;
   - Safety; and
   - Health Hazards.

   Noise – Noise is arguably both the largest concern and greatest potential impact to the residents of the Pinecliff Neighborhood. The sound of gunfire has the potential to greatly

affect quality of life for surrounding property owners and residents and was identified early on in the process as an issue to be mitigated. After the initial comment period, staff required the applicant to commission a sound study to ensure the noise attenuation features that had been incorporated into the building design were sufficient **(FIGURE 5)**.

Noise regulations are contained in City Code Chapter 9, Article 8. Based on the definitions of "zones" contained therein, staff believes the area qualifies as Light Industrial and is therefore subject to noise maxima of 70 dB(A) between 7 a.m. and 7 p.m. and 65 dB(A) between 7 p.m. and the next 7 a.m. Periodic, impulsive, or shrill noises are declared unlawful when the noises exceed levels 5 dB(A) less than the prescribed maxima. Additionally, the Code states that when a noise measurement can be taken from more than one zone, the more restrictive shall apply. Since the closest residential use lies 500 ft. to the north of the site and 300 ft. in elevation above the site, most likely the Light Industrial noise classification would be applied in the field. However, for purposes of the noise study, the project was evaluated at the residential noise levels which are set at 55 dB(A) between 7 a.m. and 7 p.m. and 50 dB(A) between 7 p.m. and 7 a.m. The applicant has designed the project to contain noise levels at 45 dB(A).

The study was presented at the neighborhood meeting on December 3, 2013, where it was explained that computer modeling software using worst-case scenario wind conditions showed that the finished building would exceed the City Code regulations for noise in industrial zones as described in Section 9.8.104. Just to be sure, the applicant requested an additional study of the existing Whistling Pines Gun Club, located at 1412 Woolsey Heights in Colorado Springs, Colorado and Trigger Time Gun Club at 3575 Stagecoach Road South in Longmont, Colorado **(FIGURE 8)**. The additional study asserts that the noise attenuation incorporated into the proposed building will sufficiently mitigate the noise issues.

Some neighbors have still expressed concerns over the validity of these studies **(FIGURE 9)**; accordingly staff has placed a condition of approval on the application, to which the owner of Whistling Pines Gun Club and the applicant have agreed, that before issuing the Certificate of Occupancy a 45 dB(A) level must be demonstrated as modeled in the sound study to ensure the noise attenuation features work as expected.

Safety – Another outstanding concern is safety. The shooting range will install interior steel plate baffle systems that deflect bullets into the bullet trap and a bullet trap at the end of the range to trap the projectiles **(FIGURE 10)**. Range safety protocols and rules are discussed also in the applicant's project statement **(FIGURE 2)**.

Health Hazards – Finally, concerns about potential health hazards have been raised in **FIGURE 6**. The building itself will feature a filtration system that will ensure no lead particles or gun powder are expelled through the building ventilation. All shooting occurs within the building, so there is no potential for environmental contamination from lead projectiles, etc. All other health concerns mentioned in **FIGURE 6** have to do with range workers and are governed through different agencies such as the Occupational Safety and Health Administration (OSHA) and are not land use impacts.

Development Plan Review Criteria

The site is accessed via a private access easement off of Elkton Drive and as such, is not easily seen from the public right-of-way. The building is tucked back against the

slope and is designed so that classrooms and an outdoor deck may take advantage of mountain views. The parking lot is broken up into smaller areas to lessen the amount of asphalt and the site is nicely landscaped.

Hillside Development Plan Review Criteria
Site design has incorporated the recommendations of the approved Geologic Hazard Study and provided a 10-ft. wide rock catchment ditch at the rear of the building. The building will be placed within the already leveled area and the severe existing cut-slopes will be lessened around the sides of the building area. Finally, building and roofing materials will be earth-toned to blend as much as possible into the hillside.

For the reasons listed above, staff finds the proposed Indoor Sports and Recreation use for an indoor shooting range to comply with the review criteria for a Conditional Use, Development Plan and Hillside Development Plan.

2. Conformance with the City Comprehensive Plan:
Objective LU 4: Encourage Infill and Redevelopment
Strategy LU 801f: Plan and Locate Mixed Uses to Serve Industrial Areas
Strategy NE201c: Preserve the Natural Contours of the Land
Policy NE 204: Protect Hillsides and Ridgelines
Strategy NE 301d: Mitigate Identified Hazards
Policy NE 303: Avoid or Mitigate Effects of Geologic Hazards

Staff finds the project to substantially conform to the goals and objectives of the City's Comprehensive Plan.

3. Conformance with the Area's Master Plan: Not applicable.

STAFF RECOMMENDATION:

Item No: 6 CPC CU 13-00077 – Whistling Pines West – 4750 Peace Palace Point
Approve the Conditional Use for Whistling Pines West, based upon the finding that the request complies with the Conditional Use review criteria found in City Code Section 7.5.704, the Development Plan review criteria in City Code Section 7.5.502.E and the Hillside Development Plan review criteria found in City Code Section 7.3.504.D.3, subject to compliance with the following condition:

Condition of Approval:
Prior to the issuance of the Certificate of Occupancy, noise levels measured in accordance with City Code Section 9.8.103 shall be demonstrated not to exceed 45 dB(A).

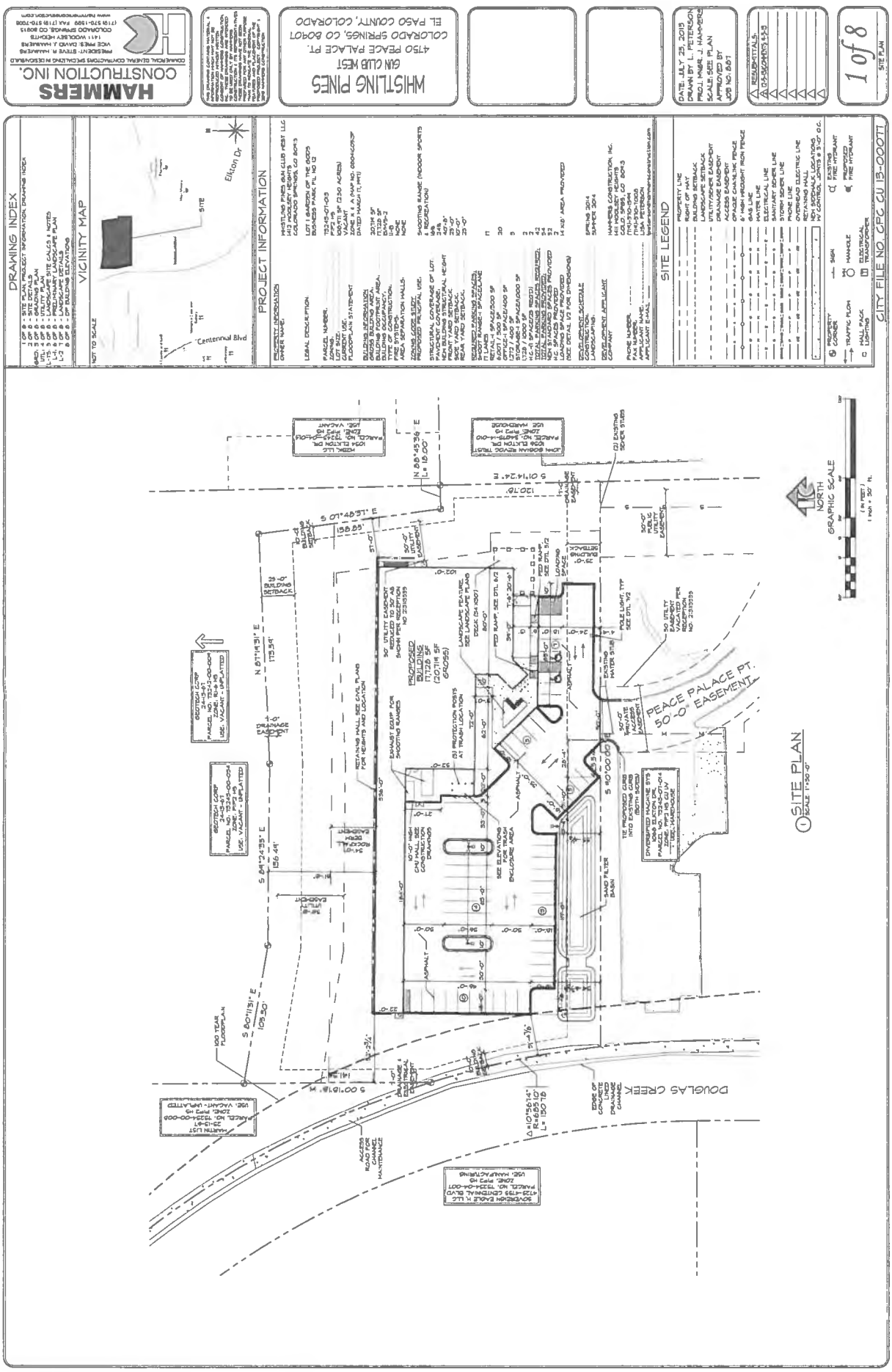
HAMMERS CONSTRUCTION INC.
WHISTLING PINES
6th CLUB WEST
4750 PEACE PALACE PT.
COLORADO SPRINGS, CO 80907
EL PASO COUNTY, COLORADO
DRAWING INDEX
VICINITY MAP
PROJECT INFORMATION
SITE LEGEND
CITY FILE NO. CPC CU 13-00077
SITE PLAN
PEACE PALACE PT. 50'-0" EASEMENT
PROPOSED BUILDING 17,726 SF (2071# SF GROSS)
DOUGLAS CREEK
GRAPHIC SCALE
NORTH
SITE PLAN
SCALE 1"=30'-0"

FIGURE 1

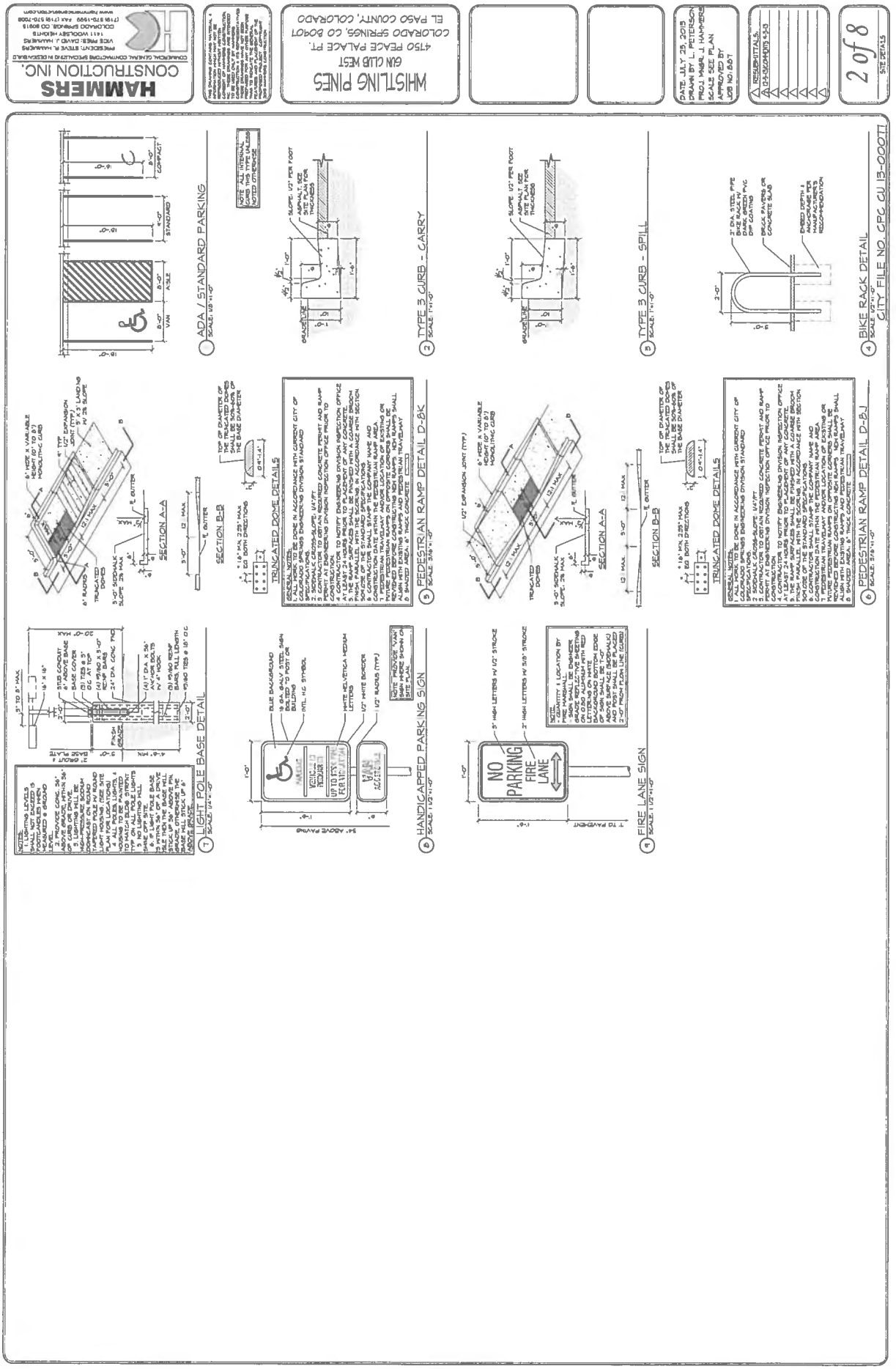
HAMMERS
CONSTRUCTION INC.
WHISTLING PINES
GUN CLUB WEST
4750 PEACE PALACE PT.
COLORADO SPRINGS, CO 80907
EL PASO COUNTY, COLORADO
DATE: JULY 29, 2013
DRAWN BY: L. PETERSON
PROJ. MGR.: J. HAMMERS
SCALE: SEE PLAN
APPROVED BY:
JOB NO: 867
2 of 8
SITE DETAILS
ADA / STANDARD PARKING
TYPE 3 CURB - CARRY
TYPE 3 CURB - SPILL
BIKE RACK DETAIL
CITY FILE NO. CPC CU 13-00077
LIGHT POLE BASE DETAIL
HANDICAPPED PARKING SIGN
PEDESTRIAN RAMP DETAIL D-8K
PEDESTRIAN RAMP DETAIL D-8J
FIRE LANE SIGN
NO PARKING FIRE LANE

FIGURE 1

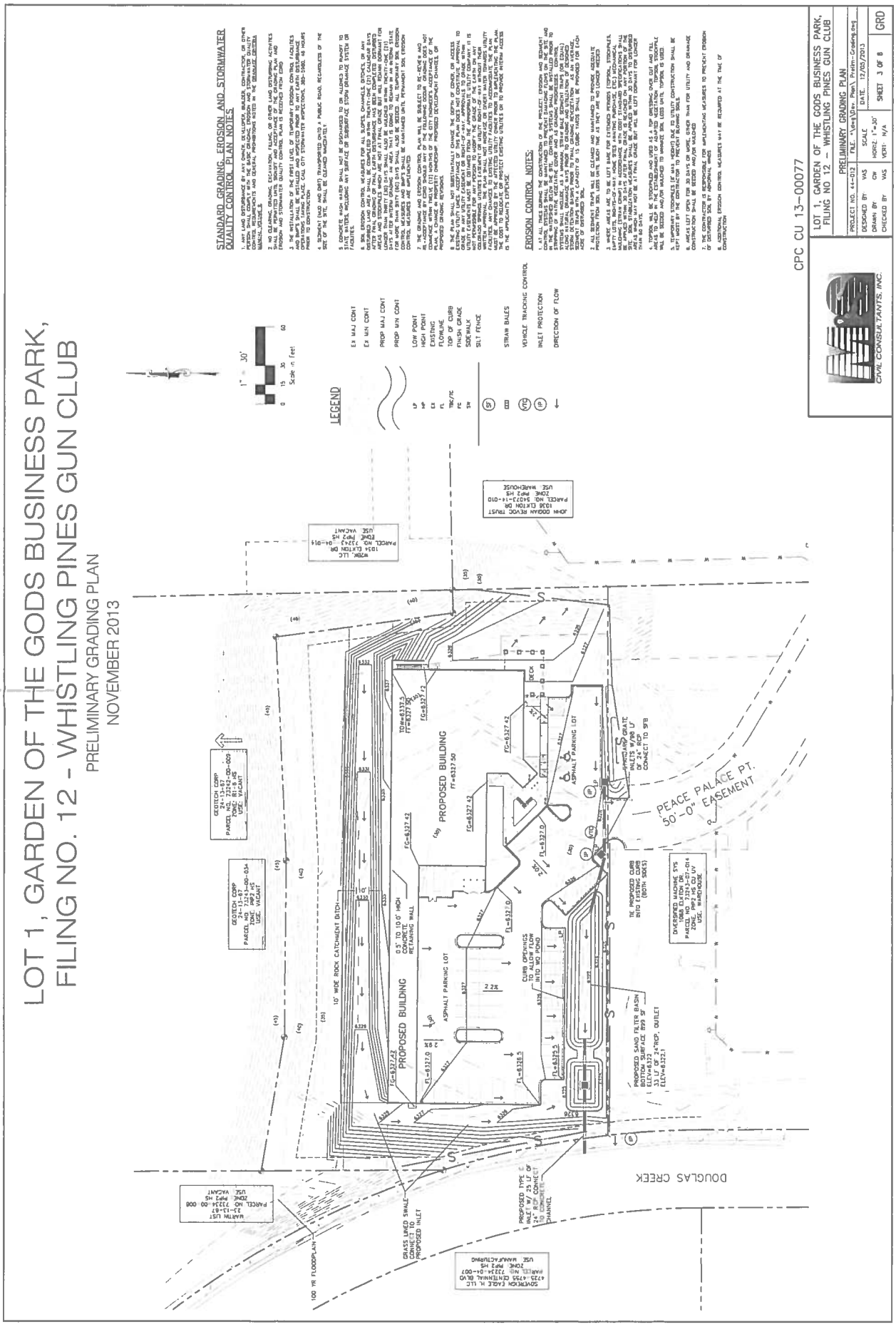
LOT 1, GARDEN OF THE GODS BUSINESS PARK,
FILING NO. 12 - WHISTLING PINES GUN CLUB
PRELIMINARY GRADING PLAN
NOVEMBER 2013
CPC CU 13-00077
LOT 1, GARDEN OF THE GODS BUSINESS PARK, FILING NO 12 - WHISTLING PINES GUN CLUB
PRELIMINARY GRADING PLAN
CIVIL CONSULTANTS, INC.
LEGEND
STANDARD GRADING, EROSION AND STORMWATER QUALITY CONTROL PLAN NOTES
EROSION CONTROL NOTES:
PROPOSED BUILDING
ASPHALT PARKING LOT
PEACE PALACE PT.
50'-0" EASEMENT
DOUGLAS CREEK
100 YR FLOODPLAIN
10' WIDE ROCK CATCHMENT DITCH
GRASS LINED SWALE CONNECT TO PROPOSED INLET
PROPOSED SAND FILTER BASIN
PROPOSED TYPE C INLET W/ 75 LF OF 24" RCP CONNECT TO CONCRETE CHANNEL
DIVERSION MACHINE STS
JOHN DOUGAN REVOC TRUST
GEOTECH CORP
SOVEREIGN EAGLE H, LLC

FIGURE 1

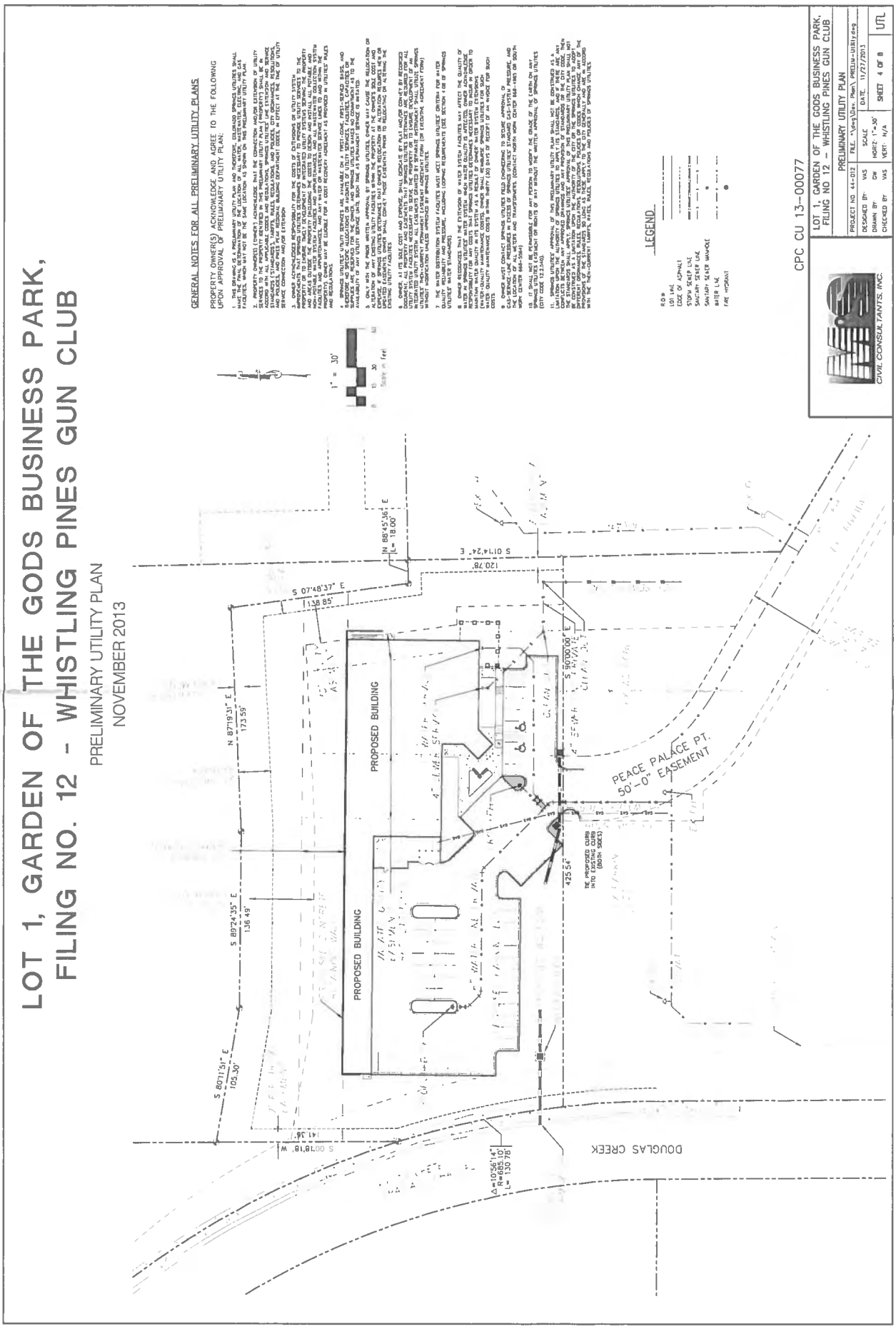
LOT 1, GARDEN OF THE GODS BUSINESS PARK,
FILING NO. 12 - WHISTLING PINES GUN CLUB
PRELIMINARY UTILITY PLAN
NOVEMBER 2013
GENERAL NOTES FOR ALL PRELIMINARY UTILITY PLANS
PROPERTY OWNER(S) ACKNOWLEDGE AND AGREE TO THE FOLLOWING UPON APPROVAL OF PRELIMINARY UTILITY PLAN:
LEGEND
PROPOSED BUILDING
PROPOSED BUILDING
PEACE PALACE PT. 50'-0" EASEMENT
DOUGLAS CREEK
S 87°19'31" E 105.30'
S 80°24'35" E 136.49'
N 87°19'31" E 173.59'
S 07°48'37" E 138.85'
S 01°14'24" E 120.78'
N 85°45'36" E L= 18.00'
S 90°00'00" E 425.54'
Δ=10°56'14" R=685.10' L= 130.78'
S 00°18'18" W 141.36'
THE PROPOSED CURB INTO EXISTING CURB (BOTH SIDES)
1" = 30'
CPC CU 13-00077
LOT 1, GARDEN OF THE GODS BUSINESS PARK, FILING NO 12 - WHISTLING PINES GUN CLUB
PRELIMINARY UTILITY PLAN
PROJECT NO. 44-012
DESIGNED BY: VAS
DRAWN BY: CW
CHECKED BY: VAS
FILE: *Dev\Dev_Plan\PRELIM-Utility.dwg
SCALE
DATE: 11/27/2013
HORZ: 1"=30'
VERT: N/A
SHEET 4 OF 8
UTL
CIVIL CONSULTANTS, INC.

FIGURE 1

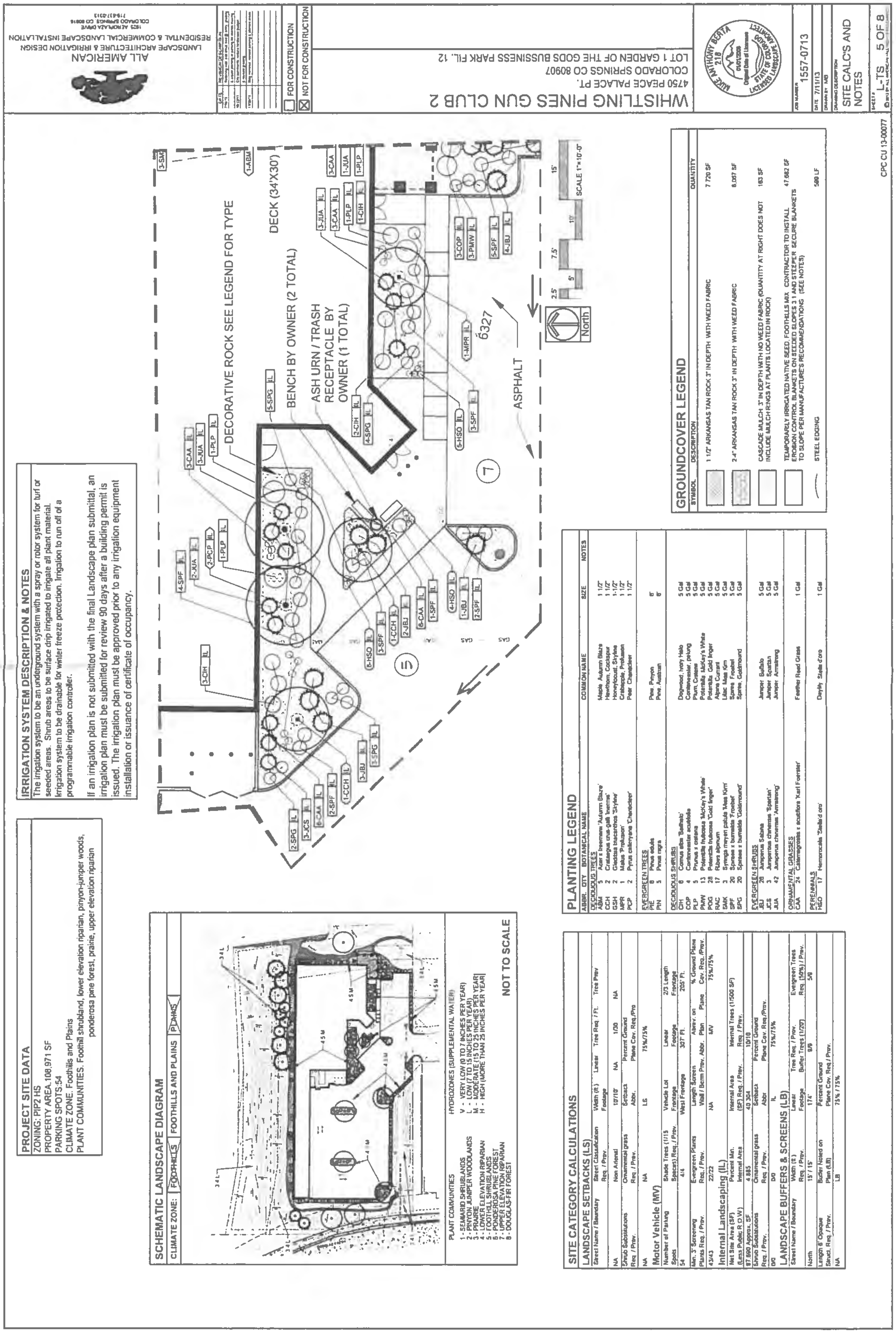
ALL AMERICAN
LANDSCAPE ARCHITECTURE & IRRIGATION DESIGN
RESIDENTIAL & COMMERCIAL LANDSCAPE INSTALLATION
FOR CONSTRUCTION
NOT FOR CONSTRUCTION
WHISTLING PINES GUN CLUB 2
4750 PEACE PALACE PT.
COLORADO SPRINGS CO 80907
LOT 1 GARDEN OF THE GODS BUSSINESS PARK FIL. 12
1557-0713
SITE CALCS AND NOTES
L-TS 5 OF 8
CPC CU 13-00077
IRRIGATION SYSTEM DESCRIPTION & NOTES
The irrigation system to be an underground system with a spray or rotor system for turf or seeded areas. Shrub areas to be surface drip irrigated to irrigate all plant material. Irrigation system to be drainable for winter freeze protection. Irrigation to run off of a programmable irrigation controller.
If an irrigation plan is not submitted with the final Landscape plan submittal, an irrigation plan must be submitted for review 90 days after a building permit is issued. The irrigation plan must be approved prior to any irrigation equipment installation or issuance of certificate of occupancy.
PROJECT SITE DATA
ZONING: PIP2 HS
PROPERTY AREA:108,971 SF
PARKING SPOTS:54
CLIMATE ZONE: Foothills and Plains
DECORATIVE ROCK SEE LEGEND FOR TYPE
DECK (34'X30')
BENCH BY OWNER (2 TOTAL)
ASH URN / TRASH RECEPTACLE BY OWNER (1 TOTAL)
ASPHALT
North
SCALE 1"=10'-0"
SCHEMATIC LANDSCAPE DIAGRAM
NOT TO SCALE
SITE CATEGORY CALCULATIONS
PLANTING LEGEND
GROUNDCOVER LEGEND

FIGURE 1

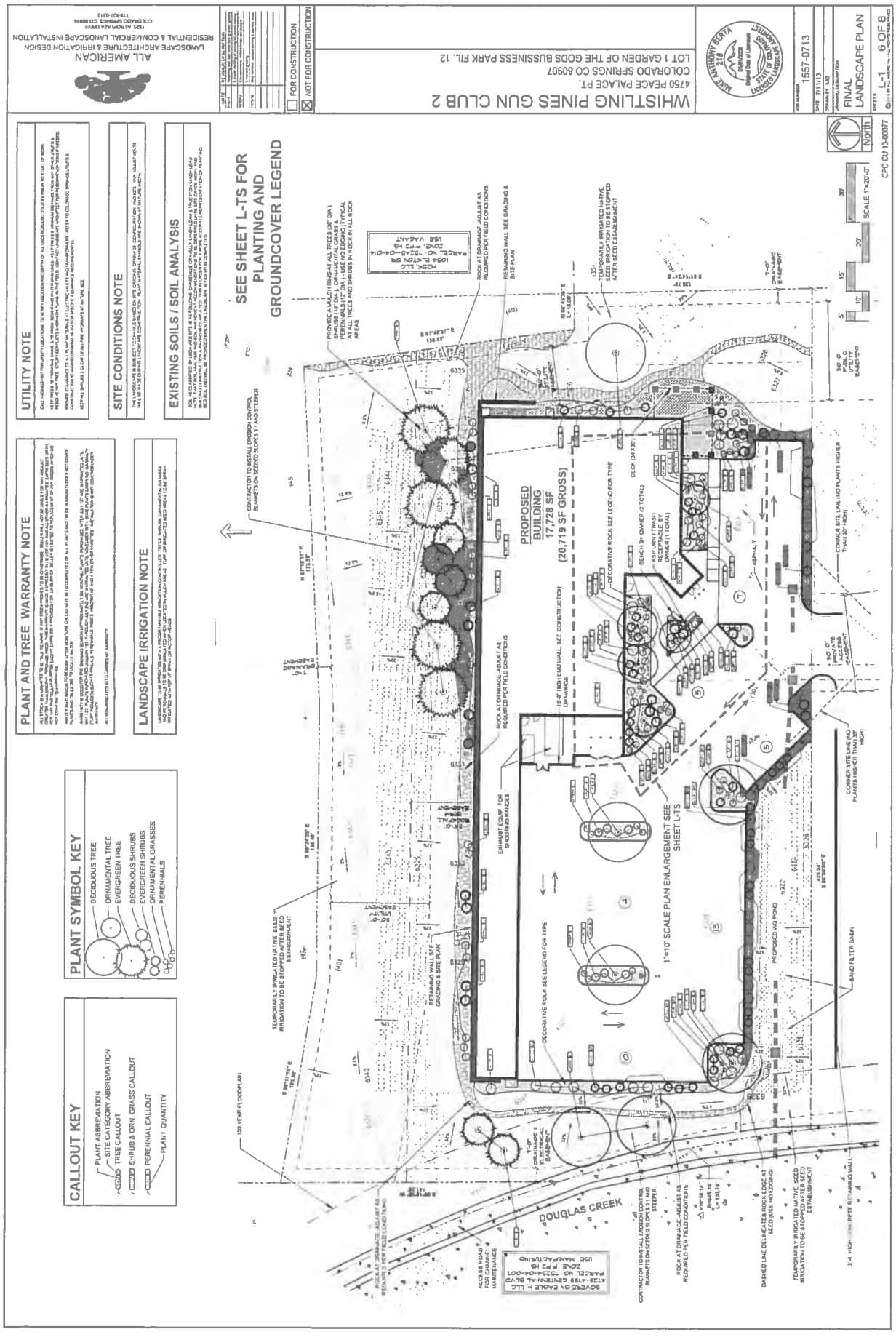
WHISTLING PINES GUN CLUB 2
4750 PEACE PALACE PT.
COLORADO SPRINGS CO 80907
LOT 1 GARDEN OF THE GODS BUSSINESS PARK FIL. 12
FOR CONSTRUCTION
NOT FOR CONSTRUCTION
ALL AMERICAN
LANDSCAPE ARCHITECTURE & IRRIGATION DESIGN
RESIDENTIAL & COMMERCIAL LANDSCAPE INSTALLATION
1557-0713
FINAL
LANDSCAPE PLAN
L-1 6 OF 8
CPC CU 13-00077
SEE SHEET L-TS FOR
PLANTING AND
GROUNDCOVER LEGEND
UTILITY NOTE
SITE CONDITIONS NOTE
EXISTING SOILS / SOIL ANALYSIS
PLANT AND TREE WARRANTY NOTE
LANDSCAPE IRRIGATION NOTE
PLANT SYMBOL KEY
DECIDUOUS TREE
ORNAMENTAL TREE
EVERGREEN TREE
DECIDUOUS SHRUBS
EVERGREEN SHRUBS
ORNAMENTAL GRASSES
PERENNIALS
CALLOUT KEY
PLANT ABBREVIATION
SITE CATEGORY ABBREVIATION
TREE CALLOUT
SHRUB & ORN. GRASS CALLOUT
PERENNIAL CALLOUT
PLANT QUANTITY
PROPOSED
BUILDING
17,728 SF
(20,719 SF GROSS)
1"=10' SCALE PLAN ENLARGEMENT SEE
SHEET L-TS
DOUGLAS CREEK
100 YEAR FLOODPLAIN
SCALE 1"=20'-0"

FIGURE 1

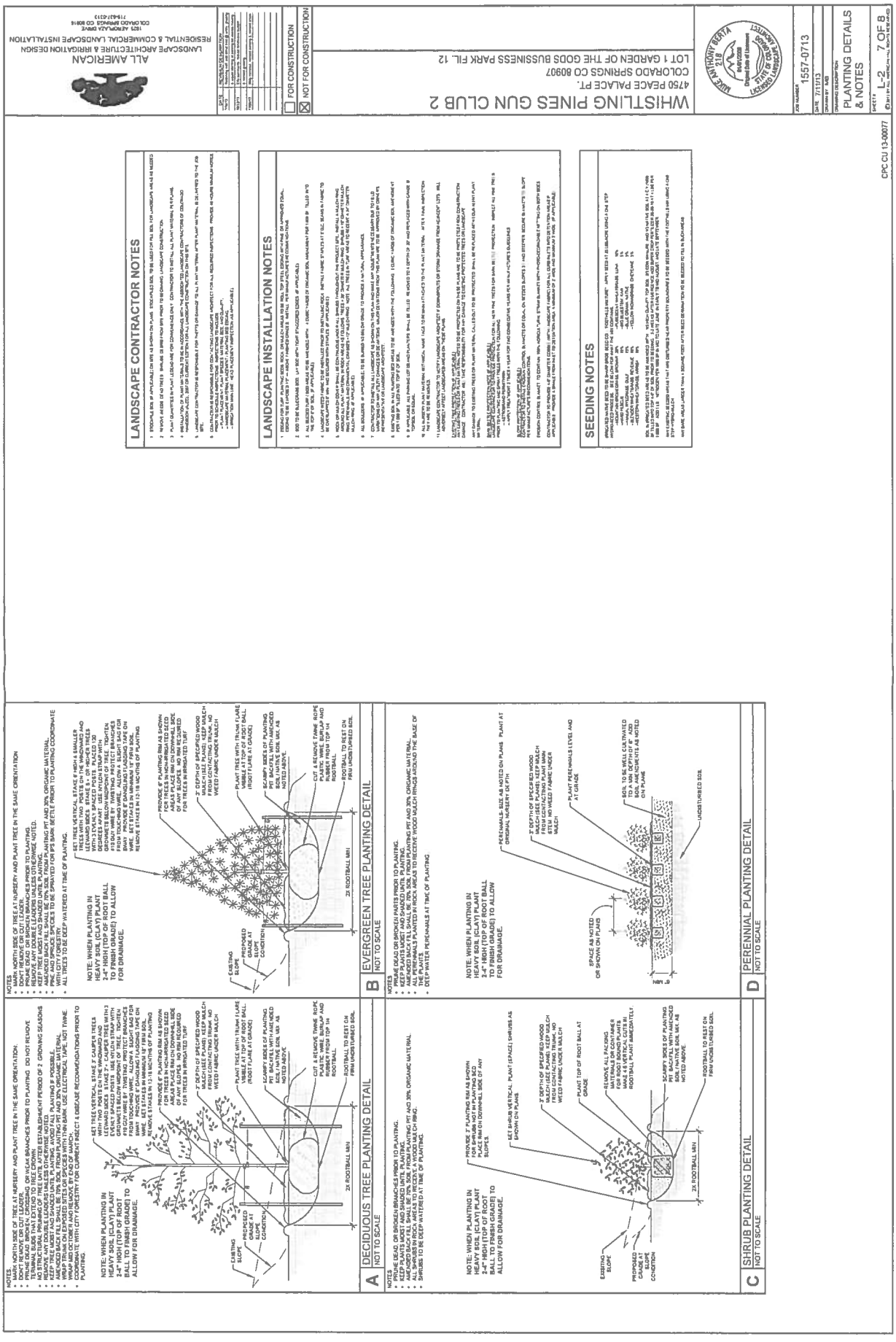
LANDSCAPE CONTRACTOR NOTES
LANDSCAPE INSTALLATION NOTES
SEEDING NOTES
A DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE
B EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE
C SHRUB PLANTING DETAIL
NOT TO SCALE
D PERENNIAL PLANTING DETAIL
NOT TO SCALE
ALL AMERICAN
LANDSCAPE ARCHITECTURE & IRRIGATION DESIGN
RESIDENTIAL & COMMERCIAL LANDSCAPE INSTALLATION
1625 ATROPLAZA DRIVE
COLORADO SPRINGS, CO 80916
719.637.2313
WHISTLING PINES GUN CLUB 2
4750 PEACE PALACE PT.
COLORADO SPRINGS CO 80907
LOT 1 GARDEN OF THE GODS BUSSINESS PARK FIL. 12
FOR CONSTRUCTION
NOT FOR CONSTRUCTION
1557-0713
7/11/13
PLANTING DETAILS & NOTES
L-2
7 OF 8
CPC CU 13-00077

FIGURE 1

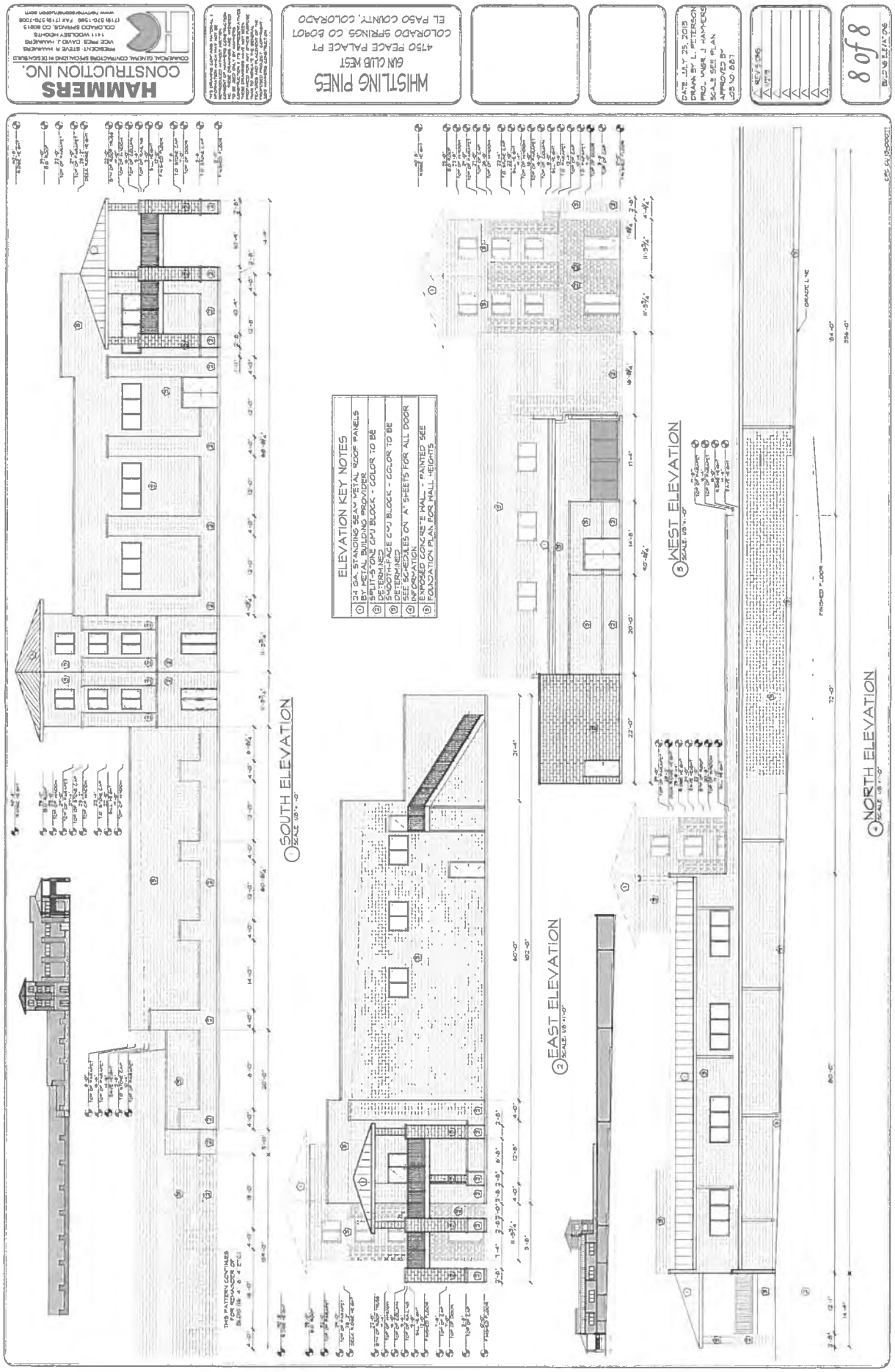
HAMMERS
CONSTRUCTION INC.
WHISTLING PINES
GUN CLUB WEST
4750 PEACE PALACE PT
COLORADO SPRINGS CO 80907
EL PASO COUNTY, COLORADO
DATE JULY 25, 2013
DRAWN BY L. PETERSON
PROJ. MGR J. HAMMERS
SCALE SEE PLAN
APPROVED BY
JOB NO 861
8 of 8
ELEVATION KEY NOTES
1 24 GA. STANDING SEAM METAL ROOF PANELS
2 EIFS METAL BUILDING PROVIDER
3 DETERMINED
4 DETERMINED
5 DETERMINED
6 EXPOSED CONCRETE WALL - PAINTED SEE FOUNDATION PLAN FOR WALL HEIGHTS
SOUTH ELEVATION
SCALE 1/8"=1'-0"
EAST ELEVATION
SCALE 1/8"=1'-0"
WEST ELEVATION
SCALE 1/8"=1'-0"
NORTH ELEVATION
SCALE 1/8"=1'-0"

FIGURE 1

HAMMERS CONSTRUCTION, INC.
1411 Woolsey Heights • Colorado Springs, Colorado 80915-5400
(719) 570-1599 • FAX (719) 570-7008 • www.hammersconstruction.com
• SPECIALIZING IN DESIGN / BUILD •
Steve Hammers, President
shammers@hammersconstruction.com

Project Statement

Owner Information
Whistling Pines Gun Club West, LLC
Robert Holmes
1412 Woolsey Heights
Colorado Springs, CO 80915
Project Name: Whistling Pines Gun Club West

Owner Representatives:
Hammers Construction, Inc.
Lisa Peterson – Design (Applicant)
Jeremy Hammers – Project Manager
1411 Woolsey Heights
Colorado Springs, CO 80915
(719) 570-1599

Site:
Lot 1 Garden of the Gods Business Park, Fil. No. 12
4750 Peace Palace Pt.
Colorado Springs, CO 80907
Lot Size: 108,971 sf / 2.50 acres
Zoned – PIP2 HS CU UV
Parcel number: 73243-07-013

Description
Request approval for the construction of a new 17,728 sf (20,719 gross) building used for an indoor shooting range with office and retail uses. The proposed building will be built on the property indicated above, complete with parking, drive aisles.

Justification
This request is consistent with other businesses that exist already in the area and is an approved use in PIP2 zone.

Additional Information:

Significance: Whistling Pines Gun Club is an indoor shooting range gun club. The facility is a membership only club. There is an existing facility located on the east side of town. After talking to its members, the gun club felt that they needed to expand and provide a north-westerly location. Members and non-members have looked at this expansion with enthusiasm as the location provides additional convenience in location and the gun club will be able to provide a 100 yard rifle

FIGURE 2

range (something the existing club does not have). The proposed facility will also offer a handgun range with 12 lanes. The facility has an open retail area with a second floor for training classes and a lounge (indoor and outdoor seating) to sit back and relax. Whistling Pines has a family environment and is the safest and cleanest indoor shooting range in Colorado.

Hours of Operation: Whistling Pines Gun Club is open as follows:

- Monday: 9 am until 8 pm
- Tuesday: closed
- Wednesday-Saturday: 9 am until 8 pm
- Sunday: 9 am until 6 pm

Traffic: Whistling Pines Gun Club will not create undue traffic congestion or traffic hazards in the surrounding areas. The facility has one access off of Elkton Dr that meets requirements from the city and has adequate parking for customers.

Smell: There will be no smells emanating from the building. The facility will be equipped with an air handling system as well as other range mechanical systems that exceed OSHA standards. Every molecule of air brought into the range is flushed within 85-90 seconds. In addition, all air being exhausted from the building goes through a HEPA filtration system; therefore, eliminating any smells or gun powder residues.

Health/Safety: Safety is the first and foremost consideration at the Whistling Pines Gun Club. Safety is very important to them; here are a few things that they do to implement safety:

- Each staff member is a shooter with many years of experience. They are thoroughly familiar with all aspects for shooting safety. The range will be monitored by staff via recording closed circuit television at all times. In addition, bullet proof windows will be provided so the staff can easily see what is going on in the shooting range. The staff is always available to answer questions and assist with any problems.
- This facility is a membership based club, where a membership initiation fee is due as well as a monthly fee. With this being a membership based club, this tends to attract serious and safe shooters. In addition, when a client signs up for membership, they must read and agree in writing to abide by the safety rules (see attachment), which will be clearly posted in the facility.
- Any member, guest or student who engages in unsafe practices may immediately forfeit membership in the club, along with all shooting privileges. In addition, Whistling Pines Gun Club reserves the right to revoke any membership at any time for any violation of posted safety

FIGURE 2

policy by the member and/or their guest. Unsafe, disruptive, irrespective or unruly behavior is not tolerated.

- Whistling Pines Gun Club reserves the right to inspect firearms and ammunition for safety purposes prior to allowing their use in the facility. Firearms can only be brought into and taken out of the building in the following manner:
    - Holstered: Holstered firearms may not be drawn until the club member or guest is on the firing line. They may be loaded or unloaded, concealed or unconcealed.
    - Boxed, bagged or otherwise completely enclosed (unloaded only)
    - Unboxed, unbagged or otherwise unenclosed firearms may not be carried in hand, loaded or unloaded, in any portion of the building. Carrying a loaded firearm in hand will result in the immediate revocation of membership.
- Since safety is Whistling Pines Gun Club number one priority. They offer various classes throughout every month for the novice, intermediate, advanced and expert shooters.

The building structure itself does not allow any way for bullets to penetrate the walls. The proposed building will be build using concrete filled 8" and 12" CMU block and the roofs are protected by hanging AR500 steel plates from the roof structure. There is no possibility of bullets ever leaving the building in whole or part.

As mentioned already, due to the air handling, range mechanical systems and HEPA filtration system, there will be no lead dust present in the air at the shooting line. Nor will any lead dust be introduced into the surrounding environment. The range floor is cleaned each evening. The club also recycles over 3,000 lbs of lead and lead compounds each month, as well as hundreds of pounds of cartridge cases. With all these measures in place, this should alleviate any heath/environmental concerns.

Noise: We will be designing the facility to meet the city decibels level guidelines. Due to the proximity of the residential neighborhood we will be designing this facility at a min. decibel level of 50 dB at all property lines. In addition, we will be hiring an acoustical engineer to evaluate and analyze the all sound levels and how we need to construct the facility to maintain the required sound levels. Please understand at the existing facility they were not required to provide any additional sound mitigation or required to meet any certain dB rating.

FIGURE 2

Surrounding Neighborhood: The immediate surrounding property owners are all within the same zoned area, PIP2 (Planned Industrial Park). The building will more than complement the surrounding neighbors. Most of the existing buildings mainly have an industrial. This proposed building will be an upgrade to this look, by designing the building with an aesthetically pleasing look. Whistling Pines Gun Club wanted to achieve an inviting environment to its members.

The most northern point of this property is approximately 490' away horizontally. And the building will be approximately 700 feet from the nearest residential home. We feel that the proposed facility is more than enough distance from the existing residential neighborhood and will not be detrimental to their values any more than they already have being adjacent to this PIP-2 zoned subdivision. In fact, the gun club is a deterrent of crime and will be an asset to the community.

As mentioned above this facility will be a favorable addition to community and the City of Colorado Springs. This facility will benefit and add convenience to the gun clubs members (and new members that live in the area). We feel we have addressed and alleviated issues regarding safety, noise and smell to name a few. If there are any additional questions or concerns that arise, please feel free to call me at any time to discuss the project in more detail. Thank you for your acceptance and review of this application.

FIGURE 2

Whistling Pines Gun Club safety rules

1. Shooting safety is ultimately the responsibility of each individual member, guest, and student. The Whistling Pines Gun Club (WPGC) does its utmost to promote and ensure safe gun handling, but must rely on the members to bring unsafe behavior and situations to the staff's attention.
2. All members and their guests are required to conduct themselves in a sensible, responsible, safe manner at all times. Unsafe, disruptive, disrespectful, or unruly behavior is not tolerated. **Members are responsible for the behavior of their guests.**
3. There's no age limit for children, as long as parents ensure the club's high safety standards are upheld. If there is any doubt about a child's safe gun handling skills, the parent must be directly supervising the child at the shooting position.
4. Members are responsible for the safety and proper functioning of their firearms and ammunition, as well as their appropriate use.
5. Sight and hearing protection are required on the range at all times.
6. Firearms may be brought into and taken out of the building only in the following manner:
   - Holstered: loaded or unloaded, concealed or unconcealed. Holstered firearms may not be drawn until the club member or guest is on the firing line.
   - Boxed, bagged, or otherwise completely enclosed: unloaded only.
   - Unboxed, unbagged, or otherwise unenclosed firearms may not be carried in hand, loaded or unloaded, in any portion of the building. Carrying a loaded firearm in hand will result in the immediate revocation of membership.
7. WPGC reserves the right to inspect firearms and ammunition for safety purposes prior to allowing their use in the facility. Use of armor piercing and tracer ammunition is prohibited, since they can damage the backstops.
8. On the range, all firearms must be kept on the individual shooting positions, in boxes or other closed containers, or holstered at all times. Guns at the shooting positions must be positioned with muzzles facing the backstops. Shooters may reload magazines at the tables behind the shooting positions; all unboxed and unholstered firearms, however, must remain on the individual shooting positions with muzzles pointing downrange.
9. Members are expected to sweep up their fired cartridge cases before leaving the range, since they constitute a hazard underfoot. Containers are provided for brass recycling; alternatively, members may simply sweep empty cartridge cases forward from the shooting line. Shooters whose cartridge cases fall behind the shooting line may take them home for reloading. Cartridge cases that fall in front of the firing line may not be retrieved, but become the property of the WPGC, and are recycled.
10. Targets must be taped to cardboard backing sheets provided by the WPGC. Small targets must be positioned with their centers at the member's shoulder height to prevent damage to the baffles and floor. **It is the shooters responsibility to ensure that all rounds land in the steel bullet trap.**
11. Only one door to the sally-port (the small square room between the retail area and the range) may be opened at a time, since gunfire is injurious to human hearing.
12. All ammunition used in WPGC **rental** firearms must be purchased from the club.

FIGURE 2

13. Rental firearms are reserved for the exclusive use of WPGC members and their guests, as well as students enrolled in WPGC courses. Damage to rental firearms or associated accessories such as laser sights is the responsibility of the member.
14. Member and guest use of the range may be limited to one hour and one lane during peak use periods. The WPGC accepts reservations from members in good standing by telephone, in person, and through this web site.
15. Members who experience problems with firearms while on the firing line are required to leave their firearms at the firing line, pointed downrange, and seek assistance from the WPGC staff. **No firearm, loaded or unloaded, may be carried by hand from the firing line or anywhere else in the building at any time.**
16. All damage to the building, including range facilities, through accidental or negligent actions is the financial responsibility of the member.
17. WPGC reserves the right to revoke any membership at any time for any violation of a posted safety policy by the member and/or his or her guest without refunding the member's initiation fee. Monthly dues are not refundable.
18. WPGC reserves the right to revoke any membership at any time for any reason or no reason whatever by refunding the member's initiation fee. Monthly dues are not refundable.
19. Firearms stored at the WPGC must be retrieved by the same person who left them for storage. Proper identification (government-issued, with photograph) and documentation in a bound acquisition and disposition book are required by B.A.T.F.E. regulations.
20. Firearms left for repair overnight or longer must be retrieved by the same person who left them for repair. If the person who left them for repair presents a signed release, another person may retrieve them, but a B.A.T.F.E. form 4473 and background check are required by law to release the firearm.
21. WPGC reserves the right to make and enforce additional safety rules as needed.

FIGURE 2

McCauley, Erin

From: McCauley, Erin
Sent: Monday, December 30, 2013 12:30 PM
To: Peterson, Carl [USA] (peterson_carl@bah.com)
Subject: FW: Whistling Pines Gun Club Noise Study Questions

Hi Carl,

I just got the following response from Jeremy Hammers and his sound Engineer. Let me know if this answers your questions.

Thanks,

Erin McCauley AICP LEED AP BD+C
Planner II
Land Use Review Division
Planning & Development Team
30 S. Nevada Avenue, Suite 105
Colorado Springs, CO 80903
(719) 385-5369 - phone
(719) 385-5167 - fax
emccauley@springsgov.com

Please consider the environment before printing this email.

From: Jeremy Hammers [mailto:jjhammers@hammersconstruction.com]
Sent: Monday, December 30, 2013 12:28 PM
To: McCauley, Erin
Subject: FW: Whistling Pines Gun Club Noise Study Questions

See below…

Jeremy Hammers
Senior Project Manager
Hammers Construction, Inc.
1411 Woolsey Heights
Colorado Springs, Co. 80915
direct: 719-955-4614
office: 719-570-1599
cell: 719-499-4133
fax: 719-570-7008
North Dakota 701-842-6999
jjhammers@hammersconstruction.com
www.hammersconstruction.com

FIGURE 2

From: Jeff Kwolkoski [mailto:jkwolkoski@waveengineering.co]
Sent: Friday, December 27, 2013 9:20 AM
To: Jeremy Hammers
Subject: Re: Whistling Pines Gun Club Noise Study Questions

Jeremy,

I have attempted to address the issues raised by Mr. Petersen. Let me know if you have any comments.

What were the calibers and cartridges modeled in the study?

We use a database of sound data for over 100 combinations of weapons and ammunition. However, there are many weapons and cartridges for which good sound data is not available. It is true that the sound level of each weapon and cartridge will vary somewhat. We cannot model every weapon and cartridge that will be used in the ranges, but we believe that the sound levels of these weapons are representative of the vast majority of weapons that will be fired on the ranges.

The representative weapons are:
Rifle M/87 308 cal (.308 Winchester Match 12.3gr)
Rifle M/75 G3 (7.62mm x 51mm Sharp APE)
Beretta 9mm M92F Compact (Norma 9mm Luger safety)
Smith & Wesson .357 magnum (cal.357 Magnum 10.2 gr soft point flat nose)
SigSauer 228 Police 9mm (Action 3, 9mm x 19 Sintox)
Glock 17/9mm (9mm sharp M/41)

Please note that most of these weapon and ammunition designations are European and "gr" means grams, not grains.

As I mentioned before, we do not have sound data for a .50 caliber rifle and Mr. Holmes indicated that he is willing to have the higher caliber weapons measured if necessary.

Were the effects of muzzle brakes also included in the study?
Muzzle breaks were not specifically studied. Muzzle breaks redirect a portion of the sound to the side. They can significantly increase the sound level at the shooter's ear but they do not significantly increase the overall sound energy produced by the gun. As I discussed in the public meeting, the direction of the sound inside the range is not an issue since sound will reflect and reverberate inside the range before it gets to the roof, which is our main concern. In other words, the sound transmitting through the roof will be the same no matter which way the gun is pointed inside the range, and whether or not a muzzle brake is used.

I hope this addresses Mr. Peterson's concerns. Please let me know if you need anything else.

Regards,

Jeff Kwolkoski, P.E., INCE Bd. Cert.
President

WaveEngineering
P.O. Box 1153, Littleton, CO 80160

FIGURE 2

720-446-WAVE (9283)
www.WaveEngineering.co

On Mon, Dec 23, 2013 at 12:31 PM, Jeremy Hammers <jjhammers@hammersconstruction.com> wrote:

See below. Some thinking for over the Holiday. Our sound tests sound sufficiently help this out.

I have a muzzle break on my 300 Win Mag that I was shooting during our latest sound testing.

If your going to eliminate the 50 cal. That would help our case so let me know.

By the way is everything ok in the 25 yard range?

Sent from my iPhone

Begin forwarded message:

From: "McCauley, Erin" <EMcCauley@springsgov.com>
Date: December 23, 2013 at 11:52:29 AM MST
To: "Jeremy Hammers (jjhammers@hammersconstruction.com)" <jjhammers@hammersconstruction.com>, "Steve Hammers (SHammers@hammersconstruction.com)" <SHammers@hammersconstruction.com>
Subject: FW: Whistling Pines Gun Club Noise Study Questions

Hi Jeremy & Steve,

I was printing out all of the comments and came across this one that I should have forwarded earlier – do you have answers to these questions or could you get them? I remember your noise consultant mentioning the calibers, but I didn't write them down...

Erin McCauley AICP LEED AP BD+C

Planner II

Land Use Review Division

Planning & Development Team

30 S. Nevada Avenue, Suite 105

Colorado Springs, CO 80903

(719) 385-5369 - phone

(719) 385-5167 - fax

emccauley@springsgov.com

FIGURE 2

Please consider the environment before printing this email.

From: Peterson, Carl [USA] [mailto:peterson_carl@bah.com]
Sent: Thursday, December 12, 2013 7:24 PM
To: McCauley, Erin
Subject: Whistling Pines Gun Club Noise Study Questions

Erin,

I have some concerns about the validity of the noise study that was accomplished to support the building of the Whistling Pines Gun Club. We need to know the following in order to determine if the study is accurate:

1. What were the calibers and cartridges modelled in the study?

2. Were the effects of muzzle brakes also included in the study?

Gunpowder burned relates to noise produced. More gunpowder burned, more noise. Regarding rifle rounds, a typical .30-06 will have a little under 60 grains of gunpowder in it, whereas a .460 Weatherby Magnum can have up to 124 grains of powder in it. A 50 caliber Browning machine gun (BMG) round can have up to 238 grains.

Finally, big guns generate a lot of energy at both ends. In order to ameliorate the effects of recoil, many big guns will have a muzzle brake at the muzzle that deflects gas from the gunpowder to the side, with the result that felt recoil is reduced. Another effect of a muzzle brake is increased muzzle blast, hence noise. Does the noise study include the effects of muzzle brakes in the calculations? We need to know what kind of cartridges were used in the noise study calculations and whether or not muzzle brakes were employed. See the attachment for a picture of a .50 caliber muzzle brake.

The best advertisement for the Whispering Pines Gun Club would be that no one knows that it is there because it is so quiet. I'm sure that the gun club wants to be a good neighbor. We want them to be a good neighbor as well. But we need accurate data to answer these questions.

FIGURE 2

Sincerely,

Carl

Carl H. Peterson

FIGURE 2

CPC CU 13-00077 500-ft. Notification Buffer

FIGURE 3

McCauley, Erin

From: morrig15@aol.com
Sent: Monday, August 12, 2013 8:20 AM
To: McCauley, Erin
Cc: president@pinecliff-hoa.com
Subject: Gun Club Proposal and neighboring homes

Dear Erin,

I received a public notice postcard this past weekend detailing a request for a gun club to be built on Peace Point Place. It says comments can be provided until August 19th.

I live directly above the proposed site at 4935 Cliff Point Circle E. In fact my property line which ends halfway done the cliff may be adjacent to theirs or possibly yards away. The thought of having a gun club in my backyard brings up many concerns for me, as well as many of my neighbors.

Questions and concerns include;

Legality of having a gun club so close to residential properties

Noise issues effecting residents and their pets

Smell (via vents)

Traffic issues

Light bomb/noise issues for residents above a parking lot with 52 proposed spaces.

Property values

The list goes on, but these are a few of our initial concerns which need to be addressed, as I feel the owner perhaps hasn't considered how many residential homes directly above him will be effected.

Sincerely,
Gail and Angus Morrison

FIGURE 4

McCauley, Erin

From: weisprings@comcast.net
Sent: Monday, August 12, 2013 3:25 PM
To: McCauley, Erin
Subject: Second location for the Whispering Pines Gun Club (4750 Peace Palace Point)

Hi Erin -

Hope all is well. This is John Wei from the Pinecliff neighborhood.

I have lived in Pinecliff for the last twenty five years. I reason why I built my home back in 1988 is that Pinecliff is so beautiful with all its natural vegetation and the tranquility (i.e. peace and quiet) which Pinecliff offers.

I know about ten years ago a developer wanted to build his first Whispering Pines Gun Club location nearby. I think due to the number of complaints and concerns the developer decided to build his gun club elsewhere (i.e. a more remote location).

As such, I was really surprised to find out again that the same developer already bought a lot (i.e. 4750 Peace Palace Point) and have plans to build the his second location for the Whispering Pines Gun Club.

I live on 4985 Cliff Point Circle East which is near the lot in question. I have spoke with some concerned neighbors who will be directly impacted by this gun club.

I have not received the yellow card from your office yet Erin but I wanted to share with you some of my concerns and questions:

- The noise pollution concerns (i.e. both gun shots as well as customers possibly loitering in the gun club's parking lot)
- Gun powder smell concerns on what will be coming out of the vents and may adversely impact Pinecliff
- The increased traffic / load and impact assessment
- Capability issues with the existing church at the end of Elkton as well as being so close or adjacent to Pincecliff homes
- Safety concerns:
- Customer's accidentally shooting off their gun or riffle at homes above
- Customers smoking and chatting in parking lot of this business there by causing additional noise after business or in the evening. Also to fire threat of careless disposing of cigarette butts which can quickly ignite up the side of PineCliff hill side
- Possible devaluation of PineCliff homes right above this gun club
- This business is too close and adjacent to our neighborhood and should be ideally located in a remote area and near homes
- Questions?
- What are the week day and weekend business hours?
- Is this lot (i.e. 4750 Peace Palace Point) zoned for this type of business already?
- Why has the developer come back after ten years to location adjacent to Pinecliff when he decided to open his first gun club at a remote location?

FIGURE 4

Erin - I appreciate you soliciting Pinecliff neighbors' feedback and concerns since this is a major issue for us and our quality of life. Thanks!

Please let me know if you have any questions.

Regards,

John Wei

(719) 757-2722 (work)

FIGURE 4

DMS
DIVERSIFIED MACHINE SYSTEMS

August 14, 2013

City of Colorado Springs
Attn: Erin McCauley, Reviewing Planner
emccauley@springsgov.com

RE: CPC CU 13-00077-A Conditional
4750 Peace Palace Place

Dear Erin,

Comments regarding above Public Notice.

An indoor firing range appears to be more retail type customer traffic than the business office/manufacturing type business typical in the Garden Of The Gods Business Park environment.

On a daily basis we have box trucks and flatbed semi-trucks entering our loading dock area at the rear of our property, which is directly adjacent to the above property in question. Due to the shared driveway easement, and close proximity of our business, I am concerned for the impact on both or our businesses.

I am requesting, that at a minimum, traffic, parking, noise, and drainage studies be conducted prior to any building permit being issued.

Sincerely,
Diversified Machine Systems LLC

Patrick K. Bollar
CEO

FIGURE 4

McCauley, Erin

From: Linda Mulready [llmulready@gmail.com]
Sent: Friday, August 16, 2013 5:01 PM
To: McCauley, Erin
Subject: Whispering Pines Gun Club

Follow Up Flag: Follow up
Flag Status: Flagged

Hello Erin,

My name is Linda Mulready. I reside at 4925 Cliff Point Circle E. in Colorado Springs, CO. It has been brought to my attention by the Pinecliff HOA that Whispering Pines has plans to build a gun club below my property. This causes several concerns for me as a homeowner.

First, I was surprised that I did NOT receive a public notice postcard this past week as several of my neighbors did detailing a request that Whispering Pines Gun Club be built on Peace Point Place. The lack of communication is a big concern to me as well as to other residents on Cliff Point Circle that did not receive a public notice postcard.

My other concerns include noise levels, smells, traffic studies and zoning issues. I would be very interested in how these issues are being addressed. I am also concerned that this proposed gun club will impact this neighborhood in a negative way.

Sincerely,

Linda and Michael Mulready
4925 Cliff Point Circle E.
Colorado Springs, CO 80919
719-599-4533

FIGURE 4

McCauley, Erin

From: Bruce Hutchison [bruceh@pcisys.net]
Sent: Monday, August 19, 2013 6:26 PM
To: McCauley, Erin
Cc: vp@pinecliff-hoa.com; 'PATTY CARBONE'; president@pinecliff-hoa.com
Subject: Comment Letter regarding the Whispering Pines Gun Club

Bruce Hutchison
Pinecliff HOA
1170 Popes Valley Drive
Colorado Springs, CO 80919

August 19, 2013

Ms. Erin McCauley
Colorado Springs Land Use Review
30 S. Nevada, Suite 105
Colorado Springs, CO

Dear Ms. McCauley,
On behalf of a number of members of the Pinecliff HOA, I am submitting comments and a request regarding the Hammers Construction's application for a conditional use request that would permit the construction and operation of an indoor firing range south of the Pinecliff neighborhood. The file number for this application is CPC CU 13-00077.

Having studied a map of the area, I estimate that as many as 30 Pinecliff homes along Cliff Point Circle may be adversely affected by this facility once it opens for business. My biggest concern is that these houses may be subject to continuous popping noise from the gun fire throughout most of the day and especially during the summer months when residents are enjoying outside activities. Even if the shooting range satisfies the city's noise ordinance for a commercial enterprise, the noise may be enhanced by the dramatic hillside slope north of the site.

My second concern hinges on whether noise will indeed be a problem or not. If it is, the affected houses would very likely experience a significant drop in their property values. Several of these expensive homes have spectacular views of Pikes Peak and Cheyenne Mountain which enhances their value. Prospective buyers may be dissuaded from purchasing these houses if there are noise problems.

In light of these concerns and uncertainties, I strongly suggest that we organize an informational meeting with Mr. Holmes and his representatives prior to further action on the application. This will give concerned Pinecliff residents the opportunity to learn about the facility and all the measures being taken to address and mitigate the dangers, hazards, and noise associated with an indoor shooting operation. In addition to inviting Pinecliff residents, I suggest inviting other businesses and organizations in the west Elkton Drive area to enlighten them as well.

I look forward to hearing back from you on my meeting proposal and would be happy to assist in creating the agenda and arranging the logistics.

Best regards,
Bruce Hutchison - Pinecliff HOA President
email: president@Pinecliff-HOA.com

FIGURE 4

WaveEngineering
Acoustics, Noise & Vibration

September 30, 2013

Jeremy Hammers
Senior Project Manager
Hammers Construction, Inc.
1411 Woolsey Heights
Colorado Springs, Co. 80915

Re: Whistling Pines Gun Club West - Noise Assessment
Wave #1100

Dear Jeremy,

We have completed an evaluation of noise from the proposed Whistling Pines Gun Club west in Colorado Springs. The indoor shooting range site is at 4750 Peace Palace Point which is north of Garden of the Gods Road and East of Centennial Boulevard.

Noise transmitted from the future gun club to residences north of the site is the main concern, and the purpose of this study is to evaluate the impact of that noise. The nearest homes are on Cliff Point Circle north of the site. The homes are at an elevation of approximately 6600' and the floor of gun club building is at 6328.5', so the homes overlook the gun club site by about 250'. The line-of-sight from the new gun club building to all but the closest three or four homes is blocked by the terrain, which drops sharply just south of the homes.

We measured ambient noise levels near the project site at various times of day and night. Then we predicted noise levels from the proposed gun club and compared the predicted levels to the existing ambient noise levels and the permissible noise levels in the City of Colorado Springs noise ordinance.

Noise mitigation measures have been incorporated into the building design and are accounted for in our analysis. The predicted noise levels are equal to or less than the Colorado Springs permissible levels and below the existing ambient noise levels.

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FIGURE 5

Colorado Springs Noise Ordinance, Article 8: Offenses Affecting the Environment, Part 1 Noise Pollution-General

Section 9.8.104 sets permissible noise levels for time periods and zones. Paragraph E of this section states

> *"...when a noise source can be measured from more than one zone, the permissible sound level of the more restrictive zone shall govern..."*

This noise study is focused on the residences north of the project site. The permissible noise level for a residential zone is 55 dBA during the day (7:00a.m. to next 7:00 p.m.) and 50 dBA at night (7:00 p.m. to next 7:00 a.m.).

We understand that the operating hours of the gun club will be 9:00 a.m. until 8:00 p.m., unless the hours are shorter on Sundays or other days. Since the gun club will operate after 7:00 p.m., the nighttime noise limit will apply.

In addition, Section 9.8.106 states

> *"...Periodic, impulsive, or shrill noises are declared unlawful when the noises are at a sound level of five (5) dBA les than those listed in section 9.8.104 of this part..."*

Noise from gun shots is considered "impulsive" and the 5 dBA "penalty" applies to the gun club. **Therefore, the permissible noise from gun shots measured at a residential property line is *45 dBA* (50 dBA – 5dBA=45 dBA).**

Noise from steady sources such as the shooting range exhaust fans will need to meet the *50 dBA* nighttime limit.

Paragraph B.3 of Section 8.8.103 states

> *"3. In all sound level measurements consideration shall be given to the effect of the ambient noise level created by the encompassing noise of the environment from all sources at the time and place of the sound level measurement..."*

This paragraph means that the ambient sound level shall be taken into consideration. If someone is going to measure noise from the gun club after it is built, they will likely have to take into account the background noise if they are measuring near the residences. Background noise is noise from any noise source in the area other than the gun club. This includes, vehicle traffic, air-conditioning equipment on industrial and commercial buildings in the area, etc.

Ambient Sound Level Measurements

Measurement Locations

Ambient sound levels were measured near the gun club site and the residences to the north on Tuesday, September 3 and Wednesday September 4, 2013. Please refer to Figure 1 below for the measurement locations.

Figure 1: Aerial photo showing measurement locations

Location 1 is on the hill north of the project site, between the site and the nearest residences. Location 2 is at an overlook off of Cliff Point Circle. The noise environment at this location should be very similar to that at the closest homes. Location 3 was at Cliff Point Circle, near the overlook, but at the street and out of the line-of-sight of Garden of the Gods Road and the many industrial and commercial buildings below.

Measurement Equipment and Procedures

The following equipment was used to measure sound levels.

- Larson Davis Model 831 sound level meter, S/N 2878
- PCB Model PRM831 preamplifier, S/N 021453
- PCB Model 377B02 ½" microphone, S/N LW130873
- Larson Davis Electronic Calibrator CAL200, S/N 2905

The system calibration was checked in the field periodically. The calibration of all equipment has been certified by the manufacturer and calibration certificates are available.

Measurement Results

The measured ambient sound levels are shown in Table 1. Sound levels were measured for approximately 15 minute durations at Location 1. The measurements at Locations 2 and 3 were for shorter durations of one to eight minutes each.

Table 1: Measured Ambient Sound Levels

Date, Start time	L_{EQ} (dBA)	L_{90} (dBA)
Measurement Location 1		
9/3/13, 3:22 p.m.	51	50
9/3/13, 10:47 p.m.	50	49
9/4/13, 6:01 a.m.	49	48
9/4/13, 11:49 a.m.	52	50
Measurement Location 2 (Neighborhood Overlook)		
9/3/13, 4:09 p.m.	52	51
9/4/13, 6:39 a.m.	53	50
Measurement Location 3 (at street, Neighborhood Overlook)		
9/3/13	39	36

The measured sound levels are given as L_{EQ} and L_{90} values.

The $\mathbf{L_{EQ}}$ is the Equivalent Sound Level which is essentially the average sound level.

The $\mathbf{L_{90}}$ is the 90 Percentile Sound Level and is the sound level that was exceeded 90% of the time over a given time period. The L_{90} is often used as a measure of the "residual" sound level, or the relatively steady sound level that excludes short term events such as an occasional car passing or aircraft over flights.

The L_{EQ} and the L90 values in Table 1 are relatively close in all the measurements. This shows that the ambient sound is fairly steady. If the sound level fluctuated greatly due to nearby traffic

or other intermittent sources, the L_{EQ} and L_{90} would be further apart. For the purposes of this noise study, we will use the L_{90} as the existing ambient sound level. This is also called the background sound level when comparing it to noise from the shooting range.

The dominant ambient sound at Locations 1 and 2 was from traffic on Garden of the Gods Road and other area streets, and from HVAC and other mechanical equipment serving the many industrial and commercial buildings surrounding the project site. Since much of the mechanical equipment runs during the day and night, the ambient sound level did not drop significantly at night as it would if it were primarily from traffic.

The main reason for measuring at Location 2 was to show that the sound levels were very similar to those at Location 1. Therefore Location 1 is representative of the sound levels along the edge of the bluff at the nearest homes.

The sound levels at Location 3 were significantly lower than at Locations 1 and 2 since Garden of the Gods Road and the industrial and commercial buildings were out-of-sight and shielded by the terrain.

Effect of Atmospheric Conditions

Atmospheric conditions, including wind speed and direction, can influence the propagation of sound outdoors.

The wind was calm during most of the ambient measurements. On September 3, the wind speed was 2 to 5 mph from the south during the afternoon measurements. The wind does not appear to have changed the ambient sound level much at that time.

Predicted Sound Levels from the Indoor Shooting Range

We used Datakustik CadnaA noise prediction software to predict what noise levels from the shooting range will be near the residential properties. The computer model takes into account sound that radiates from the building from shooting inside, the local terrain, and the atmospheric conditions. It assumes worst case atmospheric conditions with the residences downwind at all times. The predictions are done according to the methodology of ISO Standard 9613-2: Acoustics – attenuation of sound during propagation outdoors, Part 2: General Method of Calculation.

There will be two types of noise sources at the shooting range. The noise from firing guns is short duration impulsive noise. As discussed above, the impulsive part of the noise ordinance applies and the permissible limit at the residential property lines is 45 dBA at night.

There will also be noise from steady sources such as the exhaust fans and make-up air units on the roof. For these sources, the permissible limit at the residential property lines is 50 dBA at night.

FIGURE 5

For our predictions, we used a database of over 100 handguns and rifles and selected the loudest weapons likely to be used in the range. The shooting noise of the weapons was measured according to Nordtest Method NT ACOU 099.

Shooting Noise

The predicted impulsive shooting noise levels are shown at selected receptor on Figure 2. The receptor locations are shown by target symbols (⊕).

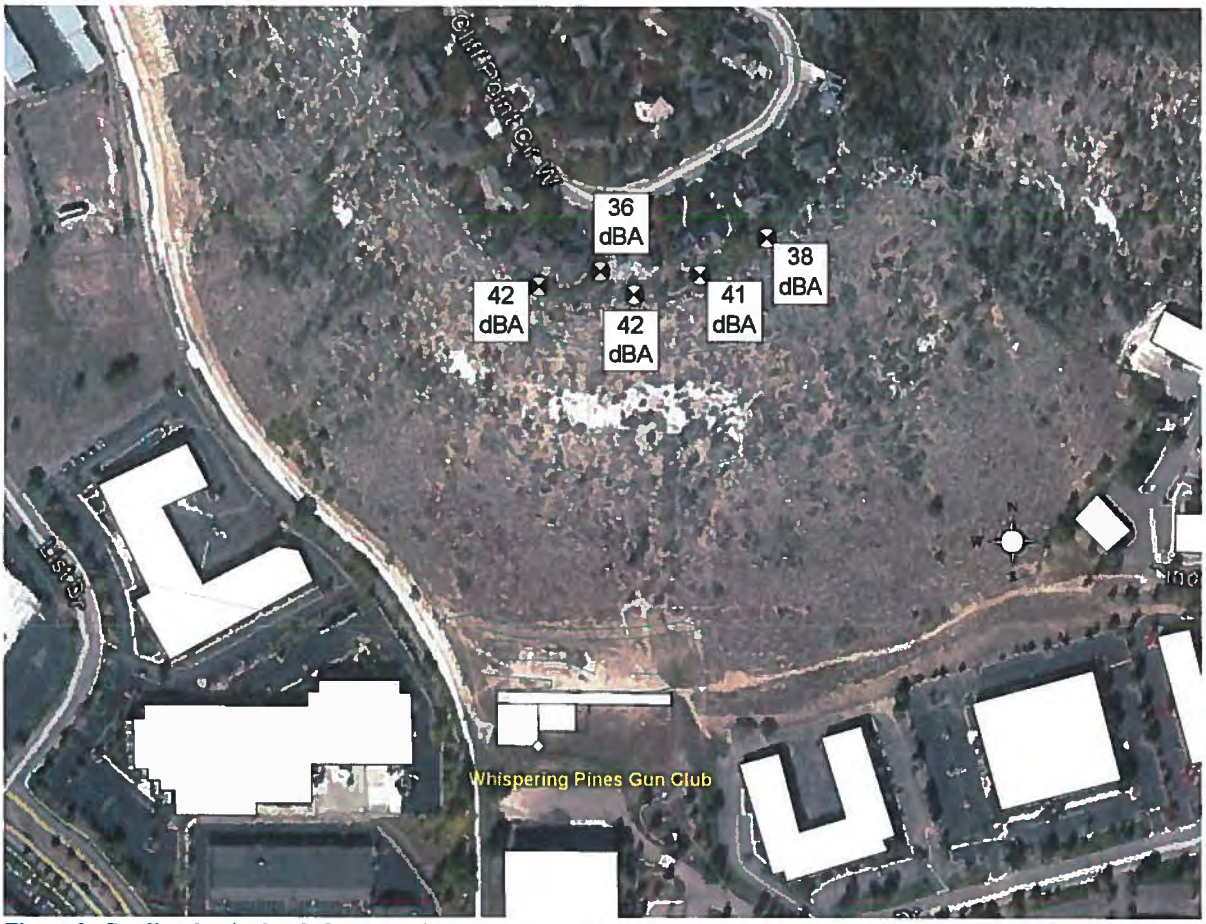

Figure 2: Predicted noise levels from gunshots

The four locations ranging from 38 to 42 dBA are at the edge of the bluff, in clear line-of-sight of the gun club. This is near the residential property lines, but south of the homes themselves. The upper floors of several of these homes are visible from at or near the future gun club site.

The one location shown with the 36 dBA noise level is approximately 50' back from the bluff near the homes themselves. The noise level continues to drop as you move further away from the bluff.

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FIGURE 5

The shooting noise levels at the residential property line are less than the permissible level of 45 dBA.

These levels are the noise levels that occur from simultaneous shots from the rifle range and the handgun range. The sound of a gunshot is very short in duration and in reality shots that are exactly simultaneous do not occur often. If the ranges are fully occupied and many shots are being fired, the shooting noise occurs more often, but the noise level will not be higher.

Steady Noise from Mechanical Equipment

The predicted steady noise levels from the rooftop make-up air units and the shooting range exhaust fans are shown below on Figure 3. This equipment runs continuously when the gun club is operating.

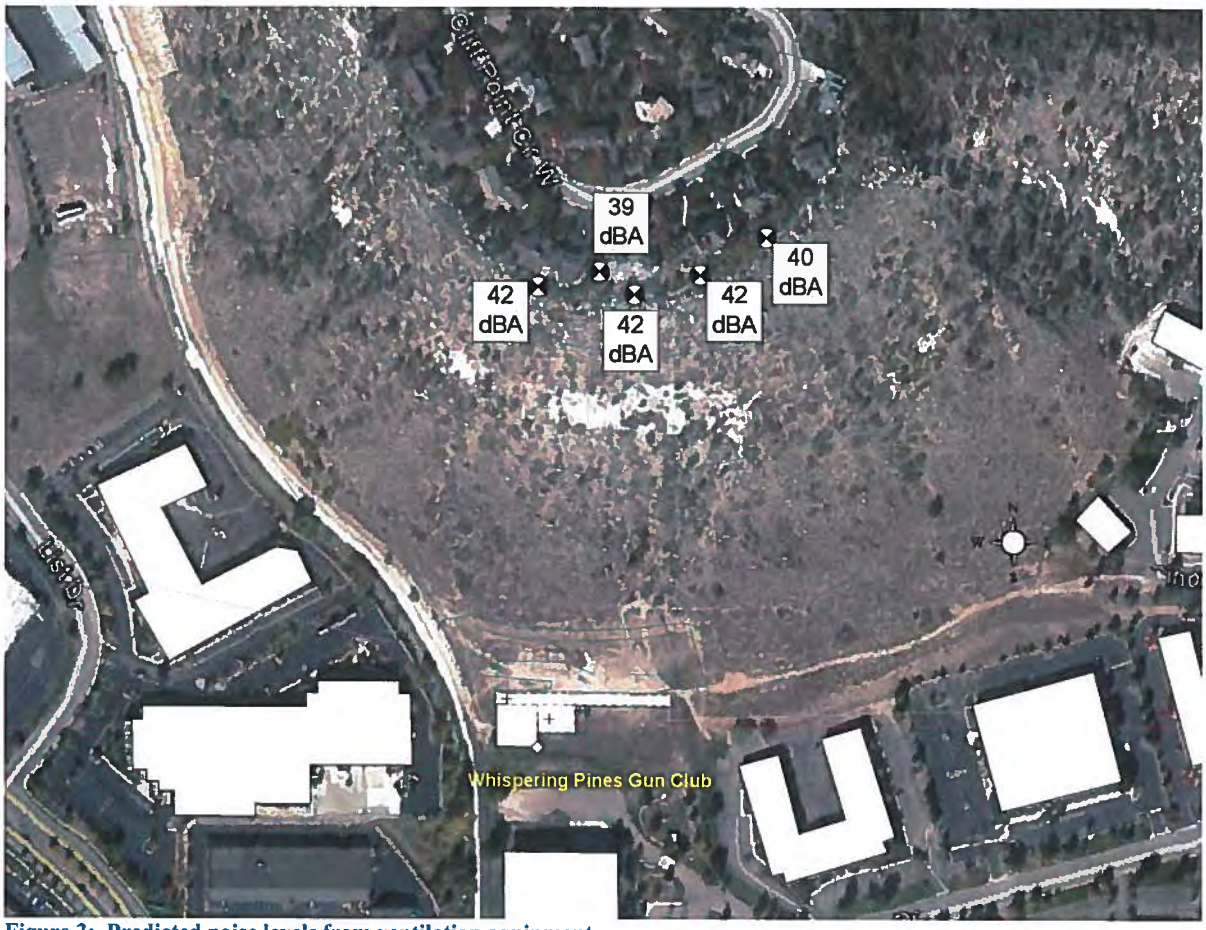


Figure 3: Predicted noise levels from ventilation equipment

The steady noise levels at the residential property line are less than the permissible level of 50 dBA.

Combined Noise from Gunshots and Mechanical Equipment

The mechanical ventilation equipment will always be running while the shooting ranges are in use. The predicted noise levels from gunshots and ventilation equipment combined are shown below on Figure 4.

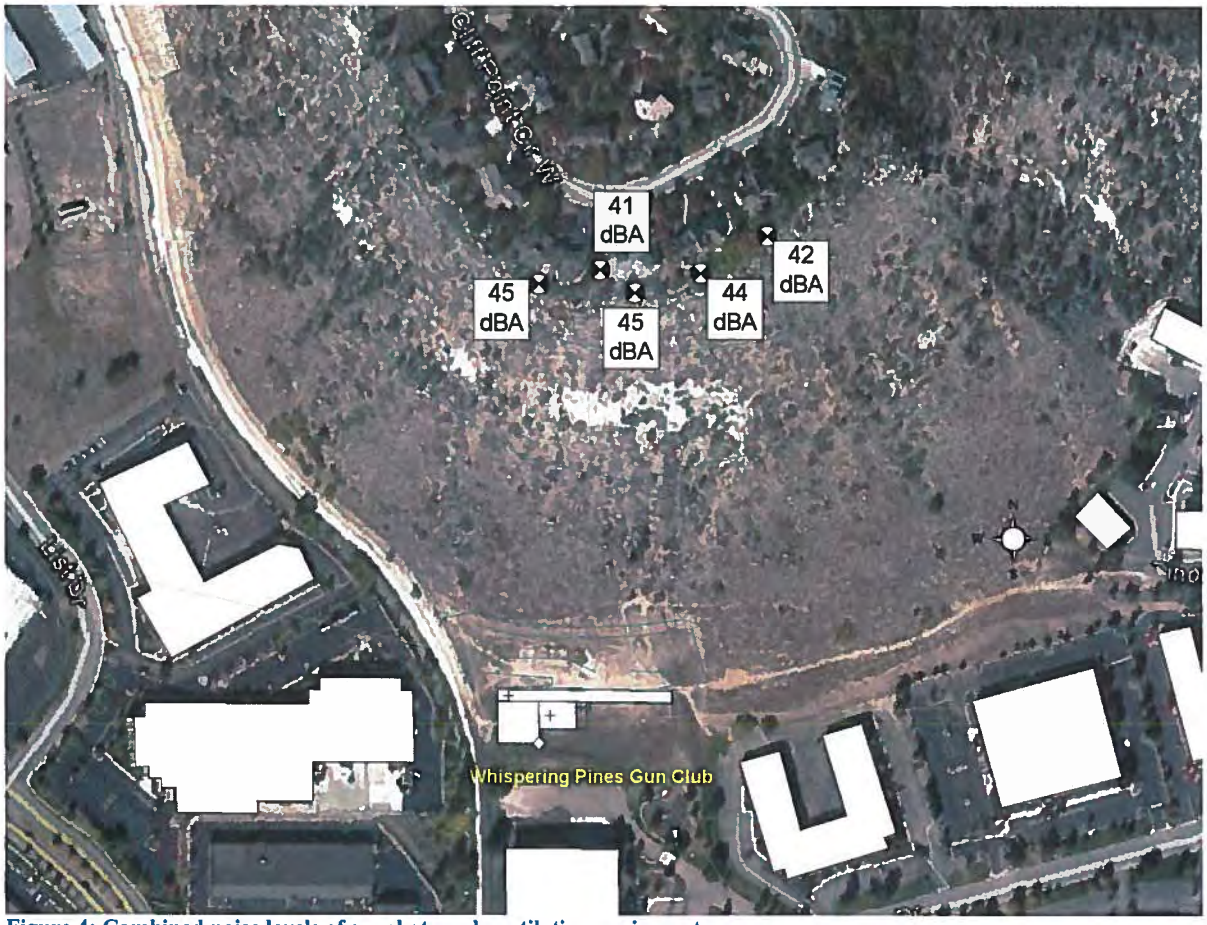


Figure 4: Combined noise levels of gunshots and ventilation equipment

The noise levels of gunshots combined with the noise of ventilation equipment are less than or equal to the permissible limit of 45 dBA for impulsive sources.

Noise Mitigation

A number of noise mitigating measures have been incorporated into the design.

The interior of each range includes Tectum sound absorbing panels to reduce noise levels inside the range, which also reduces noise transmitted out through the building walls and roof.

Range exhaust fans REF-1 and REF-2 will be fitted with 45° elbows to direct air to the south and reduce noise transmitted to the north.

The exterior doors used to access the area behind the handgun and rifle range traps will be STC 50 sound rated doors to reduce noise transmitted to the outside.

The interior door to the rifle range (from the air-lock), behind the firing line, will be equipped with neoprene bulb or closed-cell foam weatherstripping and a door bottom or sweep to make an airtight seal and reduce sound leakage.

The exterior door from the rifle range air-lock will have an STC 50 sound rating.

The exterior door from the south side of the rifle range to the ventilation equipment enclosure will have an STC 50 sound rating.

The rifle range roof will be constructed with three layers of ⅝" Densglass roof sheathing board instead of the normal one layer. The handgun range roof will be constructed with two layers of Densglass roof sheathing board instead of the normal one layer.

Conclusions

We have evaluated the noise impact of the gun club on the residences to the north.

The Colorado Springs noise ordinance gives permissible noise levels for daytime and nighttime hours. Noise from gun shots is "impulsive" and is limited to 5 dBA less than the steady noise of fans and mechanical equipment. Since the gun club will operate after 7:00 p.m., we have applied the nighttime limits.

Figure 2 shows the predicted gunshot noise levels at the residential properties to the north. The noise levels are less than the impulsive noise limit of 45 dBA, which is less than the ambient sound level of 48 to 50 dBA during the hours that the gun club will be open. The ambient sound level drops as one moves away from the edge of the bluff into the neighborhood, but the sound from the gun club will also drop as it is also shielded by the terrain.

Figure 3 shows the predicted noise levels from ventilation equipment at the gun club. The noise levels are less than the permissible limit of 50 dBA.

Figure 4 shows the combined sound levels of gunshots and the ventilation equipment. Even when combined with the ventilation equipment noise, the noise level of gunshots remains equal to or less than the Colorado Springs 45 dBA impulsive noise level limit.

Noise from the indoor shooting range will be below the existing ambient noise level in the residential area to the north. Gunshots may be audible because distinct sounds can be discerned

FIGURE 5

by the ear even below ambient sound levels. However, they will likely be difficult to measure because they will be below ambient levels.

Please feel free to call if you have any questions.

Sincerely,

Digitally signed by Jeff Kwolkoski
DN: cn=Jeff Kwolkoski, o=Wave Engineering, Inc., ou, email=jkwolkoski@WaveEngineering.co, c=US
Date: 2013.09.30 05:34:09 -06'00'

Jeff Kwolkoski, P.E., INCE Bd. Cert.
President

P.O. Box 1153 • Littleton, CO 80160
720-446-WAVE (9283)
www.WaveEngineering.co

FIGURE 5

FIGURE 6

Figure 6 responses are organized by date, most recent first. Responses from the same property are then grouped together.

Bruce Hutchison
Pinecliff HOA
1170 Popes Valley Drive
Colorado Springs, CO 80919

December 23, 2013

Ms. Erin McCauley
Colorado Springs Land Use Review
30 S. Nevada, Suite 105
Colorado Springs, CO

Dear Ms. McCauley,
On behalf of the Pinecliff HOA and its entire board of directors, I am submitting this letter stating our opposition to the Hammers Construction's application for a conditional use request that would permit the construction and operation of an indoor firing range south of the Pinecliff neighborhood. Our position is based on the fact that the current facility design has insufficient noise suppression to ensure that no gunshot noise will be heard in our neighborhood.

It is important to know that the Pinecliff HOA by-laws specify that the association's purpose shall be: "The creation and encouragement of an environment designed to enhance the quality of life for the people in the community." It was with this purpose that we have examined all the documents, drawings, reports, etc. that were submitted to your office. We have also read quite a few comment letters sent to you from members opposing the application for numerous reasons. We attended the December 3rd public meeting and I personally toured both the Whistling Pines Gun Club East and the Trigger Time Gun Club near Longmont. We feel we have done due diligence prior to submitting this letter.

Here are our specific concerns:

1) We were originally told last March that the rifle range would be below ground level which would contain the substantially louder gunshot sounds from rifles. This approach was viewed quite positively by the PHOA board.

2) Based on the satellite view in the Wave Engineering's noise assessment report, up to 7 Pinecliff properties have direct, line of sight to the proposed site. These expensive homes with views of Pikes Peak and Cheyenne Mountain are some of the most desirable homes in Pinecliff.

3) Based on the noise assessment report, the gunshot noise from this facility would definitely be heard on these properties. While the level of the noise is considered acceptable by Wave Engineering and likely adhere to the city's noise ordinance requirements, the nature of sharp noise bursts emanating from the facility 7 days per week and from 9 AM to 8 PM most days, would be intolerable to most of the homeowners above. This would be especially true during the warmer months when residents want to enjoy outside activities and meals.

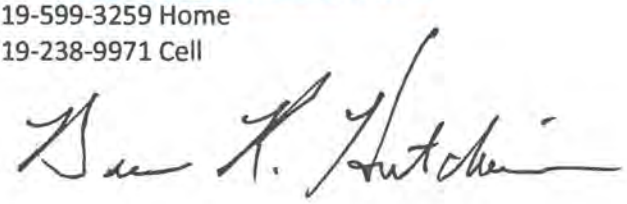
FIGURE 6

4) The above situation would lower the property values of these homes, with the owners ultimately bearing the resulting financial loss.

5) As currently structured, the Land Use Review approval process places the risks of intolerable gunfire noise and the resulting impact to property values only on the affected Pinecliff homeowners. If the application is approved and the facility is constructed, the club owners will bear no responsibility and will have no motivation to offer compensation or remedy.

Please know that the Pinecliff HOA board is willing to drop its opposition if the gun club ownership would incorporate additional noise suppression measures into the facility design to ensure no gunfire noise will be heard within the Pinecliff neighborhood. We would also want a legally binding agreement from the gun club owners stating that they would address and remedy any gunshot noise issues within the Pinecliff neighborhood once the facility begins operation.

Best regards,
Bruce Hutchison - Pinecliff HOA President
email: president@Pinecliff-HOA.com
719-599-3259 Home
719-238-9971 Cell



McCauley, Erin

From: Scott Morrison <smorriso@rams.colostate.edu>
Sent: Monday, December 23, 2013 2:06 PM
To: McCauley, Erin
Cc: Wysocki, Peter
Subject: Proposed Whistling Pines Gun Club

Dear Erin McCauley,

My name is Scott Morrison. I am writing this letter of behalf of concerned residents of the Pinecliff area regarding the construction of a gun club downhill from Cliff Point Circle Street. I'm currently a student at CSU with a major in Natural Resources.

As someone who has grown up in this neighborhood I would simply like to express my paradigm and point out a few negative externalities, perhaps overlooked by gun club planners.

As a member of this neighborhood for 21 years I have come very well to understand that most of the residents that live here chose to do so because of the neighborhood's tranquility, privacy, and appreciation of the surrounding natural environment.

My concern is that a gun club encroaching on this quiet residential area will negate the underlying values of this neighborhood and impinge on the privacy of residents.

The noise from continuous gunshot sounds will inevitably disturb and lead to conflict with many private property owners. For instance, my mother is retired; my father often works at home. Although their hearing range may have shrunk a bit at the high-frequency end, low-frequency noises such as gunshots are quite audible and difficult to contain.

While I do not know the specifics of the noise generated by the facility, sound is undoubtedly affected by many factors. I worry residents will be inundated by alarming sounds from the facility, even if decibel levels are low. Having a recreational gun club so close to private property, peace and quiet is impossible to guarantee.

Another concern of mine is that real estate values in the area will be jeopardized. One of the main reasons real estate is highly valued in this area is its tranquil atmosphere and its interconnectedness with nature encompassing it. A gun club could easily diminish these values with audible noises, bothering residents and deterring wildlife that the neighborhood is known for.

Whether or not sound levels can be contained within the facility, the mere presence of such an active recreational facility so close to private properties is a cause for concern and a deterrence to buying real estate.

The point that I am trying to make is that recreation and private property are rarely congruent. Conflict of interest issues and litigation are results when the two overlap.

As someone who very highly values many types of recreational activity, including recreation gun shooting, I have always known to take all possible measures to never let my recreation disrupt others, especially private property owners.

FIGURE 6

Recreation has its place, but it is always subsequent to the needs of the people who live in that area. As most of us involved with the proposal of the gun club construction are avid recreationalists, we should all know that recreational enjoyment is permissible until it negatively impacts the agendas of the people nearby.

Thank you for taking the time to understand the perspective of a concerned resident who understands the opportunity to recreate is optional; however, being able to live at ones residence with contentment is imperative.

Sincerely,

Scott Morrison

FIGURE 6

McCauley, Erin

From: morrig15@aol.com
Sent: Monday, December 09, 2013 9:17 PM
To: McCauley, Erin
Cc: Wysocki, Peter; angus911@aol.com
Subject: Response to Dec 3rd Gun Club Meeting

Dear Erin,

We have lived in Pinecliff for 28 years. We located here because of the peaceful tranquility, wildlife, and unparalleled views.
I can assure you being one of two homes closest to the proposed club this has been an issue of great concern for at least 4 months.
It's clear the sound data is deficient, as evidenced at the meeting. The fact remains at the end of the day these are at best predictions.
For the Wave Study to be meaningful they also need to provide margin of errors. Jeff didn't include uncertainties in his estimate
or test on the weekend when 95% of the light industrial area is not there and ambient noise goes way down.

Angus and I (and other neighbors) don't care what the db level is; if we are hearing repetitive shots in or outside our home, it is
unacceptable, equivalent to Chinese Water Torture. We are perched directly on top of the proposed club and our house practically teeters on the cliff. We have a 5000 sq ft. home with
a huge wrap around deck with two huge sliding glass doors. We are outdoors much of the time when weather permits. All the floor to ceiling windows in the rear of the house facing the
proposed club are open a majority of the time. This home is not air conditioned leaving us further susceptible to sound intrusions. Reverberation/percussions need a thorough evaluation as well,
considering the unique geologic interface. Home values are a huge concern in this $500,000 and above avg price range - with million dollar views you have some very discriminating buyers. We could
face great personal loss and financial risk. You would rule out many potential buyers who would object to finding themselves being perched above a 20,000 sq ft gun club/
public retail shop/public classes with all it entails. Potential home buyer loss would come from;

1. Any veteran or anyone with PTSD. A Vietnam Vet already said I could not live in your home.
2. Parents of children who have real and perceived fear about safety including leakage of lead dust particles, a mother of seven children said,"Forget it."
3. Any person with values differing from a gun club would not want to be in proximity.
4. Persons with real or perceived issues of noise, exhaust, safety, traffic, and customer loitering.
5. Anyone with fire hazard concerns, we have lots of people with PTSD issues (myself included) surrounding the Waldo Canyon and Black Forest fires, after witnessing the fire breeching the ridge, the following devastation, and having a 30 min. emergency evacuation. We know no building is immune to fire, especially one filled with ammunition. After two of the most devastating fires in CO history, buyers look at homes differently.

Jeff (Wave Study) pointed to our property and said, "Here we have the worst case scenario, but when you go across the street and back further the **sound** will get better." This was extremely unsettling for your home of 20 years to be

FIGURE 6

the worst case scenario. It's unlikely but possible we may not hear much, but it's also very clear after the meeting that we probably will.
When the city wrote their noise ordinances for repetitive sound levels, I'm sure they were thinking barking dogs etc., gun shots
were probably never factored in. A rewrite would be necessary to protect residents from hearing one of the most alarming sounds
imaginable in their homes at any decibel level, that is devastating to physical and mental health. Gunshots are a far cry from the usual ambient noise
in a residential neighborhood.

There is no doubt Whistling Pines is a solid, reputable business with good clients, and responsible owners. For us that is not the issue, but rather some of
those issues listed above. The owner needs to pick a more appropriate location, not one within 490 feet of established homes. When you have a business that could negatively
impact its neighbors because it is not "in harmony" with it's surroundings, then that is not the right business for that location. It is in opposition to the conditional use credo which
says it must be compatible with the surrounding area and not infringe on the peaceful environment and the quiet enjoyment of home.

A conditional use permit would be unconscionable considering we only have weak predictions of what will exist after the club is built.
Since we have no absolutes to protect established properties, a vote of no is the only reasonable, prudent choice.

Sincerely,

Gail Morrison

FIGURE 6

McCauley, Erin

From: Angus Morrison <angus911@aol.com>
Sent: Tuesday, December 10, 2013 1:26 PM
To: McCauley, Erin
Cc: Wysocki, Peter; morrig15@aol.com
Subject: Concerns on Noise Study for Whistling Pine Gun Club

Erin:

I am contacting you regarding the proposed Whistling Pines Gun Club (WPGC) at 4750 Peace Palace Point, and, specifically, the conditional use request to allow Indoor Sports and Recreation in a PIP-2 zone district. Based upon the presentation given by the applicant (i.e., Robert Holmes of Whistling Pines Gun Club West, LLC) and his development support team on 3 December, 2013, which I attended, the assurance that the noise levels from WPGC will satisfy the Colorado Noise Statute is based on a noise study performed by Wave Engineering, Inc. This study was briefed at the 3 December meeting by Jeff Kwolkoski, who is President of Wave Engineering and the principal investigator of the noise study. While Jeff performed a credible and thorough investigation using state-of-the-art noise prediction software (i.e., DataKustik CadnaA) of the WPGC noise levels, I have a number of concerns in the use of this noise study to support WPGC's compliance with the established noise level thresholds in the Colorado Noise Statute.

First, I am a long time resident of the Pinecliff area, and currently reside in the house whose location was characterized by Jeff Kwolkoski in his briefing as the "worst case" location for the WPGC gunshot noise. My qualifications in this area include an Engineering M.S. from MIT, an Engineering Ph.D. from Stanford University, and over 40 years in the defense industry as a Systems Engineer using computer simulations for technical analysis and decision making support. I am presently employed as a Radar Engineer supporting the U.S. Air Force's Space Surveillance mission. I have led or supported countless numbers of investigations similar to or exceeding the complexity of Jeff's noise study for WPGC. Hence, I am confident that I have some informed insight into the utility of this noise study for the conditional use decision.

The analysis and simulation effort necessary to produce predicted noise levels from gunshots and ventilation equipment in proximity of gun club is ameliorated somewhat by the existence of commercial-off-the-shelf noise prediction software such as the DataKustik CadnaA application mentioned previously. The major difficulty in generating accurate results from these applications is ensuring that the embedded software models and data represent their "real-world" counterparts. Based on the information that was presented at the 3 December meeting, it is unclear if the DataKustik CadnaA application has been independently validated for this intended use (i.e., the prediction of noise levels from gunshots). This is critical for software simulations whose results are going to be used in making real life decisions – conditional use applications, for example.

The noise prediction application must first simulate the source(s) of the gunshot noise which includes both the acoustic muzzle blast as well as an acoustic shock wave if the bullet speed exceeds the speed of sound (which is typical for most rifles). Obviously, the noise characteristics would be weapon dependent, which is of importance since, as Jeff admitted in the meeting, a model for the 50 caliber rifle which WPGC will allow to be fired in their facility was not available for the Wave Engineering noise study. This weapon represents a stressing case for the noise prediction study.

FIGURE 6

Next, the acoustic energy from the gunshots impacts the facility surroundings which requires modelling not only the geometrical characteristics of the facility relative to the acoustic sources, but also the acoustic properties of the facility construction and noise abatement materials which are typically frequency dependent. The gunshot noise is ultimately transmitted through the facility infrastructure to the outside environment. At this stage, the gunshot noise level is not simply an idealized point source of acoustic energy, but an extended noise source including the facility roof and walls. Hence, the application must take into account this extended noise source by modelling the overall acoustic energy exiting the gun club facility as collection of individual noise sources with their unique noise propagation characteristics. In addition, the ventilation equipment which operates continuously at the WPGC generates a significant contribution to the noise levels, and also must be modelled in order to obtain realistic estimate of the actual noise levels emanating from the WPGC facility.

If modelling the gunshot noise levels from the weapon source through the facility infrastructure to the outside environment is not challenging enough, the predicting the noise levels in proximity of the WPGC as the acoustic energy leaves the building and propagates through the atmosphere is especially difficult because of the broad spectrum of influencing environmental conditions. First, noise propagation in the atmosphere is very dependent on frequency, and noise level calculations must be performed as a sum over individual frequency bands as per the application design. The four main factors which contribute to the noise level predictions through the atmosphere are:

1. The $1/(\text{distance})^2$ power loss
2. Atmospheric absorption
3. Ground effects
4. Wind direction and speed

The power loss due to the spherical divergence of the acoustical wave is same as that experienced by electromagnetic energy, and clearly is the easiest contribution to the noise levels to predict. The attenuation from the atmosphere is significantly influenced by acoustic frequency, temperature, and relative humidity. Consequently, the predicted noise levels at locations in proximity to the WPGC will necessarily have measureable daily and seasonal fluctuations. Unlike light in the form of electromagnetic energy, acoustic waves will be highly influenced by the surrounding terrain due ground surface reflection and diffraction. The simulation of this contribution to the noise propagation is especially difficult given the characteristics of the hillside terrain in proximity to the WPGC. For example, it is quite plausible that the acoustic waves which exit the WPGC and travel directly to the adjacent neighborhood above could be reinforced by the acoustic waves reflecting off the hillside, which would result in a noise level significantly above that predicted from a simulation without the hillside feature. Typically, noise level prediction software assumes downwind propagation conditions in order to produce a conservative estimate of the noise levels. However, it is not at all clear that the wind conditions produced by the unique terrain surrounding the WPGC would not accentuate these conservative estimates.

As the narrative above indicates, the prediction of noise levels in the proximity of the WPGC is a complex problem which necessitates an extraordinary amount of high-fidelity modelling and data. The DataKustik CadnaA application employed in the WPGC noise study by Wave Engineering has sufficient fidelity to provide the desired noise level estimates. It requires the user to select from a menu of national and international standards to implement the sound propagation calculations. Wave Engineering selected the International Standard for Acoustics, ISO 9613-2, for the sound propagation – a reasonable choice. The noise study chose five locations in the residential area adjacent to the WPGC to generate the noise levels. Two sets of calculations were performed by Wave Engineering with their application: 1) the noise levels from only the gunshots inside the gun club facility (Fig. 3 of the study), and 2) the noise levels from the ventilation equipment on the roof of the WPGC (Fig. 4 of the study). The corresponding sound pressure intensities from

FIGURE 6

these distinct sources were added to yield the combined noise levels (Fig. 5 of the study). The noise study stated that these calculations were performed under worst case atmospheric conditions and a downwind assumption.

The predicted noise levels for two out of the five neighborhood locations were at the allowable threshold for impulsive noise sources, 45 dB(A). First, the meaning of these predicted noise levels, themselves, is unclear. Do they represent mean values when considerations are given to variations in the simulation models and data which comprise the noise level prediction software? Or, are they bounds on the realizable noise levels which could only be extent in extreme circumstances? When Jeff Kowlkoski was queried on this point at the meeting, his response was ambiguous at best. Second, the study was devoid of any estimates on the uncertainties in these predictions given the complexity of the modelling and the supporting data base. Hence, there is no quantitative basis to determine the expected excursions from the predicted values. Any positive noise level prediction error would clearly result in a violation of the noise statute limits at two of considered locations. While the statute states that the noise levels may be exceeded up to 10 dB(A) for a duration of less than 15 minutes in any one hour period during the day (i.e., 7:00 am to 7:00 pm), there is no clear definition of what constitutes a violation during the night time hours, which is of concern since the WPGC is open past 7:00 pm. Consequently, one must assume from this omission that any noise level reading above 45 dB(A) during the night time hours would be considered a violation of the Colorado Noise Statute.

As mentioned previously, the Wave Engineering noise study selected the ISO 9613-2 standard for their sound propagation algorithms. The ISO quotes an uncertainty in their calculations of ±3 dB(A) for distances between 100 and 1000 meters (see Table 5 of the ISO) when averaged over the assumed downwind conditions of propagation implicit in the algorithms. However, the following quote from the ISO relative to their uncertainty estimates is particularly significant relative to the "real-world" noise level estimates that are of interest for the WPGC conditional use, "They should not necessarily be expected to agree with the variation in measurements made at a given site on a given day. The latter can be expected to be *considerably larger* than the values in Table 5." I have added the italics to the ISO quote. Thus, if the results of the Wave Engineering noise study are to be believed, the variation in the computed 45 dB(A) noise levels would necessarily lead to values in the 48 dB(A) range or higher depending upon the atmospheric conditions and modelling uncertainties (including atmospheric propagation and acoustic energy transmission through the WPGC facility). That is, if measurements were taken at different times of the day and year at the locations in the study with the 45 dB(A) noise level values, one could expect the noise levels to vary in an intensity band between ~ 42 dB(A) and ~ 48 dB(A) if the noise study predictions are accurate. Violations of the noise statute certainly during the night time and possibly during the day time would be a frequent occurrence under these circumstances.

Although this discussion has focused on the noise level issue relative to the statute values, the more important question for us is, will the gunshot noise be audible to the residents of the neighborhood in proximity to the WPGC? If gunshots are being heard continuously throughout the day and night (as residents of Layton, Utah, Blue Ash, Ohio, and Clovis, California have endured), the actual noise level reading is little consequence. Gunshot noise which was be perceived below the statue thresholds would be difficult situation to rectify other than pleading with the owners of WPGC to move (never happen) or improve their noise abatement design and material in their facility (huge cost). Clearly, the Colorado Noise Statue is deficient in this regard. In fact, the Wave Engineering noise study categorically states in their conclusion that in all likelihood the gunshots will be heard by residents nearest to the WPGC.

Therefore, given 1) that the noise study implies noise levels above the statute threshold, and 2) that it is very likely that the gunshots will be audible by neighborhood residents, the issuance of a conditional use for the WPGC in light of these circumstances would be counter to its stated constraints:

FIGURE 6

1. The value and qualities of the neighborhood surrounding the conditional use are not substantially injured.
2. The conditional use is consistent with the intent and purpose of this Zoning code to promote public health, safety, and general welfare (i.e., PIP-2 zoning explicitly states that the included facilities have industrial uses *with operations which are quiet*.

I urge you to carefully consider the potential disruption to the tranquility of our neighborhood as I have attempted to describe in this narrative from the proposed WPGC operations, and recommend the disapproval of their conditional use application.

Sincerely,

Angus Morrison

FIGURE 6

McCauley, Erin

From: weisprings@comcast.net
Sent: Monday, December 23, 2013 3:47 PM
To: McCauley, Erin
Cc: Wysocki, Peter
Subject: CPU CU 13-00077

Hi Erin –

Hope all is well. Happy Holidays.

I know that today (23-Dec-2013) is the last day to submit an email expressing concerns and questions for the proposed gun club (i.e. regarding CPU CU 13-00077). As such, over the last few months (i.e. to include the 03-Dec-2013 public meeting held) raised additional questions and concerns for me.

Here are some additional concerns and questions:

- I am the neighborhood watch block captain for Cliff Point Circle (i.e. East & West) which was denoted as the **worst case scenario** by the sound engineer from Wave Engineering.
  - Here are some interesting statistics:
    - Out of the sixteen (16) homes in our neighborhood watch block, ten (10) homes have one or more household members who are retired. As such, the percentage of **retirees per household constitutes approximately 62.5%** (i.e. 10 / 16 = 0.625 x 100 = 62.5%)
    - Also the trend for our block demographic is that more households are nearing retirement age. We have fairly mature residents' demographics.
    - To compound the problem, most of these homes are older (i.e. 20 to 30 + years old and therefore do not have central air conditioning). As such, during the spring, summer and fall these residents often leave their windows and sliding glass doors open for much needed ventilation and cooling
  - Therefore any gun / rifle noise will adversely impact these neighbors and will definitely be classified as an "**objectionable noise**" (i.e. 7.3.302: PURPOSE AND SPECIFIC REQUIREMENTS OF THE INDUSTRIAL ZONE DISTRICTS) from the residential Pinecliff neighbors perspective
- Also out of the sixteen (16) homes in our neighborhood watch block, I personally know of nine (9) veterans in these households and most likely more:
  - Some of the veterans have served in the Korea and Vietnam wars as well as other worldwide conflicts.
  - **Gunshot noise, no matter what level ,is not a noise which is tolerable** (i.e. resurrect war time memories; PTSD; canot use decks due top repitive noise; etc.) especially not in one's own home where peace and safety are paramount especially during the retirement years when residents stay in their homes more often.
- Adverse impact for animals in Pinecliff:
  - There are an abundance of wild lives (e.g. deers, bears, bob cats, owls, turkeys,, etc.) and animals in general have more sensitive hearing than humans
  - Also a number of households have pets which have more acute hearing and will be adversely impacted by the repetitive gunshot noise
  - Is the planning department also watching out for these animals' interest? If not, who is?

FIGURE 6

- During the 03-Dec-2013 public meeting, the owners and their developer confirmed that there weren't any geological issues. If this is indeed the case, then why doesn't the developer bury the rifle range (i.e. make it underground) to help mitigate the noise from rifle which will be louder than pistols?
- Property values:
  - Most of the neighbors have been living in Pinecliff for a long time (e.g. 10, 20, 30 + years)
  - As such, we have been paying our mortgages over a prolonged period of time and some of us have paid off our mortgages
  - At some point there might be an interest to down size
  - The proximity (e.g. 490 feet) of the proposed gun club will reduce the pool of prospective buyers (i.e. buyer with children, veterans, etc.)
  - Our home values will suffer and therefore property taxes which will have a domino effect on the rest of Pinecliff since comps are used for comparison purposes in pricing a home for sale
  - What benefit will this proposed club offer to Pinecliff except for a few hobbyists when Magnum shooting range (i.e. scheduled to open in 2014) is only 15 minutes away. As such, a number of Pinecliff residents have already expressed an interest in this new gun club in the Northgate shopping area since it's not right next to an existing neighborhood like ours

Erin – with the above additional concerns, I would encourage the City of Colorado Springs planning department to **revisit the "Conditional Use"** since any repetitive gun noise is not acceptable for any residential neighborhood within the city limits since it can cause physical and psychological harm in the long run.

As such, a "**zero tolerance**" ordinance will need to be considered to properly protect the taxpaying residents of Colorado Springs of their home/property values and quality of life. **Any gunshot noise is not a "natural noise" within the city limits** and therefore residents should not be forced into an unnecessary prolonged exposure to these types of noise, period. After all, it's your fiduciary responsibility to do the right thing.

As stated before, **this is not a gun issue (i.e. many of us own guns); this is a property value, quality of life, and noise issue.** Unfortunately the compelling positive attributes of Pinecliff will drastically change if the "conditional use" is approved for the proposed gun club.

A number of Pinecliff neighbors would be more than happy to show the proposed gun club owners a more suitable lot within the city which is not next to an existing residential neighborhood.

Thanks again for your consideration and time.

Happy Holidays to you and your Family!

John Wei (719) 528-5133

FIGURE 6

McCauley, Erin

From: weisprings@comcast.net
Sent: Thursday, December 12, 2013 11:04 AM
To: McCauley, Erin
Cc: Wysocki, Peter
Subject: FILE NO.: CPC CU 13-00077

Hi Erin –

Hope all is well. This is John Wei from the Pinecliff neighborhood. Thanks for coordinating the 03-Dec-2013 public meeting with the proposed gun club (i.e. Whistling Pines Gun Club) owners and their representatives.

I thought the presentations were informative and I have no doubt that the owners and their employees of the current Whistling Pines Gun Club are "***nice people***". A number of us who attended this meeting will take up on Mr. Bob Holmes' offer for a tour of his current east location facility. Details are to be arranged shortly.

In the meantime, I have lived in Pinecliff for nearly twenty six years. I love the natural beauty, wild animals, panoramic views, peacefulness and tranquility Pinecliff has to offer. Therefore I commuted daily from Colorado Springs to Denver and back for sixteen years with no regrets.

Just to level-set, this is not a gun issue (i.e. many of us own guns); this is a property value, quality of life, and noise issue. Unfortunately the compelling positive attributes of Pinecliff will drastically change if the "conditional use" is approved for the proposed gun club.

As such, I have documented the following in an attempt to "staple myself to the process" and to walk through this process logically. I also documented my rationale for the Planning Department to deny this "conditional use" request:

City Ordinance / Zoning Code:	Description / Details (i.e. applicable portions highlighted):	Comments / Objections:
9.7.104: DISCHARGE OF WEAPON:	A. It is unlawful for any person to wrongfully fire or discharge any cannon, gun, pistol, revolver, rifle, shotgun, air gun, BB gun, gas operated gun, spring gun, or firearm within the City. The discharge of firearms using only blank ammunition by the members of any military company when on parade or when engaged in an official ceremony, done in accord with the command of the commanding officers, shall not be deemed a violation, nor shall the discharge of firearms at shooting galleries as a licensed business, or as part of a business licensed or permitted to operate within the City be deemed a violation.	So it is illegal to discharge weapon in the Colorado Springs city limits unless it is within a business permitted to operate with the City. As such, File no. CPC CU 13-00077 – A conditional use request to allow Indoor Sports and Recreation in a PIP-2 (Planned Industrial Park) zone district was submitted for the proposed gun club It appears that the proximity of this club to an existing residential neighborhood (within 490 feet with hillside overlay considerations) is unprecedented

FIGURE 6

		in the City of Colorado Springs
City Ordinance / Zoning Code:	**Description / Details (i.e. applicable portions highlighted):**	**Comments / Objections:**
7.3.302: PURPOSE AND SPECIFIC REQUIREMENTS OF THE INDUSTRIAL ZONE DISTRICTS:	A. PIP-1 and PIP-2 - Planned industrial park: These zone districts accommodate a limited group of professional, administrative, research, manufacturing and industrial uses with operations which are quiet and clean to ensure the creation and maintenance of an environment which will serve the mutual interest of the community as a whole, any adjacent residential areas, and the occupants of the industrial park in particular. Planned industrial park zone districts shall be located on lands that are suitable for industrial development, have an acceptable relationship to the major thoroughfare plan and applicable master plans, and are held in single ownership or under unified control. Uses allowed in planned industrial park districts are listed in a table in section 7.3.203 of this article. Some districts will be located near residential neighborhoods; therefore, it is necessary that all activities including manufacturing, processing or assembly of materials and products be carried on in a manner which is not injurious or offensive to the occupants of surrounding properties. Uses shall not cause: a. Glare, vibration, objectionable noise, or emission of smoke, fumes, gas, dust, odor or any other atmospheric pollutant detectable beyond the boundaries of the immediate site. P Physical hazard by reason of fire, radiation, explosion or similar cause to the property in the same or surrounding district. In order to develop a site in a reasonable manner which will not be detrimental to the public welfare or the interests of the City, regulations governing the height, open area, setbacks, off street parking, and loading and maneuvering area may be modified by the	<u>Per Jeff Kwolkoski on page 9 of his 30-Sep-2013 Whistling Pines Gun Club West – Noise Assessment stated the following:</u> Noise from the indoor shooting range will be below the existing ambient noise level in the residential area to the north. Gunshots may be audible because distinct sounds can be discerned by the ear even below ambient sound levels. However, they will likely be difficult to measure because they will be below ambient levels. • **Note:** This sound study was done on a weekday. Weekends will have less ambient noise since most factories and businesses are closed. As such, this wave sound study is not comprehensive nor definitive • "**Noise**" is a sound that disturbs or harms and is categorized as either continuous or impulsive. As such, shooting range noise is consider impulsive and therefore an "***objectionable noise***" • Per Jamie Prather-Newton (Layton Utah), ***"Do you know the feeling you get when a car next to you has his stereo volume on high, it's such an annoying sound, so irritating that you can't wait until that jerk moves his car away from***

FIGURE 6

	Planning Commission or City Council when a PIP district is established or changed. The differences between the PIP-1 and the PIP-2 districts are generally reflected in the development standards.	***you, well that's the "feeling" we hear in our gut when each shot was taken in this business."*** • During the 03-Dec-2013 public meeting, the owner plans to permit .50 caliber machine guns, which were not tested for decibel levels by their acoustical engineer. • Please see additional analysis performed, explicit concerns and questions raised by Dr. Angus Morrison and Dan Oltrogge (i.e. both highly experienced Pinecliff engineers) in their respective emails to the City Planner which questions the Wave Engineering sound study's validity and its accuracy.
City Ordinance / Zoning Code:	**Description / Details (i.e. applicable portions highlighted):**	**Comments / Objections:**
7.5.705: CONDITIONS OF APPROVAL:	In approving a conditional use, Land Use Review or City staff may recommend or the City Planning Commission may impose special conditions upon the subject property that are necessary to alleviate or mitigate any potentially significant adverse impacts on other property in the neighborhood, and to carry out the stated purposes of the Comprehensive Plan and this Code.	**<u>Significant adverse impacts for Pinecliff neighborhood to include:</u>** • <u>Repetitive noise:</u> o 11 hours per day for 5 weekdays and 9 hours on Sunday o Totally a staggering **3328 hours per year** (i.e. 64 hours per week times 52 weeks) • Loss of property value and therefore loss of property taxes for city, county, etc. • Loss of tranquility and undue stress for neighbors and veterans • Homes are older in Pinecliff and therefore may not have central AC.

FIGURE 6

		Repetitive noise will prohibit residents from opening their windows and sliding glass doors for essential cooling and ventilation purposes
City Ordinance / Zoning Code:	**Description / Details (i.e. applicable portions highlighted):**	**Comments / Objections:**
7.5.704: AUTHORIZATION AND FINDINGS:	The Planning Commission may approve and/or modify a conditional use application in whole or in part, with or without conditions, only if all three (3) of the following findings are made: A. Surrounding Neighborhood: That the value and qualities of the neighborhood surrounding the conditional use are not substantially injured. B. Intent Of Zoning Code: That the conditional use is consistent with the intent and purpose of this Zoning Code to promote public health, safety and general welfare. C. Comprehensive Plan: That the conditional use is consistent with the Comprehensive Plan of the City	A. There has been a "**pattern of behavior**" where "***state of the art***" gun clubs promised that residents wouldn't hear the noise but subsequently having serious noise / percussion issues "***after the fact***" resulting in ongoing litigations: • See Blue Ash, Ohio www.fixthegunnoise.com • Search Layton, Utah gun at www.standard.net • Google "Firing Line" in Clovis, CA + www.fresnobee.com B. With the recent devastation of the Waldo Canyon and Black Forrest fires, we know that no buildings are immune to fires and also confirmed by two Colorado Springs firemen. By having a gun club with stored ammunition at the base of Pinecliff it will cause additional safety issues since if the building catches on fire then the whole Pinecliff neighborhood will go up in flames (i.e. like having a fuse at the bottom of our hill / cliff). Also Colorado Springs residents have been traumatized enough by the recent fires and having a gun club so close to an existing neighborhood will be unnerving and cause undue stress C. Per Erin McCauley, the 2020 Comprensive Plan of the City had planned for an "**Employment Center**" (i.e. no noise) which is a

FIGURE 6

		far cry from the proposed gun club (i.e. will hear gun shots)

In closing Erin, I would like to state that if we were to "weigh" the major issues at hand:

- On the left hand, the proposed gun club which for the most part will cater to hobbyists
- On the right hand, or the preserving the tranquility and property values of Pinecliff neighborhood

The weight and immensity of the issue (i.e. hobby versus property value and quality of life) does not compare. As such, we encourage you to recommend denial of the **"Conditional Use" for FILE NO.: CPC CU 13-00077** (i.e. a conditional use request to allow Indoor Sports and Recreation in a PIP-2 (Planned Industrial Park) zone district).

We the Pinecliff residents support development BUT "***responsible development***" and not growth for growth's sake. As such, I strongly recommend that the planning department deny this "conditional use" request given the apparent incompatibility of its location adjacent to an existing and long established residential neighborhood, as well as the adverse impact this use will have on Pinecliff for decades (i.e. once a gun club always a gun club). Thanks for your time and consideration.

Regards,

John Wei (719) 528-5133

FIGURE 6

Patty Carbone
5368 Cliff Point Circle West
Colorado Springs, CO 80919
December 23, 2013

Dear Erin, Planning Commissioners, and perhaps City Council members,

I still have the remaining unanswered questions and concerns regarding the Whistling Pines Gun Club proposal (CPC CU 13-00077, Hillside Overlay):

1) I have not seen the list of gun ranges that Jeff Kwolkoski of the Wave Study had said he would provide, or received the list of the 100 guns used to create the database used in the Sound Study. Also, I did not get an answer to why no sound readings were taken on weekends, or what the ramifications would have been if "unfavorable" wind conditions were assumed.
2) Are there sprinklers being shown on the 12/12/13 drawings? If so, I am not seeing that indicated. What is the fire rating of the rubber membrane on the roof? Has the Fire Dept. even seen the latest drawings showing the relocation of the door from the North side to the West side? Do they approve of the evacuation plan, roofing materials, and the fact that this facility may be built without sprinklers?
3) Can we get a copy of the interior floor plan which indicates where the ammunition storage is located?
4) Looking at the Terracon geotechnical update letter date December 10, 2013, I would like to be advised where to find the "responses for Suggestions 1 through 3" (the stability analysis of the colluvial slope above the depressed area beyond the lot boundaries and the subsurface foundation investigation) that were supposedly included in the Geologic Hazard Study of March 10, 2008. Has a qualified Civil Engineer been hired yet to review the site grading to repair the eroded channels in the steep cut slopes north of the site and to establish any erosion control plan?
5) I understand that the applicant may be willing to meet with some of us to address remaining concerns. I would certainly be happy to have that opportunity.
6) Lastly, I do not think that this development would be compatible with an existing neighborhood. I would argue that this proposed use does not meet the CONDITIONAL USE REVIEW CRITERIA in City Code 7.5.704., which I'm sure will be enumerated at the Planning Commission.

Thank you in advance for your response to these questions.

Respectfully, Patty Carbone, Pinecliff Development Review Advisor

FIGURE 6

McCauley, Erin

From: bursell@netzero.net
Sent: Monday, December 23, 2013 1:31 PM
To: bursell@netzero.net
Cc: McCauley, Erin; Wysocki, Peter
Subject: Filing supplemental information for proposed Conditional Use Permit f or Whistling Pines Gun Range
Attachments: OSHA fines Gun Range $2.1 million for exposing workers to lead hazards.pdf

December 13, 2013 (1:32 PM).

Please include the following OSHA, U.S. Department of Labor, news release that discusses a proposed $2.1 million citation of an indoor gun range for knowingly neglecting to protect employees who clean gun ranges from serious overexposure to lead. It also provided, without medical supervision, non-FDA-approved treatments for lead exposure. The company was cited for more than 50 violations of the Code of Federal Regulations previously discussed in our submission.

In terms of public safety and welfare, I believe this information underscores the necessity to review, in record detail, whether Whistling Pines has not only complied with these requirements for employees at their current location but also what procedures and plans are in place to ensure future compliance ... before approving a requested Conditional Use Permit.

The specific health violations issued by OSHA are available for review at:

https://www.osha.gov/dep/citations/enrange.html

Sincerely,

Dick and Pat Bursell

FIGURE 6

December 22, 2013

Colorado Springs Planning Commission
Attn: Erin McCauley, Planner II and
Peter Wysocki, Planning & Development Director
P.O. Box 1575
Colorado Springs, CO 80901-1575

Re: CPU CU 13-00077, 4750 Peace Palace Point
Proposed Whistling Pines Gun Club near Pinecliff Residential Homeowners

As a 20-year veteran with the U.S. Army, homeowner in the Pinecliff area of Rockrimmon, and an owner of several firearms, I find it imperative to submit the following information for the Planning Commission's consideration regarding the above request for a Conditional Use Permit.

Objection #1 (Lead as a Health Hazard). Insufficient showing of compliance with Occupational Safety and Health Standards regarding exposure to toxic contaminants for indoor gun ranges (e.g., lead dust and vapors) that places a health hazard to the general public as well as all employees in the facility.

Background: **Sources of Lead at Indoor Shooting Ranges**

Exposure to lead poisoning in indoor firing ranges comes primarily from inhaling lead particles suspended in the air in the range (although it may also be ingested orally, with contaminated food for example). These particles come principally from ignition of the primer, which contains lead styphnate, from microscopic lead particles scraped off the bullet as it passes through the gun barrel, and from lead dust created when the bullet strikes the target or the backstop behind the target.

Both indoor and outdoor ranges share a common problem—lead. Most ammunition used at ranges is made of lead. It has been estimated that between 400 and 600 tons of lead are used each day to make bullets and "a high proportion of it is left to clutter up shooting ranges." It is no wonder, then, that numerous studies—since at least the 1970s—have documented that *outdoor* shooting ranges are major sources of lead pollution in the environment, and that ***indoor* shooting ranges are significant sources of lead poisoning among people who use them.**

> ***"Until fairly recent years, most shooters wore no hearing protection. As a result, most shooters over 40 have some hearing loss. For many, it is a very significant and noticeable hearing loss. Most of us didn't know how much damage we were incrementally inflicting on ourselves. There was little or no warning about the danger to our health years ago. The same is true with the lead problem. We fired round after round, match after match, without realizing what lead could do to us."***
>
> **—Joseph P. Tartaro, Second Amendment Foundation news release, January 10, 1998**

FIGURE 6

The danger of lead poisoning extends not only to those who shoot in indoor firing ranges. It also reaches the shooters' families (especially children), and third parties, such as construction workers whose jobs bring them into contact with shooting ranges, and persons who share the building, such as children in a school in which a range is located.

A recent example of an indoor gun range toxic infection of 24 workers was reported in February 2013 in both the Huffington Post *(Inexcusable Exposure: Unprotected Workers, Toxic Lead at Gun Range)* and the Seattle Times (*Gun range under fire over lead in blood of workers).* The Times noted that construction workers and firing range employees who were exposed to excess lead, which sparked multiple government investigations and a lawsuit. Three children and two women in workers' households also tested positive for excess lead suspected to have been brought home on workers' clothes, boots, and tools. Forty-seven gun range workers tested had elevated blood-lead levels and 24 had symptoms possibly resulting from lead exposure. Those two dozen workers experienced headaches, stomachaches, lost appetite, fatigue, irritability and other symptoms of excess lead exposure during expansion of the range.

Health officials are taking the incident seriously because "inhaled or ingested lead can damage the nervous system, kidneys, cardiovascular system and gastrointestinal system," according to King County Environmental Health Director Ngozi Oleru.

Another relatively recent example involving lead workplace violations was reported in November 2010 by the Kentucky Labor Cabinet's Occupational Safety and Health Compliance (KyOSH) office. It issued citations and fines to Lost Lodge Properties LLC, **dba Bluegrass Indoor Range** in Louisville. The range, located was issued four failure-to-abate, three repeat serious, three serious, and one non-serious violations for lead, electrical, hazard communication and respirator hazards. The fines associated with the citations total **$372,000.** The Division also determined that lead found in the facility could pose a **health hazard to the general public, including children, and a referral was made to the health department.** (Copy of the Commonwealth of Kentucky Labor Cabinet press release is attached).

The applicant makes no mention of compliance with any workplace standards regarding noise and lead contamination for employees such as those recommended by the National Institute for Occupational Safety and Health's publication: Reducing Exposure to Lead and Noise at Indoor Firing Ranges (2009, also attached). This particular publication also notes school rifle teams who had extensive lead contamination (2003). The firing range was voluntarily closed down.

No mention is also made to compliance with applicable standards or medical monitoring of employees for lead (29 CFR 1910.1025(j) or noise 29 CFR 1910.95(d)(e)(g)(h). For example:

1910.1025(a)(1)

> This section applies to all occupational exposure to lead, except as provided in paragraph (a)(2).

FIGURE 6

1910.1025(b)

> Definitions. *Action level* means employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air (30 ug/m^3) averaged over an 8-hour period.

1910.1025(j)(1)(i)

> The employer shall institute a medical surveillance program for all employees who are **or may be exposed at or above the action level** for more than 30 days per year.

1910.1025(j)(1)(ii)

> The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician.

1910.1025(j)(2)(iii)

> Accuracy of blood lead level sampling and analysis. Blood lead level sampling and analysis provided pursuant to this section shall have an accuracy (to a confidence level of 95 percent) within plus or minus 15 percent or 6 ug/100 ml, whichever is greater, and shall be conducted by a laboratory licensed by the Center for Disease Control, United States Department of Health, Education and Welfare (CDC) or which has received a satisfactory grade in blood lead proficiency testing from CDC in the prior twelve months.

The applicant's file makes only a very general, inadequate, and "sweeping" (no pun intended) comment to this serious health hazard in his application:

> As mentioned already, due to the air handling, range mechanical systems and HEPA filtration system, **there will be no lead dust present** in the air at the shooting line. Nor will any lead dust be introduced into the surrounding environment. The range floor is cleaned each evening. The club also recycles over 3,000 lbs of lead and lead compounds each month, as well as hundreds of pounds of cartridge cases. With all these measures in place, this should alleviate any heath/environmental concerns.

Well, of course, absent some exemption from the law of physics, contrary to the above comment, lead dust and vapors will be present in the air at the shooting line and potentially throughout the entire facility. Airborne lead contamination is one reason why in-door ranges would have difficulty in opening any sort of "hand to mouth" food operation. I would also be concerned as to what environmental precautions (for employees) are established for removing, handling, and recycling "**3000 pounds of lead** and lead compounds **each month**." 3000 pounds seems to not only beg the question but cause more to be inquired in terms of OSHA compliance (medical or otherwise)

FIGURE 6

Pointed Questions:

Has the Whistling Pines Gun Club complied with the above employee workplace health/safety requirements at their current location at 1412 Woolsey Heights? If they do not meet the "action level" for compliance, who measured or certified the level of airborne concentration of lead being less than 30 micrograms per cubic meter of air (30 ug/m^3) averaged over an 8-hour period? Any records of such measurements?

Has the application been coordinated with any Health Departments (County or State) for comment/review?

If at some future date Whistling Pines, as a Limited Liability Company, would close due for financial insolvency and its building is left abandoned with a history of lead dust and vapor contaminants, who is responsible for its clean-up?

Should an annual performance bond be required to ensure its solvency to cover this issue so the city is not the recipient of an unwanted hazardous waste clean-up?

Objection #2 (Insufficient sound abatement to residential neighborhood):

The applicant's sound engineer consultant, Jeff Kwolkoski of Wave Engineering, provided many important technical measurements, including ambient and other information on "impulse sounds" that would obviously emanate from the proposed gun range. There were, however, two very significant comments regarding his projections that should be seriously considered before placing adjacent properties at risk for quality of life deterioration, to wit:

"I can't say you'll never hear a gunshot from the range." (and)

"Our testing did not include a .50 caliber machine gun," or words to that effect.

The applicant, on the other hand, made it clear that they intend to permit .50 caliber machine guns to be fired as they do in their current indoor gun range. He attempted to somewhat cavalierly diminish their frequency of use by mentioning that they were "expensive to operate" at "$5.00 a shell." It is hard to believe that this facility would permit, arguably, multiple .50 caliber machine gun operators to simultaneously fire down its lanes and NOT expect impulse sounds to travel outside the building a mere 492 feet to adjoining properties?

A .50 caliber machine gun uses a very large cartridge and is used by the military primarily against infantry, unarmored or lightly armored vehicles and boats, light fortifications and low-flying aircraft. According to one U.S. Army publication that addresses hearing loss (*TG 250 Readiness thru Hearing Conservation*) an "M2 .50 Cal Mach Gun" emits a decibel level of 161 dB(P). A jet engine at 100 feet is rated generally at 130-140 dB. A firearms db chart (also attached), which unfortunately does

FIGURE 6

not list a .50 caliber machine gun, does note that some rifles can be even louder depending on the cartridge grain used. The term BOSS in the chart refers to Ballistic Optimizing Shooting System, a muzzle brake and accuracy tuning device.

As a general objection to the acoustical information provided, since the acoustic engineer did not test the decibel levels of an expected machine gun sound level, his projections are ergo, unreliable and should not be given full consideration.

Here is a photo of a .50 caliber machine gun and its cartridge compared to other rifle cartridges. I have fired this weapon. It is extremely loud.

From left: .50 Cal , 300 Win Mag, .308 Winchester, 7.62×39mm, 5.56×45mm NATO, .22LR

FIGURE 6

Objection #3. Prolonged exposure to unnatural intermittent impulse sounds is unhealthy and potentially physically and psychologically damaging to neighboring properties (even if within "allowable db limits").

The importance of one's home as a refuge from modern life. Car alarms, horns, sirens. The booming bass of radios and hi-fi, the tinny **noise** leaking from other people's MP3 players. Roadworks, roaring jet planes and people shouting down cellphones. Is there no escape even to one's home?

And so it goes on, every minute of every day. Individually, such sounds can be dismissed as an unavoidable consequence of modern life. Together, they create an incessant wall of sound that experts now say poses a significant threat to our health.

According to a December 22, 2007 issue of the *New Scientist*, the World Health Organization broke new ground by releasing preliminary estimates of the number of Europeans killed or disabled by exposure to **noise**. For example, chronic and excessive traffic **noise** is implicated in the deaths of 3 per cent of people in Europe with ischaemic heart disease. Given that 7 million people around the globe die each year from heart disease, and assuming an average exposure to traffic, that would put the annual toll from exposure to **noise** at 210,000 deaths.

Noise kills in much the same way as chronic stress does, by causing an accumulation of stress hormones, inflammation and changes in body chemistry that eventually leads to problems such as impaired blood circulation and heart attacks. Such insidious effects on our health can happen even when we're asleep and unaware that we're exposed, as our bodies still produce a similar physiological response. Like smoking and its passive effects, making a din may no longer be considered simply antisocial, or even illegal. It might be deemed lethal.

The Colorado Legislature has codified and recognized this problem by noting a "Legislative Declaration" in Colorado Revised Statute 25-12-101, which notes:

The general assembly finds and declares that **noise** is a major source of environmental pollution **which represents a threat to the serenity and quality of life** in the state of Colorado. **Excess noise often has an adverse physiological and psychological effect** on human beings, thus contributing to an economic loss to the community. Accordingly, it is the policy of the general assembly to establish statewide standards for **noise** level limits for various time periods and areas. **Noise** in excess of the limits provided in this article constitutes a public nuisance.

Objection #4, Insufficient Notice to potentially affected residential owners. In terms of notice to residential owners in nearby or adjacent properties, the use of a "500 feet" measure is insufficient as the potential noise from the proposed facility could have a sound magnitude reaching much farther. Arguably, one can easily see that the rooftop ventilation systems required to push and move large amounts of air … to counter toxic vapors and lead dust would forseeably permit the exit of large indoor reverberations that bounce around the building's interior and escape to the environment.

FIGURE 6

A mere handful of residential owners have been notified. Word has been passed, literally, by word of mouth, emails, or through the Pinecliff Homeowners Association website. The PHOA, however, is voluntary and does not include all homeowners in its geographic area. Many residential families could be "left out" of this important process.

A 1000 feet official notification by the Planning Department is requested.

For all the above reasons, the Planning Commission should not approve the application as it is deficient to a degree that it would not "promote public health, safety, and general welfare," Colo. Springs Ord. 7.5.704 B.

Sincerely,

Richard & Patricia M. Bursell

Richard and Pat Bursell
1125 Golden Hills Road
Pinecliff Residents
Colorado Springs, CO 80919

FIGURE 6

Commonwealth of Kentucky
Labor Cabinet

Steven L. Beshear, Governor **J.R. Gray, Secretary**

FOR IMMEDIATE RELEASE **CONTACT: Dick Brown**
(502) 564-5525

Kentucky Labor Cabinet issues 11 work place violations to Louisville firing range

Company cited for willful, serious violations over three-year period

FRANKFORT, Ky. – (Nov. 16, 2010) – The Kentucky Labor Cabinet's Occupational Safety and Health Compliance (KyOSH) office has issued citations and fines to Lost Lodge Properties LLC, dba Bluegrass Indoor Range in Louisville. The range, located at 4402 Kiln Ct., was issued four failure-to-abate, three repeat serious, three serious, and one non-serious violations for lead, electrical, hazard communication and respirator hazards. The fines associated with the citations total $372,000.

KyOSH inspectors first issued citations in August 2007 and later settled with the owner to pay a $5,000 fine with the promise that the issues cited had been abated in a timely manner. In April 2010, KyOSH inspectors found the issues had not been addressed and so have issued the citations and fines. Inspectors determined that the amount and location of lead found in the facility could pose a hazard to customers as well as employees. Should these hazards not be corrected, additional penalties may be assessed and the Cabinet can seek an injunction to close the business until the hazards are abated.

"We always prefer to work with a company or employer before issues reach this stage in order to avoid having to hand out such a large fine," said Labor Cabinet Secretary J.R. Gray. "However, in this case, we found multiple instances of the owners of this facility promising to take care of the problems we initially found, only to discover when we re-visited the site that nothing at all had been done to clean up and take care of the lead problem."

For employers wishing to avoid the situation described above, Secretary Gray encourages those who may have concerns about the safety and healthfulness of their facilities to contact the Division of Education and Training at 502/564-3070 to request a free, confidential, consultative visit.

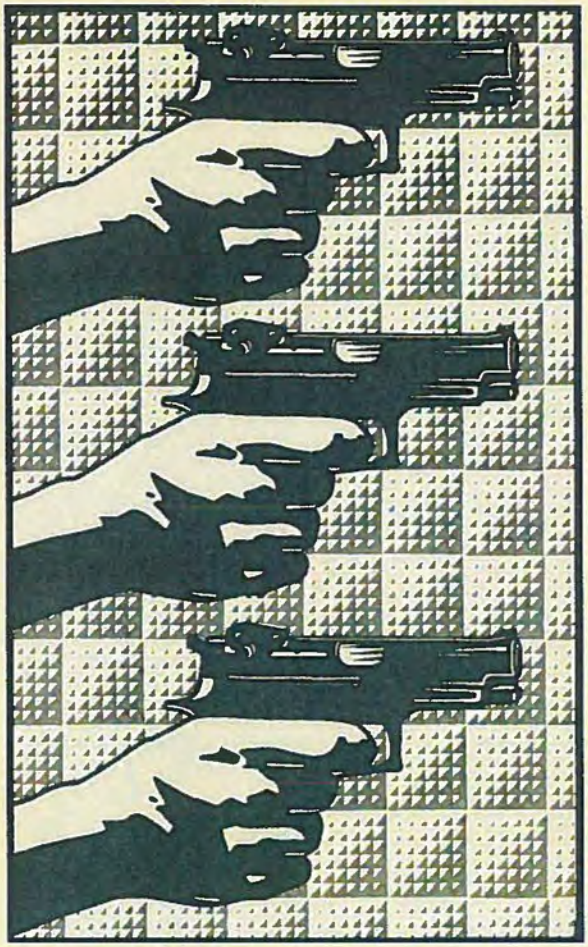
###

FIGURE 6

FIRING RANGES

The Airborne Lead Dust Hazard

Employer's Guide



Texas Department of Health

FIGURE 6

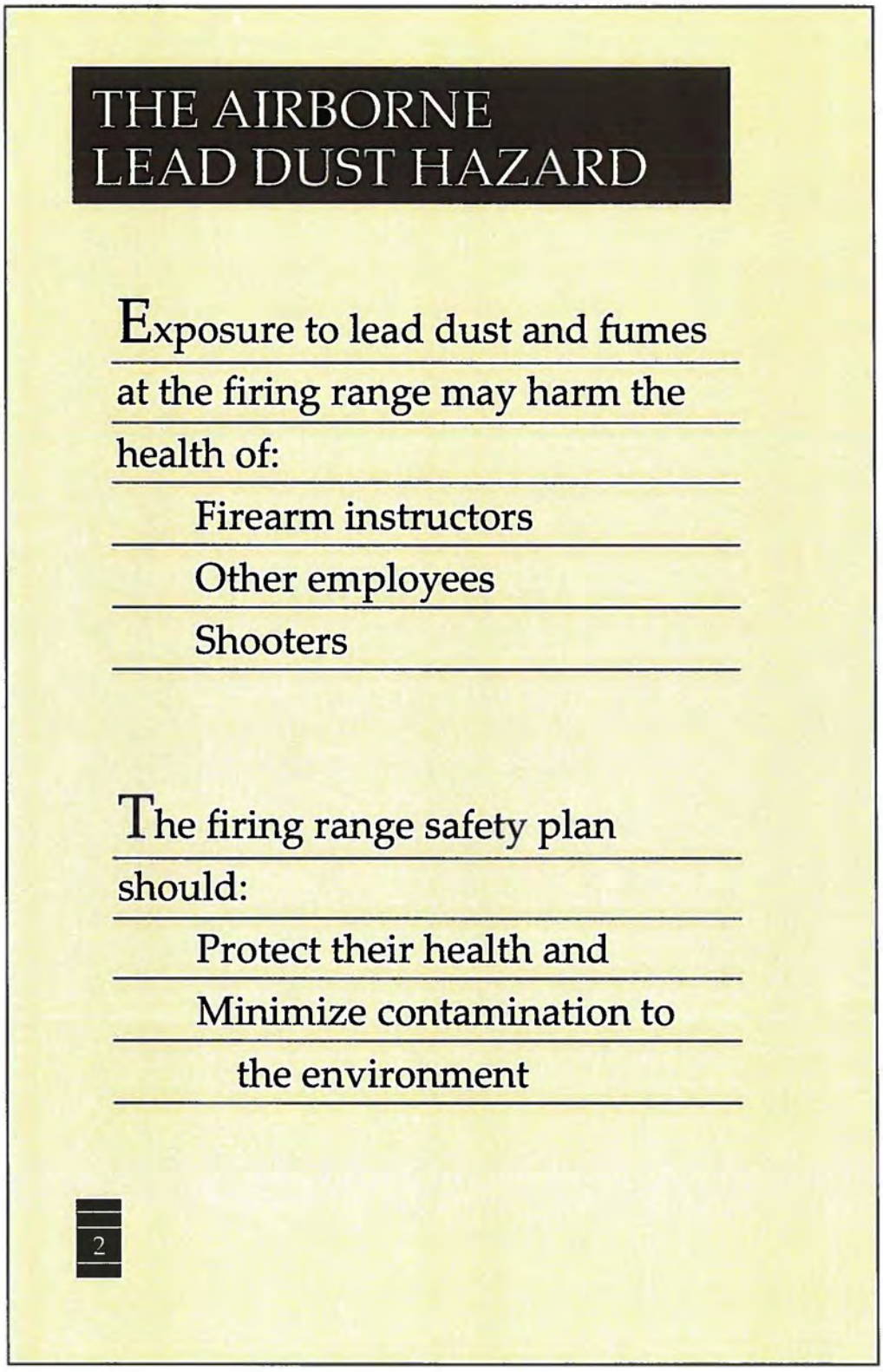
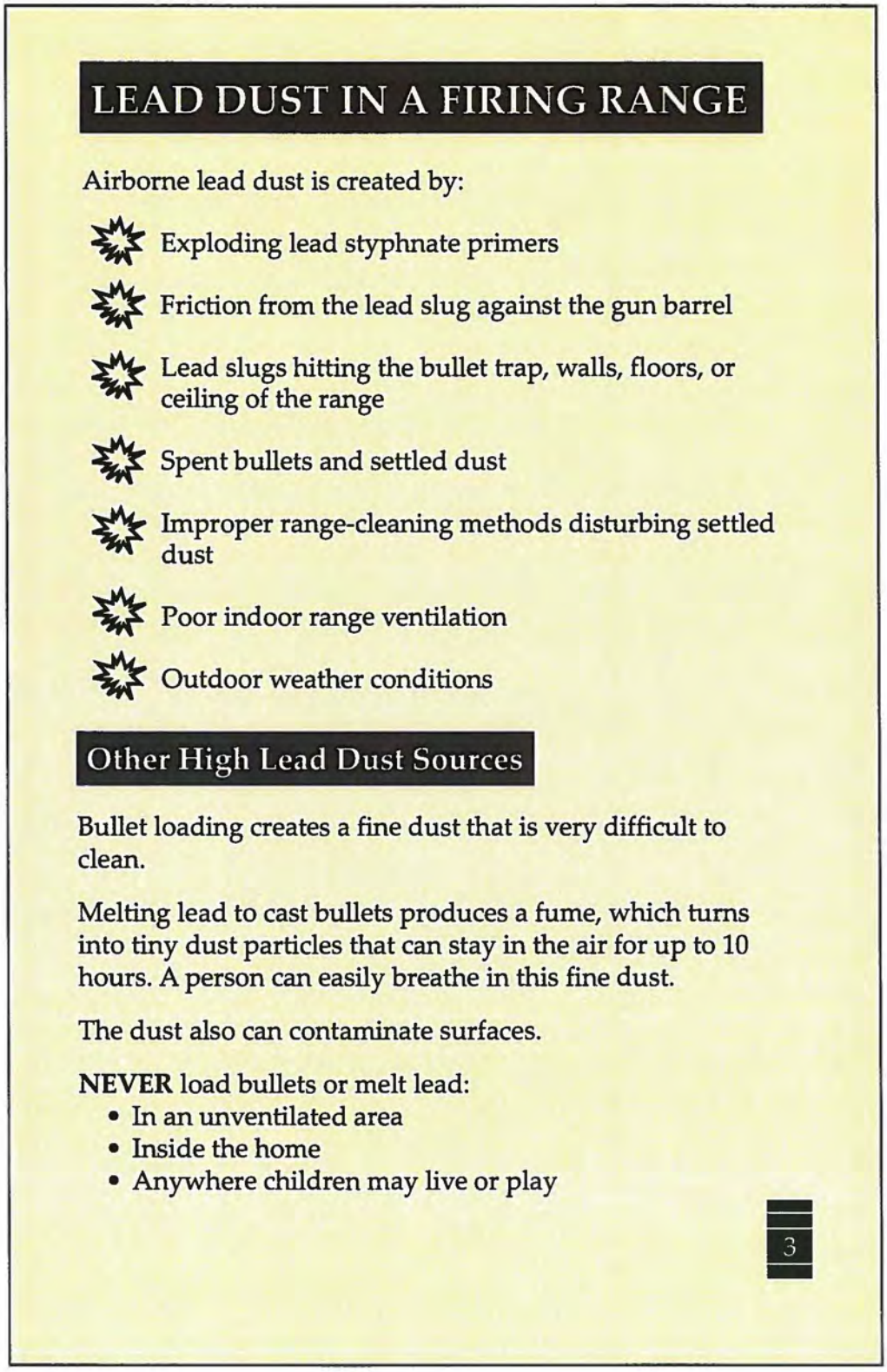

THE AIRBORNE
LEAD DUST HAZARD
Exposure to lead dust and fumes at the firing range may harm the health of:
Firearm instructors
Other employees
Shooters
The firing range safety plan should:
Protect their health and
Minimize contamination to the environment
2

FIGURE 6



LEAD DUST IN A FIRING RANGE

Airborne lead dust is created by:

- Exploding lead styphnate primers
- Friction from the lead slug against the gun barrel
- Lead slugs hitting the bullet trap, walls, floors, or ceiling of the range
- Spent bullets and settled dust
- Improper range-cleaning methods disturbing settled dust
- Poor indoor range ventilation
- Outdoor weather conditions

Other High Lead Dust Sources

Bullet loading creates a fine dust that is very difficult to clean.

Melting lead to cast bullets produces a fume, which turns into tiny dust particles that can stay in the air for up to 10 hours. A person can easily breathe in this fine dust.

The dust also can contaminate surfaces.

NEVER load bullets or melt lead:

- In an unventilated area
- Inside the home
- Anywhere children may live or play

3

FIGURE 6

Lead Dust Can Be Carried Home!

When employees and shooters are in the firing range, lead dust can:

Settle on their bodies
Settle on their hair
Settle on their clothes
Be picked up on their shoes

Then the dust can be carried to their cars and homes, where it can harm their family and children.

HEALTH EFFECTS

Lead is a strong poison that serves no known use once absorbed by the body. Lead dust can enter the body by breathing or eating.

The body stores lead in the:

BLOOD — for about 1 month
BODY ORGANS — for several months
BONES — for decades

It affects the:

Brain and nervous system
Digestive System
Reproductive System
Kidneys
Ability to make blood

Small amounts of lead can build up in the body and may cause temporary symptoms or permanent damage.

To find the amount of lead in the body, a health professional can take a blood sample from an adult or child and have it analyzed.

An elevated blood lead level is a sign that lead is building up in the body faster than it can be removed.

FIGURE 6

Adults

Adults can absorb lead at work or from hobbies. Lead dust and fumes can enter the body by:

- Breathing in lead dust and fumes
- Swallowing lead when drinking, eating, or smoking in contaminated areas
- Not washing their hands and faces after being in a contaminated area

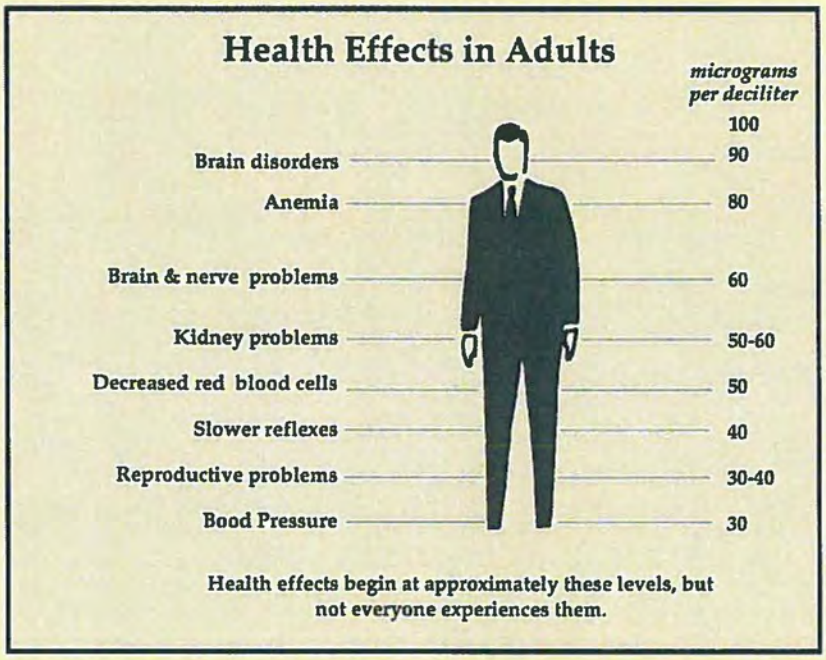


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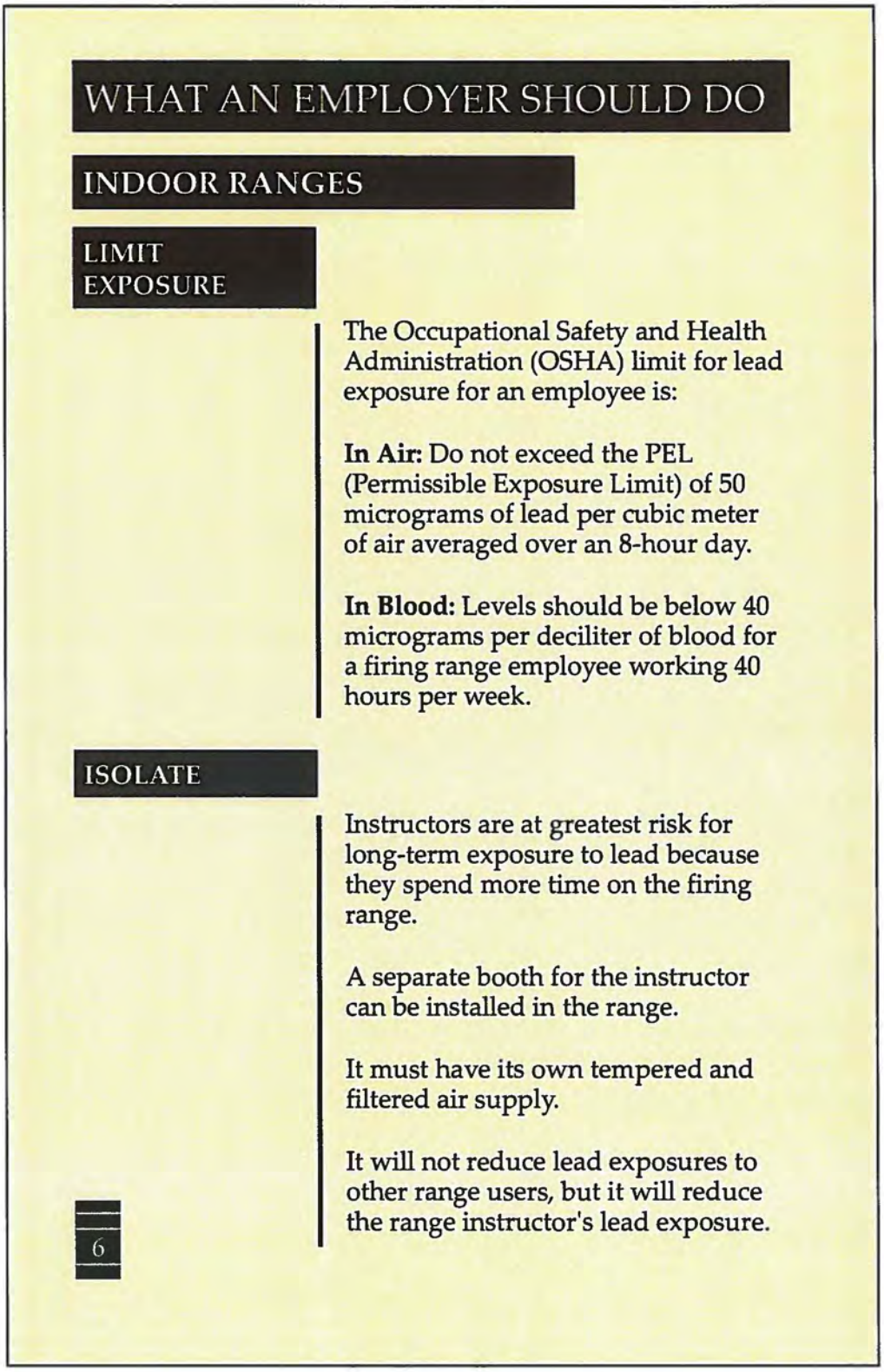
FIGURE 6



WHAT AN EMPLOYER SHOULD DO

INDOOR RANGES

LIMIT EXPOSURE

The Occupational Safety and Health Administration (OSHA) limit for lead exposure for an employee is:

In Air: Do not exceed the PEL (Permissible Exposure Limit) of 50 micrograms of lead per cubic meter of air averaged over an 8-hour day.

In Blood: Levels should be below 40 micrograms per deciliter of blood for a firing range employee working 40 hours per week.

ISOLATE

Instructors are at greatest risk for long-term exposure to lead because they spend more time on the firing range.

A separate booth for the instructor can be installed in the range.

It must have its own tempered and filtered air supply.

It will not reduce lead exposures to other range users, but it will reduce the range instructor's lead exposure.

6

FIGURE 6

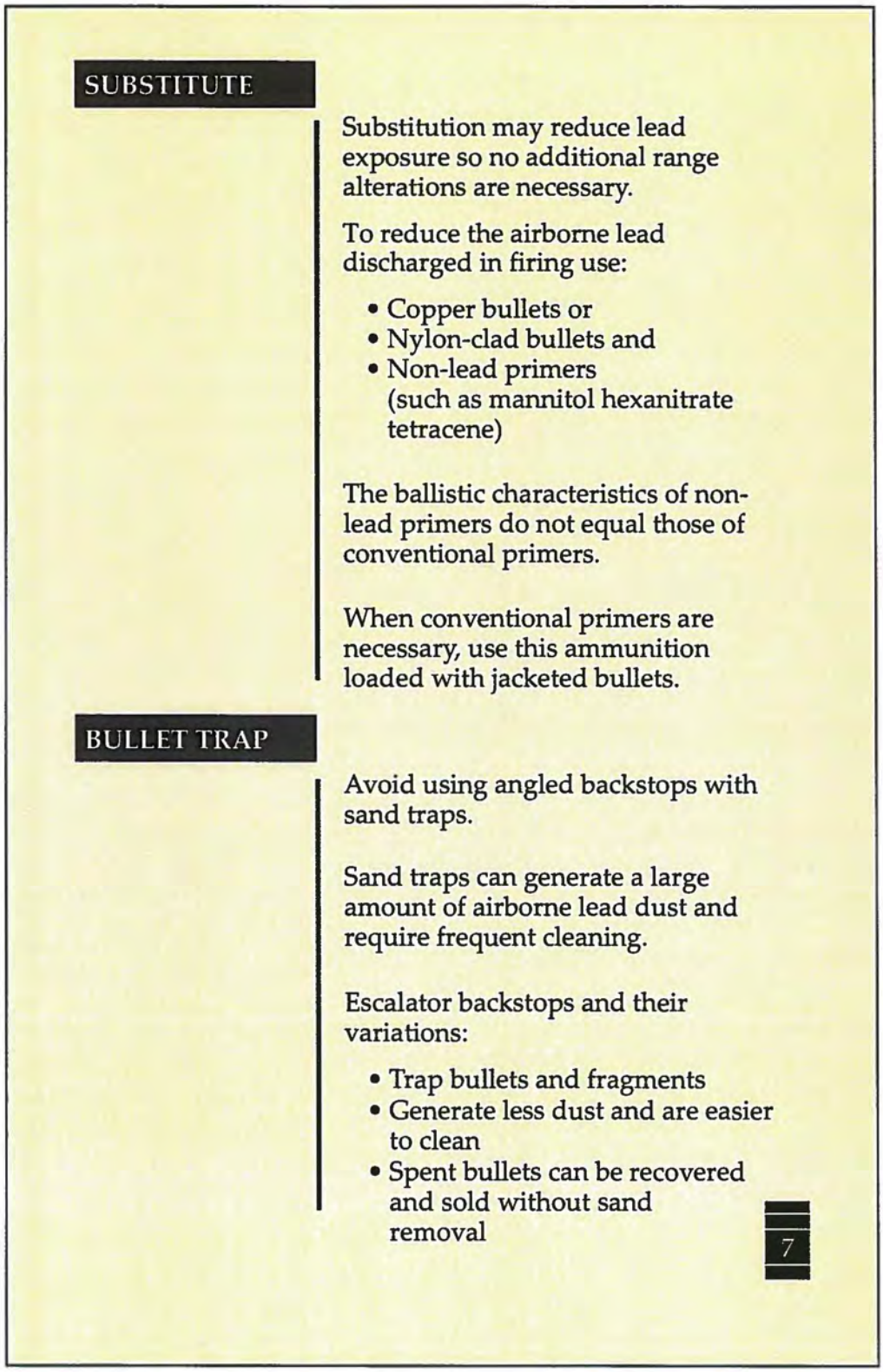

SUBSTITUTE
Substitution may reduce lead exposure so no additional range alterations are necessary.
To reduce the airborne lead discharged in firing use:
• Copper bullets or
• Nylon-clad bullets and
• Non-lead primers (such as mannitol hexanitrate tetracene)
The ballistic characteristics of non-lead primers do not equal those of conventional primers.
When conventional primers are necessary, use this ammunition loaded with jacketed bullets.
BULLET TRAP
Avoid using angled backstops with sand traps.
Sand traps can generate a large amount of airborne lead dust and require frequent cleaning.
Escalator backstops and their variations:
• Trap bullets and fragments
• Generate less dust and are easier to clean
• Spent bullets can be recovered and sold without sand removal
7

FIGURE 6

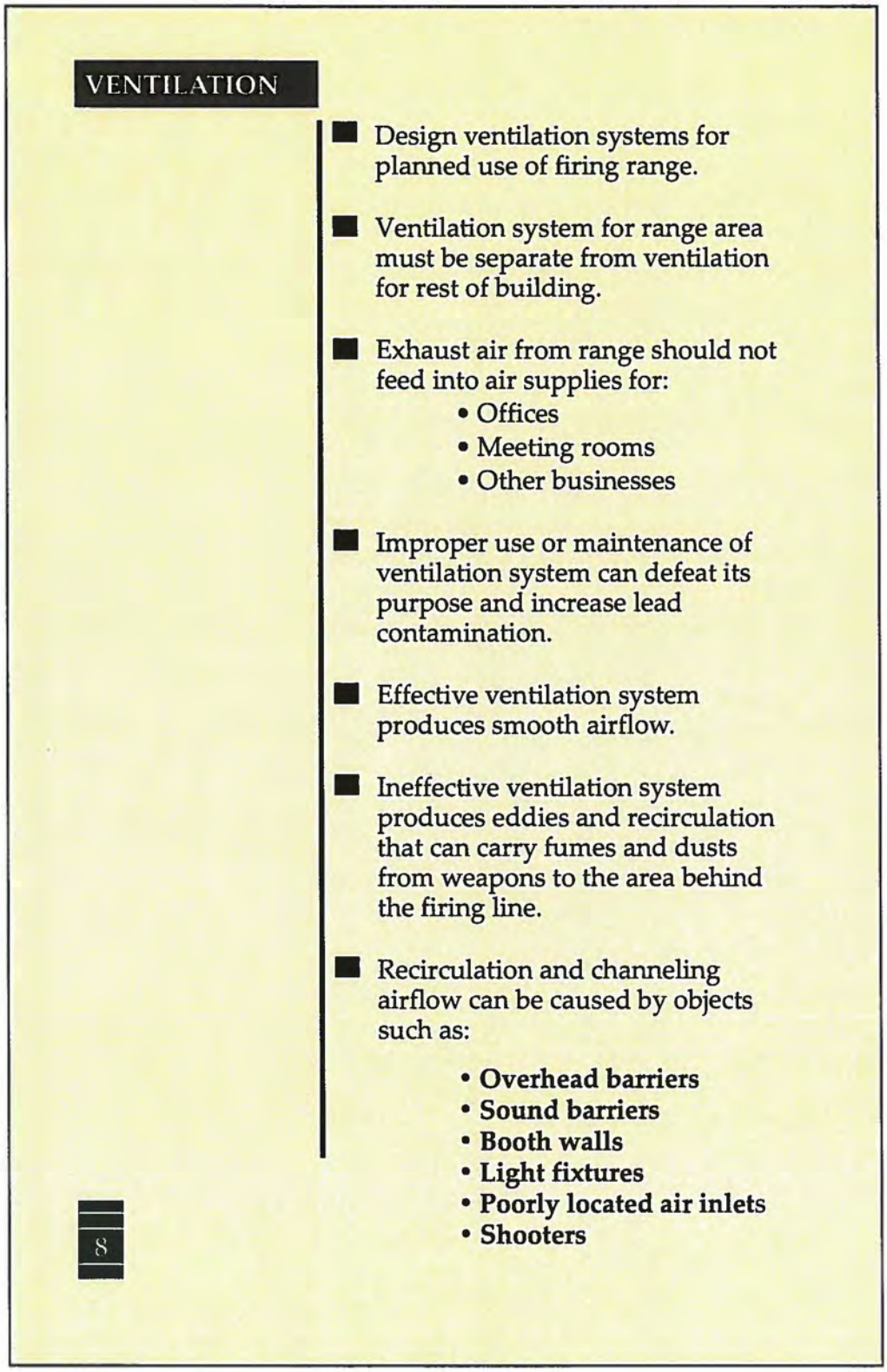

VENTILATION
Design ventilation systems for planned use of firing range.
Ventilation system for range area must be separate from ventilation for rest of building.
Exhaust air from range should not feed into air supplies for:
• Offices
• Meeting rooms
• Other businesses
Improper use or maintenance of ventilation system can defeat its purpose and increase lead contamination.
Effective ventilation system produces smooth airflow.
Ineffective ventilation system produces eddies and recirculation that can carry fumes and dusts from weapons to the area behind the firing line.
Recirculation and channeling airflow can be caused by objects such as:
• Overhead barriers
• Sound barriers
• Booth walls
• Light fixtures
• Poorly located air inlets
• Shooters
8

FIGURE 6

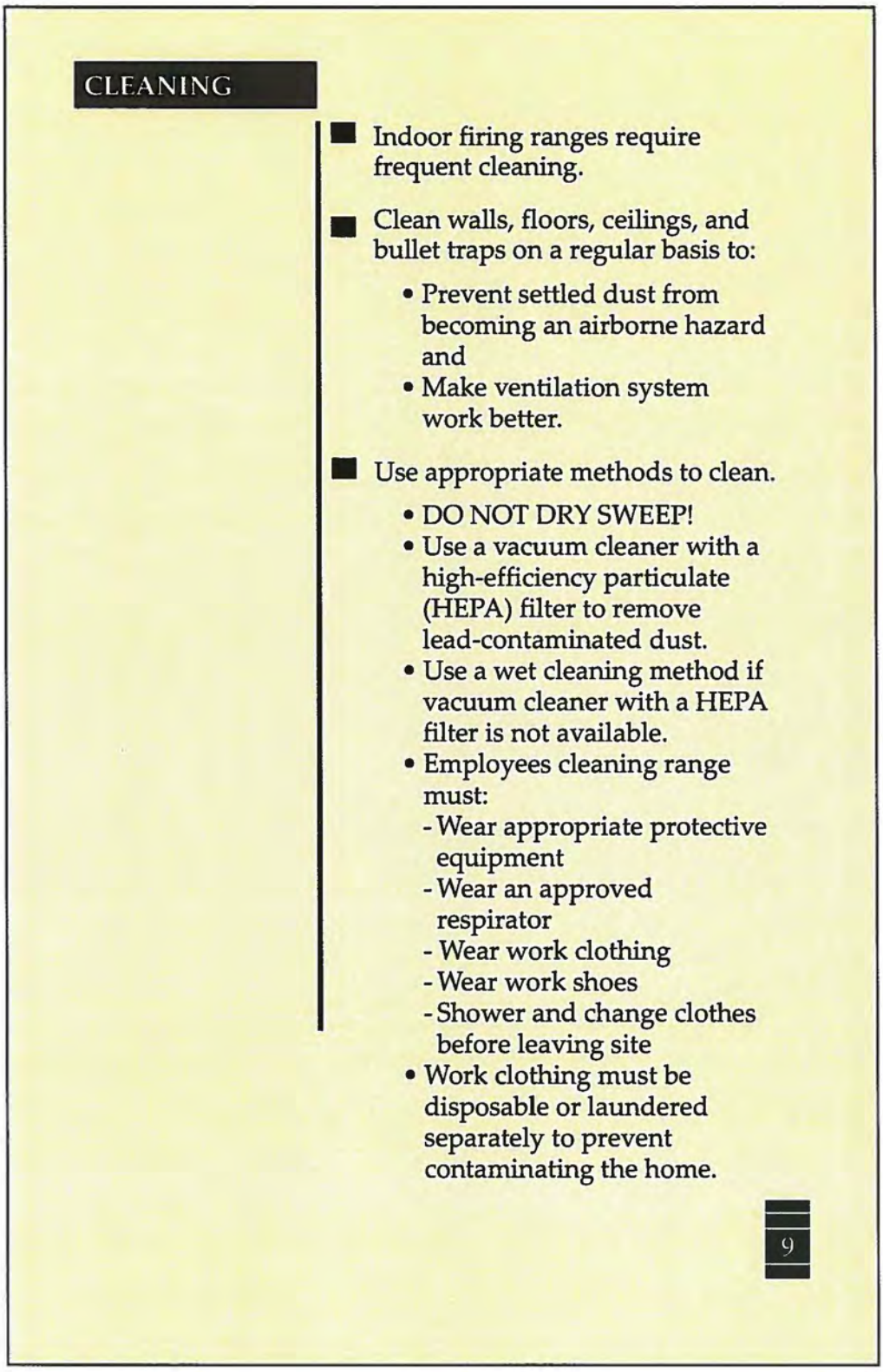

CLEANING
Indoor firing ranges require frequent cleaning.
Clean walls, floors, ceilings, and bullet traps on a regular basis to:
• Prevent settled dust from becoming an airborne hazard and
• Make ventilation system work better.
Use appropriate methods to clean.
• DO NOT DRY SWEEP!
• Use a vacuum cleaner with a high-efficiency particulate (HEPA) filter to remove lead-contaminated dust.
• Use a wet cleaning method if vacuum cleaner with a HEPA filter is not available.
• Employees cleaning range must:
- Wear appropriate protective equipment
- Wear an approved respirator
- Wear work clothing
- Wear work shoes
- Shower and change clothes before leaving site
• Work clothing must be disposable or laundered separately to prevent contaminating the home.
9

FIGURE 6

OUTDOOR RANGES

Airborne lead dust is also a concern in outdoor ranges.

Employees or shooters can be exposed to lead dust.

The surrounding environment can become contaminated by wind carrying the lead dust off-site and through water runnoff.

BULLET TRAP

Removing spent bullets or removing the face of a berm can create large quantities of lead dust.

Instead of earthen backstops, steel backstops similar to those constructed in indoor ranges, can be used.

- The trap holds the bullets and fragments, minimizing lead pollution in the soil.
- The spent bullets can be recovered and sold without soil removal.

REFERENCES

National Rifle Association, The Range Manual, 1999.

Crouch KG, Peng T, Murdock DJ, Ventilation Control of Lead in Indoor Firing Ranges: Inlet Configuration, Booth and Fluctuating Flow Contributions, NIOSH, 1990 (draft).

Juhasz AA, The Reduction of Airborne Lead in Indoor Firing Ranges by Using Modified Ammunition, US Department of Commerce, 1977.

ATSDR Toxicological Profiles, 1990.

OSHA, Occupational Lead Standard, 29 CFR 1910.1025

FIGURE 6

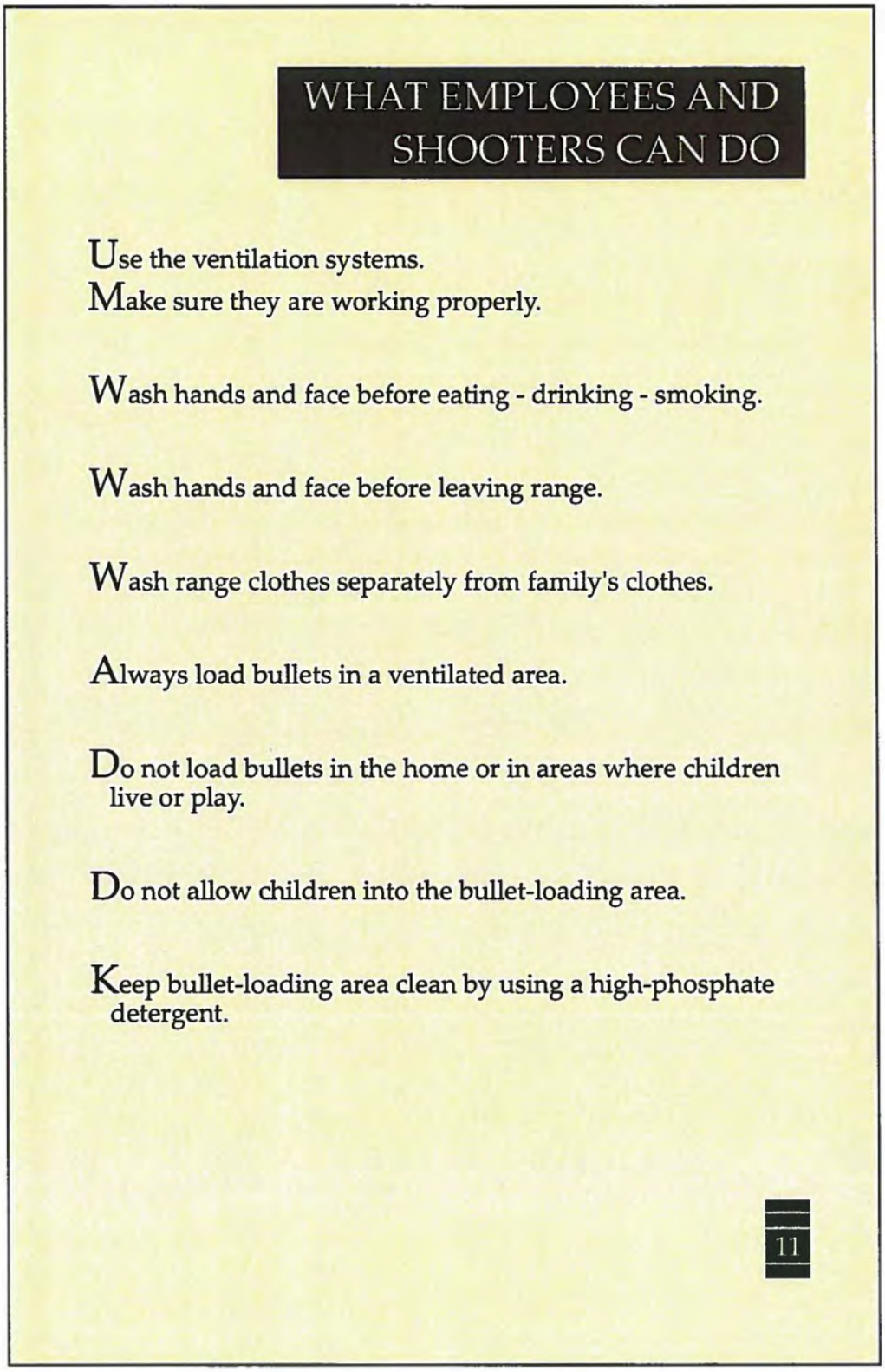

WHAT EMPLOYEES AND SHOOTERS CAN DO
Use the ventilation systems.
Make sure they are working properly.
Wash hands and face before eating - drinking - smoking.
Wash hands and face before leaving range.
Wash range clothes separately from family's clothes.
Always load bullets in a ventilated area.
Do not load bullets in the home or in areas where children live or play.
Do not allow children into the bullet-loading area.
Keep bullet-loading area clean by using a high-phosphate detergent.
11

FIGURE 6

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For more information on lead exposure and firing ranges, write or call:

Environmental & Occupational Epidemiology Program
Noncommunicable Disease Epidemiology &
Toxicology Division
Texas Department of Health
1100 W. 49th Street
Austin, Texas 78756
512-458-7269
512-458-7699 fax
Toll Free Number 1-800-588-1248

Texas Department of Health
#4644 3/96

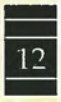


FIGURE 6

Exposure to Lead in Indoor Shooting Ranges

Lead is a well recognized health hazard in indoor shooting ranges. Therefore, managing and controlling lead exposure in this setting is important for protecting the health of those who work at the shooting range, shooters and others who spend time at the facility.

Why is lead a problem in indoor shooting ranges?

When a pistol, rifle or shotgun is fired, the primer ignites and releases very small lead particles into the air at the shooting line. Lead particles are also released as the bullet passes through the gun barrel, and lead particles are ejected into the air as the bullet strikes the target and trap. These lead particles spread through the air and can be inhaled. Although some of the airborne lead may be removed by an exhaust ventilation system, the hazard is not entirely controlled or eliminated. Some of the lead may also travel into other rooms or areas of the facility away from the shooting location. Lead particles may be deposited on surfaces and can build up over time if the range and other rooms are not cleaned frequently or thoroughly. Surface lead can be picked up on the hands and swallowed when eating, drinking or smoking. Lead can also be tracked out of the range area on shoes, clothing and equipment.

What are the health effects of lead exposure?

Inhaled or ingested lead can build up in the body, often without any obvious symptoms. However, frequent exposure, particularly at high levels, can harm the nervous, digestive and reproductive systems and produce a wide variety of symptoms. Lead can harm the brain, damage the kidneys and affect the ability of bone marrow to make blood. The U.S. Centers for Disease Control and Prevention (CDC) and the Pennsylvania Department of Health (PADOH) consider the blood lead level (BLL) to be elevated for both children and adults if it exceeds 10 microgram per deciliter (µg/dL) of blood. Lead levels can be measured through a simple blood test that can be performed by most health care providers and will identify recent exposure. Lead in the bloodstream can take months to be eliminated from the body even, after exposure has ended. Lead that has been deposited in organs, teeth and bones takes much longer to be eliminated and can prolong the elevation of blood lead levels.

FIGURE 6

Blood Lead Levels and Potential Associated Health Risks

Blood Lead Level (BLL) (µg/dL)

5-9	10-19*	20-39*	40+*
➢ Blood pressure changes can occur at BBL >6	➢ Spontaneous abortions ➢ Developmental delay of fetus ➢ Impaired or abnormal kidney function	➢ Non-specific symptoms *Headache* *Fatigue* *Sleep disturbance* *Poor appetite* *Constipation* *Diarrhea* *Muscle & joint pain* ➢ Impaired brain function *Decreased short term memory* *Attention problems* *Distractibility* *Mood swings*	➢ Kidney damage ➢ Damage to nerves in arms, legs, and organs ➢ Reduced touch sensitivity ➢ Decreased reaction times ➢ Foot/hand drop ➢ Lowered sperm counts and abnormal sperm ➢ Impaired development of red blood cells

* Effects are additional to those noted to occur at lower blood level levels

What protection measures should be used at indoor shooting ranges?

FIGURE 6

Persons who use the firing range, as well as those working at or frequently visiting the range, can be exposed to lead in the environment. Lead exposure at the firing range can be minimized through the following practices and procedures:

Air Handing

- Ensure that an adequate ventilation system is in place, working properly and has routine preventive maintenance performed on it.
- The ventilation system should be evaluated by a ventilation engineer or industrial hygienist with shooting range experience at installation and on a periodic basis. Swirling air currents at the shooting line increase airborne lead exposure.
- Keep the range area uncluttered. Airflow patterns and ventilation system efficiency can be disrupted by obstacles.

Cleaning and Maintenance

- Every shooting range should have a routine cleaning and maintenance plan and schedule.
- A high efficiency particulate air (HEPA) filtration vacuum is the only type of vacuum that should be used in order to prevent lead from re-entering the air from surfaces. A HEPA vacuum is different from a regular shop-type vacuum, because HEPA filters trap the very fine lead particles that are too small to see.
- Provide personal protective clothing and equipment to anyone cleaning the range. Include appropriate respiratory protection (a minimum of a half-face air-purifying respirator with P100 cartridges), shoes, clothing, hats and disposable coveralls. Disposable items should be removed and bagged before leaving the facility.
- Never dry sweep (broom/dust mop), as this will increase the level of lead in the air.
- Always use wet method floor cleaning and use high phosphate detergent and water to clean range floors and surface areas.
- Never hand pick spent bullet cartridges without the use of disposable gloves.

Always Use Good Hygiene Practices

- Provide a clean area for people to take breaks and eat.
- Never eat, drink or smoke in the range shooting booths or adjacent areas.
- Always wash your hands, arms and face with cool water and soap before eating, drinking or smoking. Fine particles of lead dust can easily adhere to your skin, hair and clothing, resulting in the accidental ingestion of lead.

FIGURE 6

- Lead dust can settle on your body, clothing, shooting mats and equipment, where it can be carried into your car and home. Always change out of contaminated clothing articles before leaving the firing range and place them in a non-mesh washable storage bag for laundering.
- Wash range clothing separately from the rest of the clothing; this prevents any possibility of contaminating other clothes.
- Shoes, boots and other specialized clothing used at the range should be left at the range, or stored in a separate sealed plastic bag for use only at the range. This will prevent lead dust from entering your automobile and home.
- Specialized clothing such as vests, jackets, gloves, etc. should be professionally cleaned on a regular basis. This will prevent the accumulation of lead particulates and reduce personal contamination.
- Shower as soon as arriving home, as this ensures that any lead residue is washed out of your hair and off the rest of the body.

Other Measures

- Provide information on lead hazards and protective measures during firearm safety courses.
- Offer non-leaded ammunition, including jacketed bullets and non-leaded primers, when possible.
- Frequent shooters, coaches and range officers should also have blood-lead tests done on a regular basis. Workers should be offered blood-lead tests on a periodic basis.

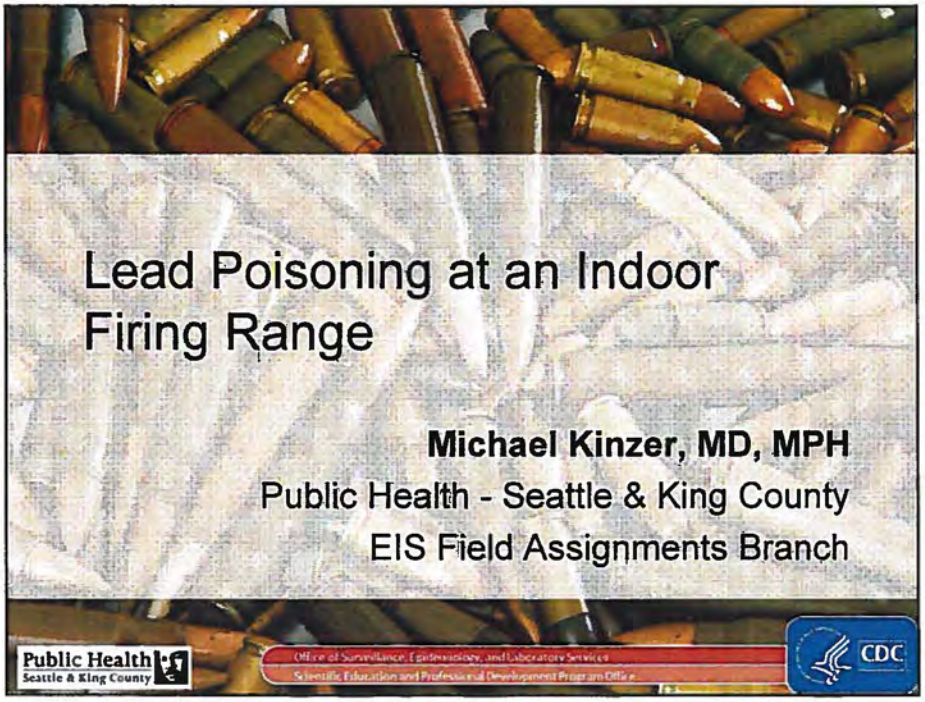
For more information about avoiding lead hazards in firing ranges,
please visit the following websites:

MMWR—Lead Exposure From Indoor Firing Ranges Among Students on Shooting Teams,
Alaska 2002-2004
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5423a1.htm

Fact Sheet: Indoor Firing Ranges, Centers for Disease Control and Prevention, National
Institute for Occupational Safety & Health
http://www.cdc.gov/niosh/topics/ranges/

Lead Management & OSHA Compliance for Indoor Shooting Ranges www.rangeinfo.org/ resource_library/facility…/Lead-OSHA.pdf

FIGURE 6


Lead Poisoning at an Indoor Firing Range
Michael Kinzer, MD, MPH
Public Health - Seattle & King County
EIS Field Assignments Branch
Public Health
Seattle & King County
CDC

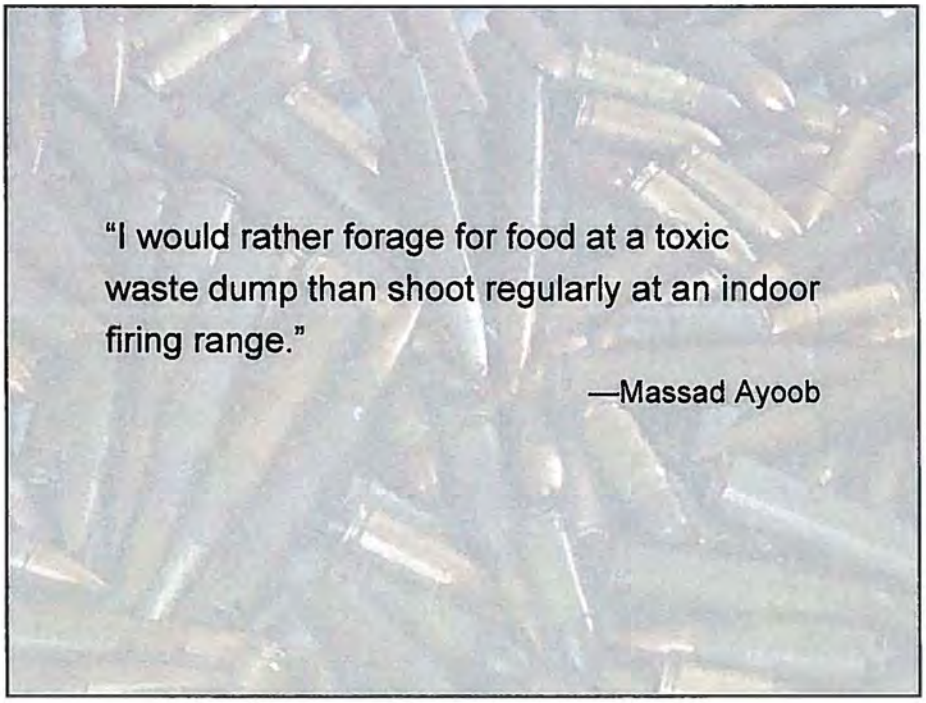

"I would rather forage for food at a toxic waste dump than shoot regularly at an indoor firing range."
—Massad Ayoob

FIGURE 6

The Call

- November 30, 2012
- Washington State Department of Labor & Industries (L&I) requests support from Public Health – Seattle & King County (PHSKC)
- An unknown number of workers at an indoor gun range had elevated blood lead levels (BLLs)
- Some as high as 48 µg/dL

Outline

- Lead in ammunition
- Lead poisoning
- The investigation
- Conclusions

2

FIGURE 6

Lead

- Soft, malleable metal
- Widespread
- Easy to extract
- Easy to work with

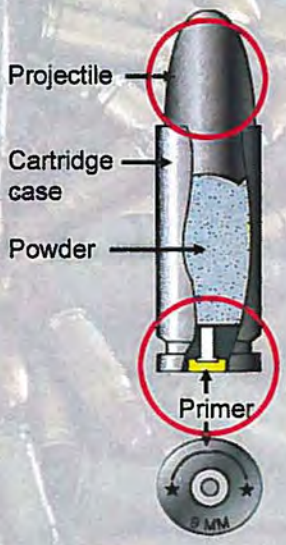
Lead ore

Uses for Lead

FIGURE 6

Lead in Ammunition

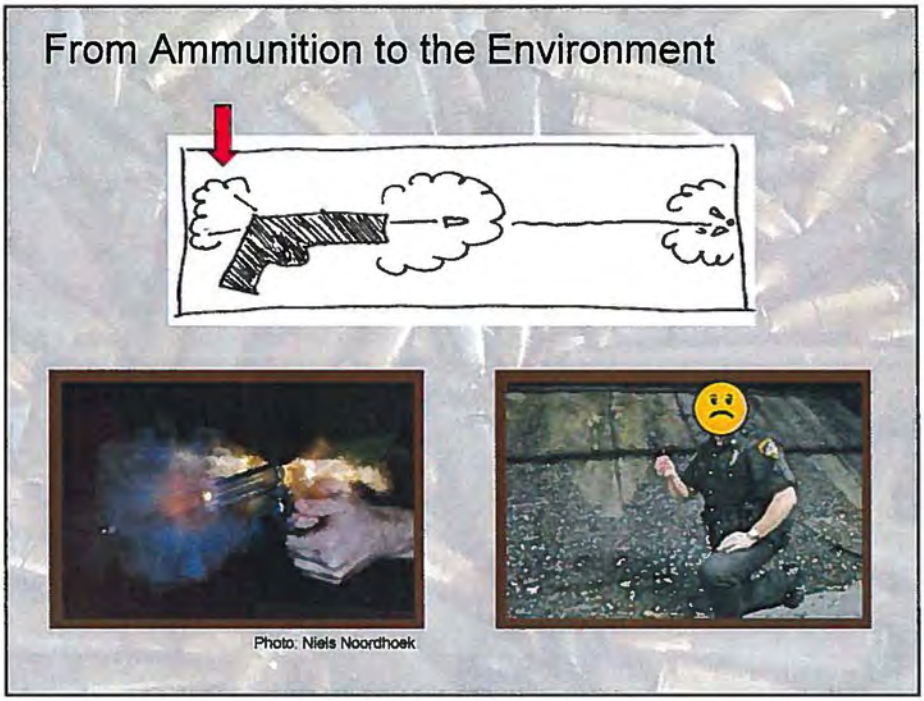
- Projectile (bullet)
  - Elemental lead
- Primer
  - Lead styphnate
  - Lead azide
  - Lead peroxide
  - Lead nitrite



From Ammunition to the Environment

Photo: Niels Noordhoek

FIGURE 6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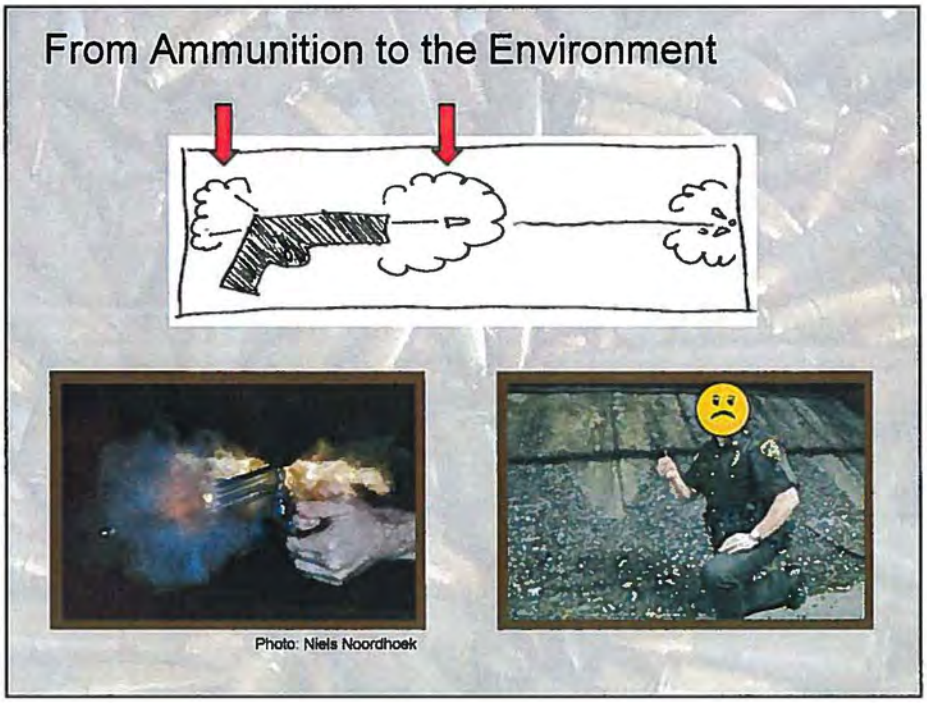
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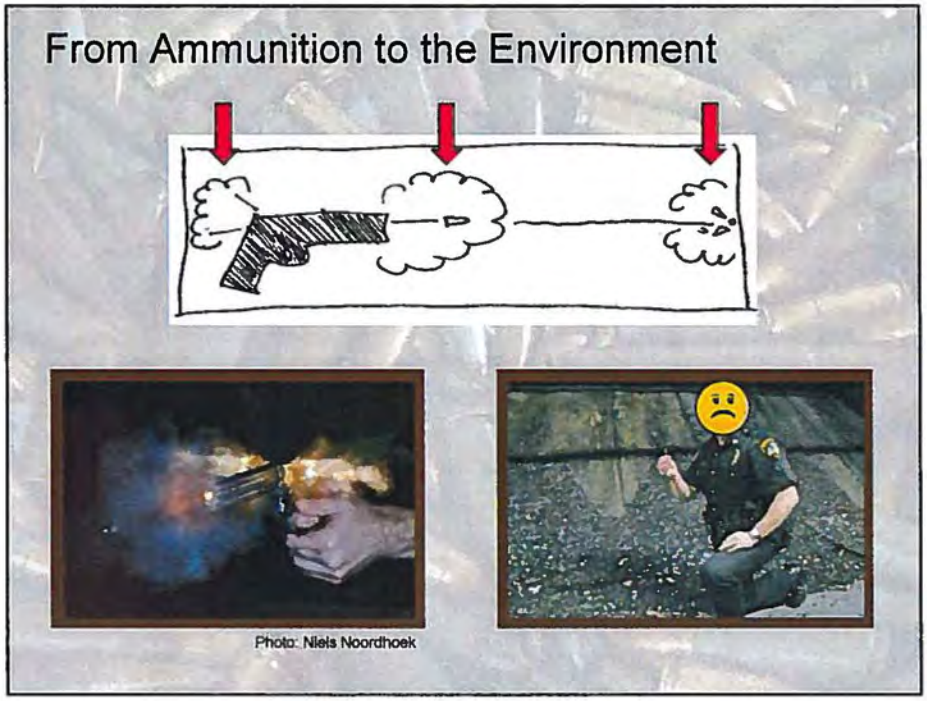
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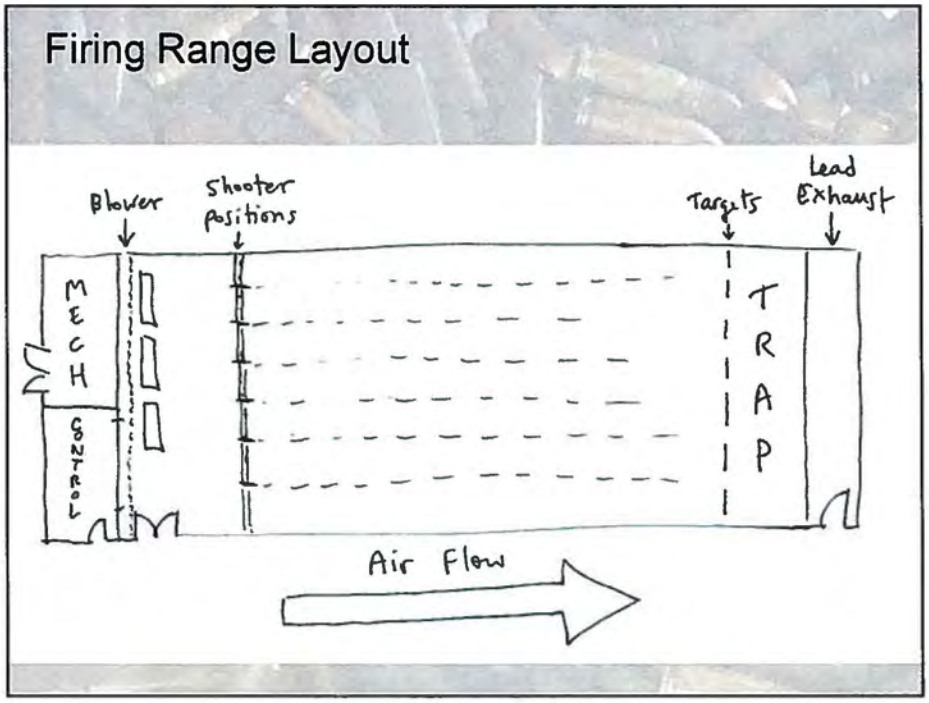
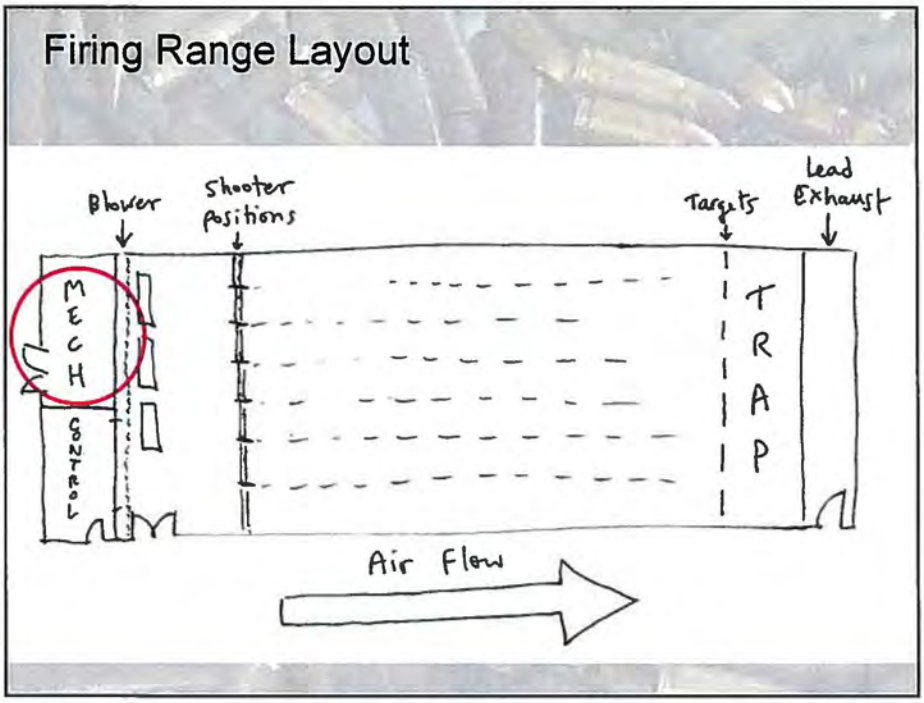

Firing Range Layout
Blower
Shooter positions
Targets
Lead Exhaust
MECH
CONTROL
TRAP
Air Flow

FIGURE 6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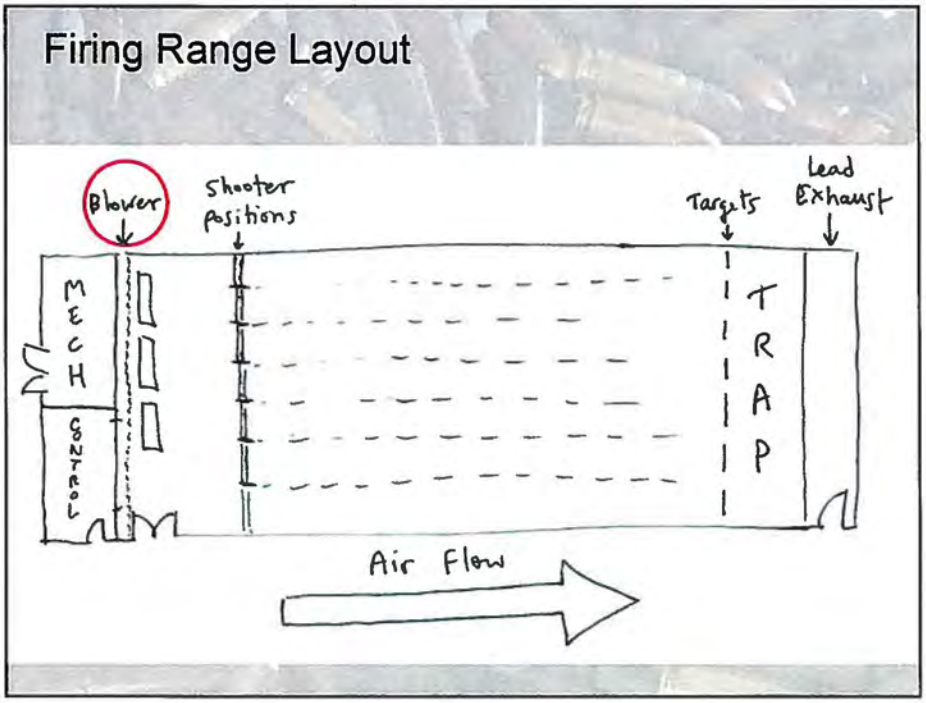
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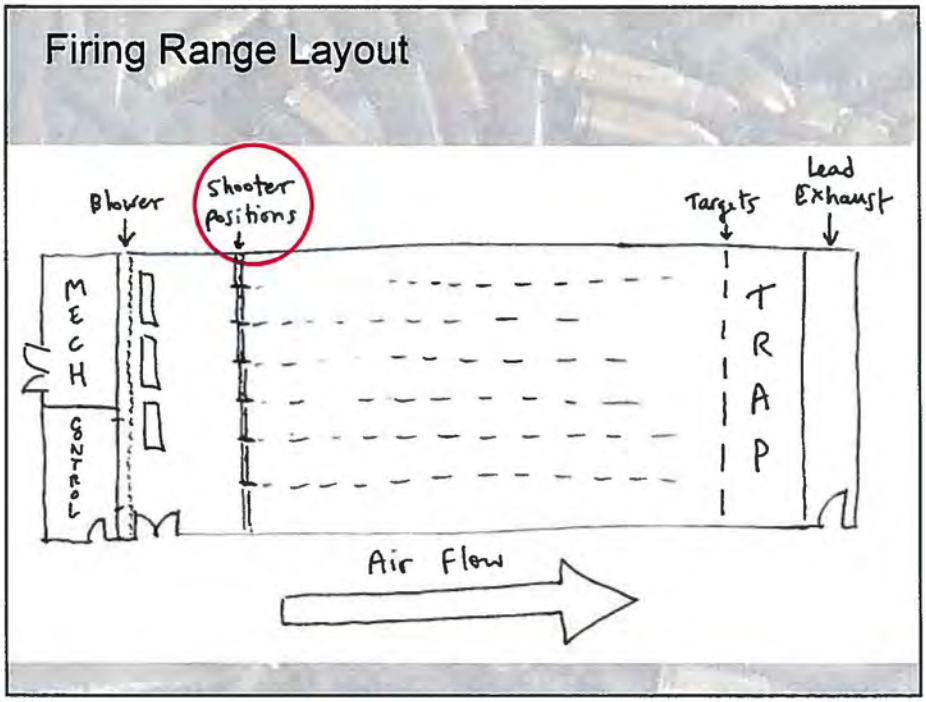
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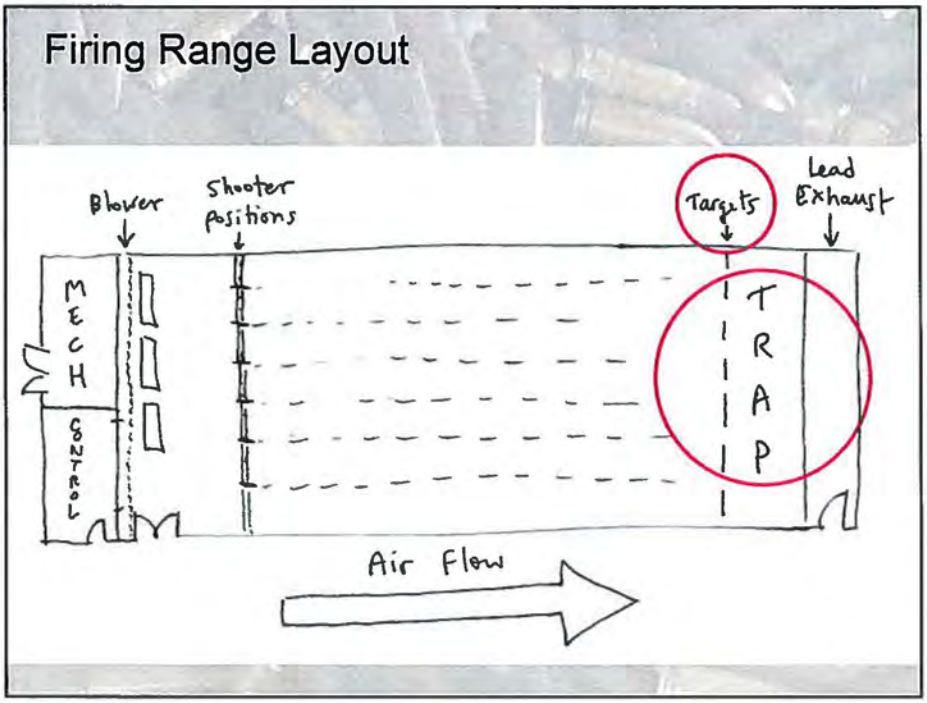
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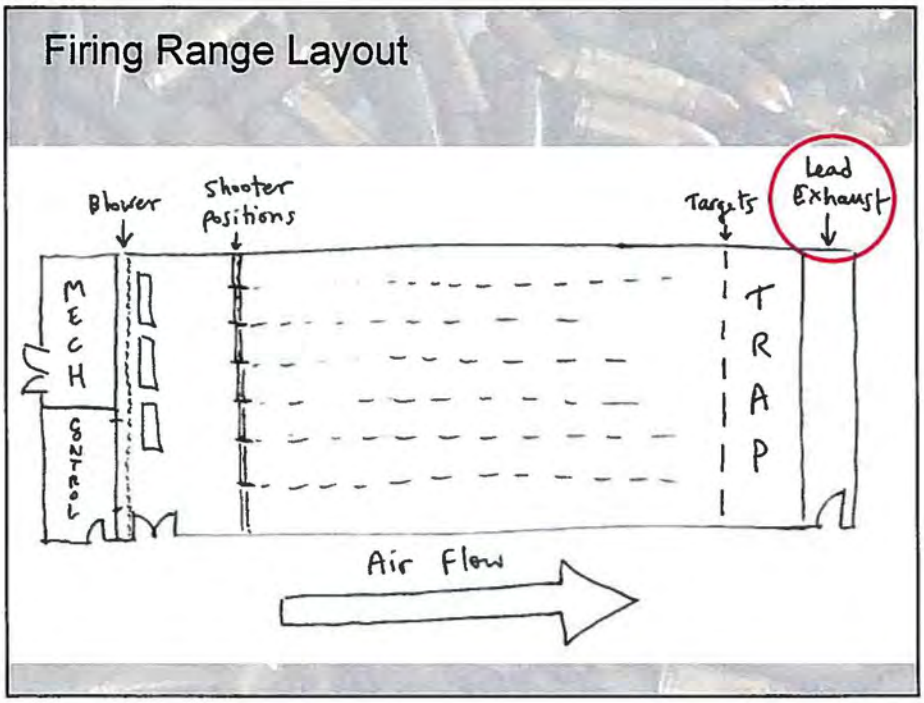
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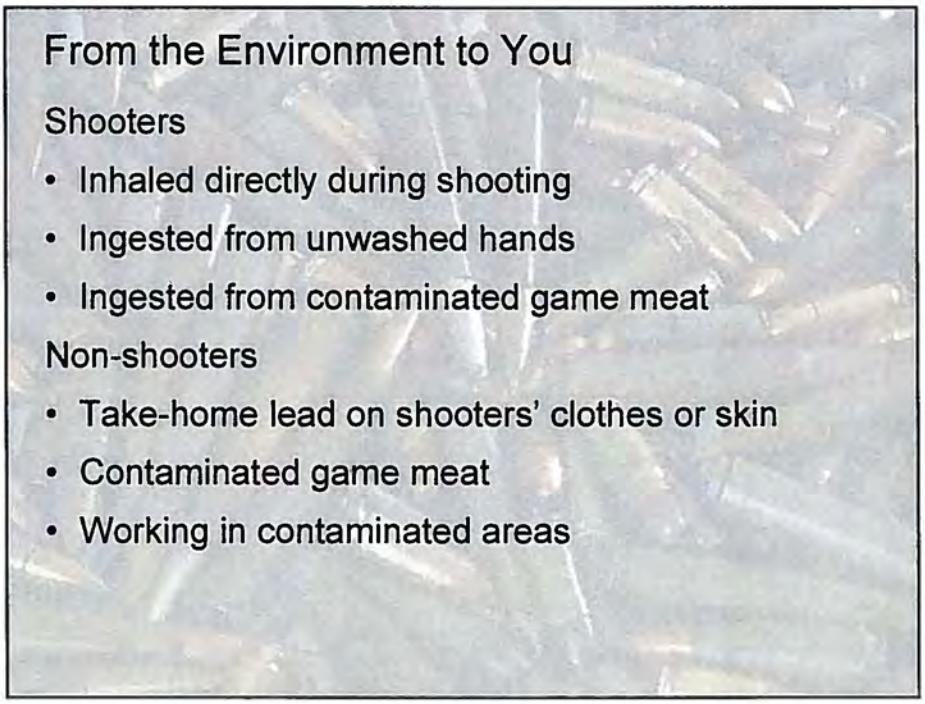
From the Environment to You
Shooters
• Inhaled directly during shooting
• Ingested from unwashed hands
• Ingested from contaminated game meat
Non-shooters
• Take-home lead on shooters' clothes or skin
• Contaminated game meat
• Working in contaminated areas

FIGURE 6

Lead Toxicity

Neurological, cardiovascular, renal, reproductive, immunological, gastrointestinal systems

Symptoms

- Numbness/tingling
- Muscle weakness
- Headache
- Memory loss
- Insomnia
- Mood changes
- Cramps, nausea/vomiting

Diagnosis & Treatment

Diagnosis

- **Blood lead level (BLL) in µg/dL**
- Toxicity with levels ≥5 µg/dL

Treatment

- **Removal from lead exposure**
- Chelation

FIGURE 6

Your Examples

There are no regulations to protect the shooting public at any of the nation's 16,000 to 18,000 indoor gun ranges. Yes, the health department in Seattle decided to act. Do you have other examples of taking action without clear regulatory authority?

Type your examples in the chat box.

FIGURE 6

Firing Range

- Indoor firing range
  - 8 bays, 24 lanes
- Sand bullet trap
- Jacketed ammo
- Historical lead safety issues
  - BLLs as high as 83 µg/dL

1 bay, 3 shooting lanes

Remodeling Operations

September 2012

- Sand removal and lead recovery
- Construction of second floor range begun

Contaminated sand in parking lot

FIGURE 6

Methods

Environmental evaluations

Blood lead levels

Worker interviews

Environmental Evaluation

- L&I
  - Inspection, follow-up
- PHSKC Environmental Health
  - Surface wipes, interviews
- Contractors & range owner
  - IH consultants
- Sampling
  - Surface ($\mu g/m^2$)
  - Air ($\mu g/m^3$)
  - Personal breathing zone (PBZ) ($\mu g/m^3$)

FIGURE 6

Blood Lead Levels

- All directly or indirectly exposed individuals
- Sources
  - Employers
  - Clinics
  - Laboratories
  - State and local blood lead registries

Interviews

- Informal discussions with range owner and construction employers
- Standardized phone interviews with workers
  - Demographics, household members
  - Extent of exposure
  - Lead safety
  - Blood lead testing
  - Health status
  - Any other lead exposures

FIGURE 6

Environmental Evaluation

- L&I
  - High surface and air levels in off-limits and public areas
  - Range air limits exceeded after 30 minutes exposure
  - Inappropriate ventilation
  - Inadequate lead safety behaviors
- PHSKC Environmental Health
  - High surface lead levels
  - Contamination beyond worksite

FIGURE 6