

Hamilton County Sheriff & Cincinnati Police Department **REGIONAL SAFETY COMPLEX**

CONCEPTUAL DESIGN PACKAGE

PRELIMINARY PROGRAMMING SUMMARY

Regional Safety Complex

Hamilton County Sheriff Training Facility	SF	Qty	Total SF
Vestibule	100	1	100
Lobby / Arrival / Multifunction	125	3	375
Offices (3 Private)	250	1	250
Shared Office (6 Desks)	250	1	250
Conference	250	1	250
Staff Toilets, Showers and Lockers	100	2	200
Training Classrooms and Storage	825	2	1,650
Public Toilets, Showers and Lockers (Men)	325	1	325
Public Toilets, Showers and Lockers (Men)	275	1	275
Break Room / Multifunction Assembly	150	1	150
Armory Maintenance Storage Closet	250	1	250
Armory (Weapon Storage)	150	1	150
Ammo Storage w/ Dock Door	280	1	280
Patio	450	1	450
MEP/IT	125	1	125
Janitor	60	1	60
Circulation	1,000	1	1,000
Subtotal			6,140

Cincinnati Police Department Training Facility	SF	Qty	Total SF
Vestibule	100	1	100
Lobby / Arrival / Multifunction	125	3	375
Offices (3 Private)	250	1	250
Shared Office (6 Desks)	250	1	250
Conference	250	1	250
Staff Toilets, Showers and Lockers	100	2	200
Training Classrooms and Storage	825	2	1,650
Public Toilets, Showers and Lockers (Men)	325	1	325
Public Toilets, Showers and Lockers (Men)	275	1	275
Break Room / Multifunction Assembly	150	1	150
Armory Maintenance Storage Closet	250	1	250
Armory (Weapon Storage)	150	1	150
Ammo Storage w/ Dock Door	280	1	280
Patio	450	1	450
MEP/IT	125	1	125
Janitor	60	1	60
Circulation	1,000	1	1,000
Subtotal			6,140

Outdoor Shooting Range & Training Area

Hamilton County Outdoor Shooting Range	SF	Qty	Total SF
100 YD Firing Range (30 Lanes)			
300 YD Firing Range (Shared w/ CPD)			
ATF Vaults with Screen Wall (2 Vaults)			
Storage	1,000	1	1,000

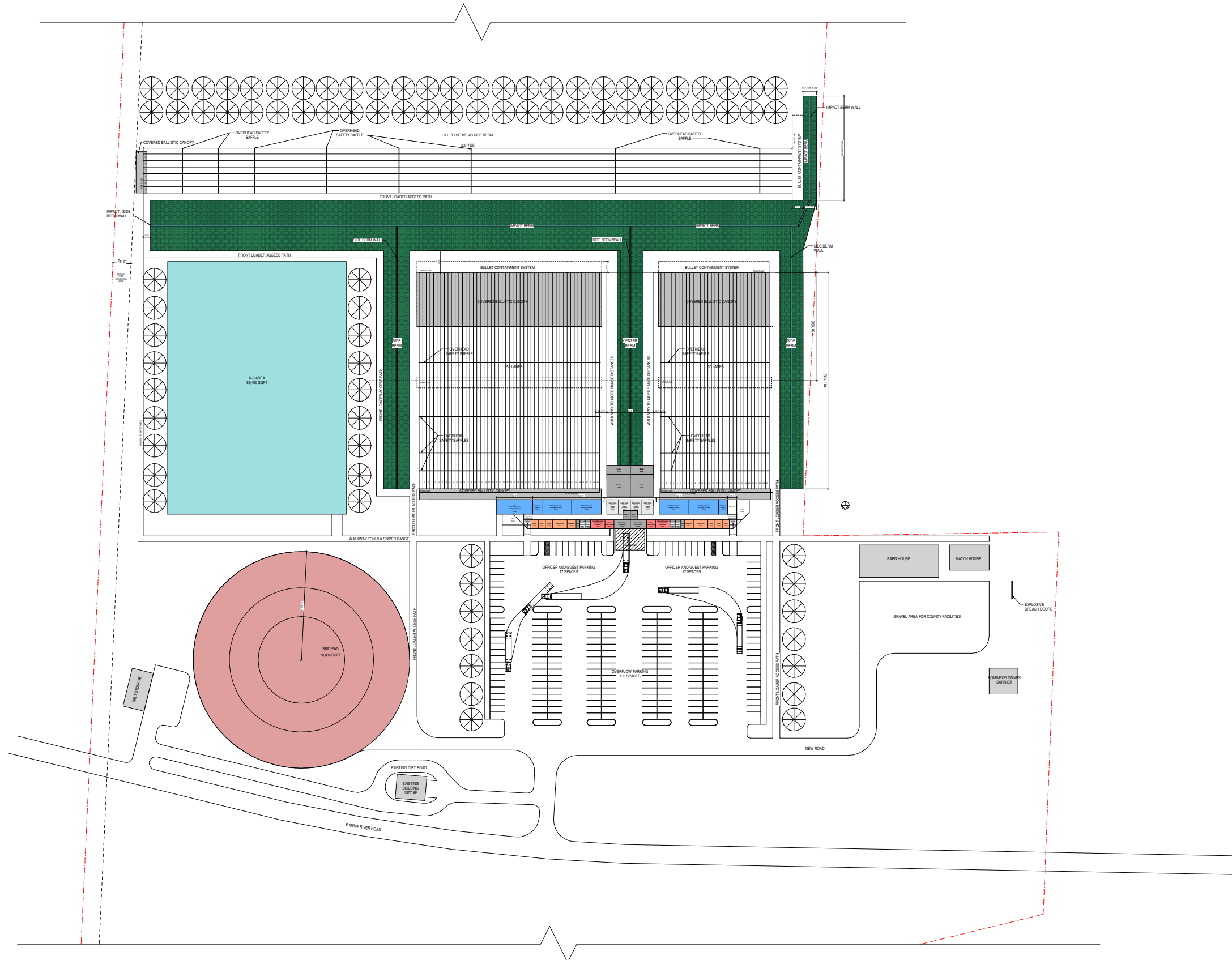
Hamilton County Training Facilities	SF	Qty	Total SF
Match House	5,000	1	5,000
Barn House (Two stories w/ multiple stairs)	2,000	1	2,000
Bomb/Explosives Barrier (20' Tall)			
Explosive Breach Doors (4 Doors)			

Cincinnati Police Department Outdoor Shooting Range	SF	Qty	Total SF
100 YD Firing Range (50 Lanes)			
300 YD Firing Range (6 Lanes)			
Storage	1,000	1	1,000

K-9 Classroom & Outdoor Training Area	SF	Qty	Total SF
Classroom (30 seats) & Storage	1,000	1	1,000
K-9 Training Area	89,000	1	89,000
Skid Pad 280' x 280' (Shared w/ HCS)			

Utility and Miscellaneous	SF	Qty	Total SF
Salt Storage	2,000	1	2,000

CONCEPT SITE PLAN



CONCEPT SITE LAYOUT

SNIPER SHOOTING RANGE

300 YARD SNIPER RANGE: 6 LANES

K9

K9 TRAINING AREA

SKID PAD

SUPPORT

- SALT STORAGE
- EXISTING BUILDING
- ENTRY GATE
- PARKING :200 CARS

CPD

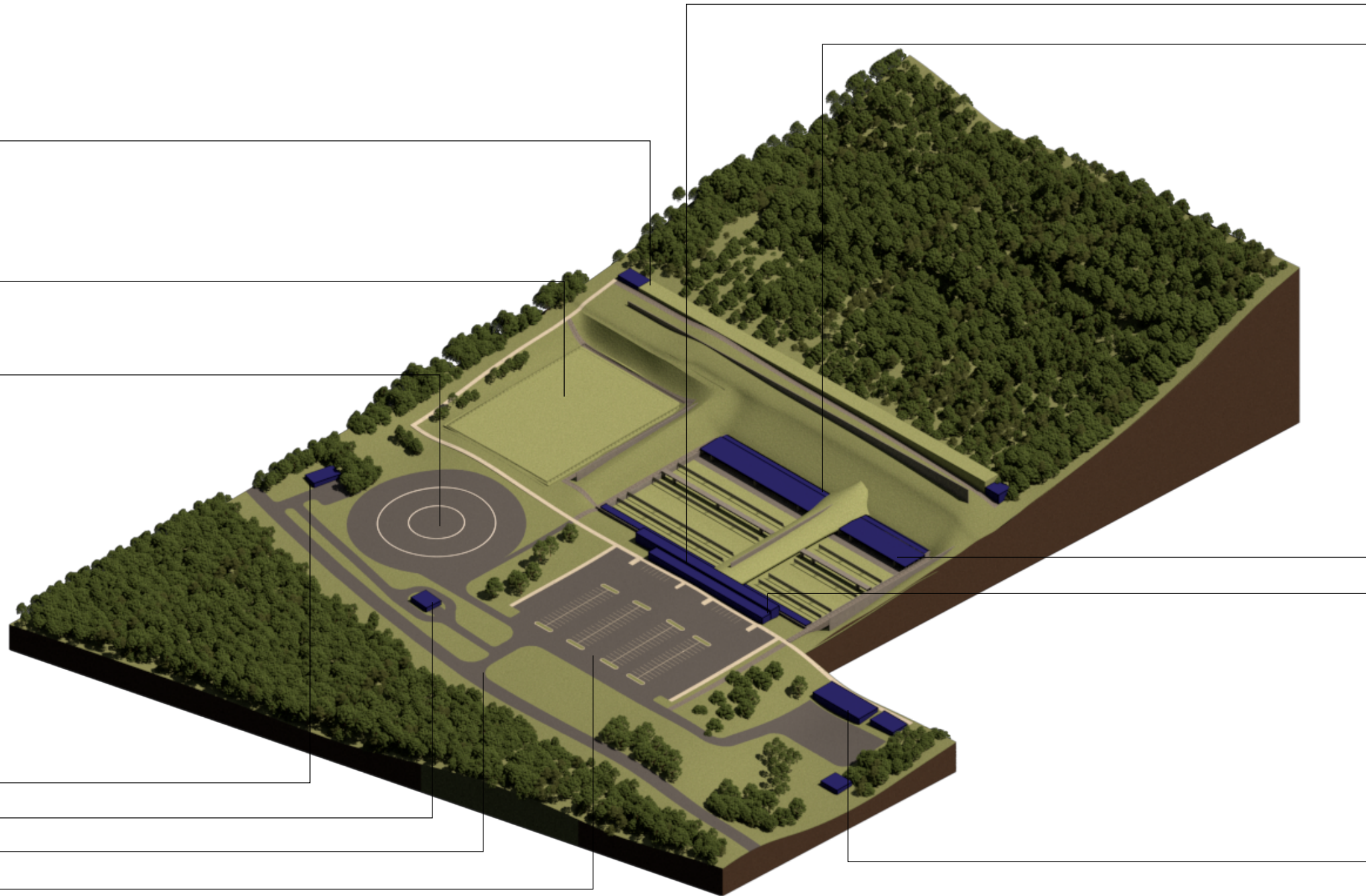
- CPD TRAINING FACILITIES
- 100 YARD TARGET :50 LANES

HCS

- 100 YARD TARGET :30 LANES
- HCS

HCS TRAINING FACILITIES

- MATCH HOUSE
- BARN HOUSE
- ATF VAULTS
- BOMB/EXPLOSIVE BARRIER
- COUNTY TRAINING FACILITIES
- BREACH DOORS



SHOOTING RANGE SAFETY COMPONENT DIAGRAM

RANGE COMPONENT DESCRIPTIONS

Overhead Safety Baffle

A structure designed to contain errant bullets for safety purposes and provide sound abatement. Oriented in a vertical fashion, these baffles are spaced out down range to retain errant fire to within the firing lanes but away from the firing lane.

Side Walls

A wall that runs along the perimeter of the range to contain errant bullets to within the range and provide sound abatement. As a component of a fully baffled system, side walls work with the overhead safety baffles to absorb ricochet and maintain safety when using the firing range. The canopy of side walls are to be constructed from ballistic materials that absorb, deflect or fragment projectiles.

Impact Berm

A mound of compacted dirt and other natural and artificial materials designed to stop penetration of bullets. Placed down range, behind the target line, the impact berm works with the bullet containment system to collect bullets after they are fired.

Side Berm

A mound of compacted dirt and other natural and artificial materials designed to stop penetration of errant bullets fired in the direction of the perimeter of the range. Side berms run along the side of range to provide a layer of safety between parallel ranges.

Bullet Containment System

Constructed range elements designed to collect bullets fired at the target line. The system will collect the bullets in a cleanup tray to provide the user with ease of cleaning and maintenance. Bullet containment systems are constructed of steel and ballistic materials. Other materials such as rubber, earth, and insulation board can be used.

Covered Ballistic Canopy

A structure designed to cover firing range users and provide safety from errant bullets. The canopy is designed to keep users shaded, dry, and safe from weather as well as deflect or absorb errant bullets to keep users safe. The structure can be constructed of steel or wood. Ballistic material will be applied to absorb or deflect bullets.

SAFETY NARRATIVE

To provide for the safety of all users and visitors, our team has done research on the proper design of firing ranges. We started with a review of domestic and international precedents to better understand how the site layout and programming would drive design. Next, we looked at the Department of Energy Office of Health, Safety and Security Range Design Criteria.

The design was to create a facility that promotes safe and efficient operation, includes provisions for ease of maintenance, and is affordable to construct and maintain. Rotating the direction of fire, using the topography of the site, and managing sound abatement were all considerations made in the design process. During our study, the following themes appeared as design drivers.

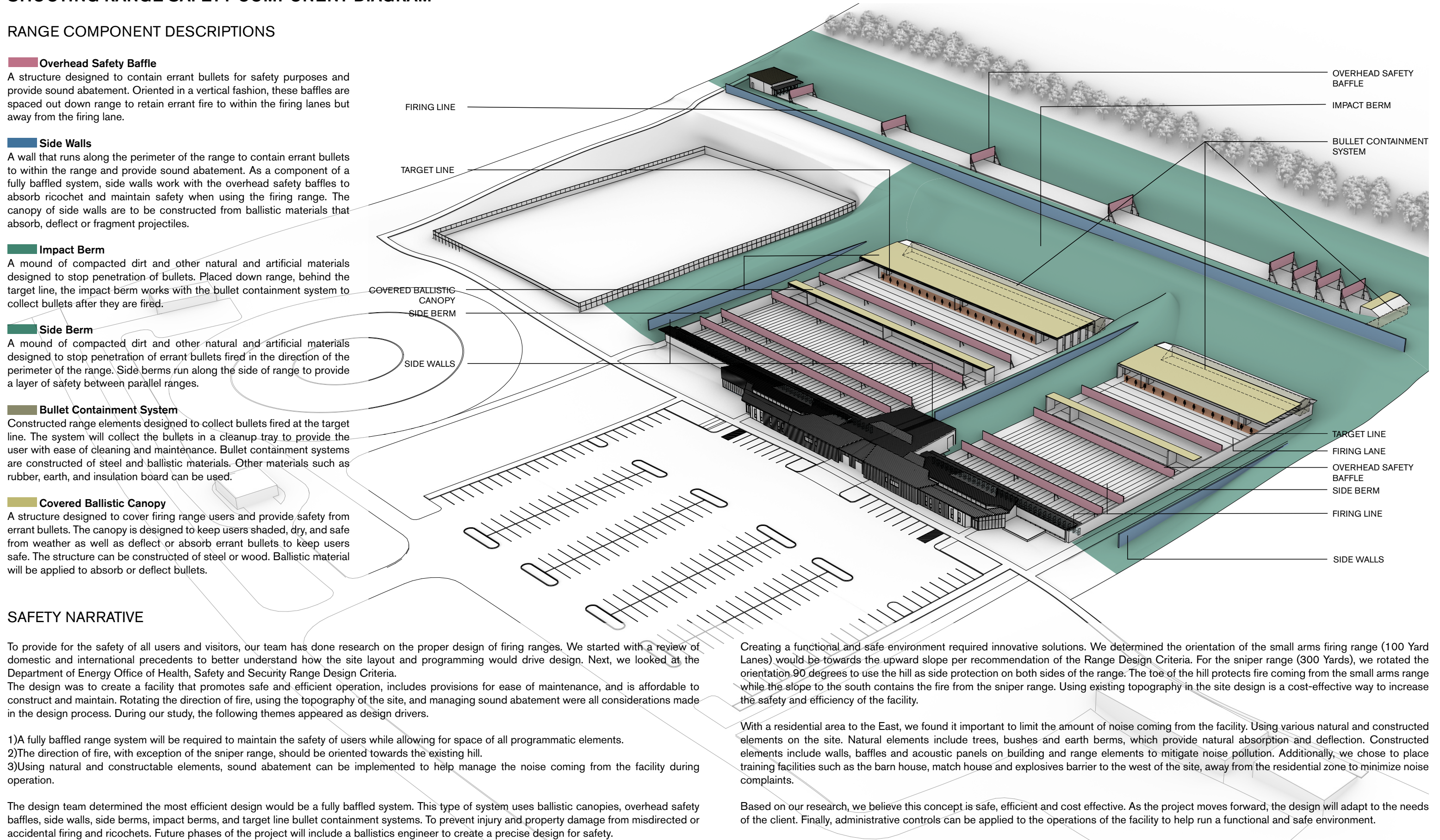
- 1) A fully baffled range system will be required to maintain the safety of users while allowing for space of all programmatic elements.
- 2) The direction of fire, with exception of the sniper range, should be oriented towards the existing hill.
- 3) Using natural and constructable elements, sound abatement can be implemented to help manage the noise coming from the facility during operation.

The design team determined the most efficient design would be a fully baffled system. This type of system uses ballistic canopies, overhead safety baffles, side walls, side berms, impact berms, and target line bullet containment systems. To prevent injury and property damage from misdirected or accidental firing and ricochets. Future phases of the project will include a ballistics engineer to create a precise design for safety.

Creating a functional and safe environment required innovative solutions. We determined the orientation of the small arms firing range (100 Yard Lanes) would be towards the upward slope per recommendation of the Range Design Criteria. For the sniper range (300 Yards), we rotated the orientation 90 degrees to use the hill as side protection on both sides of the range. The toe of the hill protects fire coming from the small arms range while the slope to the south contains the fire from the sniper range. Using existing topography in the site design is a cost-effective way to increase the safety and efficiency of the facility.

With a residential area to the East, we found it important to limit the amount of noise coming from the facility. Using various natural and constructed elements on the site. Natural elements include trees, bushes and earth berms, which provide natural absorption and deflection. Constructed elements include walls, baffles and acoustic panels on building and range elements to mitigate noise pollution. Additionally, we chose to place training facilities such as the barn house, match house and explosives barrier to the west of the site, away from the residential zone to minimize noise complaints.

Based on our research, we believe this concept is safe, efficient and cost effective. As the project moves forward, the design will adapt to the needs of the client. Finally, administrative controls can be applied to the operations of the facility to help run a functional and safe environment.



EXTERIOR RENDERING



EXTERIOR RENDERING



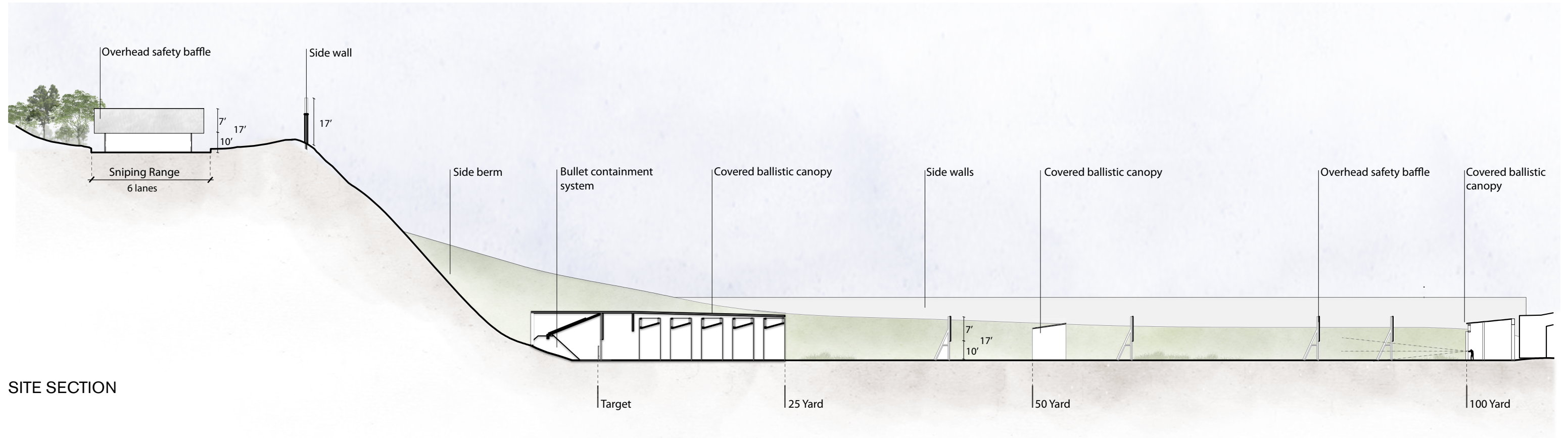
SHOOTING RANGE RENDERINGS AND SECTION



EXTERIOR RENDERING - RANGE VIEW



INTERIOR RENDERING - RANGE VIEW



SITE SECTION