EXHIBIT "A"

RFP Phase II Technical Proposal

MODERN Building Company + JKAE architecture + interiors + engineering

Phase II Design/Build Entity Proposal

Nevada County Regional Law Enforcement Indoor Shooting Range

RFP No. 194929

May 2, 2025 - 5:00 p.m.

MODERN BUILDING COMPANY | 3083 Southgate Lane | Chico, CA 95938
JKAE | 11661 Blocker Drive, Suite 220 | Auburn, CA 95603

Cover Letter

May 2, 2025

Ms. Desiree Belding, CPPO, CPPB
Nevada County Purchasing Division
950 Maidu Avenue | Nevada City, CA 95959

RE: Response to RFP No. 19429, PHASE II -
Nevada County Regional Law Enforcement Indoor Shooting Range (Design/Build)

Dear Ms. Belding and Selection Committee,

On behalf of Modern Building Company and JKAE (Modern + JKAE), we are pleased to submit our Phase II Design/Build proposal for the Nevada County Regional Law Enforcement Indoor Shooting Range. This project represents a vital investment in public safety, training, and infrastructure for the County and region, and we are honored to be considered as your partner in bringing it to life.

Our integrated team brings decades of experience delivering public safety and technically complex projects, including law enforcement and tactical training centers. We've assembled a group of experts tailored to this effort—ranging from seasoned shooting range consultants and acoustical engineers to a dedicated team of architects, engineers, and builders—each highly experienced in the specialized demands of indoor range design, sound control, and secure construction.

We recognize this facility will serve as a critical resource for the Nevada County Sheriff's Office and surrounding agencies, who currently lack a safe, suitable, and convenient space for regular firearms training. Most importantly, the range will strengthen public safety by ensuring officers are properly equipped and consistently trained to carry out their duties. We understand that community members may have questions around cost, safety, or other concerns. As your trusted partners, we're prepared to support the County in communicating the project's value and to assist in any capacity needed to build public confidence in this important long-term investment.

Our design addresses the site's specific constraints and community context with thoughtful integration of local architectural character, robust noise mitigation, and long-term operational efficiency. It meets the technical and functional needs of a 12-lane tactical indoor range while aligning with Nevada County's values and environmental setting.

Our proposed phasing plan, starting with site development followed by vertical construction, keeps the project on schedule and allows construction to begin before fall/winter weather in 2026. This approach minimizes risk and promotes an efficient delivery timeline.

Thank you for your consideration. We welcome the opportunity to deliver a high-performance, durable, and community-aligned training facility that will serve Nevada County law enforcement for years to come.

We hereby acknowledge receipt of Addendum 1, dated April 25, 2025.

Sincerely,

James Seegert
President, Modern Building, Inc.
(530) 891-4533
james@modernbuildinginc.com

Derek Labrecque, AIA, LEED BD+C, NCARB, DBIA, ALEP
Partner, JKAE
(530) 401-3736
derek@jkaedesign.com

Table of Contents

1. Price

Proposal Clarifications

Construction Budget Summary

The development of this construction budget has included a very thoughtful assessment all of the information provided, including:

- The Request for Proposals received March 17, 2025
- Our Confidential Meeting with the County on April 2, 2025
- Addendum #1, received and acknowledged on April 25, 2025

Additionally, as a cohesive team, Modern Building + JKAE and our subconsultant and subcontractor partners, have spent countless hours to provide a design solution that we believe best captures the essence of your goals for the Shooting Range and related support spaces.

With the opportunity to move forward with Nevada County, we are excited to continue our discussions to further refine the design, function, and the resulting cost. In fact, a primary aspect of our next step in the design development process includes seeking further options to offer the County potential cost savings, or provide the County with additional value at no additional cost. This mindset is where we have ultimately been highly successful in providing the BEST VALUE to our clients for their investment. As a proven design-build team, Modern + JKAE will continue to bring thoughtful and practical best-value solutions throughout all phases of the project.

Clarifications

The following items provide additional clarifications, qualifications, and assumptions regarding our anticipated scope of work.

Division 1 – General Requirements

1. Builder's Risk Insurance is included by Modern, per Addendum #1.

2. All work is assumed to take place during normal working hours. Shift, OT, or premium time has not been considered, with the exception of specific utility tie-ins, as may be required.

3. Electronic As-Built documents are assumed to be acceptable (not hard copies).

4. This proposal does not include costs for testing and inspections, including any testing or inspections for soils, concrete, structural steel, roofing, contaminated soil monitoring, etc. and all testing performed at an independent testing lab facility.

5. Energy Modeling for LEED, LEED certifications have not been included.

6. Modern Building maintains insurance in compliance with the project requirements, with a $100,000 deductible for our Pollution / Professional Liability policy. Modern Building acknowledges we would be responsible for the deductible in the event of a claim.

7. Based on the estimated September 2025 start date, there is a potential risk of cost escalation and risk of cost impacts due to tariffs, etc., resulting from the extended duration from when our proposal is initially submitted (May 2025) to when the work (all labor, material, equipment and subcontractor trades) is able to be formally bought out, following the development of the permit drawings (July 2026). In an effort to mitigate the risk of this approximately 15-month lag, we have included a 4.5% cost escalation contingency, as detailed on the cost breakdown. Should actual escalation be more or less than the budgeted contingency, we would adjust our final cost to the County to reflect the actual savings or additional cost impact, referencing the DGS California Construction Cost Index as the basis of escalation, found here:

   https://www.dgs.ca.gov/RESD/Resources/Page-Content/Real-Estate-Services-Division-Resources-List-Folder/DGS-California-Construction-Cost-Index-CCCI

   Our basis for the estimated escalation contingency percentage included is taken from the CCCI Index noted above, taking the average of the last four (4) years from April 2022 to April 2025, multiplied x 1.25 (15 months).

8. Commissioning the building systems will be provided in compliance with all building code requirements.

9. BIM - Building modeling will be prepared to provide the County with detailed architectural 3-D viewing of the interior and exterior of the building structure, components and finishes through the progression of

design development, providing the County with an accurate conceptual view of the building and related spaces, similar as presented in the RFP response.

10. Our proposed schedule includes what we believe to be reasonable durations for the CEQA / NEPA review and approval process. Should the overall timeframes for these approvals exceed the durations currently anticipated, the overall project completion date may adjust.

11. As discussed in our Confidential Meeting, we anticipate using space within the existing building bunk area for a construction office and meeting space, in lieu of a jobsite construction trailer.

12. The Modern Building/JKAE Team will provide pink frosted donuts with sprinkles as shown in our conceptual model on the classroom counter for the punch walk and project close out meetings. Clean-up of any sprinkles will not be added to the punch list.

Division 02 – Site Development

13. Any excessively large rock and/or boulders encountered during grading or trenching operations which cannot be productively moved with the affected trade's onsite equipment has not been considered. Unsuitable or unstable soils in the proposed development area have not been considered. Removal, relocation or any other impacts due to any unforeseen underground obstructions and utilities has not been considered.

14. Over-excavation and site preparation have been based on the prior site geotechnical report prepared by Holdredge & Kull. We will prepare a new geotechnical report for this new project; any variance from these initial scope requirements will be brought forward after this new report is completed.

15. A significant amount of excess earth spoil materials will be generated from our earthwork operations. As discussed at our Confidential Meeting, we have assumed stockpiling any excess material on the adjacent parcel to the west.

16. We anticipate constructing a new sump / lift station with a force main to pipe sanitary sewer from the new building to the existing septic tank/pump system on the east side of the existing building. This proposal assumes the capacity of this existing system is adequate to accommodate the waste generated from the new building.

17. Landscaping and irrigation have been included adjacent to the new Range building and at the new K-9 areas conceptually located on the rear/south of the new building. No other landscaping work has been included at the backside of the existing building or access drive to the new building.

18. This proposal excludes the costs, if any, to modify or upgrade any existing building or site improvements, accessibility/path-of-travel, etc. as may be determined by the local jurisdiction.

19. We have currently included asphalt paving at the new driveway to the new building, parking area, and turn-around 'hammer-head' areas as shown on the conceptual site plan. There are possible savings to this approach, if a hard, compacted aggregate base rock surface would be acceptable to the County and the local jurisdiction.

20. At the relocated K-9 Area, we anticipate re-using the existing chain link fencing material.

21. We have included a maintenance period of the Landscaping scope of 60 calendar days after the Landscape work is completed.

Division 03 – Concrete

22. See Site Plans & Structural Plans provided with this proposal for schematic design.

Division 04

23. Primary structure of the Range itself is planned to include CMU construction (Concrete Masonry Units), including a colored CMU block utilizing standard Basalite color options.

24. It is assumed existing trash facilities are acceptable for use by the new range building.

Division 05 – Steel

25. See Project Understanding in Section 3 of this proposal.

Division 06 – Wood/Carpentry

26. Built-in cabinetry and counters is limited to the Classroom (standard plastic laminate) and the Cleaning Room and Range (stainless counters).

Division 07 – Roofing & Moisture Protection

27. See Project Understanding in Section 3 & Architectural & Interior Design in Section 6 of this proposal.

28. Roof tie-off points have not been included.

Division 08 – Doors & Windows

29. See Project Understanding in Section 3 & Architectural & Interior Design in Section 6 of this proposal.

Division 09 – Finishes

30. See Project Understanding in Section 3 & Architectural & Interior Design in Section 6 of this proposal.

Division 10 – Specialties

31. Restroom partitions are assumed to be floor-mounted steel partitions, with a baked enamel finish.

Division 11 – Equipment

32. Range Equipment Warranty – All Range Equipment includes a comprehensive 3-Year on all parts and labor due to manufacturing or product defects.

33. See Project Understanding Section 3 for further detail of Range Equipment.

Division 12 – Furnishings

34. An ALLOWANCE of $40,000 has been included for County Fixtures, Furnishings and Equipment (FF&E).

Division 21 – Fire Protection Systems

35. We have included a fire sprinkler system in our budget. If acceptable to the local fire authority, we could possibly eliminate this system for a savings to the project. See Alternate Options below.

Division 22 – 23 – Plumbing & Mechanical Systems

36. Mechanical system at the support spaces adjacent to the Range are assumed to be roof-mounted DX units. See Alternate Option below for upgrade to a VRF System.

37. Cooling at the Range shall include evaporative cooling only.

38. We have not included air conditioning at the electric room at this time; see Alternate Options below for the addition of a ductless split conditioning system for this room, if desired.

39. No humidity control has been included at the Armory at this time. A portable humidity unit could be installed at a later date, if necessary, as discussed at our Confidential Meeting.

Division 26-28 – Electrical & Low Voltage Systems

40. No ERRCS (Emergency Responder Radio Communication System) or cellular DAS (Distributed Antenna System) has been included.

41. No UPS Systems have been considered for the IT system installation at this time.

42. Electrical gear has been anticipated to include a generator ready connection only at this time. No back-up generator is included with this proposal.

43. No Solar has been included at this time as the project does not trigger PV code requirements.

In the event of a conflict between the provisions of these Clarifications and other documents, these Clarifications shall take precedence.

Allowances

A)	Exterior Building Signage:	$ 2,500.
B)	Interior Signage / Wall Graphics:	$ 7,500.
C)	Fixtures & Furnishings:	$ 40,000.

Alternate Options

i) Fire Sprinkler System:

Should the local fire authority not require a fire sprinkler system in the building,

DEDUCT: $165,000

ii) Variable Refrigerant Flow (VRF) HVAC System:

Should the County prefer an all-electric VRF HVAC System in lieu of the roof-mounted DX System currently planned at the supports spaces (see comparison of HVAC systems in Section 3 - Project Understanding).

ADD: $99,000

iii) Ductless Split HVAC System @ Electric Room:

Should it be desired to include a ductless split system at the Electric Room,

ADD: $ 20,000

iv) Full Tactical Baffle System:

To upgrade the Hybrid Tactical Overhead Ceiling Baffles from 0-25 yards to Fully Tactical Baffles for the entire 0 – 50-yard length of the Range,

ADD: $270,000

v) Range Ceiling Tiles:

To upgrade the standard acoustical tiles on the Range ceiling baffles to 2" PEPP Acoustical Tiles,

ADD: $ 42,000

vi) Gravel Drive Surfaces:

We have currently anticipated asphalt paving at the new access drive, parking stalls and hammer head access areas around the building. Should the County be willing to have gravel aggregate base surfaces at any of these areas, some savings to the County could be realized, determined by the extent of area constructed of gravel in lieu of asphalt.

DEDUCT: To be collaboratively determined based on area of reduction

13.0 BID SECURITY ELECTION FORM

D-B Entities who submit electronic proposals shall complete and submit this Bid Security Election Form with their proposals. This form is not required for hard copy bid submissions.

Name of Proposer (D-B Entity): Modern Building Inc.

Accompanying this Proposal is: Bidder's Bond (security type)

in an amount equal to at least ten percent of the total cost proposal amount.

(NOTICE: INSERT THE WORDS ABOVE OF ONE OF THE FOLLOWING SECURITY TYPES: "CASH($ _____)," "CASHIER'S CHECK," "CERTIFIED CHECK," "BIDDER'S BOND," OR "DIGITAL BID BOND" AS THE CASE MAY BE.)

Proposer acknowledges the requirement that the bid security type indicated by the proposer above must match the actual security type submitted by the proposer, and that a "mismatch" between the two will render his/her proposal non-responsive.

14.0 PROPOSER'S BIDDER'S BOND

KNOW ALL PERSONS BY THESE PRESENTS:

That we, the undersigned D-B Entity and Surety, are held and firmly bound unto the County of Nevada in the sum of ten percent (10%) of the total amount of the cost proposal of the D-B Entity, submitted by said D-B Entity to the County of Nevada for the work described below, for the payment of which sum in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors or assigns, jointly and severally, firmly by these presents. In no event shall the liability of the Surety hereunder exceed the sum of Ten Percent Amt Bid Dollars ($ 10% of Amount Bid----------). The condition of this obligation is such that the above D-B Entity has submitted the above-mentioned proposal to the County of Nevada for certain work specifically described as:

COUNTY OF NEVADA NEW REGIONAL LAW ENFORCEMENT INDOOR SHOOTING RANGE

NOW, THEREFORE, if said D-B Entity is awarded the above-mentioned contract, and within the time and manner required by the contract documents, enters into a written contract in accordance with the proposal, and files the required bonds and insurance certificate, then this obligation shall be null and void; otherwise, it shall be and remain in full force and effect.

IN WITNESS WHEREOF, We have hereunto set our hands and seals on this 22nd day of April, 2025.

(CONTRACTOR) D-B Entity:

Modern Building, Inc.

By: _____

Title: James Seegert, President

SURETY:

Fidelity and Deposit Company of Maryland

By: _____

Title: Elizabeth Collodi, Attorney-in-Fact

Address of Surety for Service of Notice and/or Process:
Fidelity and Deposit Company of Maryland
1299 Zurich Way, 10th Floor
Schaumburg, IL 60196-1056

NOTE: Signatures of D-B Entity and Surety must be notarized and must be accompanied by a duly authorized power of attorney if executing as attorney-in-fact for Surety.

APPROVED AS TO FORM BY NEVADA COUNTY COUNSEL

15.0 CERTIFICATE OF ACKNOWLEDGEMENT

State of California
City/County of: Chico, Butte

On this 23rd day of April in the year 2025

before me, Terry Wolkoff, Notary

personally appeared, James Seegert
Attorney in Fact

personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to this instrument as the attorney in fact of Modern Building Inc.

and acknowledged to me that he/she subscribed the name of the said company thereto as surety, and his/her own name as attorney in fact.

(SEAL)

-See Attached – California all Purpose Acknowledgment
Complies with Civil Code section 1189.
Notary Public

Note: Signature of those executing for the surety must be properly acknowledged.

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Butte)

On April 23, 2025 before me, Terry Wolkoff, Notary Public
(insert name and title of the officer)

personally appeared James Seegert,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

TERRY WOLKOFF
Notary Public - California
Butte County
Commission # 2490794
My Comm. Expires Jun 17, 2028

Signature Terry Wolkoff (Seal)

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Butte)

On April 23, 2025 before me, Sara Walliser, Notary Public
(insert name and title of the officer)

personally appeared Elizabeth Collodi,
who proved to me on the basis of satisfactory evidence to be the person(~~s~~) whose name(~~s~~) is/~~are~~ subscribed to the within instrument and acknowledged to me that ~~he~~/she/~~they~~ executed the same in ~~his~~/her/~~their~~ authorized capacity(~~ies~~), and that by ~~his~~/her/~~their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

SARA WALLISER
COMM. # 2449544
NOTARY PUBLIC - CALIFORNIA
COUNTY OF BUTTE
Comm. Expires JUL 5, 2027

Signature _____ (Seal)

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Illinois, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Illinois (herein collectively called the "Companies"), Thomas O. McClellan, Vice President, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Samantha Watkins, Steven L. Williams, Phil Watkins, Jennifer Lakmann, Brad Espinosa, Paula Senna, Pam Sey, Breanna Boatright, Kathleen Le, Cassandra Medina, John Hopkins, Sara Walliser, Renee Ramsey, Sharon Smith, Jessica Monlux, Elizabeth Collodi, John Weber, Deanna Quintero, Joseph H. Weber, Matthew Foster, all of Chico, California**, its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: any and all bonds and undertakings, and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICHAMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland, in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 3rd day of February, A.D. 2025.

Colonial American Casualty and Surety Company CORPORATE SEAL
Zurich American Insurance Company CORPORATE SEAL 1872 NEW YORK
Fidelity and Deposit Company of Maryland CORPORATE SEAL 1890

ATTEST:
ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

By: Thomas O. McClellan
Vice President

By: Dawn E. Brown
Secretary

State of Maryland
County of Baltimore

On this 3rd day of February A.D. 2025, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **Thomas O. McClellan, Vice President and Dawn E. Brown, Secretary** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

GENEVIEVE M. MAISON NOTARY PUBLIC BALTIMORE COUNTY, MD

Genevieve M. Maison
Notary Public
My Commission Expire January 27, 2029

Authenticity of this bond can be confirmed at bondvalidator.zurichna.com or 410-559-8790

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify of revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 22nd day of April, 2025.

Colonial American Casualty and Surety Company CORPORATE SEAL

Zurich American Insurance Company CORPORATE SEAL 1872 New York

Fidelity and Deposit Company of Maryland CORPORATE SEAL 1890

MJ Pethick

Mary Jean Pethick
Vice President

TO REPORT A CLAIM WITH REGARD TO A SURETY BOND, PLEASE SUBMIT A COMPLETE DESCRIPTION OF THE CLAIM INCLUDING THE PRINCIPAL ON THE BOND, THE BOND NUMBER, AND YOUR CONTACT INFORMATION TO:

Zurich Surety Claims
1299 Zurich Way
Schaumburg, IL 60196-1056
reportsfclaims@zurichna.com
800-626-4577

Authenticity of this bond can be confirmed at bondvalidator.zurichna.com or 410-559-8790

16.0 ENTITY DESCRIPTION

THIS PROPOSAL IS SUBMITTED BY (check one):

☐ Individual ☐ Partnership

☐ Joint Venture ☒ Corporation California
State in which incorporated

NOTE: If Proposer is a corporation, the State in which incorporated shall be inserted above and the legal name of the corporation shall be set forth below, together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation; if Proposer is a partnership, the true name of the firm shall be set forth below, together with the signature of a partner authorized to sign contract in behalf of the partnership; and if Proposer is an individual, that person's signature shall be placed below. If signature is by an agent, other than an officer of a corporation or a member of a partnership, a Power of Attorney must be on file with the County prior to opening the proposal or submitted with the proposal; otherwise, the proposal will be regarded as irregular and unauthorized. If proposal is submitted by partnership or joint venture, the members are:

Modern Building Inc.

Business Address 3083 Southgate Lane, Chico, CA 95928

(Street and/or P.O. Box) (City) (State) (Zip)

Business Telephone Number: 530.891.4533 Facsimile Number: 530.891.6834

NOTE: If making a proposal as a joint venture, each person submitting the Proposal shall provide the information required below with respect to his or her licensure.

Proposal must be executed in same name-style in which the Proposer is licensed and prequalified. D-B Entities proposing jointly as a combination of several business organizations are specially cautioned that such Proposer must be jointly licensed and pre-qualified in the same form and style in which the proposal is executed. The undersigned Proposer certifies and agrees to provide the information and comply with the requirements contained in this Proposal.

Legal Name of Proposer: Modern Building Inc.

Federal I.D. Number: 94-2209753

Contractor's License No.: 285006 License Classification: B, C-8, A

Expiration Date of Contractor's License: 06/30/26

PRINTED NAME James Seegert

SIGN HERE _____
Signature of Proposer

DATE: May 2, 2025 President
(Day/Month/Year) Title of Proposer

17.0 COST PROPOSAL FORM – LUMP SUM

The acceptance of, and/or the payment for the D-B Entity's proposal does not constitute an acknowledgement by the County that any or all of the elements are in conformance with the Contract Documents.

Proposer acknowledges the Lump Sum set forth in the space provided below. Said price shall include all cost of bonds, insurance, sales tax, professional fees, allowances and every other item of expense–direct or indirect–incidental to the completion of the design and construction of the proposed project.

1. The certification of the Lump Sum must be without any conditions and/or alterations and/or exceptions. This form must be signed and returned as issued.

2. Appendices to the Proposal, clarifications to the Proposal, contract administration refinements, design refinements, allowance lists, modifications to County Proposal documents, additional allowances that limit the extent of work, value enhancements that reduce and/or infer pre approval of substitutions, etc., or any other conditions or clarifications, including without limitation those that purport to reduce the requirements and/or infer a pre-approval of change to the requirements or a conditional acceptance of the proposal, will not be allowed and may be the basis for considering the proposal to be non-responsive.

I, James Seegert, authorized agent of D-B Entity,

Modern Building Inc. (D-B Entity), hereby agrees to complete the design and construction of the proposed project, New **Regional Law Enforcement Indoor Shooting Range** for the Lump Sum Price of

$12,979,000 Dollars

(**Twelve Million, Nine Hundred Seventy-Nine Thousand**) for the complete scope of work

Signature: _____ **Date:** May 2, 2025

Print Name: James Seegert **Title:** President

The Notice to Proceed (NTP) will be issued by Sheriff Captain or Designee to the D-B Entity at the beginning of the Design-Build Contract.

Prior to the start of construction, the approved Design Review, and Building Permit (s) for this project along with authorization by Sheriff Captain or Designee shall be prerequisites for proceeding with construction

NV Co. Regional Law Enforcement - Indoor Shooting Range
Nevada City, CA
Nevada County Sheriff's Office
Modern #: **#2227**
Date: **5/2/2025**
Architect: **JKAE**

Construction Budget Summary

SCOPE OF WORK			COST	/ NSF
			SIZE: 13,618	
DIVISION 1	GEN. CONDITIONS & REQUIREMENTS & DESIGN		$2,337,630	$171.66
DIVISION 2	DEMOLITION / EXISTING CONDITIONS		$27,460	$2.02
DIVISION 3	CONCRETE		$511,902	$37.59
DIVISION 4	MASONRY		$579,397	$42.55
DIVISION 5	METALS		$653,355	$47.98
DIVISION 6	WOOD AND PLASTICS		$130,433	$9.58
DIVISION 7	THERMAL AND MOISTURE PROTECTION		$740,251	$54.36
DIVISION 8	DOORS AND WINDOWS		$215,613	$15.83
DIVISION 9	FINISHES		$455,476	$33.45
DIVISION 10	SPECIALTIES		$19,760	$1.45
DIVISION 11	EQUIPMENT		$1,403,165	$103.04
DIVISION 12	FURNISHINGS		$53,705	$3.94
DIVISION 13	SPECIAL CONSTRUCTION		$0	$0.00
DIVISION 14	CONVEYING		$0	$0.00
DIVISION 21	FIRE SUPPRESSION		$114,232	$8.39
DIVISION 22	PLUMBING		$247,905	$18.20
DIVISION 23	MECHANICAL		$762,080	$55.96
DIVISION 26	ELECTRICAL		$847,622	$62.24
DIVISION 27	COMMUNICATIONS		$93,033	$6.83
DIVISION 28	ELECTRONIC SAFETY AND SECURITY		$181,892	$13.36
DIVISION 31	EARTHWORK		$825,984	$60.65
DIVISION 32	EXTERIOR IMPROVEMENTS		$657,779	$48.30
DIVISION 33	UTILITIES		$540,405	$39.68
DESIGN-BUILD GEN. CONTRACTOR INSURANCE / BONDS / FEE:			$1,172,156	$86.07
CONSTRUCTION COST TODAY:			**$12,571,235**	**$923.13**
ESCALATION CONTINGENCY ***(Applicable to Divisions 2 - 33)***		4.5%	$407,765	$29.94
TOTAL COST MODEL with ESTIMATED ESCALATION:			**$12,979,000**	**$953.08**

\\MBC2K12\Files\03 - Estimates & Proposals\2227 - Nevada County Shooting Range\BUDGETING\MASTER ESTIMATE - NV Co. Shooting Range - 5.2.25

2. Project Management Plan

MODERN Building Company + JKAE architecture + interiors + engineering

NEVADA COUNTY CALIFORNIA

Architect of Record
JKAE
Derek Labrecque
AIA, LEED AP BD+C, NCARB, DBIA, ALEP

General Contractor
Modern Building, Inc.
James Seegert

Project Manager/ Architect
Andrew Todd
JKAE

Project Manager/ Range Design
Austin Schneider
USAF (Ret) Rangemaster
JKAE

Civil Engineer
Carla Sammis
JKAE

Structural Engineer
Colton Schaefer
JKAE

Mechanical/ Plumbing Engineer
Kevin Stillman
Capital Engineering

Acoustical Engineer
Erik Miller-Klein
Tenor Engineering

Electrical Engineer
Scott Wheeler
The Engineering Enterprise

Landscape Architect
Jason Bisho
BFLA

Survey
JKAE
Justin Moore

Geotech / SWPPP
NV5

CEQA/NEPA
Stantec

Range Consultant
Chris Hart
Action Target

Electrical Subcontractor
Gray Electric, Inc.

Mechanical Subcontractor
Comfort Air, Inc.

Plumbing Subcontractor
Comfort Air, Inc.

Security Electronics Subcontractor
Randy Hegje
Resi Comm Electrical & Alarms

Modern + JKAE Team Organization

3.1 Introduction

The purpose of our Project Management Plan is to establish a clear roadmap for managing the design and construction of the Indoor Shooting Range project. The plan outlines roles, processes, and controls to ensure the project is completed on time, within budget, and in compliance with all regulatory and performance standards. It emphasizes collaboration, transparency, and proactive problem-solving.

3.2 Pre-Construction Phase

3.2.1 Project Initiation & Mobilization

At the outset, the project team will be formally established, roles defined, and lines of communication clarified. After the Notice to Proceed is issued, initial meetings will be held with stakeholders to ensure everyone's expectations are aligned. Mobilization will include setup of administrative operations, communication expectations and project documentation systems.

3.2.2 Design Phase Activities

The Modern / JKAE team will refine the schematic design into comprehensive preliminary plans and construction document milestones. These phases will involve full coordination across disciplines—architecture, structural, MEP, and specialty systems—ensuring alignment with programmatic requirements such as ADA access, HVAC standards for firing ranges, and secure spaces for weapons and equipment. Iterative virtual Bluebeam and page turn reviews with County officials will guide progress during each milestone.

Concurrent with each milestone review, cost estimates will be performed to maintain alignment with the project scope and budget.

3.2.3 Quality Control / Quality Assurance

A project specific Quality Control and Quality Assurance program will be prepared and adopted to provide a road map to ensure project documents and requirements are met or exceeded. This program would be developed collaboratively with the County to ensure we are addressing all critical aspects of the anticipated work, with an added emphasis on the components of the project most important to the short-term and long-term success of the project, and the County. Please visit the link below for an example of a recent project specific QA/QC Plan.

An important part of what we do is Quality Assurance/ Quality Control. Please visit this link to view our Sample QA/QC Plan.

https://jkae.box.com/s/7wjwqujnsig091ft3ywbhc7kritrxqda

3.2.4 Permitting and Regulatory Compliance

A central focus of the pre-construction phase is obtaining all necessary environmental and building permits. The team will prepare documents for review by County departments and external agencies. Following the Preliminary Plans Phase completion effort will commence to support the environmental review efforts. This will be led by Stantec who has extensive experience supporting this effort both for the County as well as in the region. Stantec has included as part of there scope of work studies associated to; noise, biological, archaeological, and traffic studies as well. They will work with the County as the lead agency in facilitating CEQA and NEPA approvals.

Following the Construction Documents Phase, the JKAE will take the lead working with the County Building Department whom will be the lead AHJ for the permitting approvals.

3.2.5 Procurement and Subcontractor Engagement

All necessary subcontractors and suppliers will be selected in accordance with the approved Subcontractor Procurement Plan. Where possible, competitive pricing will be sought to ensure cost efficiency. Subcontractors will be onboarded through a formal process that includes review of scopes, responsibilities, and compliance expectations.

3.2.6 Pre-Construction Coordination

A detailed project schedule using the Critical Path Method (CPM) will be developed and submitted, highlighting key activities and milestones. A comprehensive site logistics plan will address access, safety, material storage, and staging. Coordination meetings with stakeholders and County agencies will confirm planning alignment and resolve any pre-execution uncertainties.

3.2.7 Risk Management

Risks related to schedule delays, permitting, design integration, and procurement will be identified early. Each risk will be assessed and mitigation strategies documented. A formal change management plan will be adopted to handle deviations from scope or schedule proactively, minimizing disruptions during the construction phase.

3.3 Construction Phase

3.3.1 Site Preparation

Construction activities will begin with site mobilization, grading, and installation of erosion control systems. Utilities will be connected per local requirements, and the site will be secured to maintain safety and minimize public disruption. All preparatory work will follow approved plans and environmental guidelines.

3.3.2 Building Construction

The primary structure—CMU building—will be erected, followed by the buildout of interior spaces such as the 12-lane range, armory, restrooms, and classroom. Mechanical, electrical, and plumbing systems will be installed in parallel with architectural finishes. Progress will be tracked against the baseline schedule.

3.3.3 Range Equipment Installation

Specialty equipment will be delivered and installed by a qualified range vendor under close coordination with the construction team. This includes rotating targets, rubber or steel bullet traps, control interfaces, and simulation lighting systems. Integration with the building's electrical and HVAC systems will ensure functionality and safety.

3.3.4 Systems Integration

Building systems such as security, fire protection, data networking, and audio/visual components will be connected, tested, and fine-tuned. Emphasis will be placed on compliance with Nevada County's technology and security standards. User interfaces and controls will be demonstrated and documented.

3.3.5 Commitment to Quality Control / Quality Assurance

The key to a successful project delivery involves a daily commitment to project oversight and review, to ensure the end-product meets or exceeds the expectations of the design documents and project requirements. Our QA / QC Plan noted above has been crafted to instill the necessary culture of excellence in all members of the team for the most effective end-result.

3.3.6 Inspections and Testing

A rigorous quality assurance program will guide testing and inspections. This includes HVAC commissioning, lighting and electrical tests, and validation of sound mitigation systems. The team will coordinate with third-party inspectors and County officials to verify compliance and address punch list items efficiently.

3.3.7 Substantial and Final Completion

After achieving Substantial Completion, the facility will be turned over to County personnel for walkthroughs, final inspections, and occupancy certification. As-built drawings, operation manuals, and warranty documentation will be submitted. A formal closeout process will ensure all contractual obligations have been met.

Our team brings together experienced shooting range consultants, acoustical specialists, and a skilled design and construction team to deliver safe, high-performing, and expertly crafted range facilities.

3. Project Understanding

Architectural Approach

The proposed Nevada County Sheriff's Shooting Range facility is conceived as a highly functional civic building that carefully balances cost, durability, and aesthetics. Our design team has thoughtfully integrated the County's architectural aspirations, community concerns, and programmatic requirements to deliver a responsive, durable, and contextually sensitive facility.

Contextual and Historical Response

Nevada County and the City of Nevada City deeply appreciate the Mother Lode architectural heritage. Understanding this, our design approach seeks to honor the region's cultural and historic character while acknowledging the facility's civic nature. The design intentionally reflects a robust and authentic materiality common to the area, ensuring the new construction harmonizes with its surroundings, particularly given its proximity to the American Hill neighborhood.

Sound Profile and Site Sensitivity

Given the nature of the program, we recognize the community's concern regarding sound generation from the range. Early in the design-build pursuit, we conducted a site-specific acoustic analysis to understand the existing sound conditions. The resulting design incorporates strategies to mitigate noise impacts, ensuring that the new range is a good neighbor within its setting. See the acoustics section for specific recommendations.

Building Placement

The Nevada County Sheriff's Shooting Range's location was shaped by a careful response to the site's challenging and varied topography, which reflects a history of heavy disturbance from historical mining operations.

Two primary factors informed our site approach: providing code-compliant fire vehicle access and maintaining responsible site drainage management. To safeguard downstream properties and ensure compliance with SWPPP (Storm Water Pollution Prevention Plan) requirements, grading strategies were developed to preserve existing drainage behavior without increasing runoff or introducing new flow paths.

Simultaneously, ensuring efficient fire apparatus access to the new facility was essential. This led to a strategic decision to orient the new range parallel to the existing building, allowing direct, code-compliant access routes and maintaining the necessary building separation requirements.

This thoughtful site planning also created an opportunity to incorporate a K9 training area adjacent to the building to minimize grading impacts and avoid the need for retaining structures. The building siting and fire access routes further allowed for the integration of front-of-house parking adjacent to the main entrance, enhancing convenience and safety. Parking has been configured to include ADA-compliant stalls and EV-ready charging spaces to meet accessibility and sustainability objectives.

The accompanying civil and landscape narratives provide further technical details regarding grading, stormwater management, and landscape treatments.

Programmatic Elements and Design Approach

The facility is organized around two primary elements:

- Shooting Range, designed for practical functionality, reflects the utilitarian nature of its use.
- Front-of-house support provides administrative and instructional areas that serve the range.

We employ a dynamic two-color CMU masonry gradient pattern to address the visual scale of the approximately 188-foot-long range structure. Inspired by the energy and movement inherent in range activities, this approach introduces rhythm and visual interest to an otherwise utilitarian form.

A smaller architectural mass containing the front-of-house support functions is wrapped around the shooting range. Here, we propose prefinished corrugated metal siding with exposed fasteners—a material both industrial in character and reflective of Nevada County's vernacular architecture. All exterior materials, including siding, window systems, and roofing, are selected to meet High Severity Wildland Urban Interface (WUI) standards and the energy efficiency criteria for our climate zone.

Our color palette draws inspiration from the Sheriff's Department's gold and green identity, thoughtfully balanced with natural, earthy tones that blend with the surrounding landscape.

Security, Safety, and Functionality

The facility's layout prioritizes security and operational efficiency. The Range Master's office is strategically positioned with direct visual control over the lobby, range entrance, and classroom areas, ensuring high situational awareness.

Circulation is simplified with a central north-south corridor spine. To promote a welcoming and well-lit environment, we incorporate storefront glazing with sidelights at the corridor ends, maximizing daylight penetration and visual connection to the outdoors.

The classroom, designed to accommodate 30 students and instructors, includes modern instructional amenities, integrated casework, and basic utility features such as a sink to support everyday needs. Full-height symmetrical windows frame views of the adjacent greenery, creating a serene and engaging learning environment.

Roof Design and Interior Experience

A single-slope roof design simplifies construction while enhancing the lobby experience. The roof is pitched with its high side at the entrance, creating a visually uplifting lobby space. Interior spaces beneath the lower portions of the roof—such as utilities and storage—are strategically clustered to optimize functionality and mechanical efficiency.

In both the range and the classroom, ceilings feature exposed acoustical metal deck systems, maintaining an industrial aesthetic while addressing sound control. The interior color palette and graphic elements extend the exterior themes indoors, reinforcing a sense of cohesion and providing a calm, secure atmosphere for users.

Utility Coordination

Utility-intensive spaces are logically grouped adjacent to primary service entry points, minimizing interior utility runs and ensuring efficient maintenance access.

Specialty Range & Support Spaces

Armory/Target Storage

The Armory/Target Storage Room is a secure, environmentally controlled area designed for the storage of range weapons, ammunition, and training targets. The room supports daily operations by ensuring quick, organized, and accountable access to critical assets while maintaining security and compliance with weapons storage needs. Our design prioritizes access control, protection, optimized organization, and environmental stability. The layout facilitates a smooth flow for issue and return processes and ensures ample space for storage of munitions pallets and ammunition storage cans. The HVAC system will maintain temperature and humidity controls to preserve weapon and ammunition integrity. *(Note: humidity control in this room is assumed to be addressed with a portable humidifier, if necessary.)* The design incorporates FF&E solutions to provide modular, heavy-duty storage racks and adjustable target shelving optimized for operational flexibility. This design enhances operational readiness by enabling rapid, secure access to weapons and training materials while minimizing downtime, maximizing the lifespan of stored assets, and maintaining the highest security postures.

Range Storage

The Range Storage Room supports the operational effectiveness of the firing range by housing training aids such as 55 -gallon drums, relocatable barricades, and spare range equipment in a secured and immediately accessible location. Our solution emphasizes contamination resistance, easy cleanability, and rapid reconfiguration capacity through use of FF&E adjustable shelving units to support loading. We incorporated impact-resistant walls and floors with durable finishes suitable for heavy wear and cleaning. This design supports long-term range efficiency by ensuring immediate access to mission-critical supplies in a clean, organized, and scalable environment.

Cleaning Room

We understand the Cleaning Room is critical for the safe cleaning of weapons while minimizing hazardous material exposure risks and ensuring operational continuity. A heavy focus on ergonomic workflow and durable, easily sanitized materials was applied. We incorporated chemical-resistant surfaces to include stainless steel workstations, sealed-stained concrete, washable wall finishes and a FF&E storage cabinet for cleaning tools & materials such as solvents and protectants. To ensure the safety and health of those utilizing this we included an eyewash station and multiple hand-washing sinks located directly outside the range entrance and cleaning area for rapid accessibility. By proactively controlling lead and chemical exposure, this Cleaning Room protects personnel health, prolongs equipment service life, and ensures regulatory compliance - directly supporting the project's mission of sustainable, safe, and efficient operation.

Range

Listening to the needs and desires of Nevada County Sheriffs and knowing that this facility will likely serve for decades, we have designed a low maintenance 12 lane 50 yard tactical indoor range that allows for modern LE training, low light scenarios, shoot/no shoot training and training on lateral moving targets as well as allowing for safe 180 degree shoot on the walls of the range nearest to the bullet trap to better replicate modern police encounters and how to train to survive them.

Bullet Trap

While the RFP mentioned a steel bullet trap, in the confidential meetings we determined that a granular rubber trap is what was desired by the County for their budget and expected volume of fire with the other features of being quieter and capturing lead dust from bullet impacts while still allowing for recycling of 100% of the bullet fired into the rubber trap. The Rubber Berm Trap granules include a Flamelock Class S fire retardant coating to reduce any risk of fire hazard.

Ceiling Baffles/Coverage

During the Confidential Meetings and discussion with the County, Captain Scales indicated a desire to see the cost savings to do a Hybrid Tactical Ceiling Baffle layout, where there are gaps in the baffles from 25-50 yards but full tactical coverage from 0-25 yards. See Figure 3-1 layout below.

A substantial savings in this proposal has been provided for this hybrid ceiling baffle layout, with an alternate additional cost to upgrade to a fully tactical layout, which would allow for shooting from 0-50 yards in the range.

Captain Scales also indicated that he'd like to see the ceiling baffles with the less costly 1/2" Armstrong standard white ceiling tiles with an alternate option of the 2" PEPP acoustical tiles on the baffles. Sheetmetal closure panels have been included in the ceiling baffles gaps between rows to ensure proper HVAC airflow is maintained. Given our team's experience relative to ceiling baffle coverage of need to have; 0-25 yards and nice to have 25-50 yards we have included in our base pricing the need and include an additive alternate for the nice to have option for consideration.

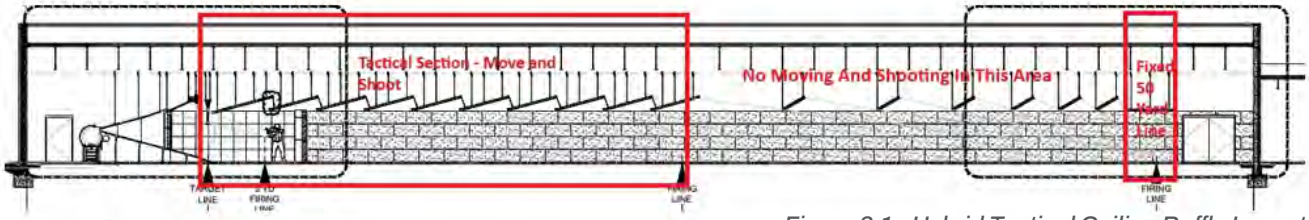


Figure 3.1 - Hybrid Tactical Ceiling Baffle Layout

Wall Baffles

Following the viewing of a demo video of the 180° safe shooting on Wall Baffles, the County asked us to include the wall baffles on this project to cover 40' long x 8' high on both side walls in front of the rubber trap. Comprised of 3/8" AR500 steel with an air gap, 1/2" Fire treated plywood and 2" Thick Surestop Acoustical Rubber Tile fascia. The Surestop rubber panels are self-healing in nature and allow for safe 180° shooting on the walls to train like you would on an outdoor range.

Turning Targets

We have included 12 lanes of the Fixed Lateral electric turning targets for this project, offering quiet operation and low maintenance, they can go from edge to shoot or not shoot for decision making drills. They can also be repositioned at any point along the width of the range or completely removed for specific training scenarios. They have an AR500 steel target clamp offering easy one hand operation.

Moving Targets

Based on the desire to train on lateral moving targets in the range, we have included the DRM PRO Dual Running Man moving target system which includes 2 independent moving target tracks across the width of the range. These can be programmed for custom training scenarios or hostage/ follower training on targets.

Acoustical Treatments

We have included the latest Acoustical Treatments in the range to reduce the sound reverberation for range users. The Porous Expanded Polypropylene Panels (PEPP) acoustical panels are designed specifically for indoor shooting ranges and are not only Class A fire rated but much more durable than traditional wood and fiber panels. The PEPP Acoustical panels when paired with 1" acoustical cotton provide a Noise Reduction Coefficient of 0.90 which is very high. These acoustical treatments cover all range side walls below the ceiling baffles as well as the back wall of the range behind the 50 yard line.

SmartRange AXIS Control System and LED Strobe Lights

The SmartRange AXIS control system to control the shooting range is comprised of a 15" touch screen ELO tablet with (2) included Samsung Galaxy wireless tablets (with Otterbox protective cases) for remote control of the Turning Targets, HVAC System, DRM PRO and LED strobe lights from anywhere in the range. A backup 4 button RF remote control allows for control of the turning targets if any of wireless tablets are not charged or fail in some way. SmartRange AXIS allows Action Target to offer free remote troubleshooting of all of the range systems if there should be any problem in the future. Captain Scales indicated LED strobes were desired at the 50 yard target line as well as at the Turning Targets, these strobes are included in our package. Simple touch screen controls allow for changes in temperature and on/off of the range HVAC system as well as current filter loads and expected filter life left before requiring change out.

FF&E Items for Range

Based on comments from Captain Scales, we have provided in our package (2) compact rifle rated clearing traps for safety clearing of firearms in the gun cleaning room or charging of weapons when leaving the range facility back to patrol. We have also included (2) sets of Sticky Mats for the range and lobby exits. These sticky mats trap contaminants such as lead and unspent powder from user's shoes as they leave the range to keep the rest of the facility clean.

Trusted Partner 3-Year Warranty

We have included the upgraded 3 year warranty for all shooting range equipment, the HVAC equipment carries the manufacturer's warranty. Industry standard for warranty in the shooting range industry is a 1 year warranty.

As Nevada County seeks to enhance its law enforcement training capabilities through a state-of-the-art shooting range, selecting the right equipment partner is critical to ensuring long-term safety, functionality, and adaptability. Action Target offers a comprehensive suite of advanced, proven range solutions—from ballistic containment systems like the Rubber Berm Trap™ and ShieldPro™ Ceiling Baffles to cutting-edge target systems and SmartRange Axis™ control software—all designed to meet the rigorous demands of law enforcement training. Action Target is uniquely positioned to support Nevada County in achieving its mission of preparedness and public safety.

The following pages provide detailed product cut sheets highlighting the performance, safety features, and customization options that make Action Target a trusted leader in live-fire range technology.

TRUSTED PARTNER WARRANTY™

3-YEAR COMPREHENSIVE COVERAGE

Action Target's 3-year Trusted Partner Warranty is peace of mind for gun ranges. It is uninterrupted training for those that serve. It is a resounding pledge from Action Target to its customer's success as the Trusted Partner at Every Level™.

Our Promise
The comprehensive Trusted Partner Warranty covers both parts and labor due to manufacturing to product defects.

CORE PRODUCTS COVERED

- Genesis™ Target Retriever
- Pilot™ Target Retriever
- SmartRange Axis™ Range control
- DRM Pro™
- Shooting Stalls
- Rubber Berm Trap
- Vortex™ Steel Trap
- Baffles and Deflectors
- Turning targets
- Auto Targets™
- MATCH™
- TAC House™
- Line of Fire™

LEARN MORE
ActionTarget.com/TrustedPartnerWarranty

RUBBER BERM TRAP™

NOT ALL RUBBER BERM TRAPS ARE BUILT ALIKE

Action Target's Rubber Berm Trap has numerous attributes that set it apart from the competition. For example, the trap is engineered with a uniquely designed galvanized steel frame that holds rubber in place to safely capture rounds. The rubber can also be treated with a flame-resistant formula to provide maximum fire protection.

Rubber Granules
Action Target's styrene-butadiene rubber granules are available in a variety of sizes and grade options to fit the needs of any range.

Fire Treatment
Action Target provides optional Flame Lock™ flame-resistant treatment. This gives rubber granules an ASTM-E84 and ASTM-E108-11 Class A rating, which is the industry's best fire rating.

Self-Supporting Frame
The Rubber Berm Trap is the safest rubber trap available. The self-supporting berm frame is designed to IBC standards.

Patented Fin Design
The Rubber Berm Trap's patented fin design keeps the rubber at a depth that is safe for shooters and reduces trap maintenance.

Sidewall Protection
Customers may opt for AR steel sidewalls to prevent bullets from damaging the range walls.

Integrated Baffles
Optional overhead baffles are available for additional protection of the building structure. Baffles can also be positioned as a hopper feeder for granule distribution.

ACTION TARGET™

LEARN MORE
ActionTarget.com/RBT

FEATURES

- Internal Frame Design
- Industry's Best Fire Rating
- Patented Fin Design
- Clean and Quiet
- Harvested Rubber Granules
- Optional .50 BMG Rating

SHIELDPRO™ CEILING BAFFLES

THE ULTIMATE OVERHEAD DEFENSE

ShieldPro™ Ceiling Baffles provide superior ballistic containment and acoustic control, ensuring maximum range safety while protecting overhead structures. Featuring a patent-pending design, they capture errant rounds, reduce ricochets, and direct spent material downward for easy cleanup. Built from durable AR500 steel, they support fixed firing line or tactical configurations with modular installation for easy customization. ShieldPro™ enhances shooter safety, reduces noise, and improves range efficiency.

Enhanced Safety & Ballistic Protection

Prevents errant rounds from exiting the range and mitigates ricochets and splatter, ensuring a safer shooting environment; while also shielding lighting, electrical systems, ventilation, and ceiling structures from bullet damage.

Modular & Durable Design

Built from AR500 ballistic steel, that provides extended performance under continuous live-fire use the ShieldPro baffles are easily installed, removed, or reconfigured to fit any range layout, including fixed firing lines and tactical training setups.

Effortless Cleanup & Maintenance

Featuring a vertical Z-furring design to secure acoustical materials, these baffles effectively redirect and contain errant rounds by utilizing an integrated air gap, which mitigates ricochets and splatter, directing spent material downrange for safe, effortless cleanup and maintenance.

Superior Acoustic Control

Create a more comfortable range experience, reducing noise levels with multiple sound-dampening fascia options, Sound fasica material with steel Z-furring configuration providing noise reduction coefficient up to 0.95 NRC depending on range design:

- Porous Expanded Polypropylene Panels (PEPP)
- Acoustic Ceiling Tile/Panel
- Wood Fiber Acoustic Panels
- SureStop™ Rubber Panels (Flate and Acoustic)
  SureStop Rubber fasica option can be directly applied to the face of the steel baffle plate without vertical z-furring configuration.

FEATURES & OPTIONS

- Engineered Deflection Angles
- Modular & Customizable
- Prevents & Contains Splatter
- AR500 Steel Ballistic Protection
- Exceeds UFC-4-179-02 Requirements
- Fixed Firing Line or Tactical Configuration
- No Field Welding Required
- Variety of Acoustic & Fascia Options
- Protects Ceiling-Mounted Equipment
- 1/4", 3/8", or 1/2" Steel Thickness Options
- Outdoor Configuration Applications
- Vertical Z-Furring Design
- Structural Certificate Stamp Upon Request

WALL BAFFLES

KEEP ERRANT ROUNDS SAFELY CONTAINED

A critical safety priority for any indoor range is making sure bullets cannot escape outside the range. Wall baffles provide an extra level of protection to wall structures and ensure that all rounds are contained within the range.

Safe
Wall baffles provide ballistic protection for wall structures and can contain thousands of rifle and handgun bullets, preventing errant rounds from escaping the shooting range.

Customizable
Action Target's wall baffles are compatible with various fascia options, range sizes, and ballistic ratings.

Modular Design
Individual baffles may be replaced as necessary, which keeps maintenance costs low.

Fascia
Wall baffle fascia helps contain splatter and provides sound abatement for the range.

Wood Panel
A layer of wood over the baffle contains bullet splatter, keeping shooters and range staff safe.

Air Gap
A wood or steel furring within the baffle provides space for bullets to splatter.

Ballistic Steel Baffles
Steel baffles prevent bullets from escaping the range and protect structural walls from projectiles fired at oblique angles. ATI Class 1 (handgun) and ATI Class 2 (rifle) options are available.

Wall Deflectors

Wall deflectors are installed in front of the bullet trap and over wall seams to keep rounds within the range. Deflectors are comprised of two components that are precisely engineered to direct rounds downrange. Deflectors are also designed with replaceable wear plates.

ACTION TARGET™

LEARN MORE
ActionTarget.com/Wall-Baffle

FEATURES

- Prevents Splatter
- Available in Standard and Acoustic Finish
- Customizable
- Modular
- 180° Training

FIXED LATERAL 360

UNIQUE FEATURES, ADVANCED TRAINING

The Fixed Lateral 360 system allows inverted targets to be repositioned laterally along a fixed rail, spaced apart or in groups, without the use of tools. Used in conjunction with the DRM Pro™ target system, these targets can represent bystanders or threats to simulate real-world scenarios.

360° Turning
Targets can turn 90, 180, and 360 degrees in the blink of an eye.

Ballistic
Exposed downrigger is built using AR500 steel to resist damage from bullets.

Quiet
Electric motor operates quietly, preventing shooters from anticipating movement.

Connected
Integrates with our range control software for advanced features and functionality.

LEARN MORE
ActionTarget.com/Fixed-Lateral-360

FEATURES

- 360° Turning
- Ballistic AR500 Steel Downrigger
- Connected to Range Control
- Advanced Quick Release Clamp
- Lateral Repositioning
- Electrical

DRM PRO

ENHANCED TRAINING AT YOUR FINGERTIPS

The DRM Pro is a state-of-the-art running man target. Equipped with two independent target carriers, variable speeds up to 20 fps, and programmable scenarios, this system offers shooters the most realistic training available.

Fast
Targets travel at speeds up to 20 FPS for realistic training.

Smart Device Control
The DRM Pro may be controlled on any Wi-Fi enabled device and provides access to service logs for maintenance.

Configuration
Inverted: System is installed behind the last row of ceiling baffles.

Two in One
Dual runners on parallel tracks provide enhanced dynamic training.

Connected
System connects with central range control and nearly any smart device.

Powerful
Heavy-duty inductive motors and hardened pulleys are built to last in any environment.

ACTION TARGET™

LEARN MORE
ActionTarget.com/DRM_Pro

FEATURES

- Control Interface Runs on Any Smart Device
- Integrates with Range Control Software
- Variable Speeds Up to 20 FPS
- Target Positions are Accurate Within 6"

SMARTRANGE AXIS™

ENHANCED RANGE CENTRAL CONTROLS

SmartRange Axis™ is a powerful range management solution allowing for remote access to your range for quick diagnosis and service, integrated control platform that puts all your equipment at your finger-tips, user friendly simple and intuitive interface for customers and staff, wireless, security with administrative login, lane management controls, industrial grade tablet, with multiple tablet control options, maximizing range usage and user experiences.

Lane Management
SmartRange Axis' Lane Management is second to none, offering the ability to enter shooters' names, assign unique permissions, and designate lane time limits.

Unique Permissions
User profiles are created by ranges and assigned to shooters at check-in. Each user profile carries unique permissions for program access and editing, lighting control, and equipment features. This allows ranges to tailor each session based on criteria such as range staff roles, membership level, etc.

Program Creation
Build dynamic programs and organize them by folder. Control exposure time, edge time, and cycle count. Or establish random parameters for a truly unpredictable and challenging training session.

Lighting Controls
Control stall and carrier lighting from one central location for an unmatched experience in training and an enhanced look and feel for any range.

Timed Drills
Set up and execute timed drills with customized target exposure times, cycle counts, and retriever speed for training or qualification.

Action Target Connected
SmartRange Axis uses a range server that connects with Action Target's cloud network. This provides access to analytics, remote troubleshooting, system improvements, and content updates for improved and streamlined business processes. As the building block for the future, Smart-Range Axis will continue to grow and serve as a central element for all range operations.

HVAC Management
Utilize a user-friendly control of your HVAC system, optimizing heating, cooling, and the safe removal of smoke and harmful containments like airborne lead and carbon monoxide from your range; while maintaining the necessary negative pressure to other areas of your building, preventing the spread of those same harmful containments. HVAC controls also allow you to monitor the health of your filters to keep your system running as efficiently as possible.

ACTION TARGET™

LEARN MORE
ActionTarget.com/SmartRange

FEATURES

- Central Master Range Control
- Lane Management
- Unique Permissions/User profiles
- Action Target Connected Remote Access
- Program and Timed Drill Creation
- HVAC Management
- Stall and Carrier Lighting Controls
- Language support options

PEPP

PEPP PANELS FOR SOUND ABATEMENT

PEPP is a cleanable acoustic panel that can be attached directly to range wall and ceiling surfaces for attractive and effective sound control.

Durable
PEPP can be used both indoor and outdoor. It is moisture-, impact-, bacteria-, and fungi-resistant. It is also resilient to oil, chemicals, flames, and sagging.

High Performance
PEPP is Class A fire-rated per ASTM E84 and also has high STRC and NRC ratings. NRC of 2" PEPP with the 1" cotton backing is .90. PEPP also has a SRT of 13.

Configuration
Can be installed on both range wall and ceiling surfaces.

Wipe-able
The non-fibrous and non-abrasive lightweight surface does not contain fiberglass and is easily cleanable.

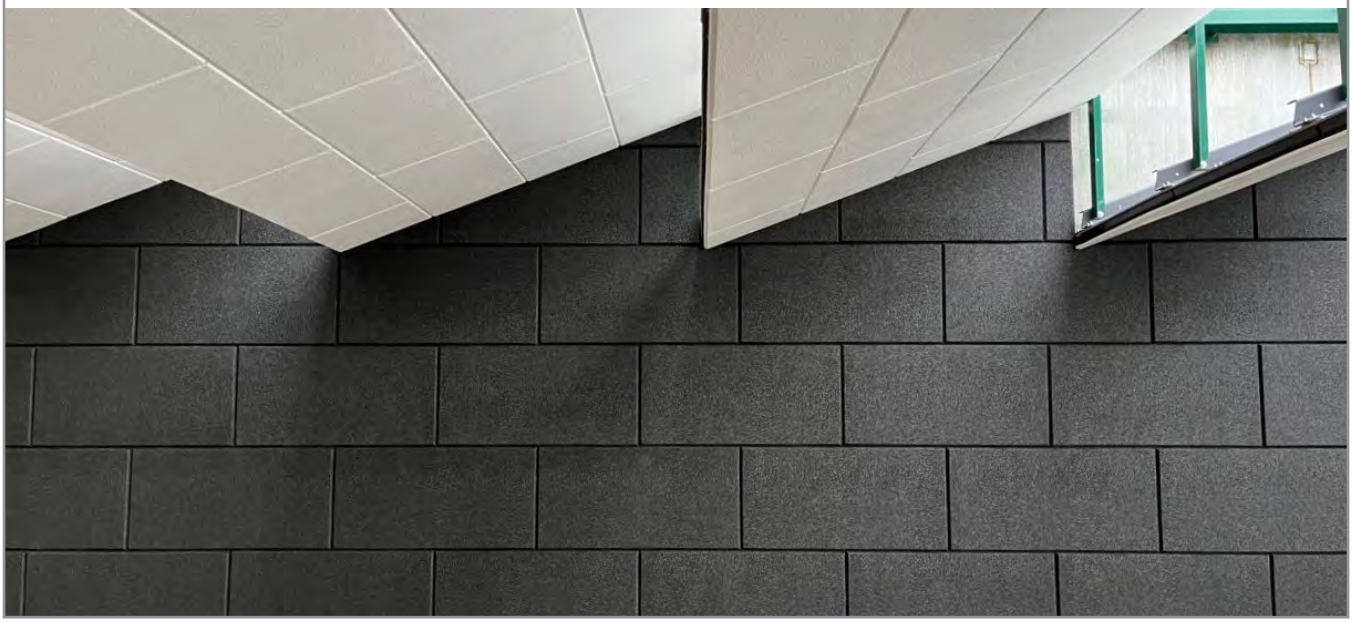
Strong
This sound-silencing material is resilient and flexible. PEPP is durable, tackable, and is made of a strong rigid material that can capture rounds without ricochet or splatter.

ACTION TARGET™

LEARN MORE
ActionTarget.com/Sound-Abatement

FEATURES

- Available in Both Charcoal and White Finish
- Both 1" and 2" Thickness
- Both Straight Edge and Beveled Edge Finishes
- High STRC and NRC Sound Rating
- Non-Fibrous, Resistant Material
- Class A Fire Rated
- Lightweight and Easy-to-Clean
- Outdoor and Indoor Usage



Acoustical

Acoustical Performance Goals

Nevada City, Chapter 8.20 – Noise Control

The noise ordinance for Nevada City, California, notes the following limits:

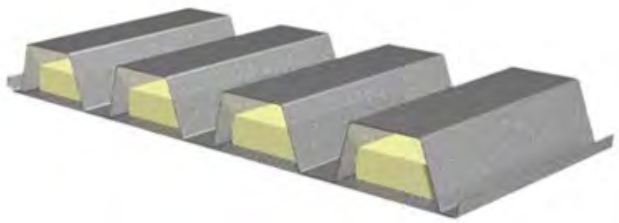


Figure 3.2 - Predicted to be code compliant below the noise ordinance, but high-caliber rifles and shotguns might be perceptible to nearest residential neighbors.

Nighttime (9pm – 7am) noise levels cannot exceed 60 dBA from Nonresidential source to Residential receivers to the south and 70 dBA to the Nonresidential receiver (Elk's Lodge to the east and undeveloped to the west) when measured at the receivers property line; 8.20.030.

Daytime noise levels cannot exceed 75 dBA when measured at 25-feet from the source; 8.20.060. This has been interpreted to be at distance of 25-feet from the building envelope on the south and east sides of the proposed project.

Interior Spaces

Based on design guidelines adopted by LEED v4.1 and the International Green Construction Code (LGCC), the background noise in the Classroom and office should not exceed 35 dBA / 60 dBC from HVAC systems or 45 dBA / 70 dBC from the firing range activities.

These rooms should also have reverberation time (RT60) less than 0.6 seconds at speech frequencies.

The team went on-site to measure basic sound levels. The intent was to understand the environmental noise and help contextualize the range's acoustical setting. It is observed that the siting of the neighboring residences is below the grade of the new facility. This site aspect, combined with our acoustician's recommendation, leads us to high confidence that the sounds generated by the facility will be below the City and County's noise requirements of 60 dB.

Acoustical Design

Firing Range

CMU Wall Assembly

BOD: 8" CMU grout-filled block. Block to extend above the roof deck to mitigate sound flanking.

Acoustical Design Plan. To meet acoustical performance goals, ensure the ballistic panels are installed on furring framing on the CMU walls.

Roof Assembly

BOD: TPO on ½" coverboard with 5" rigid insulation and 2.5" acoustical metal deck with suspended ballistic clouds

Acoustical Design Plan

With basis of design roof system:

1. Ensure acoustical metal deck is Cellular Deck or composite deck with perforated bottom pans but solid backer.
2. Install (1) layer of 5/8" thick coverboard on the back of the metal deck prior to 5" insulation.
3. Upgrade to 5/8" coverboard above insulation.
    a. Enhancement: Extend height of parapet to be at least 2'-0" above roof.
    b. Interior Enhancement: Install 2" thick sound-absorptive finish on one or both sides of the ballistic clouds.

Glazing Between Viewing Corridor and Firing Range

To ensure both safety and acoustic comfort, we propose a ballistic-rated laminated glass assembly for the glazing between the firing range and the viewing corridor.
The assembly will meet applicable ballistic standards (e.g., UL 752) and be designed to achieve a minimum STC rating of 50 to mitigate the transmission of high-decibel gunfire noise. The glazing will consist of multi-layer laminated construction, potentially with dissimilar glass thicknesses or insulated configurations to enhance acoustic performance across a broad frequency range.

Interior Firing Range

Vehicle Access Doors

- Sound Transmission Class (STC) rating of STC 55, ballistic rated.

Interior Windows to Lobby

- Minimum: ¾" thick laminated ballistic glass (STC 42).

Vestibule Doors

- Minimum: Full door seals for both doors with a minimum surface weight of 6.0 psf.

Civil

The proposed site improvements will support the development of a new standalone building located to the south of the existing facility. Site improvements include site access, grading, utility service lines, stormwater infrastructure, and demolition of existing improvements as required for the construction of the new building and associated features.

The existing driveway will be extended from the northwest corner of the current building to the new building site. The extended driveway will be 20 feet wide, asphalt paved. Two 20-foot-wide fire department hammerhead turnarounds are planned, one at each end of the new building, to comply with emergency access requirements.

Demolition activities will include the removal of existing pavement, fencing, and vegetation in areas impacted by the proposed development. Where new utility lines cross through existing paved surfaces, saw-cutting and pavement repair will be required.

A new sewer lift station is expected to serve the proposed building. New sewer lines will connect to the existing onsite sewer system located on the east side of the current facility, with the point of connection anticipated to be northeast of the building. We believe that the septic system that was designed for its prior use of restroom and showers within the Juvenile Hall should be adequately sized for is proposed uses; between the County Dispatch and Training Facility.

Water service for the new building will tie into the existing system that currently enters the site through the western driveway. The existing water vault in the parking lot contains the current backflow preventer and water meter. The domestic water line for the new building is expected to connect downstream of the existing meter. The fire water service will connect upstream of the existing backflow preventer, at the west side of the existing parking lot. A new fire backflow preventer will be installed to serve the new building's fire protection system.

The finished floor of the proposed building is expected to be around elevation 6225', which results in a cut condition along the western, eastern and, more significantly, the southern sides of the proposed improvements. The hills along the western and southern portions of the project area include gradients in excess of 30%. A flatter area will be created on the south side of the building to provide Fire Department pedestrian access and to accommodate a new stormwater detention pond. Cut slopes are expected to be no steeper than 2:1 and revegetated.

Following LID criteria, stormwater management will be handled through a combination of surface treatment features and landscaping whenever possible. A system of gravel infiltration trenches located along pavement edges and roof drainage routed to a new detention basin on the east side of the building is anticipated for the project. The detention basin will include an overflow structure and a discharge pipe with a flared end section and rock outlet protection, designed to daylight into the existing hillside.

Temporary construction Best Management Practices (BMPs) will be implemented throughout the duration of site work. These include a stabilized construction entrance, vegetation protection fencing, silt fence, and fiber rolls. All disturbed areas not receiving hardscape will require final revegetation or hydroseed.

Landscape

The Landscape Basis of Design for this project aims to provide the Client with safe and aesthetically pleasing outdoor spaces while keeping with the character of the locality and minimizing ongoing maintenance requirements. The landscape is being designed to comply with the Nevada County Standards as well as firesafe design standards per California Code, Government Code - GOV § 51182.

The use of native and adaptive plant species well suited to the rigors of the Sierra Foothills environment will minimize the need for chemical fertilizers and pesticides as well as the consumption of water. The facility entry will be enhanced by means of vegetation and decorative landscape boulders. Some appropriate additional species may be proposed to enhance the visual appeal of the landscape. Prohibited and Invasive plants will be excluded from the plant palette.

Landscape areas will be predominantly irrigated by means of an automatically controlled, low volume drip irrigation system. The K9 training area will be turf grass irrigated by means of high efficiency pop-up rotary stream nozzles. The landscape will be designed to comply with the California Model Water Efficient Landscape Ordinance (MWELO). Water use documentation will be provided as a part of the landscape plans.

With this project, we seek to create a safe, functional, and comfortable landscape to complement and augment the new facility in such a way that site users will enjoy and benefit from for many years to come.

Structural

The Indoor Shooting Range consists of a new one-story, 9,800 gross square foot range building and approximately 3,900 gross square foot support building. Currently, the basis of design includes two separate structural systems. The shooting range area utilizes 8" concrete masonry units (CMU), acoustic metal deck at the roof supported by steel open web joists spanning the short distance of the range, slab-on-grade floor, and shallow continuous concrete foundations. The support building area consists of cold-formed stud walls with plywood sheathing on the exterior and limited area on interior walls. The roof of the support building will consist of metal decking supported by steel wide flange framing and steel hollow structural sections (HSS) columns with steel baseplates to spread footings.

Codes	Description
2025	California Building Code (CBC) with State of California Amendments ASCE 7-22 Minimum Design Loads for Buildings and Other Structures
ACI 318-22	Building Code Requirements for Structural Concrete AISC
341-22	Seismic Provisions for Structural Steel Buildings AISC
360-22	Specification for Structural Steel Buildings
AISI S100-22	Design of Cold-Formed Steel Structural Members
TMS 402-22/602-22	Building Requirements and Specification for Masonry Structures
ANSI/AWC NDS-2024	National Design Specification for Wood Construction
ANSI/AWC SDPWS-2021	Special Design Provisions for Wind & Seismic

Design Criteria

RISK CATEGORY	IV (Law Enforcement Facility)
DEAD LOADS	
Dead Loads, D	Self-weight of members, systems, and assemblies + 5 PSF (Future Rooftop Solar)
LIVE LOADS	
Roof Live Load, Lr	20 PSF
Floor Live Load, L	100 PSF (Assembly, Access Floor Systems, Corridors, Stairs & Exits)
SNOW LOADS	
Project Elevation	2,664 ft. Ground Snow Load 2,664 ft. Ground Snow Load, Pg 49 PSF Ce 1.0 Ct 1.1 (Cold Roofs) 1.2 (Unheated / Open Air Roofs) Is 1.20 Flat Roof Snow, Pf 45 PSF (Cold Roofs) 49 PSF (Unheated / Open Air Roofs)
WIND LOADS	
Ultimate Wind Speed	105 MPH Exposure Category C
Enclosure Class	Enclosed (GCpi = +/- 0.18)
SEISMIC LOADS	
SS	0.583 g
S1	0.238 g
Soil Site Class	D
SDS	0.518 g
SD1	0.337 g
Ie	1.5
Seismic Design Cat.	D
Seismic Systems	Light-Frame (Cold-Formed Steel) Walls with Wood Structural Panels (R = 6.5) (Bearing) Steel Ordinary Moment Frames (R = 3.5)
Analysis Procedure	Equivalent Lateral Force (ELF)
SOIL PARAMETERS	
Soils Engineer	Holdrege & Kull
Soils Project No.	777-04
Report Date	November 5, 1999
Allowable Soil Bearing	2,800 PSF (+ 1/3 increase for Wind / Seismic) Coefficient of Friction, 0.30
Active Pressure	35 PCF
At-Rest Pressure	55 PCF
Passive Pressure	300 PCF
Frost Depth	18" Below Grade

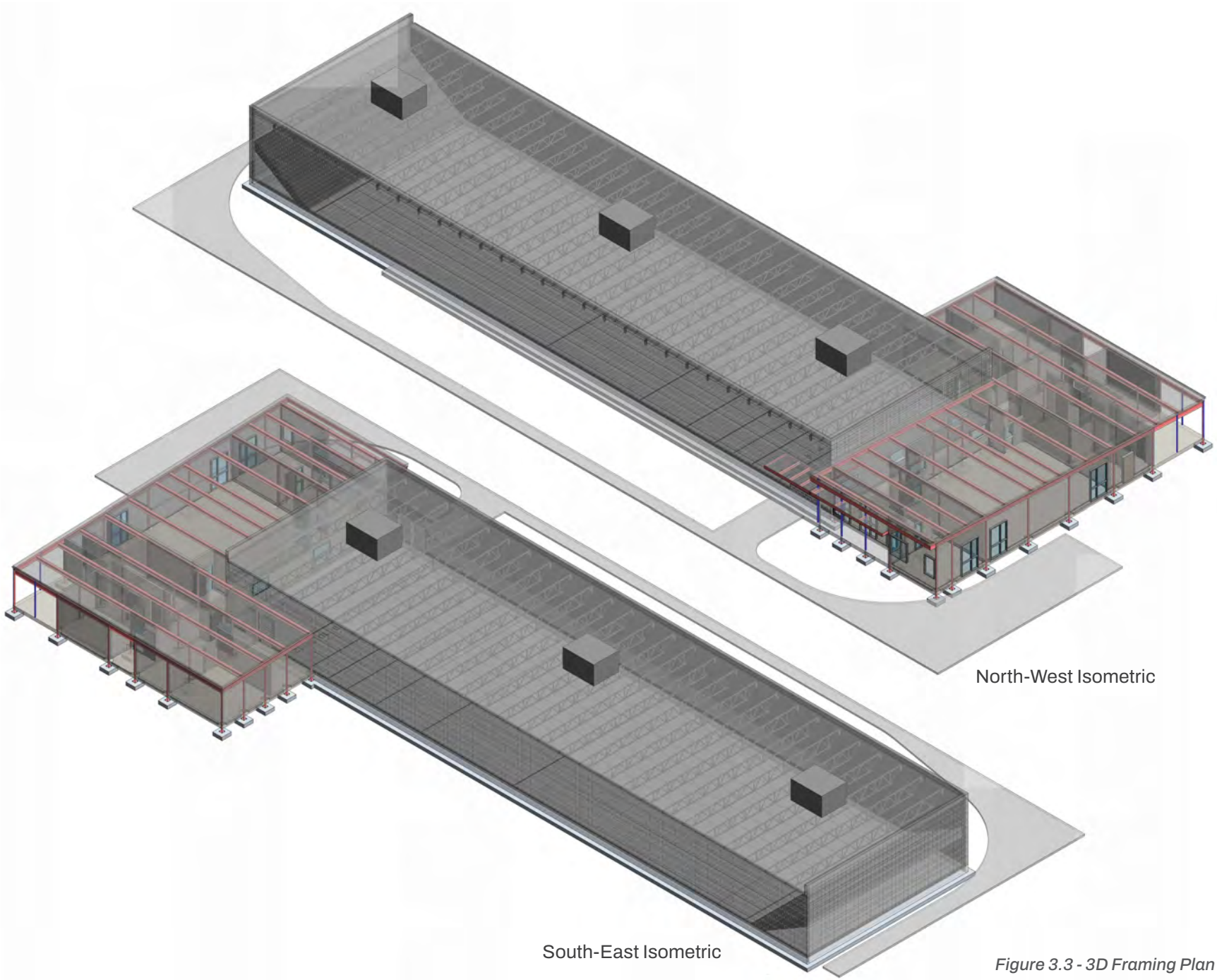


Figure 3.3 - 3D Framing Plan (Structural)

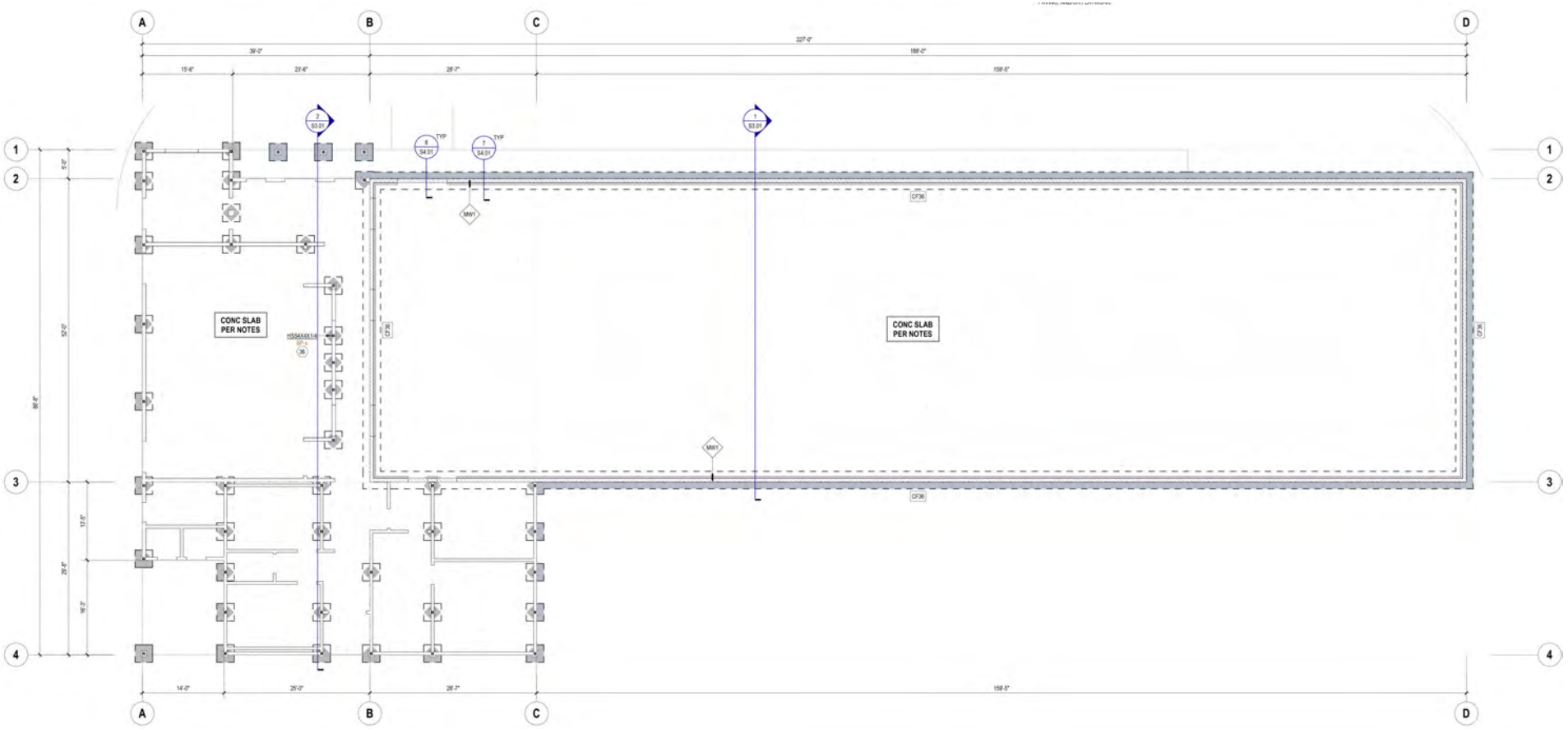


Figure 3.4 - Foundation Dimension Plan

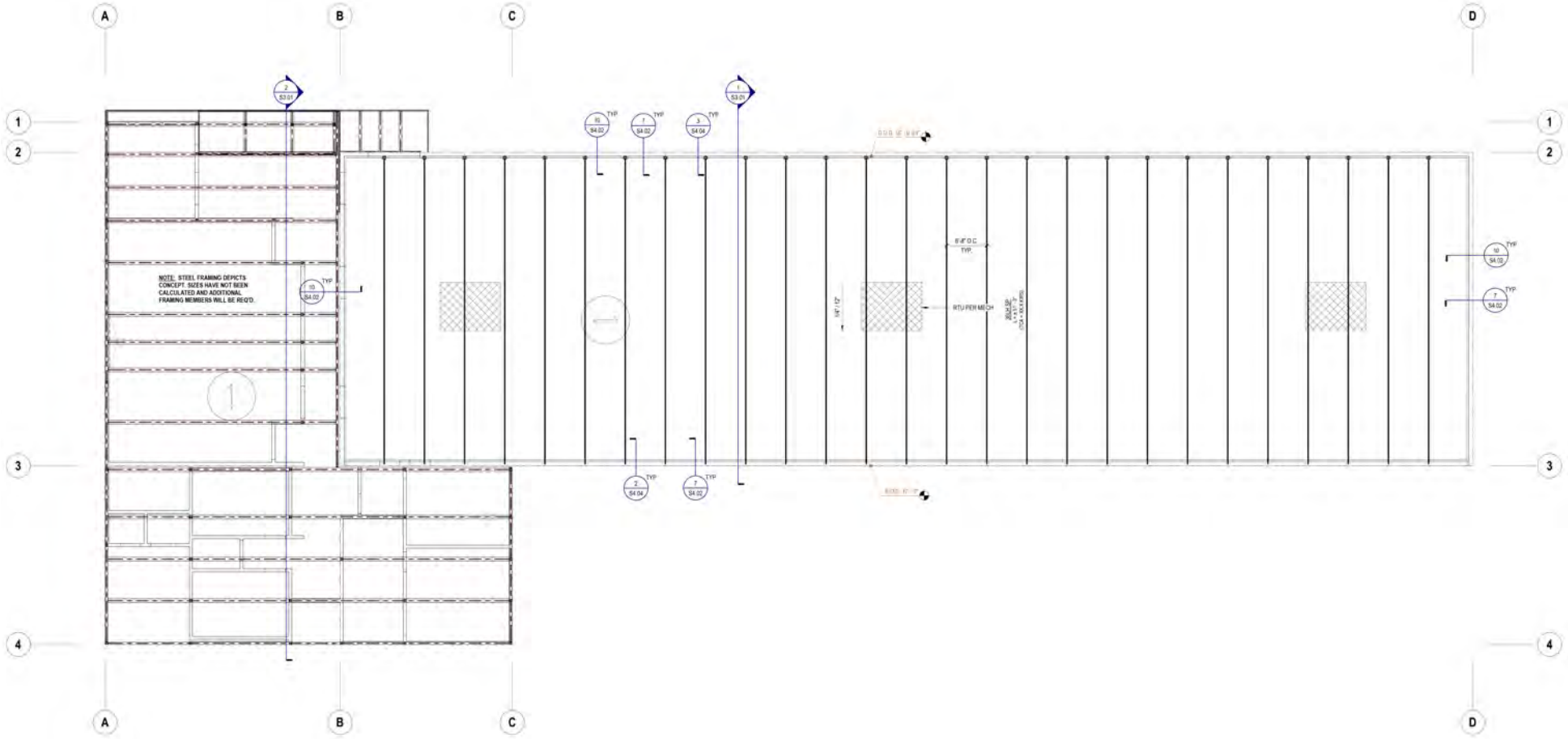


Figure 3.5 - Foundation Dimension Plan

Gravity Systems

Shooting Range Structure: Concrete Masonry Unit (CMU) Walls and Steel Open-Web Joists

To support the high roof loads including mechanical rooftop units, future photovoltaic (PV) panels, suspended ballast equipment, and moderate snow loads, we propose using an 2-1/2" thick acoustic cold-formed metal deck as described in the architectural. At every 6'-8", 36" deep steel open web joists will be used and connected to 8" concrete masonry unit (CMU) walls. The 8" CMU will require medium weight units with 4,000 psi compressive strength (f'm). The steel framing is currently selected to clear-span the spaces, typically, to meet the open space requirements of the shooting range.

The CMU walls will bear on conventional concrete continuous footings. The slab-on-grade (SOG) thickness for this project will be designed to accommodate the loads in the range.

Support Structure: Plain Steel Metal Deck Over Wide Flange Framing and Cold-Formed Studs

We propose utilizing a combination standard and acoustic metal deck profile in the support structure as the shooting range. At every 8' or less, W12 wide-flange A992 steel beams will be used and connected to hollow structural steel (HSS) columns. The steel framing is currently selected to clear-span the spaces, typically, to provide maximum programming flexibility. These result in larger structural members that could require special procurement. If desired, steel columns could be added to these spaces to reduce the tonnage of steel framing. Adding steel columns is not necessarily recommended at this time as the layout is considered to be efficient to conceal HSS columns in interior walls as described below.

Hollow structural steel (HSS) columns are strategically located to support roof framing above and will be concealed in cold-formed stud (CFS) exterior and interior assemblies. Walls are to be constructed of 6" wide CFS profiles around the perimeter of the building. Due to large point loads being applied to exterior CFS walls and typical CFS top tracks having a poor ability to distribute these point loads to multiple studs uniformly, a band of shallow structural steel (W8 or W6) will serve as a top track around the perimeter of the exterior walls.

The CFS walls will bear on conventional concrete stemwalls and continuous footings. HSS columns will bear on spread concrete footings located beneath the concrete slab-on-grade (SOG).

Lateral Force-Resisting Systems (LFRS) – Wind and Seismic

Shooting Range: Specifically Reinforced Concrete Masonry Unit (CMU) Shear Walls

The project is in a Seismic Design Category D (SDC D) region as previously described. Due to CMU being utilized as the gravity system to support multiple serviceability reasons, the most common LRFS that is approved for use are specially reinforced concrete masonry shear walls. All cells will be required to be grouted, and a grid of vertical and horizontal reinforcement will be required. Embedment of the vertical reinforcement as dowels in the foundations with relatively long lap lengths will be necessary to tie the shear walls to the foundation.

Support Structure: Cold-Framed Stud With Wood Sheathing Walls

The project site consists of high seismic demands which is compounded by the mass introduced by rooftop units and suspended shooting range ballasted equipment. Cold-formed studs with wood structural sheathing panels applied to the exterior will serve as shear walls to support the lateral demands on the support building. Due to the costs associated with fire-rated exterior wood plywood on all the cold-formed stud walls, Steel Ordinary Moment Resisting Frames (OMF) may be utilized in lieu of the sheathing as the LFRS.

Mechanical

HVAC

Applicable Codes and Standards

- California Building Codes, 2025 Edition
- California Building Code (CBC)
- California Fire Code (CFC)
- California Green Building Standards Code (CalGreen)
- California Energy Code (CEC)
- California Mechanical Code (CMC)
- California Plumbing Code (CPC)

Design Conditions

Based on ASHRAE Climatic Data for Region 11, Nevada City, CA:

- Outdoor Design Temperature:
  - Summer 97°F db, 66° F wb (0.1% Dry Bulb and Mean Coincident Wet Bulb)*
- Winter 14°F db (0.2%)*
  - * Use for peak cooling and heating load calculations only; use normal weather temps for energy compliance.
- Indoor Design Temperature:

Room Type	Summer / Winter Design Temps (°F)
Classroom	72 / 68
Office	72 / 68
Entry / Corridor	72 / 68
Cleaning / Armory	72 / 68
Restrooms	72 / 68
Electrical	85 / 55

Interior Loads: (as indicated below, or actual design load)

Room Type	Equipment & Misc. (Watts/Sq. Ft.)	Lights (Watts/Sq. Ft.)
Classroom	0.5	0.70
Office	1.0	0.65
Entry / Corridor	0	0.60
Cleaning / Armory	0	1.0
Restrooms	0	0.60
Electrical	Per actual loading	0.60

Ventilation Loads: (as indicated below, or actual design load)

Room Type	Min. Outside Air/ Person (or sq. ft.)	Min. Exhaust (Air Changes/ Hour)
Classroom	15	N/A
Office	15	N/A
Entry / Corridor	15	10
Cleaning / Armory	15	10
Restrooms	15	10
Electrical	15	Per CPC

People: (as indicated below, or actual design load)

Room Type	Sq. Ft./ Person (for occupants)	Sensible Heal Gain/ Person (BTU/ Hour)	Latent Heat Gain/ Person (BTU/Hour)
Classroom	25 occ	250	200
Office	2 occ	250	200
Entry / Corridor	2 cc	250	200
Cleaning / Armory	100	250	200
Restrooms	100	250	200
Electrical	100	250	200

Range HVAC System

Based on Captain Scales' responses in the Confidential meeting, we have designed a roof mounted Purge Style HVAC system for the Nevada County Sheriffs shooting range. This is the most common style of range HVAC system that is used in Northern California and offers both simplicity as well as reduced up front and operational cost in most seasons of the year. It is comprised of a large Greenheck (Model DGX-130-H38-II) Makeup Air Unit (MAU) with a 40 horsepower fan, either heating the air with a natural gas fired burner or cooling the air with a large Evaporative Cooler and then pushing the air into the range through custom fabricated radial diffusers at 33,000 CFM.

At the end of the range is the Range Exhaust Fan (EF) which is a Greenheck (Model USF-36) which is a 75 horsepower fan pulling 36,300 CFM out of the range to maintain the NIOSH required 10% negative pressure at all times. This negative pressure keep lead and other containments from leaving the range through doorways and exits. The exhaust air is pulled through a Camfil filter bank featuring (18) Camfil Hi-Flo SR Bag filters and then through (18) Camfil Absolute

VGSR HEPA Filters. The air leaving the range is considered "hospital grade" HEPA filtered air, making the air exhausted from the range even cleaner than the city's air going into the range.

This whole HVAC system is controlled through Action Target's patented SmartRange AXIS (SRA) control system, offering easy On/Off or adjustment of the airflow and/or temperature through the SRA 15" touch screen on the range wall or through any of the 12" wireless tablet remotes included with the system. The SRA control system also gives current filter pressure and estimated filter life left before requiring a change out. The SRA control system allows for remote troubleshooting of the Range HVAC system if there is ever an issue with the system's operation.

This system has been designed to meet all OSHA, NIOSH and EPA regulations related to employee use of indoor ranges and provide a safe environment for the Nevada County Sheriff's Office Deputies. The Purge Style system is not only a much lower up front cost, but about ½ of the operational cost on average when compared to Recirculation Systems with Electric heating and Air Conditioning. The Purge System with its Evaporative cooling offers a max of 30 degrees of cooling in the summer months, but at a greatly reduced cost compared to full A/C systems.

Attend one of our upcoming Indoor Range Development Courses link:

https://www.actiontarget.com/training/seminars/

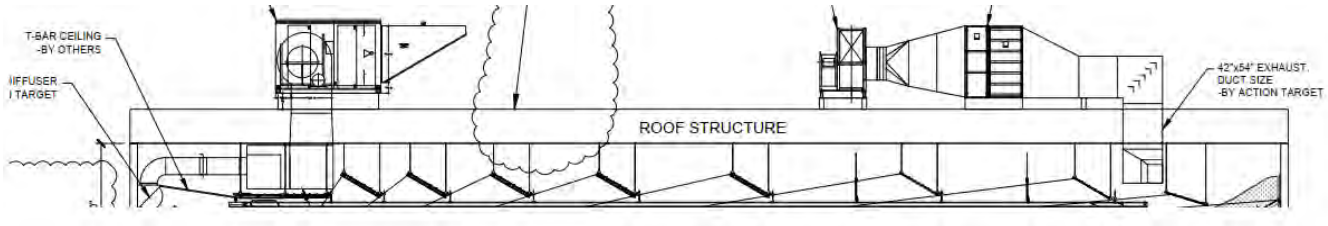


Figure 3.6 - Example Drawing of Purge Style HVAC System

HVAC

VITAL TO SAFETY AND COMFORT

Proper ventilation is essential to the shooter's experience and provides a safe atmosphere for employees and customers. Action Target provides 180-degree ceiling-mounted air delivery ventilation systems that exceed OSHA, EPA, and NIOSH regulations. Both purge and recirculation systems are available, as well as systems with heating and/or cooling. Ventilation systems can be installed indoors and outdoors.

SmartRange Axis™ Control
Action Target's ventilation systems seamlessly integrate with SmartRange Axis range control software. This software provides an intuitive digital display of the ventilation system, including real-time filter life data and remote servicing capability.

Purge System
A purge ventilation system draws air into the range, filters it, then releases cleaned air back into the atmosphere.

Recirculation System
A recirculation ventilation system filters and reuses air within the range. These systems require less energy to function because the reused air is already cooled or heated.

Laminar Diffusion
Ventilation systems introduce clean air to the range behind the shooting line. A radial diffuser ensures the air is evenly distributed.

Air Flow
Ventilation systems create negative air pressure to draw hazardous dust-filled air away from the shooter and toward the bullet trap. From there, the air enters a filtration system for a final cleaning process.

Filtration
Ventilation systems filter and collect contaminated air, meeting OSHA, EPA, and NIOSH requirements.

Climate Control
Ventilation systems adapt to changing environmental conditions to maintain required air speed and pressure conditions.

LEARN MORE
ActionTarget.com/Ventilation

FEATURES

- SmartRange Axis Compatible
- Exceeds OSHA, EPA, and NIOSH Regulations

HVAC System Recommendations

The following two options outline HVAC systems designed to serve the "front of house" spaces in the building. Note that the HVAC system for the firing range is being designed separately by a consultant and is not included in these options.

Option 1: Rooftop AC Units

System Description

- Three rooftop Direct Expansion (DX) units with gas-fired heat will serve the "front of house" spaces:
  - One unit for the classroom
  - One unit for the office and entry
  - One unit for the restrooms, cleaning room, and armory
- Each unit will include:
  - Fully modulating 100% power exhaust economizers to enable "free cooling" when outdoor temperatures are suitable
  - MERV-13 filtration for enhanced indoor air quality

Option 2: Variable Refrigerant Flow (VRF) System

System Description

- An all-electric VRF system will serve the "front of house" spaces, featuring:
  - Indoor fan coil units for each thermal zone, with consideration for both ducted and cassette-style ceiling-mounted designs
  - An outdoor heat recovery condensing unit, sized for the project's low winter ambient temperatures, supporting simultaneous heating and cooling across different zones
- Ventilation air will be routed through an Energy Recovery Ventilator (ERV) to preheat or precool incoming air using outgoing exhaust air, improving energy efficiency.
- Indoor units will be equipped with removable, washable filters.

HVAC Distribution

- Duct will be designed with operating economy in mind as a priority. Supply air, return air and exhaust air duct velocities will be designed to not exceed 1200 FPM and duct friction not to exceed 0.08" WC per 100 feet.
- At a minimum, 1-inch acoustical duct lining will be provided for 10 feet from fans.
- Air Inlets and Outlets:
  - Grilles will be selected with outlet neck velocities shall not exceed 600 FPM.
  - Grilles will be placed such that adequate mixing in space occurs and velocity in all areas of the occupied zone (3 feet to 7 feet above finished floor) is between 50 and 80 FPM.
  - A minimum of one supply air diffuser and one return grille will be provided for each room except small rooms in need of only an exhaust register when the room is ventilated.
  - The placement of grilles will be coordinated with light fixtures, speakers, and smoke/security detectors, and any other ceiling devices. Transfer grilles will be arranged with lined ductwork between to minimize noise and light transmittance.
  - The exact locations of ceiling inlets and outlets will be coordinated with architectural reflected ceiling plans. Outlet neck velocities will not exceed 600 FPM. Inlet neck velocities will not exceed 500 FPM. This does not apply to linear or other high-volume specialty air outlets.

Exhaust and Ventilation

- Exhaust fans and ductwork will be provided for:
  - Restrooms
  - Custodial room
  - Clean room
  - Armory
- The electrical room will be assessed during the design phase to determine cooling or ventilation requirements.

HVAC Controls

- A new BACNet-based Direct Digital Control (DDC) system will be implemented for automatic temperature management.
- Remote access will be available via a server or web-based interface.
- Exhaust fans will be interlocked to run with the main system or via local thermostatic control.
- Per firing range standard practice, make-up air unit and exhaust fan will not be integrated with BMS, and will operate stand-alone, to prevent unintended control sequence disruption of those critical systems.
- Building maintenance personnel will be trained in all aspects of system operation, maintenance, scheduling, and set point adjustment.

Plumbing

Applicable Codes and Standards

California Building Codes, 2025 Edition

- California Building Code (CBC)
- California Fire Code (CFC)
- California Green Building Standards Code (CalGreen)
- California Energy Code (CEC)
- California Mechanical Code (CMC)
- California Plumbing Code (CPC)

Plumbing Systems

Fixtures

- Low-flow vitreous china fixtures will be used for all areas.
- Fixtures are to be low flow, with battery powered sensors and faucets.
- Water closets to be 1.28 gallons per flush. (Floor-mounted water closets)
- Freeze-proof hose bibs will be provided around the building perimeter, and adjacent to equipment on roof.
- Drinking fountains will include hydration station bottle filler options at all locations.

Domestic Water

- A nominal 50 gallon gas water heater is anticipated to be the basis of design for domestic hot water heating.
- Water heater to serve restroom lavatories, hand sinks, a mop sink, and an emergency eye wash.
- System to be provided with a recirculation pump and loop sized at 3 feet per second velocity.
- Water hammer arrestors will be provided in accordance with latest CPC requirements and PDI recommendations.
- Any piping subject to freezing conditions will be heat traced.
- Domestic cold water will be sized per the current edition of the CPC.
- The water pressure within the building's distribution piping shall not exceed 80psi.
- Water velocity in all piping shall not exceed 6 feet per second for cold water.
- Copper type L shall be used for domestic water systems.

Waste and Vent

- Trap primers will be provided to all drains. Electric trap primers will be provided when located more than 30 feet from a quick closing valve.
- Drains for air conditioning system condensate will be discharged to floor sinks or as allowed by CPC.
- Waste and vent systems for fixtures will be sized in accordance with the current edition of the CPC.
- Floor drains will be provided at each toilet room with multiple fixtures per CPC.

Storm Drainage

- Roof drain system anticipated to implement gutters and downspouts; there will be no roof drains, rainwater leaders, or overflow leaders on or within the building.

Natural Gas

- It is anticipated that the project will tie into the existing adjacent building natural gas piping system.
- Natural gas will be routed to the new building, with a regulator and shut-off valve at the entry point.
- Basis of design assumes a gas meter is not required.
- Low pressure natural gas will be routed within the building to serve the firing range make-up air unit. Additionally, gas will serve the rooftop AC units if that HVAC system type is chosen.

Miscellaneous

- A cold water line will be plumbed to serve the evaporative make-up air unit on roof. Line shall be isolated from potable water system with backflow device and isolation valve. A drain line shall be provided for maintenance of unit.
- It is anticipated that a sewer lift station will be necessary to pump the building's sanitary sewer to the existing septic system on site.

Fire Protection

The building will be provided with a new fire riser room to support a fully automatic wet sprinkler system. The sprinkler system will serve all areas of the building, including front of house space, and firing range, as well as overhangs as required by Code. Areas that cannot maintain 40 degrees F shall have provisions for freeze protection.

The system will include all necessary distribution piping and sprinkler heads to ensure comprehensive fire protection throughout the building. The design drawings will be provided as criteria plans, establishing the performance requirements for the system. Our design build fire sprinkler subcontractor will be responsible for developing and submitting fully calculated fire sprinkler plans at the start of construction for AHJ approval, as this scope is a deferred submittal. The final system design will comply with all applicable codes and standards, ensuring proper coverage and functionality for the various space types within the building.

Electrical

The purpose of this narrative is to provide general electrical information for the new Nevada County Regional Law Enforcement Indoor Shooting Range in Nevada City, California. The information contained within this package is based on the RFP Criteria and information from confidential meetings. Work includes:

1. New incoming utility power service.
2. New incoming telecommunication / broadband service (copper and fiber) from the adjacent building.
3. Power distribution system.
4. Connection for temporary standby generator to power the whole building.
5. Power connections to all motors.
6. Grounding system.
7. Branch circuiting of all devices, equipment, and appliances.
8. Interior lighting and lighting control system.
9. Emergency/egress lighting system via inverter.
10. Exterior lighting and controls.
11. Fire alarm system.
12. Telecommunication cabling system.
13. Electronic security systems.
14. Audio visual systems.
15. UPS for IT equipment shall be provided by Owner.

Codes & Standards

Work shall be performed in accordance with all applicable requirements of the latest edition of governing codes, rules, and regulations, including but not limited to the following minimum standards:

- CCR, California Code of Regulations, Title 24
- CBC, California Building Code
- CEC, California Electric Code
- CFC, California Fire Code
- CMC, California Mechanical Code
- NFPA, National Fire Protection Association
- BICSI, Building Industry Consulting Service International

Equipment and materials shall conform to the following standards where applicable:

- ANSI, American National Standards Institute
- ASTM, American Society for Testing Materials
- CBM, Certified Ballast Manufacturers
- ETL, Electrical Testing Laboratories
- IEEE, Institute of Electrical and Electronics Engineers, Inc.
- IPCEA, Insulated Power Cable Engineer Association
- NEMA, National Electrical Manufacturer's Association
- UL, Underwriters Laboratories

Site

Power

Provide utility power to the building by Pacific Gas & Electric (PG&E) via a new pad mounted utility transformer. We assume the connection point to be near the existing PG&E transformer that serves the building to the North (the old Juvenile Hall). We will coordinate all work with PG&E. Our current assumed scope of work is:

- Provide PG&E approved primary intercept vault.
- Provide pad for PG&E pas mounted junction box.
- Provide conduits between the vault and junction box.
- Provide conduit from the junction boxes to the new PG&E pad mounted transformer serving the Range.
- Provide pad for new PG&E transformer.

The PG&E transformer will be located on the West side of the building. Transformer shall be provided by PG&E and be installed per their standards. Provide duct structure (conduits, pullboxes, trenching, etc.) as required. The power shall step down to building voltage (277/480V) via the utility pad mounted transformer. From the transformer, provide conduits to the main switchboard per PG&E standards. Main switchboard shall be 600A, 277/480V, 3 phase, 4 wire and shall be located outside near the transformer. Refer to the Figure 3.7 below.

Telecom

Provide fiber and copper connectivity to the building IDF cabinet, which shall be located in the office. Pathway shall include two 4" conduits with OSP cabling (fiber and 25 pair copper). Connection point shall be the existing building MDF.

Site Lighting

New site lighting will be provided to accommodate the new building and site reconfigurations. The site lighting will consist primarily of building mounted lighting with pole mounted lighting if needed.

EV Charging Stations

Provide EV capable spaces to comply with Cal Green Code. Refer to the Additional Miscellaneous Requirements section below.

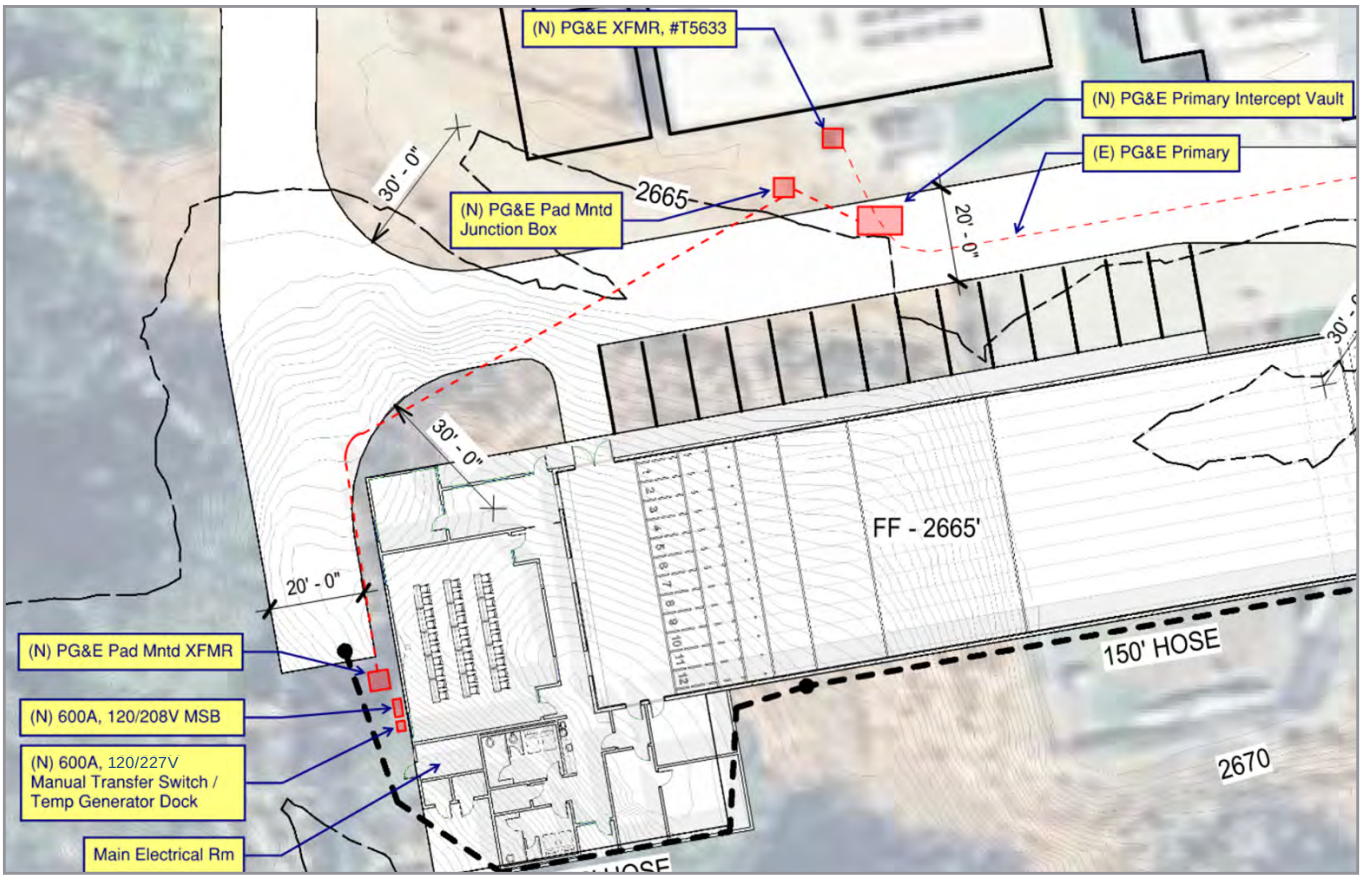


Figure 3.7 - PG&E Service Work

Power Distribution

Load Calculation

The following load calculation is the basis for the electrical service size indicated above as well as the power distribution throughout the building. This shall be used as a basis of initial design and finalized/confirmed during the design process.

Note, the load calculations below assume an all-electric building, which results in the higher than expected.

Normal Power

A new NEMA 3R 600A, 277/480V main switchboard shall be provided to serve the building and site. This equipment will be located outside near the transformer as shown in Figure 3-9. The MSB shall serve the building via 600A, 277/480V manual transfer switch (MTS)/generator socking station, which shall be located next to the MSB. The MTS shall be set up for a temporary generator connection as the secondary source. The main electrical room shall contain the distribution board, lighting panels, and receptacle panels.

Standby/Emergency Power

By code, emergency power is required for egress/exit lighting only. Building will contain lighting with integral 90 minute batteries for service to the egress/exit lighting. Refer to the lighting section. Other systems (fire alarm and security) shall be provided with integral batteries.

The system shall be set up such that a temporary standby generator can be connected as described above.

Metering

The electrical design will include power distribution with desegrated loads, i.e. lighting, mechanical equipment, plumbing equipment and plug loads. The building will contain a digital meter at the service point.

Photovoltaic (PV) System

Photovoltaics and energy storage are not required for this building type per the California Energy Efficiency Standards, Title 24 Section 140.

Lighting and Lighting Controls

General

LED luminaries will be used for all interior and exterior lighting. Interior LED sources shall meet the following minimum technical requirements:

1. Correlated Color Temperature (CCT): 3500K.
2. Minimum Color Rendering Index (CRI): 80.
3. Measured Flicker: 10% or less across the entire dimming range, UON.
4. Minimum Warranty: 5-year, full replacement.
5. UL Listed.
6. DesignLights Consortium (DLC) compliant.
7. California Energy Commission 2022 Appliance Efficiency Regulations “Title 20.”

Luminaires will be selected based on architectural aesthetic, performance and efficacy, ease of maintenance, durability, visual comfort/glare control, and budget.

Range Lighting & Controls

The lighting system will provide interior and exterior illumination levels in accordance with IES guidelines and best practices.

The Range lighting shall be provided per the Unified Facilities Criteria (UFC) – 4-179-02 document for Small Arms Ranges. Footcandle levels are shown below. Utilize strip LED luminaires with acrylic lenses mounted up in the baffles to minimize glare. These luminaires shall be dimmable down to 1%.

Provide red strobe lights to indicate range is active outside of the range and on the outside of the building.

Provide red and blue strobe lights, similar to those used on emergency vehicles, throughout the range to simulate law enforcement operating conditions. Mount these so that they are protected from projectile damage.

- **Lighting:** Strip LED with lens, Williams 75L series or equal. See table below for light levels.
- **Controls:** Provide three zones of control in the Range, Target, Mid Range and Back. Wall mounted dimmer stations located at each entry door with ceiling occupancy sensors. The dimmer stations shall include up/down control for each zone as well as 4 scenes.
- **Egress/Exit Lighting:** Exit signs at each door with bug eyes and integral 90 minute battery. Provide supplemental dual head emergency lighting unit with 90-minute battery.

Lighting Requirements

Location	*FT Candles	Type
Range Control Booth	60	Fully Dimmable + dimmable red light
Vestibules	40	On/Off with switches in vestibule + range control booth
Get Ready Area and Uprange Firing Line	60	Fully dimmable + dimmable red light
Target Area	80	Fully dimmable
Last Target Line	100	Fully dimmable
Area Behind Trap	40	On/off

*Measured at 4 ft. (1.2 m) above floor.

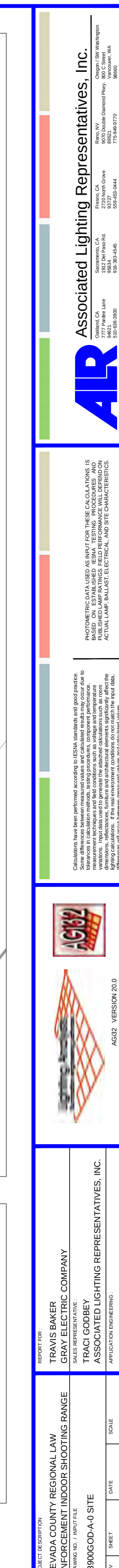
Building/Phase	Square Footage	Lighting [a]	Receptacles [b] (kW)	Mechanical [c] (kW)	Building Total (kW)	Building Total (A)
Range	9,800	10	25	191	225	626
Rest of Building	3,825	4	10	50	63	176
Site					2	6
EV Capable	4			7	26	73
Building Total	**13,625**	**14**	**34**	**247**	**317**	**880**

Table Notes

		W/SF
[a]	Ltg	1
[b]	Recepts	2.5
[c]	Mechanical	Range loads per mech

1000A, 120/208V

Assume we will use 100% main CB



Luminaire Schedule												
Symbol	Qty	Tag	Arrangement	Luminaire Lumens	LLF	LLD	LDD	UDF	Description	Optical Height	Luminaire Watts	Filename
	6	E1	Single	9762	0.850	0.944	0.900	1.000	GARDCO OPF-S-A03-840-T3M	20	63.59	OPF-S-A03-840-T3M.ies
	4	E2	Single	3701	0.850	0.944	0.900	1.000	GARDCO GWS-A03-840-T3M	12	24.6	GWS-A03-840-T3M.ies
	4	E3	Single	1578	0.850	0.944	0.900	1.000	WILLIAMS 6DR-TL-L20-840-DIM-UNV-LW-OF-X	10	19.5	6DR-TL-L20-840-DIM-UNV-LW-OF-WH_.ies

Calculation Summary									
Label	Description	Calculation Type	Units	Avg	Max	Min	Avg/Min	Max/Min	# Pts
Parking Driveway	IES RP-8-14: Parking Driveway - 0.2fc Min, Max:Min < 20:1	Illuminance	Fc	2.0	4.0	0.4	5.0	10.0	575
Parking Stalls	IES RP-8-14: Parking Stall - 1fc Min, Max:Min < 15:1	Illuminance	Fc	2.5	3.8	1.5	1.7	2.5	94
Perimeter Walkway	IES RP-8-21: Walkway - 1fc Avg, Avg:Min < 5:1	Illuminance	Fc	3.1	8.6	0.9	3.5	9.6	33
South Entry Canopy	IES10E 22.6: Canopied Entry - 4fc Avg, Avg:Min < 2:1	Illuminance	Fc	7.0	12.1	3.5	2.0	3.5	9

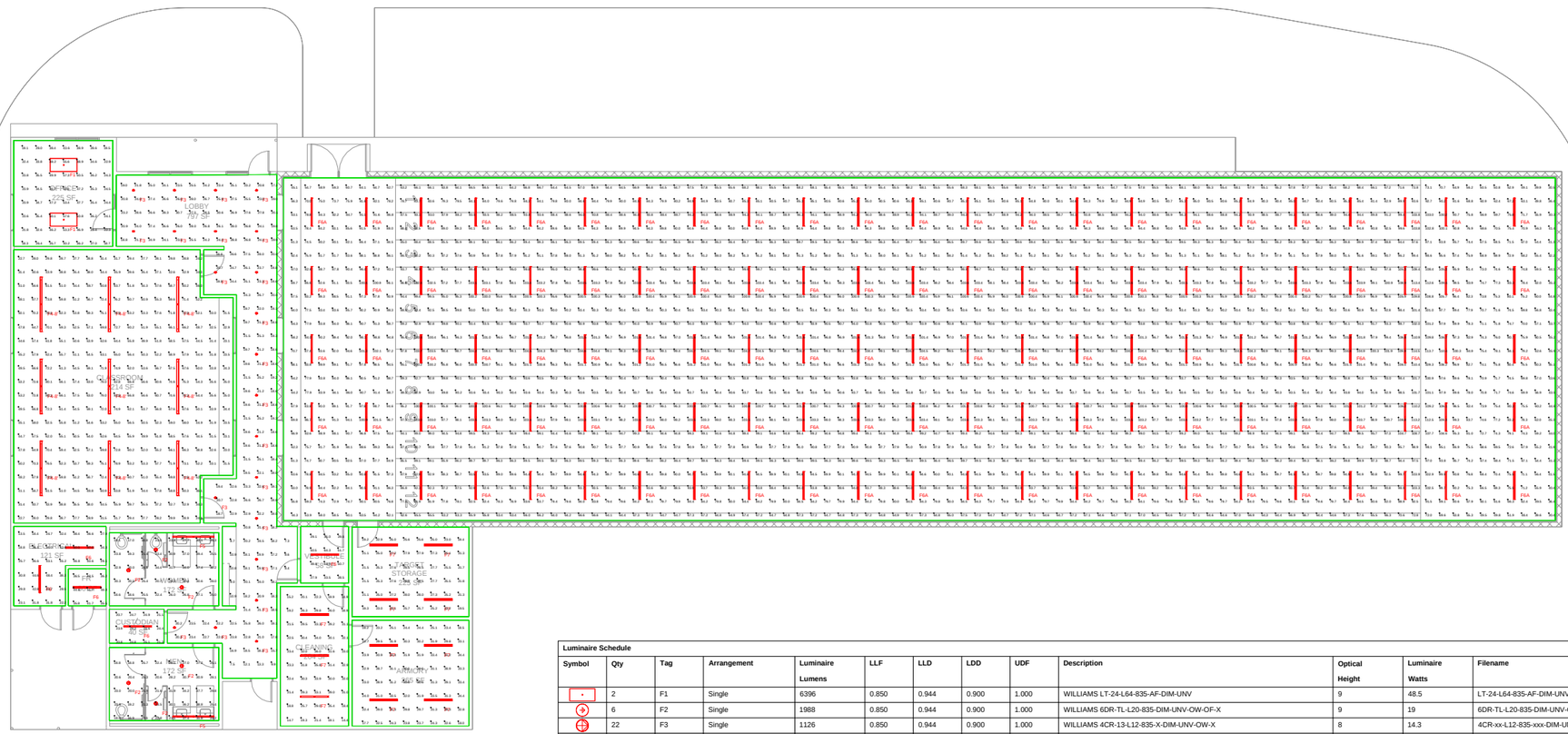
Note: Unless otherwise specified - the lamp lumen depreciation (LLD) for legacy sources used in these calculations is based on published mean lumen ratings by major lamp manufacturers; 0.80 LLD for pulse start metal halide; 0.90 LLD for high pressure sodium; 0.95 LLD for linear T8 and T5 fluorescent; 0.86 LLD for compact fluorescent and induction; 0.88 LLD for Cosmo and Elite lamps. 0.94 LDD for all LED sources. Unless otherwise noted - 0.90 luminaire dirt depreciation (LDD) is commonly applied. In cases where appropriate - ballast factor (BF) is applied. Additional user defind factors (UDF) may be applied if necessary to represent luminaire performance to a higher degree of accruracy. Total light loss factor (LLF) is the product of all multiplied loss factors.

LIGHTING PLAN - PHOTOMETRIC ANALYSIS - LAYOUT VERIFICATION

(ALL VALUES SHOWN ARE MAINTAINED HORIZONTAL FOOTCANDLES ON GRADE, U.O.N.)

PRELIMINARY - NOT FOR CONSTRUCTION
NOT FOR QUOTING PURPOSES

Figure 3.8 - Exterior Lighting Plan



Luminaire Schedule

Symbol	Qty	Tag	Arrangement	Luminaire Lumens	LLF	LLD	LDD	UDF	Description	Optical Height	Luminaire Watts	Filename
▭	2	F1	Single	6396	0.850	0.944	0.900	1.000	WILLIAMS LT-24-L64-835-AF-DIM-UNV	9	48.5	LT-24-L64-835-AF-DIM-UNV_.IES
⊕	6	F2	Single	1988	0.850	0.944	0.900	1.000	WILLIAMS 6DR-TL-L20-835-DIM-UNV-OW-OF-X	9	19	6DR-TL-L20-835-DIM-UNV-OW-OF-CS_.ies
⊕	22	F3	Single	1126	0.850	0.944	0.900	1.000	WILLIAMS 4CR-13-L12-835-X-DIM-UNV-OW-X	8	14.3	4CR-xx-L12-835-xxx-DIM-UNV-OW-OF-SG-xx_.ies
▭	9	F4-8'	Single	5064	1.699	0.944	0.900	2.000	FINELITE HP3-P-ID-8-S-S-835-WSO-F	8	38.2	HP3-P-ID-4ft-S-S-835-WSO-KPL2008-102.015.ies
▭	2	F5	Single	4800	0.850	0.944	0.900	1.000	WILLIAMS LRX2-6-L8-835-DMA-DIM-UNV	9	41.4	LRX2-6-L8-835-DMA-DIM-UNV_.IES
▭	5	F6	Single	3937	0.850	0.944	0.900	1.000	WILLIAMS 75L-4-L38-835-DMA-DIM-UNV	9	31.2	75L-4-L38-835-DMA_.ies
▭	115	F6A	Single	8080	0.850	0.944	0.900	1.000	WILLIAMS 75L-4-L80-835-DMA-DIM-UNV	12	66.9	75L-4-L80-835-DMA_.ies
▭	11	F7	Single	2916	0.850	0.944	0.900	1.000	WILLIAMS 75R-4-L30-835-DIM-UNV	9	19.7	75R-4-L30-835-DIM-UNV_.ies

Calculation Summary

Label	Description	Calculation Type	Units	Avg	Max	Min	Avg/Min	Max/Min	# Pts
Armory	Basis of Design: 25fc Avg	Illuminance	Fc	27.4	33.5	17.7	1.6	1.9	64
Circulation	IES RP-10-20: Open Circulation - 10fc Avg, Avg:Min < 3:1	Illuminance	Fc	20.1	28.0	7.3	2.8	3.8	125
Classroom	IES RP-3-20: Middle School Classroom - 40fc Avg, Avg:Min < 2:1	Illuminance	Fc	52.5	82.8	21.5	2.4	3.9	304
Cleaning	Basis of Design: 25fc Avg	Illuminance	Fc	25.1	36.0	14.4	1.7	2.5	50
Custodian	IES RP-10-20: Medium Item Storage - 10fc Avg, Avg:Min < 3:1	Illuminance	Fc	24.1	28.6	20.7	1.2	1.4	12
Electrical	Basis of Design: 25fc Avg	Illuminance	Fc	34.2	50.0	13.5	2.5	3.7	33
FR	Basis of Design: 25fc Avg	Illuminance	Fc	41.0	51.7	35.5	1.2	1.5	9
Lobby	IES RP-10-20: Main Vestibule - 15fc Avg, Avg:Min < 4:1	Illuminance	Fc	24.8	30.7	17.2	1.4	1.8	60
Office	IES RP-10-20: Reading and Writing - 30fc Avg, Max to Avg < 2:1	Illuminance	Fc	36.2	57.6	18.3	2.0	3.2	56
Restroom	Basis of Design: 20fc Avg	Illuminance	Fc	25.7	39.4	16.9	1.5	2.3	80
Target Storage	IES RP-10-20: Medium Item Storage - 10fc Avg, Avg:Min < 3:1	Illuminance	Fc	24.8	28.5	19.2	1.3	1.5	48
Vestibule	Basis of Design: 40fc Avg	Illuminance	Fc	42.8	64.3	27.9	1.5	2.3	12
Area Behind Trap	Basis of Design: 40fc Avg	Illuminance	Fc	62.4	84.1	30.4	2.1	2.8	125
Last Target Line	Basis of Design: 100fc Avg	Illuminance	Fc	100.1	114.5	70.6	1.4	1.6	50
Range Control & Firing	Basis of Design: 60fc Avg	Illuminance	Fc	82.3	102.1	44.3	1.9	2.3	200
Target Area	Basis of Design: 80fc Avg	Illuminance	Fc	91.1	104.9	62.6	1.5	1.7	1825

Note: Unless otherwise specified - the lamp lumen depreciation (LLD) for legacy sources used in these calculations is based on published mean lumen ratings by major lamp manufacturers; 0.80 LLD for pulse start metal halide; 0.90 LLD for high pressure sodium; 0.95 LLD for linear T8 and T5 fluorescent; 0.86 LLD for compact fluorescent and induction; 0.88 LLD for Cosmo and Elite lamps. 0.94 LDD for all LED sources. Unless otherwise noted - 0.90 luminaire dirt depreciation (LDD) is commonly applied. In cases where appropriate - ballast factor (BF) is applied. Additional user defind factors (UDF) may be applied if necessary to represent luminaire performance to a higher degree of accruracy. Total light loss factor (LLF) is the product of all multiplied loss factors.

LIGHTING PLAN - PHOTOMETRIC ANALYSIS - LAYOUT VERIFICATION

(ALL VALUES SHOWN ARE MAINTAINED HORIZONTAL FOOTCANDLES ON WORKPLANE, U.O.N.)

PRELIMINARY - NOT FOR CONSTRUCTION
NOT FOR QUOTING PURPOSES

Associated Lighting Representatives, Inc.

Oakland, CA	Sacramento, CA	Fresno, CA	Reno, NV	Oregon / SW Washington
7777 Pardee Lane	1912 Del Paso Rd.	2720 North Grove	9070 Double Diamond Pkwy.	800 C Street
94621	95834	93727	89521	Vancouver, WA
510-638-3800	916-383-4545	559-453-0444	775-849-9770	98660
				503-894-7500

Calculations have been performed according to IESNA standards and good practice. Some differences between measured values and calculated results may occur due to tolerances in calculation methods, testing procedures, component performance, measurement techniques and field conditions such as voltage and temperature variations. Input data used to generate the attached calculations such as room dimensions, reflectances, furniture and architectural elements significantly affect the lighting calculations. If the real environment conditions do not match the input data, differences will occur between measured values and calculated values.

PHOTOMETRIC DATA USED AS INPUT FOR THESE CALCULATIONS IS BASED ON ESTABLISHED IESNA TESTING PROCEDURES AND PUBLISHED LAMP RATINGS. FIELD PERFORMANCE WILL DEPEND ON ACTUAL LAMP, BALLAST, ELECTRICAL, AND SITE CHARACTERISTICS.

AGi32 VERSION 20.0
AGi (C) 2024 LIGHTING ANALYSTS, INC. From REVALIZE SOFTWARE
8800 BAYMEADOWS WAY WEST, SUITE 500, JACKSONVILLE, FL 32256

PROJECT DESCRIPTION
NEVADA COUNTY REGIONAL LAW
ENFORCEMENT INDOOR SHOOTING RANGE

DRAWING NO. / INPUT FILE
23900GOD-A-0 INTERIOR

REV	SHEET	DATE	SCALE
0	1 OF 1	04/28/2025	1/8" = 1'-0"

REPORT FOR :
TRAVIS BAKER
GRAY ELECTRIC COMPANY

SALES REPRESENTATIVE :
TRACI GODBEY
ASSOCIATED LIGHTING REPRESENTATIVES, INC.

APPLICATION ENGINEERING :
YUCHENG LU
ASSOCIATED LIGHTING REPRESENTATIVES, INC.

Figure 3.9 - Interior Lighting Plan

Building Lighting & Controls

Luminaires will be selected based on architectural aesthetic, performance and efficacy, ease of maintenance, durability, visual comfort/glare control, and budget. All controls shall be Title 24 compliant.

Assume the following luminaire types, light levels and controls:

Office

- **Lighting:** 2x4 troffer, architectural high efficiency type, Williams PT Series or equal, luminaires shall be provided with integral daylight sensors, 30 FC.
- **Controls:** Wall mounted dimmer/occupancy sensor with daylight sensors on the luminaires.
- **Egress/Exit Lighting:** None.

Lobby

- **Lighting:** LED cylinder pendant, Williams 4CR Compact or equal, 15 FC.
- **Controls:** Wall mounted dimmers at each end of the corridor with ceiling occupancy sensors.
- **Egress/Exit Lighting:** Exit signs at each door with bug eyes and integral 90 minute battery. Provide supplemental dual head emergency lighting unit with 90 minute battery.

Classroom

- **Lighting:** Linear LED, Finelite HP3 Series or equal, luminaires shall be provided with integral occupancy sensors and daylight sensors, 40 FC.
- **Controls:** Wall mounted dimmer with occupancy and daylight sensors on the luminaires. Provide control zones such that the lighting at the white boards/screen is controlled separately.
- **Egress/Exit Lighting:** Exit signs at each door with bug eyes and integral 90 minute battery.

Restrooms

- **Lighting:** Surface downlights (Juno JSF Series) with recessed linear LED above mirror, Williams LRX2, 20 FC.
- **Controls:** Wall mounted dimmers at each entry with ceiling occupancy sensors.
- **Egress/Exit Lighting:** None.

Electrical Room

- **Lighting:** Strip LED with lens, Williams 75L series or equal, 25 FC.
- **Controls:** Toggle switch.
- **Egress/Exit Lighting:** None.

Cleaning, Target Storage & Armory

- **Lighting:** Strip LED with lens, Williams 75 R series or equal, 25 FC.
- **Controls:** Wall mounted dimmer/occupancy sensor.
- **Egress/Exit Lighting:** None.

FR, Utility & Custodian

- **Lighting:** Surface downlight (Juno JSF Series).
- **Controls:** Wall mounted dimmer/occupancy sensor.
- **Egress/Exit Lighting:** None.

Additional Miscellaneous Requirements

1. Device branch circuiting:
    A. A maximum of six (6) duplex convenience receptacles shall be connected to a 20 amp, 120 volt circuit for branch circuiting.
    B. Provide a dedicated 20 amp, 120 volt circuit where required by equipment load.
    C. Provide GFCI receptacle at drinking fountains.
2. Miscellaneous interior power:
    A. Provide power connection to all automatic doors.
3. EV Chargers:

A. Based on the 14 new spaces, we will need 4 EV capable spaces in compliance with the 2022 Cal Green code. This shall include capacity, panel space and empty conduit from the panel to the parking space.

Fire Alarm

General

The fire alarm and notification system shall be UL listed, California State Fire Marshall approved. The fire alarm system shall be fully addressable Class B wiring throughout. All fire alarm devices shall be addressable.

Equipment and Devices

Equipment and devices shall be located as described below:

Fire Alarm Control Panel: Located in the main electrical room

Manual Pull Stations
- All exits (if desired)

Smoke Detectors
- Electrical room

Duct Smoke Detectors
- HVAC units 2000 CFM and above
- At fire/smoke dampers

Remote Annunciator Panel
- Building main entrance

Speaker / Strobes
- Lobby & Corridor
- Restrooms
- Classroom
- Range

Monitor Modules
- PIV
- Flow switch
- Tamper switch

Network and Communication Systems

The telecommunications system will provide network connectivity within the building. The systems will consist of backbone cabling and horizontal cable distribution. All work shall be done per Nevada County Information Systems Standards.

Horizontal Structured Cabling

The horizontal cable shall be solid copper, 23 AWG, twisted-pair (UTP) Category 6 cables with four individually twisted-pairs, and will meet or exceed the mechanical and transmission performance specifications in ANSI/TIA/EIA-568-C.2.

Station Outlet Conduit

1. Telecommunications outlets in walls will use 4 11/16” x 2 1/8” deep square boxes with single gang rings and 1.25” conduit to accessible ceiling.

2. All cable will be supported with basket tray (along main arteries) and J-Hooks every 48” or less.

Telecom Outlets

Assume telecom outlets as described below. Each outlet shall be provided with 2 drop unless otherwise noted:

- Office
  - One outlet with 2 drops
- Lobby
  - One outlet with 2 drops
- Classroom
  - Two outlets with 2 drops each
- Electrical Room
  - One outlet with 2 drops

Wireless Access Points

A Wireless Local Area Network shall be provided to achieve seamless 100% coverage. CAT6 cables to Wireless Access Point (WAP) telecom jacks shall be included as part of the structured cabling system.

Audio/Visual System (AV)

Provide the following in the classroom:

- Ceiling projector (HDMI cable to instructor’s station and two data drops)
- Audio system with distributed ceiling speakers for playback of program content with connection to instructor control station
- Wall mounted instructor control station with two data drops
- All the peripheral AV equipment (amplifier, wireless video device, etc.) shall be mounted in a ceiling enclosure.

Distributed Antenna Systems (DAS)

We do not anticipate a cellular DAS or emergency responder system in this building.

Security Systems

Access Control & Intrusion Detection Systems

The County standard for access control is Avigilon and doors are monitored by Beam. Provide card readers and door contacts at the following doors:

- All exterior doors
- Armory door

Video Surveillance System

Provide IP security cameras per County Standards with a cable back to the building IDF. The connection back to the adjacent building (which houses the storage server) shall be via the OSP cabling noted in the Telecom Site section.

Provide cameras at the following locations:

- At each door containing a card reader
- Exterior building, with coverage around entire perimeter

4. Scheduling and Phasing

We have evaluated the requirements of the RFQ/P and the proposed timelines to adequately design, document, collaborate, review and construct the project. Below is a summary of the proposed phase activities and timelines. The detailed Project Schedule is provided in Figure 4.1 and includes additional activities.

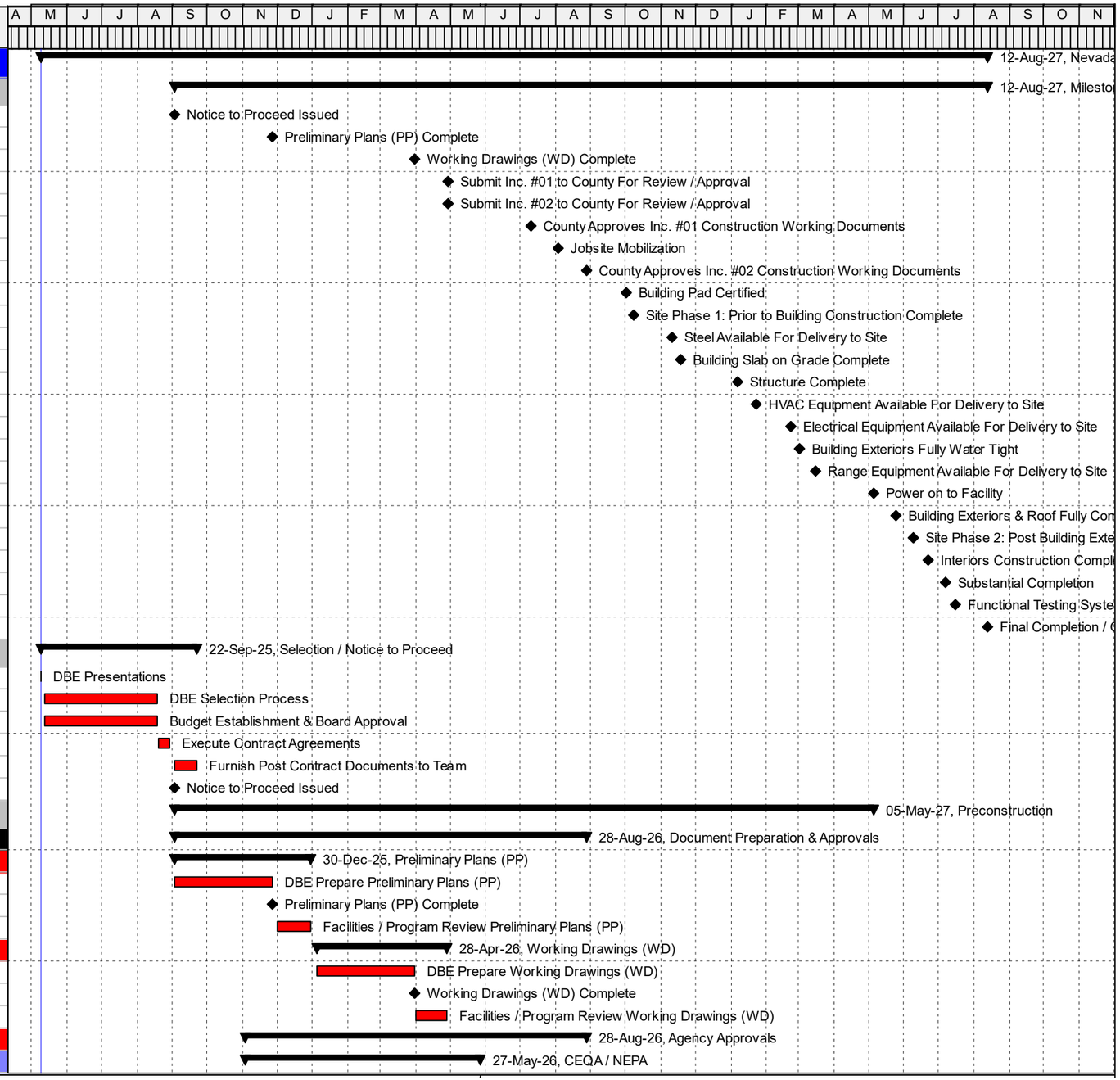
As discussed during the Confidential Meeting, we have an opportunity to run the building permit review concurrent with CEQA/NEPA process that could save several months of time and escalation costs from the project. This could be something that we further review and discuss.

Relative to creative scheduling strategies, the amount of effort that has gone into this RFP pursuit is equivalent to a schematic design phase. Therefore, we have proposed an initial Preliminary Plans Phase that integrates schematic design and design development into a single more efficient phase. This will provide an opportunity to integrate all comments from our RFP response and move the project along to support the deliverables necessary for the environmental review process.

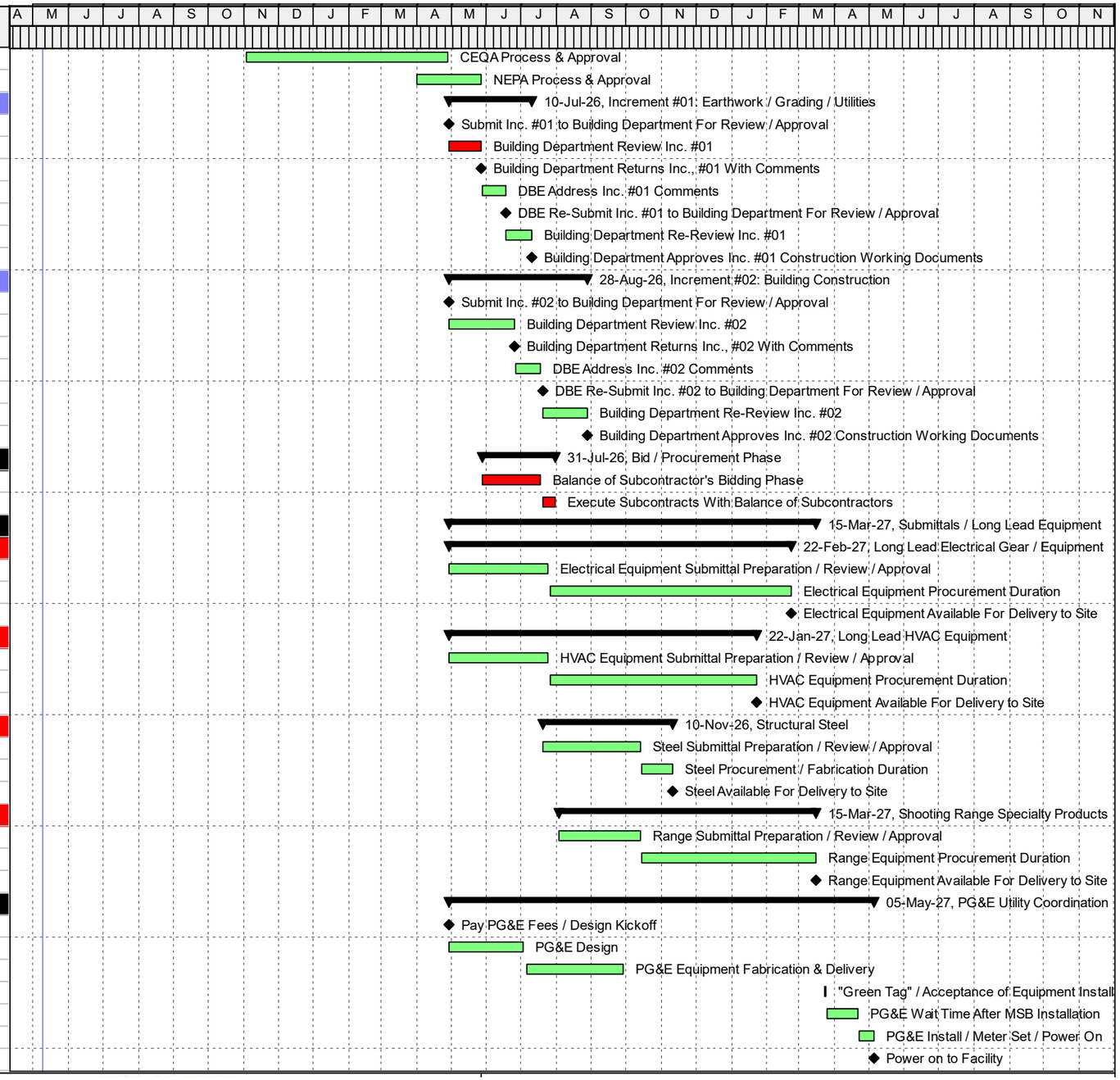
Additionally, our approach includes developing separate packages for Phase 1: Site Development and Phase 2: Building Construction. This approach allows for early relocation of the significant earthwork volume, ensuring the site is prepared for building construction well in advance of the fall/winter 2026 weather season.

Phase	Timeline
Preliminary Plans (PP)	September - November 2025
County Review of PP	December 2025
CEQA Review	November 2025 - April 2026
NEPA Review	April 2026 - May 2026
Working Drawings	January 2026 - March 2026
County Review of Working Drawings	April 2026
Agency Approvals	May 2026 - September 2026
Phase 1: Site	May 2026 - June 2026
Phase 2: Building	May 2026 - September 2026
Bid/Procurement	May 2026 - September 2026
Construction	August 2026 - May 2027
Phase 1: Site	August 2026
Phase 2: Building	October 2026
Commissioning	June 2027 - July 2027
Occupancy	**August 2027**

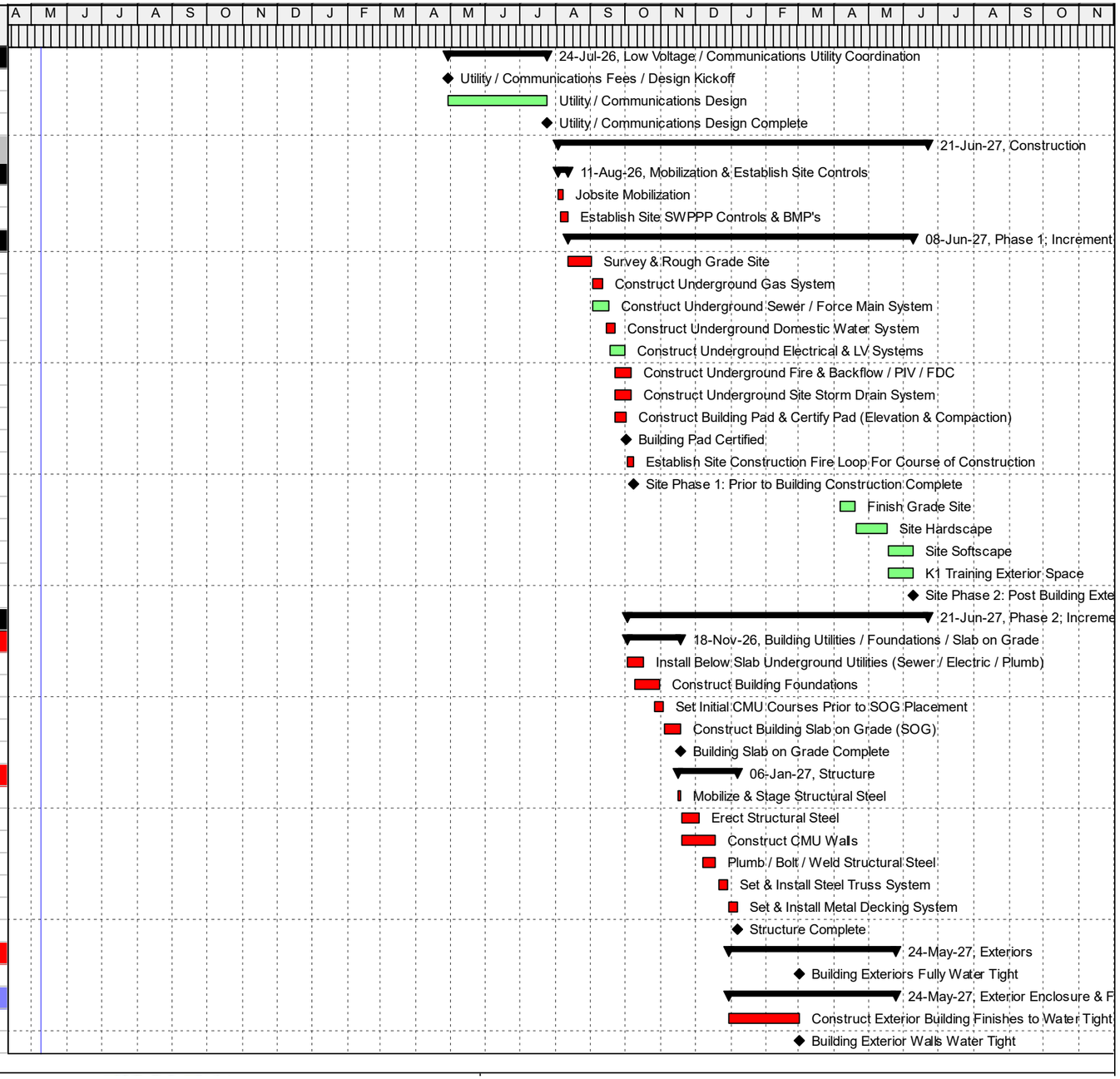
Activity ID	Activity Name	Original Duration	Start	Finish
Nevada County Regional Shooting Range		559	09-May-25	12-Aug-27
Milestones		480	02-Sep-25	12-Aug-27
MSTONE-1000	Notice to Proceed Issued	0	02-Sep-25	
MSTONE-1020	Preliminary Plans (PP) Complete	0		26-Nov-25
MSTONE-1010	Working Drawings (WD) Complete	0		31-Mar-26
MSTONE-1030	Submit Inc. #01 to County For Review / Approval	0	29-Apr-26	
MSTONE-1040	Submit Inc. #02 to County For Review / Approval	0	29-Apr-26	
MSTONE-1050	County Approves Inc. #01 Construction Working Documents	0		10-Jul-26
MSTONE-1120	Jobsite Mobilization	0	03-Aug-26	
MSTONE-1060	County Approves Inc. #02 Construction Working Documents	0		28-Aug-26
MSTONE-1130	Building Pad Certified	0		01-Oct-26
MSTONE-1140	Site Phase 1: Prior to Building Construction Complete	0		08-Oct-26
MSTONE-1090	Steel Available For Delivery to Site	0		10-Nov-26
MSTONE-1160	Building Slab on Grade Complete	0		18-Nov-26
MSTONE-1170	Structure Complete	0		06-Jan-27
MSTONE-1080	HVAC Equipment Available For Delivery to Site	0		22-Jan-27
MSTONE-1070	Electrical Equipment Available For Delivery to Site	0		22-Feb-27
MSTONE-1180	Building Exteriors Fully Water Tight	0		01-Mar-27
MSTONE-1100	Range Equipment Available For Delivery to Site	0		15-Mar-27
MSTONE-1110	Power on to Facility	0		05-May-27
MSTONE-1190	Building Exteriors & Roof Fully Complete	0		24-May-27
MSTONE-1150	Site Phase 2: Post Building Exteriors Construction Complete	0		08-Jun-27
MSTONE-1200	Interiors Construction Complete	0		21-Jun-27
MSTONE-1220	Substantial Completion	0		07-Jul-27
MSTONE-1210	Functional Testing Systems Cx Complete	0		15-Jul-27
MSTONE-1230	Final Completion / Owner Occupancy Begins	0		12-Aug-27
Selection / Notice to Proceed		94	09-May-25	22-Sep-25
NTP-1000	DBE Presentations	1	09-May-25	09-May-25
NTP-1010	DBE Selection Process	69	12-May-25	18-Aug-25
NTP-1020	Budget Establishment & Board Approval	69	12-May-25	18-Aug-25
NTP-1040	Execute Contract Agreements	9	19-Aug-25	29-Aug-25
NTP-1050	Furnish Post Contract Documents to Team	15	02-Sep-25	22-Sep-25
NTP-1060	Notice to Proceed Issued	0		02-Sep-25
Preconstruction		412	02-Sep-25	05-May-27
Document Preparation & Approvals		245	02-Sep-25	28-Aug-26
Preliminary Plans (PP)		80	02-Sep-25	30-Dec-25
PP-1000	DBE Prepare Preliminary Plans (PP)	60	02-Sep-25	26-Nov-25
PP-1020	Preliminary Plans (PP) Complete	0		26-Nov-25
PP-1010	Facilities / Program Review Preliminary Plans (PP)	20	01-Dec-25	30-Dec-25
Working Drawings (WD)		80	05-Jan-26	28-Apr-26
WD-1000	DBE Prepare Working Drawings (WD)	60	05-Jan-26	31-Mar-26
WD-1020	Working Drawings (WD) Complete	0		31-Mar-26
WD-1010	Facilities / Program Review Working Drawings (WD)	20	01-Apr-26	28-Apr-26
Agency Approvals		202	03-Nov-25	28-Aug-26
CEQA / NEPA		137	03-Nov-25	27-May-26



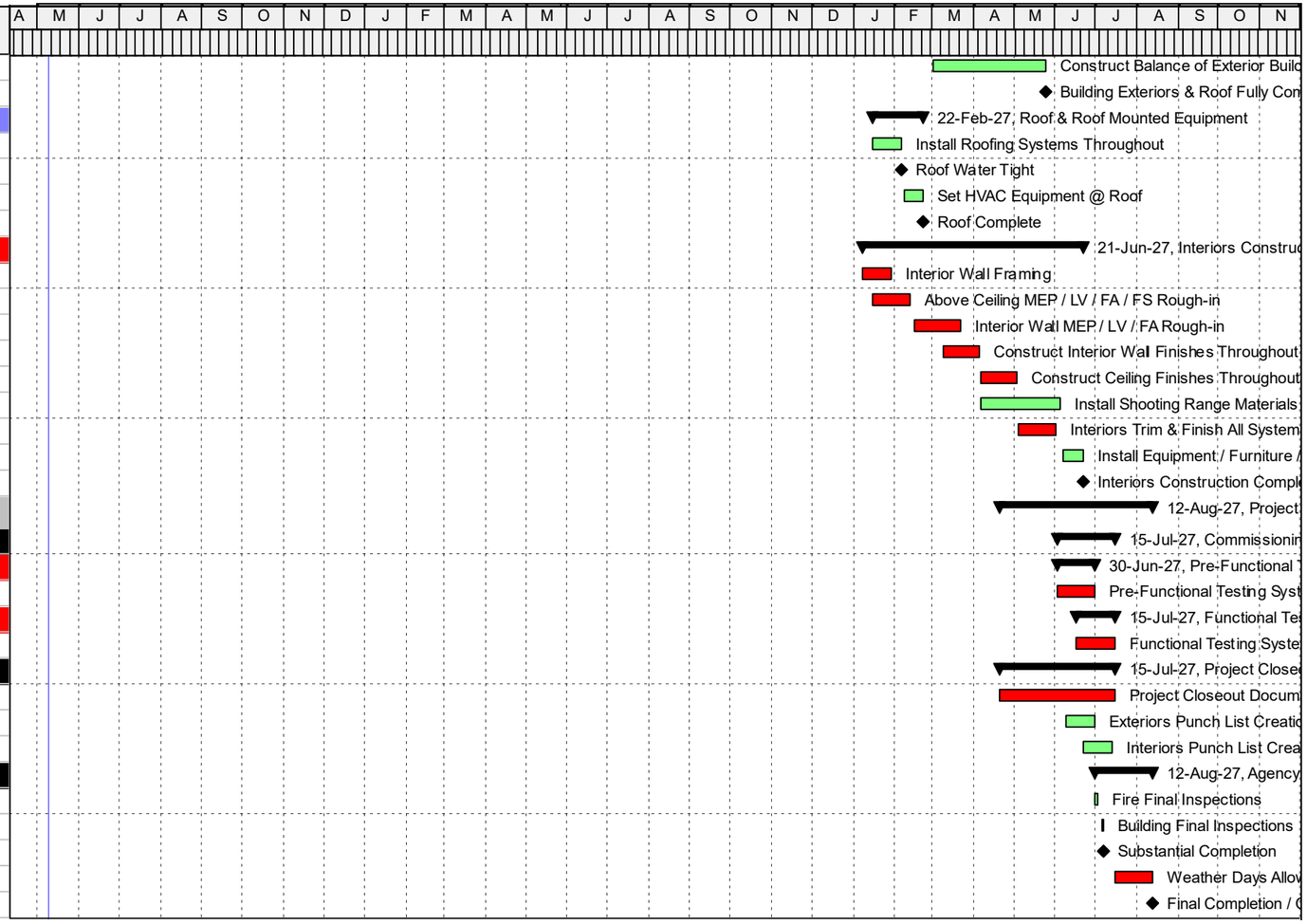
Activity ID	Activity Name	Original Duration	Start	Finish
CEQA-1000	CEQA Process & Approval	117	03-Nov-25	28-Apr-26
CEQA-1010	NEPA Process & Approval	40	01-Apr-26	27-May-26
Increment #01: Earthwork / Grading / Utilities		50	29-Apr-26	10-Jul-26
AGENCY-1000	Submit Inc. #01 to Building Department For Review / Approva	0	29-Apr-26	
AGENCY-1070	Building Department Review Inc. #01	20	29-Apr-26	27-May-26
AGENCY-1080	Building Department Returns Inc., #01 With Comments	0		27-May-26
AGENCY-1090	DBE Address Inc. #01 Comments	15	28-May-26	17-Jun-26
AGENCY-1100	DBE Re-Submit Inc. #01 to Building Department For Review	0	18-Jun-26	
AGENCY-1120	Building Department Re-Review Inc. #01	15	18-Jun-26	10-Jul-26
AGENCY-1110	Building Department Approves Inc. #01 Construction Workin	0		10-Jul-26
Increment #02: Building Construction		85	29-Apr-26	28-Aug-26
AGENCY-1010	Submit Inc. #02 to Building Department For Review / Approva	0	29-Apr-26	
AGENCY-1020	Building Department Review Inc. #02	40	29-Apr-26	25-Jun-26
AGENCY-1030	Building Department Returns Inc., #02 With Comments	0		25-Jun-26
AGENCY-1040	DBE Address Inc. #02 Comments	15	26-Jun-26	17-Jul-26
AGENCY-1050	DBE Re-Submit Inc. #02 to Building Department For Review	0	20-Jul-26	
AGENCY-1130	Building Department Re-Review Inc. #02	30	20-Jul-26	28-Aug-26
AGENCY-1060	Building Department Approves Inc. #02 Construction Workin	0		28-Aug-26
Bid / Procurement Phase		45	28-May-26	31-Jul-26
BID-1000	Balance of Subcontractor's Bidding Phase	35	28-May-26	17-Jul-26
BID-1010	Execute Subcontracts With Balance of Subcontractors	10	20-Jul-26	31-Jul-26
Submittals / Long Lead Equipment		215	29-Apr-26	15-Mar-27
Long Lead Electrical Gear / Equipment		200	29-Apr-26	22-Feb-27
LL ELECT-1000	Electrical Equipment Submittal Preparation / Review / Approv	60	29-Apr-26	24-Jul-26
LL ELECT-1010	Electrical Equipment Procurement Duration	140	27-Jul-26	22-Feb-27
LL ELECT-1020	Electrical Equipment Available For Delivery to Site	0		22-Feb-27
Long Lead HVAC Equipment		180	29-Apr-26	22-Jan-27
LL HVAC-1000	HVAC Equipment Submittal Preparation / Review / Approval	60	29-Apr-26	24-Jul-26
LL HVAC-1010	HVAC Equipment Procurement Duration	120	27-Jul-26	22-Jan-27
LL HVAC-1020	HVAC Equipment Available For Delivery to Site	0		22-Jan-27
Structural Steel		80	20-Jul-26	10-Nov-26
LL STEEL-1000	Steel Submittal Preparation / Review / Approval	60	20-Jul-26	13-Oct-26
LL STEEL-1010	Steel Procurement / Fabrication Duration	20	14-Oct-26	10-Nov-26
LL STEEL-1020	Steel Available For Delivery to Site	0		10-Nov-26
Shooting Range Specialty Products		150	03-Aug-26	15-Mar-27
LL RANGE-1000	Range Submittal Preparation / Review / Approval	50	03-Aug-26	13-Oct-26
LL RANGE-1010	Range Equipment Procurement Duration	100	14-Oct-26	15-Mar-27
LL RANGE-1020	Range Equipment Available For Delivery to Site	0		15-Mar-27
PG&E Utility Coordination		252	29-Apr-26	05-May-27
PGE-1000	Pay PG&E Fees / Design Kickoff	0	29-Apr-26	
PGE-1010	PG&E Design	45	29-Apr-26	02-Jul-26
PGE-1020	PG&E Equipment Fabrication & Delivery	60	06-Jul-26	28-Sep-26
PGE-1030	"Green Tag" / Acceptance of Equipment Installation	2	23-Mar-27	24-Mar-27
PGE-1040	PG&E Wait Time After MSB Installation	20	25-Mar-27	21-Apr-27
PGE-1050	PG&E Install / Meter Set / Power On	10	22-Apr-27	05-May-27
PGE-1060	Power on to Facility	0		05-May-27



Activity ID	Activity Name	Original Duration	Start	Finish
Low Voltage / Communications Utility Coordination		60	29-Apr-26	24-Jul-26
LV-1000	Utility / Communications Fees / Design Kickoff	0	29-Apr-26	
LV-1010	Utility / Communications Design	60	29-Apr-26	24-Jul-26
LV-1020	Utility / Communications Design Complete	0		24-Jul-26
Construction		218	03-Aug-26	21-Jun-27
Mobilization & Establish Site Controls		7	03-Aug-26	11-Aug-26
MOB-1000	Jobsite Mobilization	5	03-Aug-26	07-Aug-26
MOB-1010	Establish Site SWPPP Controls & BMP's	5	05-Aug-26	11-Aug-26
Phase 1; Increment #01 Earthwork / Grading / Utilities		203	12-Aug-26	08-Jun-27
SITE1-1000	Survey & Rough Grade Site	15	12-Aug-26	01-Sep-26
SITE1-1010	Construct Underground Gas System	7	02-Sep-26	11-Sep-26
SITE1-1020	Construct Underground Sewer / Force Main System	10	02-Sep-26	16-Sep-26
SITE1-1030	Construct Underground Domestic Water System	6	14-Sep-26	21-Sep-26
SITE1-1150	Construct Underground Electrical & LV Systems	10	17-Sep-26	30-Sep-26
SITE1-1040	Construct Underground Fire & Backflow / PIV / FDC	10	22-Sep-26	05-Oct-26
SITE1-1050	Construct Underground Site Storm Drain System	10	22-Sep-26	05-Oct-26
SITE1-1060	Construct Building Pad & Certify Pad (Elevation & Compactio	8	22-Sep-26	01-Oct-26
SITE1-1140	Building Pad Certified	0		01-Oct-26
SITE1-1070	Establish Site Construction Fire Loop For Course of Constru	5	02-Oct-26	08-Oct-26
SITE1-1120	Site Phase 1: Prior to Building Construction Complete	0		08-Oct-26
SITE1-1080	Finish Grade Site	10	06-Apr-27	19-Apr-27
SITE1-1090	Site Hardscape	20	20-Apr-27	17-May-27
SITE1-1100	Site Softscape	15	18-May-27	08-Jun-27
SITE1-1110	K1 Training Exterior Space	15	18-May-27	08-Jun-27
SITE1-1130	Site Phase 2: Post Building Exteriors Construction Complete	0		08-Jun-27
Phase 2; Increment #02 Balance of Building Construction		175	02-Oct-26	21-Jun-27
Building Utilities / Foundations / Slab on Grade		32	02-Oct-26	18-Nov-26
SOG-1000	Install Below Slab Underground Utilities (Sewer / Electric / Plu	10	02-Oct-26	16-Oct-26
SOG-1010	Construct Building Foundations	15	09-Oct-26	30-Oct-26
SOG-1040	Set Initial CMU Courses Prior to SOG Placement	7	26-Oct-26	03-Nov-26
SOG-1020	Construct Building Slab on Grade (SOG)	10	04-Nov-26	18-Nov-26
SOG-1030	Building Slab on Grade Complete	0		18-Nov-26
Structure		32	16-Nov-26	06-Jan-27
STRUCT-1000	Mobilize & Stage Structural Steel	3	16-Nov-26	18-Nov-26
STRUCT-1010	Erect Structural Steel	10	19-Nov-26	04-Dec-26
STRUCT-1030	Construct CMU Walls	20	19-Nov-26	18-Dec-26
STRUCT-1020	Plumb / Bolt / Weld Structural Steel	10	07-Dec-26	18-Dec-26
STRUCT-1040	Set & Install Steel Truss System	5	21-Dec-26	29-Dec-26
STRUCT-1050	Set & Install Metal Decking System	4	30-Dec-26	06-Jan-27
STRUCT-1060	Structure Complete	0		06-Jan-27
Exteriors		100	30-Dec-26	24-May-27
WEATHER-1000	Building Exteriors Fully Water Tight	0		01-Mar-27
Exterior Enclosure & Finishes		100	30-Dec-26	24-May-27
EXT-1000	Construct Exterior Building Finishes to Water Tight	40	30-Dec-26	01-Mar-27
EXT-1020	Building Exterior Walls Water Tight	0		01-Mar-27



Activity ID	Activity Name	Original Duration	Start	Finish
EXT-1010	Construct Balance of Exterior Building Finishes	60	02-Mar-27	24-May-27
EXT-1030	Building Exteriors & Roof Fully Complete	0		24-May-27
Roof & Roof Mounted Equipment		25	15-Jan-27	22-Feb-27
ROOF-1000	Install Roofing Systems Throughout	15	15-Jan-27	05-Feb-27
ROOF-1030	Roof Water Tight	0		05-Feb-27
ROOF-1010	Set HVAC Equipment @ Roof	10	08-Feb-27	22-Feb-27
ROOF-1020	Roof Complete	0		22-Feb-27
Interiors Construction		113	08-Jan-27	21-Jun-27
INT-1000	Interior Wall Framing	15	08-Jan-27	29-Jan-27
INT-1020	Above Ceiling MEP / LV / FA / FS Rough-in	20	15-Jan-27	12-Feb-27
INT-1010	Interior Wall MEP / LV / FA Rough-in	25	16-Feb-27	22-Mar-27
INT-1030	Construct Interior Wall Finishes Throughout	20	09-Mar-27	05-Apr-27
INT-1040	Construct Ceiling Finishes Throughout	20	06-Apr-27	03-May-27
INT-1050	Install Shooting Range Materials & Finishes (Walls & Ceilings	43	06-Apr-27	04-Jun-27
INT-1070	Interiors Trim & Finish All Systems	20	04-May-27	01-Jun-27
INT-1060	Install Equipment / Furniture / Misc. Materials	10	07-Jun-27	21-Jun-27
INT-1080	Interiors Construction Complete	0		21-Jun-27
Project Commissioning / Final Inspections / Closeout		80	20-Apr-27	12-Aug-27
Commissioning & Systems Verification		30	02-Jun-27	15-Jul-27
Pre-Functional Testing		20	02-Jun-27	30-Jun-27
PFT-1000	Pre-Functional Testing Systems	20	02-Jun-27	30-Jun-27
Functional Testing / Cx		20	16-Jun-27	15-Jul-27
COMM-1000	Functional Testing Systems Cx	20	16-Jun-27	15-Jul-27
Project Closeout		60	20-Apr-27	15-Jul-27
CLOSE-1000	Project Closeout Documentation	60	20-Apr-27	15-Jul-27
CLOSE-1010	Exteriors Punch List Creation & Execution	15	09-Jun-27	30-Jun-27
CLOSE-1020	Interiors Punch List Creation & Execution	15	22-Jun-27	13-Jul-27
Agency Approvals & Building Finals		30	01-Jul-27	12-Aug-27
FINAL-1000	Fire Final Inspections	2	01-Jul-27	02-Jul-27
FINAL-1010	Building Final Inspections	2	06-Jul-27	07-Jul-27
FINAL-1020	Substantial Completion	0		07-Jul-27
FINAL-1040	Weather Days Allowance	20	16-Jul-27	12-Aug-27
FINAL-1050	Final Completion / Owner Occupancy Begins	0		12-Aug-27



5. Sustainable Design and ZNE

Sustainable Sites

The planting palette is to be native-based and appropriate to the environmental context. Native landscaping is a highly sustainable approach to site design as it uses plants that are naturally adapted to the local climate, soil, and ecosystem, reducing the need for excessive irrigation, fertilizers, and pesticides. Stormwater management strategies are implemented to maximize the use of existing topography by using swales and recharge ponds.

The off haul of excessive soil will occur to the adjacent county owned property. This soil export will be more efficient while saving green house gas impacts and project costs.

Water Efficiency

Outdoor Water Use

Plant selection to support minimum irrigation needs to comply with CalGreen requirements.

Indoor Water Use

Low-flow fixtures will be specified as required by CalGreen to enhance sustainability of the project by reducing indoor water use. Water closet flush valve flow will be 1.28 GPM, lavatories will be 0.35 GPM (exceeds baseline Cal Green requirement), and sinks will be 1.5 GPM (exceeds baseline Cal Green requirement). These efficient fixtures lower utility costs, reduce energy for water heating, conserve local water resources, and reduce energy for water treatment, cutting greenhouse gas emissions. They support eco-friendly building practices and long-term environmental conservation.

Materials & Resources

The application of exterior metal panel is proposed as a highly sustainable architectural material, offering exceptional durability and resistance to weather, corrosion, and fire, which contributes to long service life and reduces the need for frequent replacement or repairs—ultimately minimizing resource consumption over time. Metal panels commonly include a high percentage of recycled content and are fully recyclable at the end of their lifespan, supporting a circular economy and reducing landfill waste.

Exterior visibility and access to natural light are important elements of the design as they enhance occupant well-being, comfort, and productivity. The windows and doors designed are intentionally located to maximize visibility across interior spaces and to reduce reliance on artificial lighting, lowering energy consumption and contributing to a building's energy efficiency, as well as contributing points toward LEED certification under categories like Indoor Environmental Quality by supporting daylighting strategies and providing visual connection to the outdoors.

The project will divert at least 65% of non hazardous C&D debris from landfills thorough recycling or salvage.

Energy Efficiency

Lighting Systems

Sustainable lighting is prioritized through full adoption of LED technologies, with high-efficacy, low-wattage luminaires with integrated dimming. This approach reduced kilowatt-hours per square foot per year, rather than traditional watts-per-square-foot measures. Advanced lighting controls—including occupancy sensors, dimming interfaces, photo controls, and closed-loop daylight sensors—will be used to optimize energy savings while maintaining occupant comfort.

Design will include detailed Sequence of Operation (SOO) documentation to support efficient commissioning and system performance. This approach ensures daylight dimming systems operate seamlessly and unobtrusively, enhancing user acceptance and energy savings.

System Efficiency & Energy Efficiency

HVAC System Option 1

Rooftop packaged HVAC units enhance energy efficiency by integrating heating, cooling, and ventilation into a compact system. Equipped with high-efficiency scroll compressors, variable-speed fans, and smart controls, they adapt to real-time thermal and occupancy demands, reducing energy waste. Using low-GWP refrigerant R-454b, these units minimize environmental impact. Economizer mode leverages low-enthalpy outdoor air (55–65°F) for free cooling, cutting compressor use. Short duct runs reduce airflow losses to save on fan energy, and ASHRAE 90.1 compliance lowers electricity costs.

HVAC System Option 2

Variable Refrigerant Flow (VRF) HVAC systems boost energy efficiency delivering precise heating and cooling through a modular network of indoor units connected to a single outdoor condenser. Featuring inverter-driven compressors, advanced zoning controls, and low-GWP refrigerant R-454b or R-32, VRF systems dynamically adjust refrigerant flow to match real-time thermal and occupancy demands, minimizing energy waste. Heat recovery modes enable simultaneous heating and cooling in different zones, further increasing system efficiency. Adherence to ASHRAE 90.1 standards lowers electricity costs.

Evaluation Category	Option 1: AC Units	Option 2: VRF	Discussion
First Cost	Better	OK	AC unit approach is more cost effective. Estimate/pricing needed to evaluate the extent of cost difference.
Efficiency	Better	Better	VRF is more efficient in general, but energy analysis needed to evaluate our specific project.
Maintenance	Best	OK	The AC unit approach has maintenance concentrated on roof, and accessibility without in-room disruption. AC units are generally simpler to repair and replace. The VRF system has distributed units located above the ceiling making maintenance more dispersed. The VRF system requires more expertise and training for maintenance and is more manufacturer specific.
Redundancy	Better	Best	The VRF system has many indoor units to allow continued operation if a unit is down. AC units have fewer zones and thus less redundancy if a unit were to fail.
Aesthetics	OK	Better	AC units on roof would likely be visible from outside/around the building. VRF fan coil units would be visible overhead in the space. VRF condensing unit would be concealed at grade-mounted location in back of building.
Cooling Comfort	Better	Best	VRF offers more zones for increased temperature control throughout the building.
Heating Comfort	Better	Best	VRF offers more zones for increased temperature control throughout the building.
Refrigerant (GWP)	Better	OK	The VRF system has extensive amounts of refrigerant piped throughout the building and to the condensers. AC unit refrigerant is less and contained within rooftop unit.
Gas	Best	Best	The AC unit approach would use natural gas for heating operation, and take advantage of the existing gas service available. The VRF system would not use natural gas, but the range MAU would still require gas heating.
Acoustics	Better	Better	The VRF units are located directly above occupied spaces but are very quiet. The ERV would contribute some noise to the space. The AC units would be relatively quiet in operation, if mounted on spring isolator curbs.
Ductwork	Better	Better	The VRF system offers smaller ductwork throughout the building for its fan coils, but the total extent of ductwork may be more than AC units. Design drawings needed to properly evaluate.

VRF Systems allow more of the building's heating and cooling energy consumption from electricity sources. If the county's PV resources can be utilized to support energy delivery.

Concrete Masonry Unit (CMU) walls on the shooting range side of the building improve energy efficiency by using concrete's thermal mass to balance indoor temperatures. The dense walls absorb heat during warmer hours and release it gradually as it cools, reducing reliance on mechanical cooling. Combined with an evaporative cooling system for range make-up air, which consumes much less energy than traditional AC, the range stays comfortable with low energy use. This approach cuts costs and supports sustainability by lowering overall energy demand.

Using a Building Management System (BMS) to control the HVAC systems greatly improves energy efficiency by allowing precise, automated management of heating, cooling, and ventilation based on real-time building conditions. A BMS optimizes system performance by adjusting temperatures, fan speeds, and schedules to match occupancy and outdoor weather, reducing unnecessary energy use. It also detects faults early, preventing energy waste from malfunctioning equipment. A BMS helps lower energy costs and extends equipment life.

Building Envelope & Design

Beyond material efficiency, metal panels contribute to energy performance in buildings, with Solar Reflectance Index (SRI) opportunities that enhance thermal performance, reduce heat gain, and lower cooling loads, in turn reducing energy use. When specified and installed thoughtfully, exterior metal panels align with minimum energy performance requirements and green building certifications, specifically LEED, contributing points across categories like materials and resources, energy efficiency, and indoor environmental quality.

The building's low slope south-facing roof surfaces and overall orientation on the site provide opportunities for optimizing future photovoltaic systems installation, maximizing northern hemisphere sun exposure and making the building more adaptable to renewable energy upgrades.

Indoor Air Quality

Indoor air quality (IAQ) measures can enhance occupant health and sustainability through advanced filtration and smart ventilation controls. The classroom space will be provided with CO2 sensors for demand-controlled ventilation. This will adjust outside air delivery based on real time CO2 levels, reducing energy consumption and ensuring adequate fresh air. High-efficiency MERV-13 filters capture fine particulates under regular conditions, ensuring clean air circulation. If desired, during poor outdoor air quality events, such as wildfire smoke, facility staff can reduce or shut off outside air intake to limit contaminant infiltration, via the BMS. Provisions for activated carbon filters during these events further improve IAQ by effectively capturing smoke particles and odors. Low VOC materials will be specified to minimize off-gassing and chemical pollutants.

All interior surfaces and coatings are to meet CalGreen minimum standards to support indoor air quality.

Innovation

CMU, while a highly common and widely available building material, was selected for its versatility, structural integrity, and innovative design opportunities to create dynamic patterns, enabling both functional and aesthetic architectural expression. CMU modularity supports creative detailing, while durability and thermal mass characteristics contribute to sustainable, long-lasting design solutions.

The use of interior wall graphics offers a powerful way to create a sense of context and ownership by reflecting the building's purpose, history, or community identity, transforming otherwise generic functional spaces into meaningful environments that engage occupants, foster connection, and reinforce cultural values.

Electrical Sustainability Commitment

TEE integrates sustainability into every aspect of our design process. We actively research new systems and technologies to reduce lifecycle operating and maintenance costs. As members of the U.S. Green Building Council, and with several LEED™-accredited professionals on staff, we demonstrate a strong commitment to environmentally responsible design. Our portfolio includes over 90 LEED™ certified projects, including 11 Zero Net Energy facilities.

Lighting Systems

We prioritize sustainable lighting through full adoption of LED technologies, specifying high-efficacy, low-wattage luminaires with integrated dimming. Our focus is on reducing kilowatt-hours per square foot per year, rather than traditional watts-per-square-foot measures. Advanced lighting controls—including occupancy sensors, dimming interfaces, photo controls, and closed-loop daylight sensors—optimize energy savings while maintaining occupant comfort.

TEE provides detailed Sequence of Operation (SOO) documentation to support efficient commissioning and system performance. Our approach ensures daylight dimming systems operate seamlessly and unobtrusively, enhancing user acceptance and energy savings.

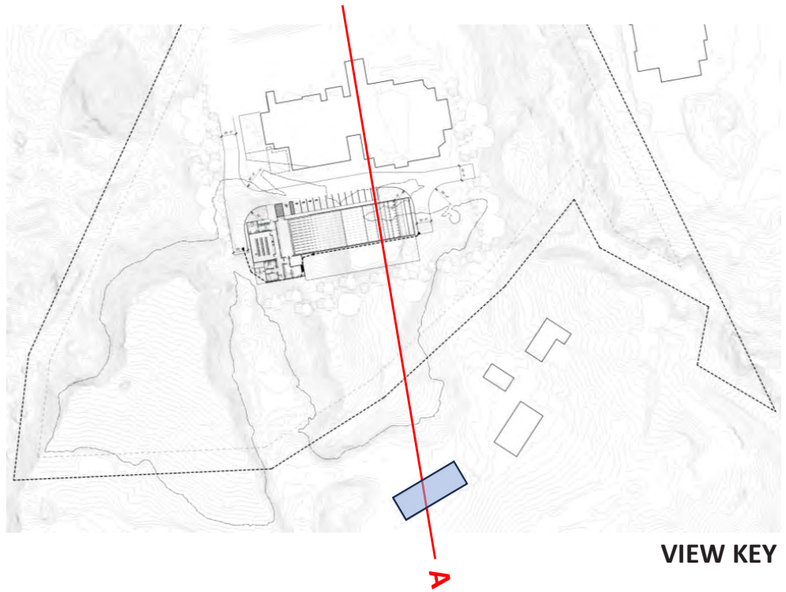
6. Architectural and Interior Design

DESIGN | Exterior Renderings: Entry

DESIGN | Exterior Renderings: Entry

DESIGN | Exterior Renderings: Site Context

DESIGN | Site Section



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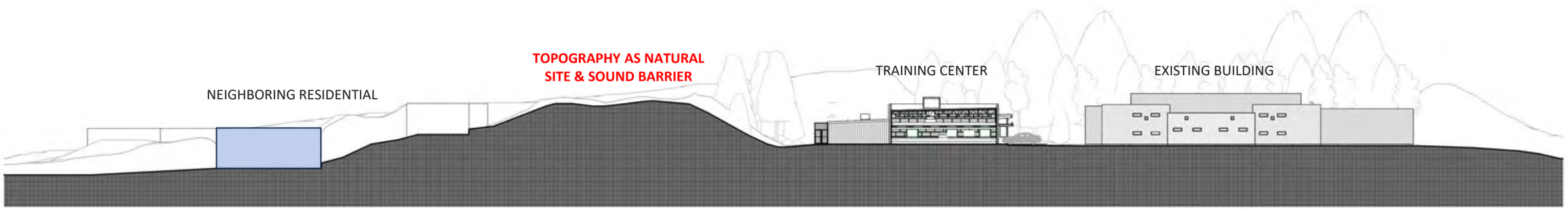
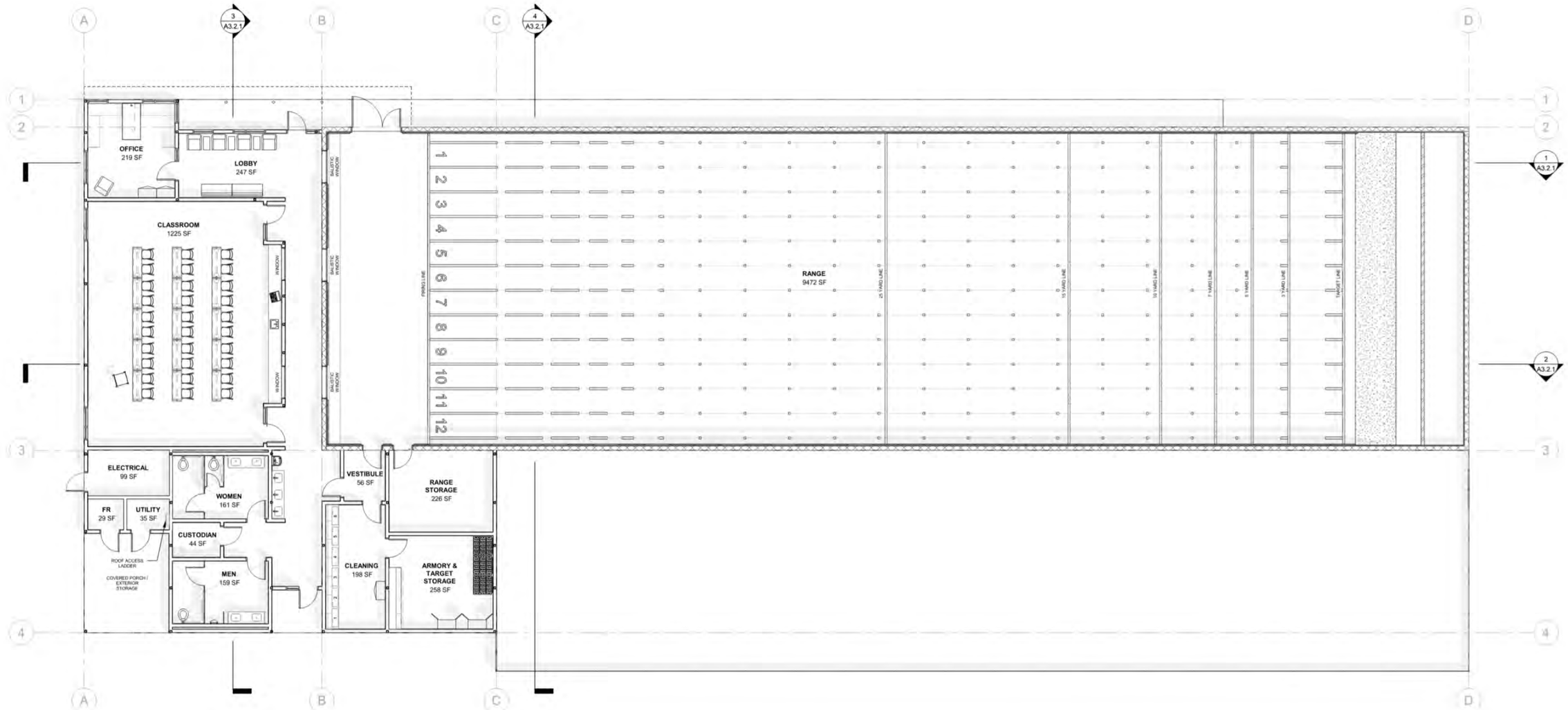


SECTION A

DESIGN | Overall Floorplan



DESIGN | Overall Roof Plan

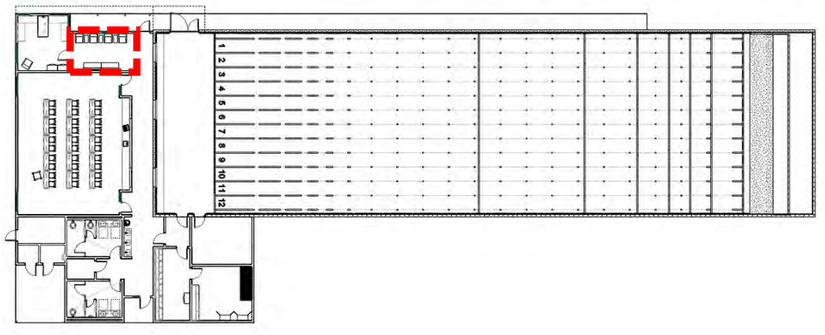
DESIGN | Program: Main Entry

3D View Link

Check this out!

DESIGN FEATURES

- Lounge seating to accommodate 8.
- Vinyl Graphic feature wall showcasing Nevada County Sheriff's team.
- This wall serves as a proud focal point and tribute to the local service.
- Ballistic-Resilient glazing for unobstructed views into the shooting range.



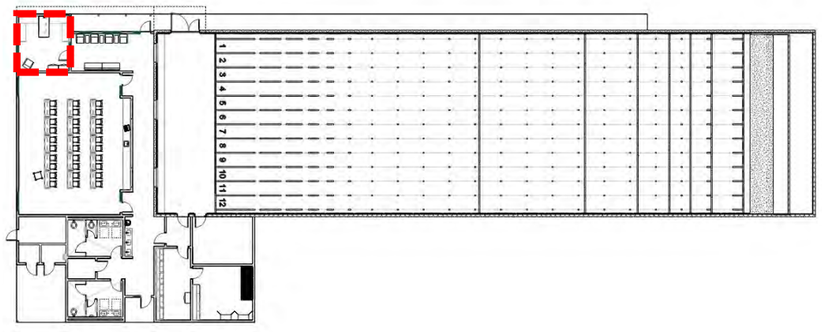
DESIGN | Program: Office

3D View Link

Check this out!

DESIGN FEATURES

- Workstations for 2.
- Central collaboration desk, ideal for map layouts and strategic planning.
- Soft seating to accommodate guests.
- 2 storage lockers.
- Interior glazing offering clear sightlines towards the entry & into the shooting range.
- Markerboard.



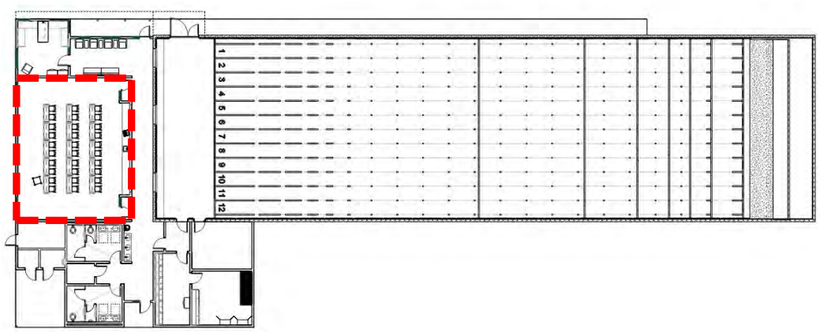
DESIGN | Program: Training Room

3D View Link

Check this out!

DESIGN FEATURES

- Seating to accommodate 30.
- Casework and a mini-fridge, offering both functional storage and convenient refreshment access and donuts.
- Lectern for presentations, briefings, or instruction.
- Glazing for unobstructed views into the shooting range.
- 2 dynamic vinyl graphic installations add visual interest and reinforce departmental identity.
- Dual markerboards and projector screen paired with short-throw projector, ideal for interactive training and presentations.



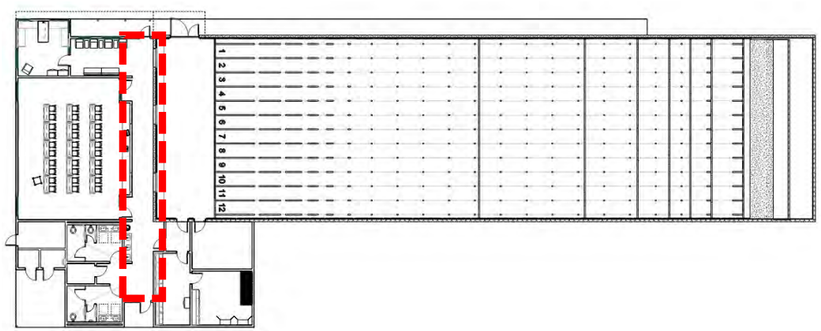
DESIGN | Program: Corridor

3D View Link

Check this out!

DESIGN FEATURES

- Vinyl signage for wayfinding.
- Sleek stainless-steel backsplash, countertop, and integrated sinks with touchless automatic faucets for hygienic, hands-free handwashing.
- Hydration station featuring a combination water fountain and bottle filler.
- Ballistic-Resilient Bulletproof glazing along corridor, providing secure, uninterrupted sightlines into the shooting range.



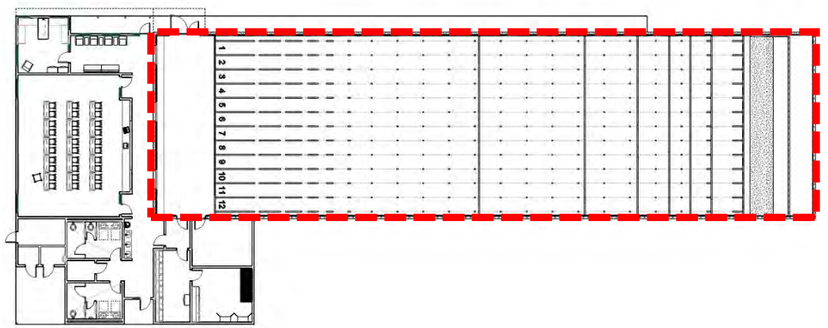
DESIGN | Program: Range

3D View Link

Check this out!

DESIGN FEATURES

- High-performance PEPP Sound Silencer acoustic wall panels for sound absorption.
- Durable, non-porous acoustic ceiling baffles designed to enhance sound control while ensuring easy maintenance.
- Stainless steel counter w/ stainless steel shelf below along back wall.
- Stained color concrete surface from Lobby/Hallway/Training Room extends into Range up to the firing line. Remainder of concrete in Range to be standard sealed.



DESIGN | Program: Cleaning & Armory

3D View Cleaning Link

Check this out!

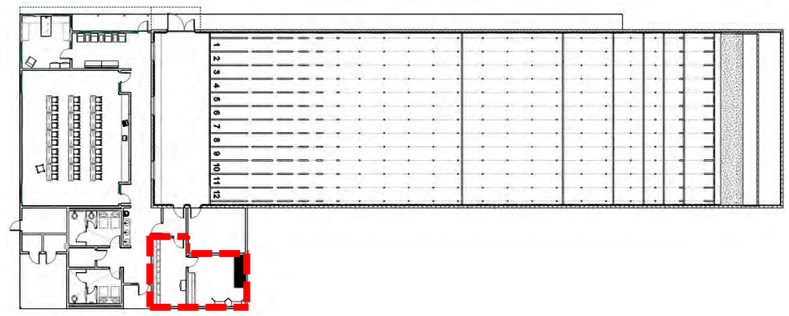
3D View Armory Link

DESIGN FEATURES

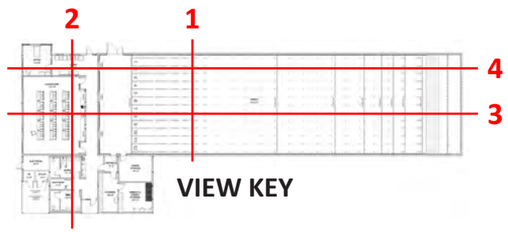
- Upper cabinet storage (FF&E).
- Stainless steel counter and 12” deep shelf.
- 6 dedicated gun cleaning stations, each equipped with protective mats.
- 1 secure storage locker for convenient access to essential equipment and supplies (FF&E).

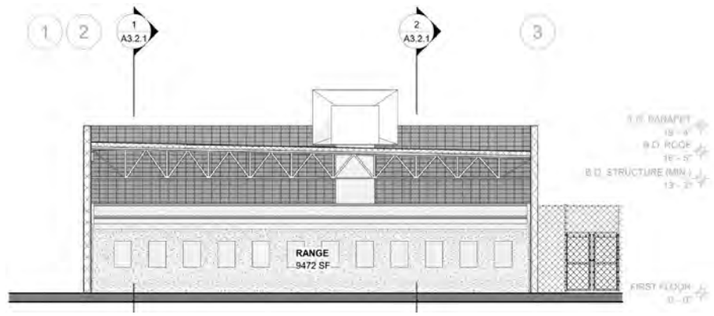
DESIGN FEATURES

- 2 secure Gun storage cabinets (FF&E).
- Designated space to accommodate three 3x3 pallets.
- Durable workbench featuring an integrated shelf for practical, multi-functional workspace support (FF&E).

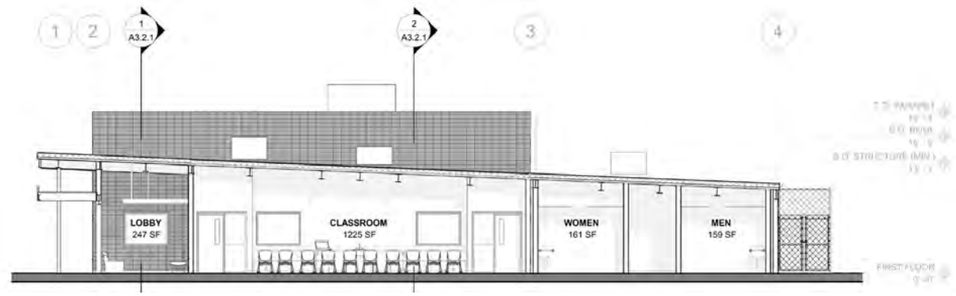


DESIGN | Building Sections

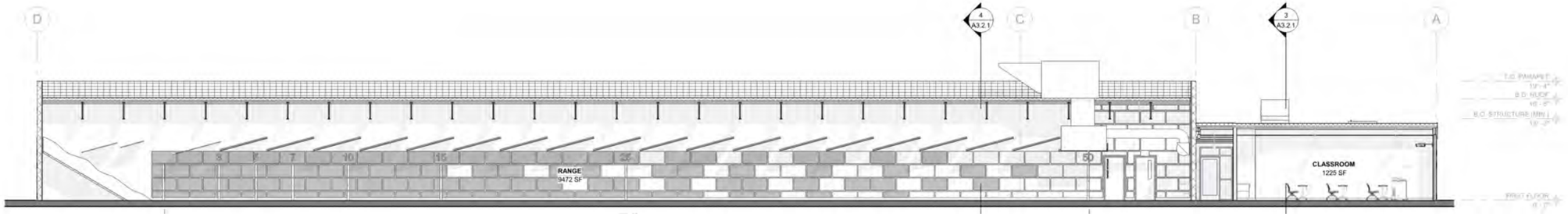




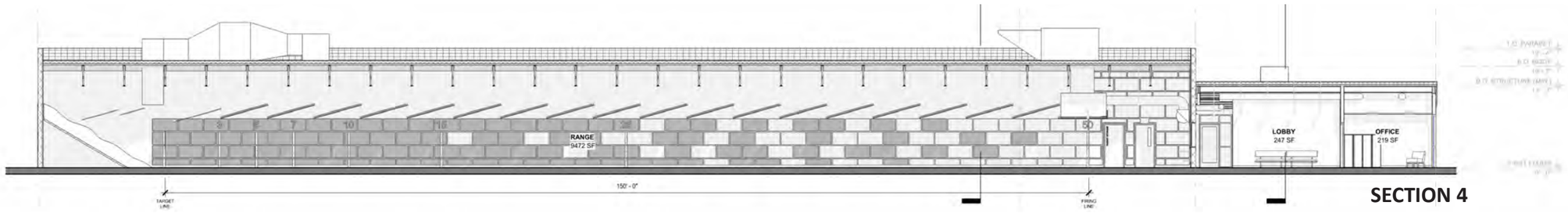
SECTION 1



SECTION 2

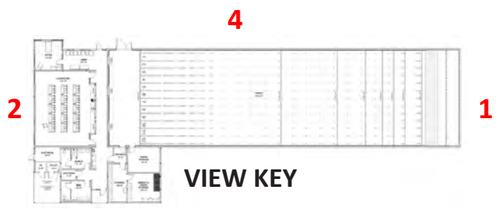


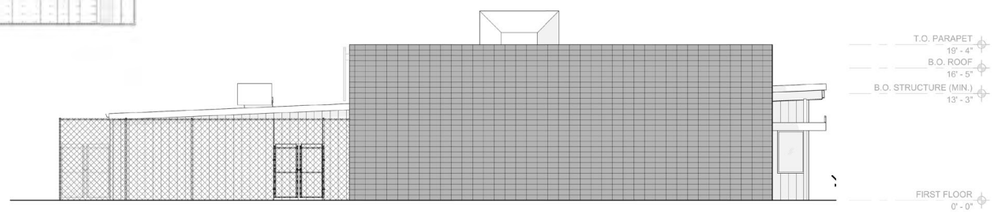
SECTION 3



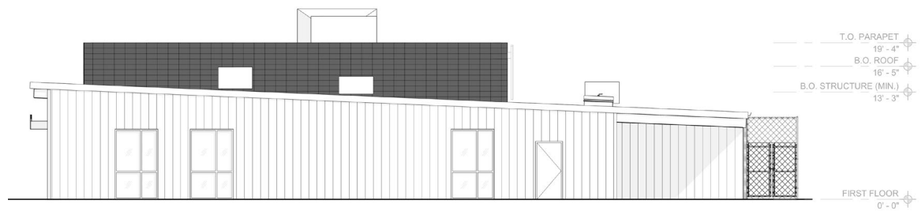
SECTION 4

DESIGN | Building Elevations

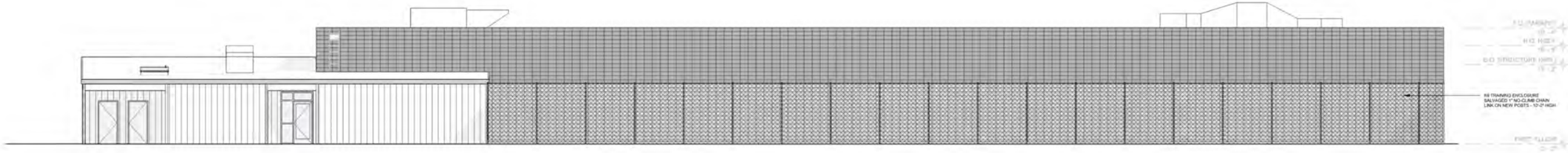




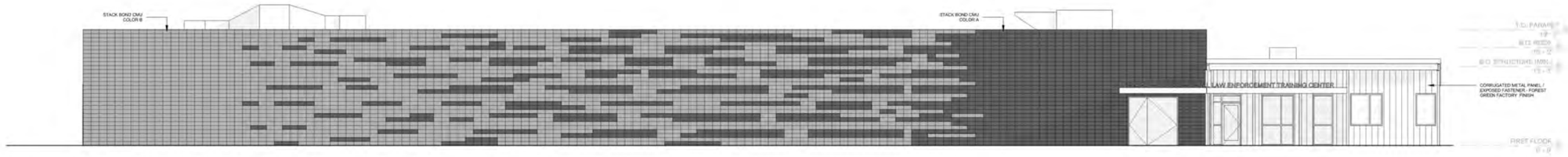
EAST ELEVATION 1



WEST ELEVATION 2



SOUTH ELEVATION 3



NORTH ELEVATION 4

7. Site Improvements and Integration Management

Modern Building is very familiar with effectively constructing complex work on active, operating facilities and campuses. The basis of our approach to addressing the logistics of every jobsite is respect. Our logistics plans are developed to respectfully minimize the impact of our construction activities on the operations of the existing facility, while taking into consideration any residual impacts our activities may have on surrounding businesses or adjacent neighbors, as well.

Logistics Plan

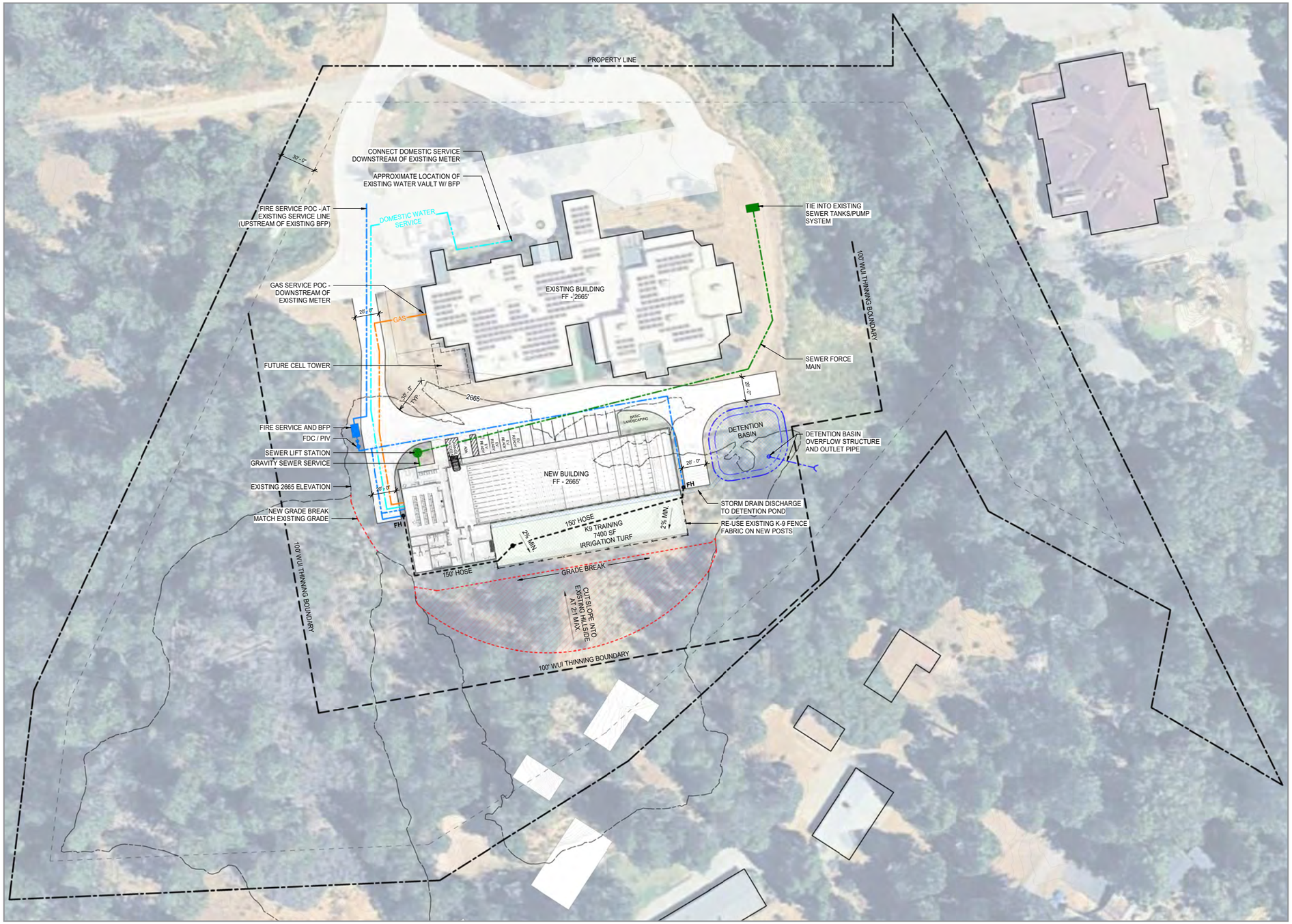
The plan would be incrementally developed, working collaboratively with the County, to ensure all critical aspects are considered. The preliminary Logistics Plan we are providing is just the first step of this effort - intended to spur questions and conversation, allowing us to then further develop the plan with the County's "hot points" in mind. This process allows the plan to eventually evolve into an agreeable Logistics Plan, from which guides the construction activities and operations.

Plan Updates and Specific MOPs (Methods of Procedure)

As construction progresses, we acknowledge site conditions and other variables may require the Plan to be revisited and revised. We anticipate this and seek continued opportunities to constantly improve our interaction. Additionally, for occasional activities that may cause other impacts to the site and/or neighbors, e.g. an activity taking place during non-standard working hours, impactful material deliveries, large equipment mobilizations, etc., a specific MOP will be shared with to ensure our construction efforts render minimal impact to the shared site or adjacent properties.

Please note: as discussed in our Confidential Meeting, we propose utilizing some of the existing bunk space in the existing building for a temporary office and meeting space. This provides a cost-savings to the County, and reduces our footprint on the site, eliminating an additional field office trailer.

DESIGN | Architectural / Civil Site Plan



DESIGN | Site Logistics Plan