Chaparral High School

Schematic Design Package

February 7, 2023

DLRGROUP

ARCHITECTURE ENGINEERING PLANNING INTERIORS

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Temecula Valley Unified School District

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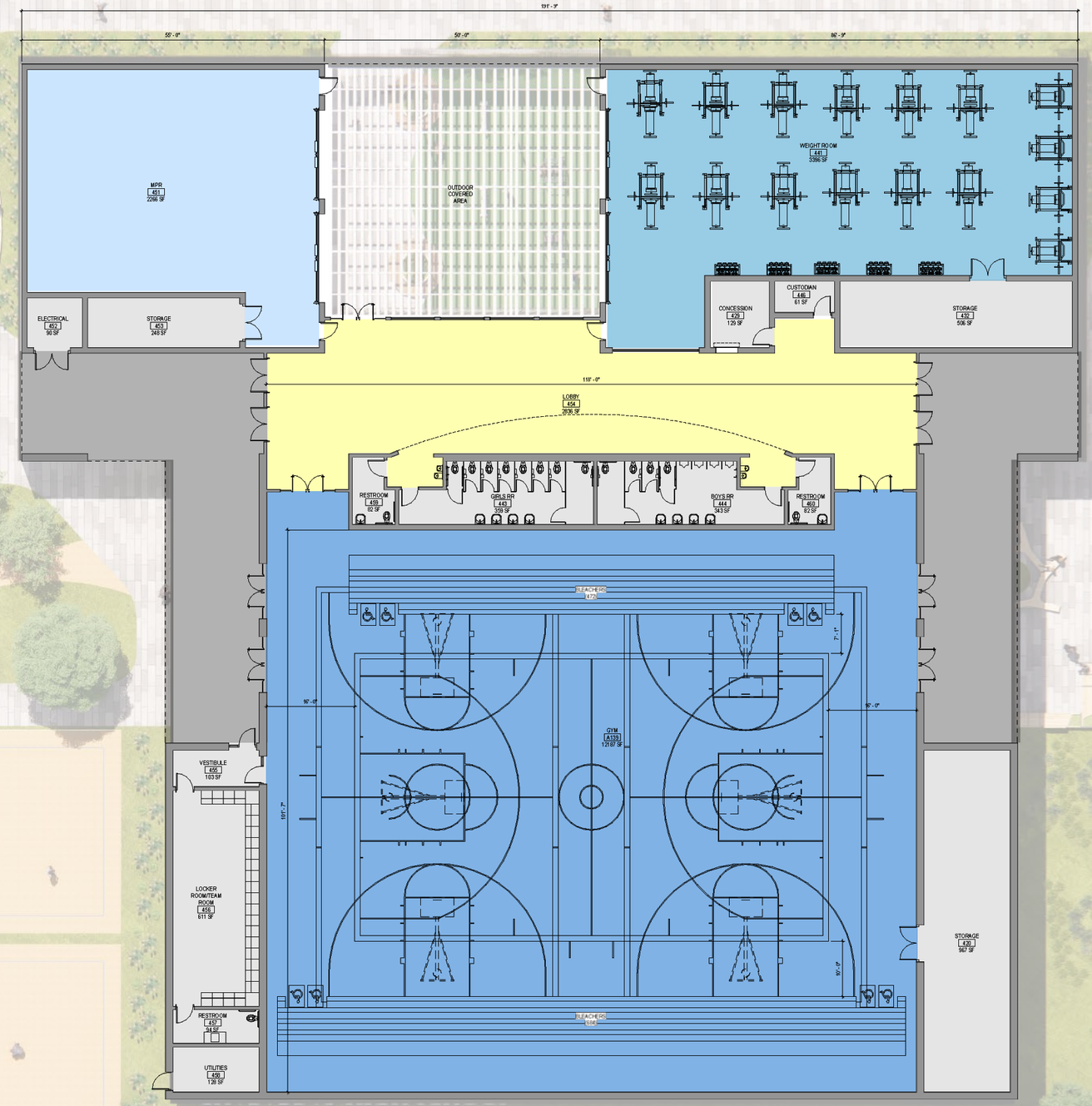

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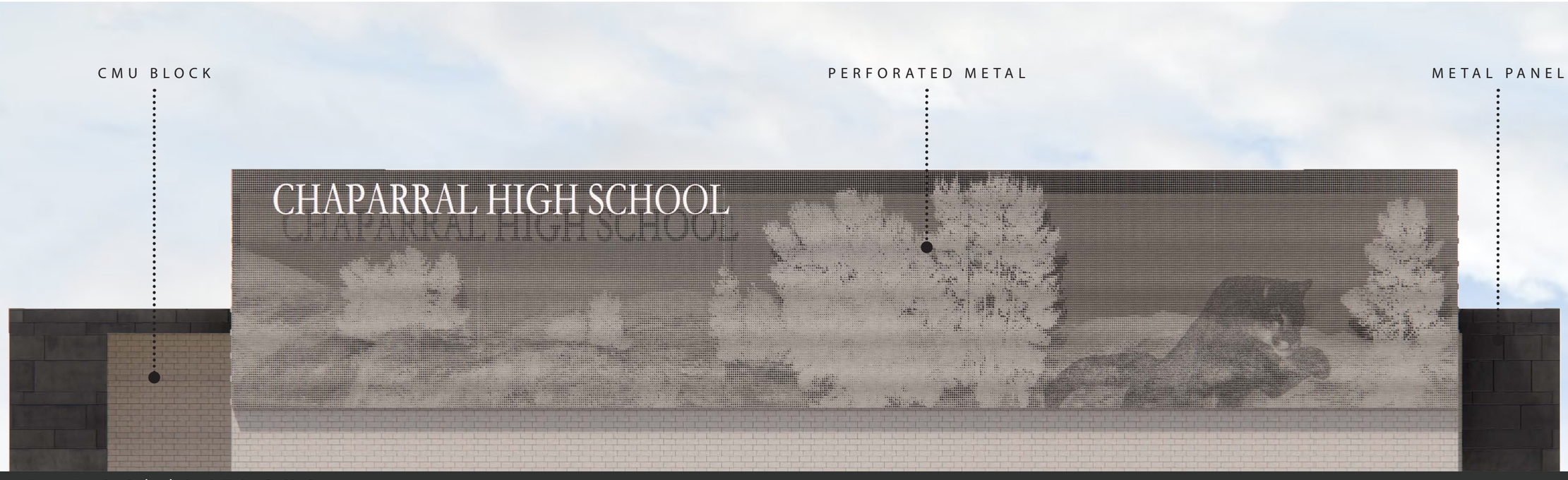
ELEVATIONS

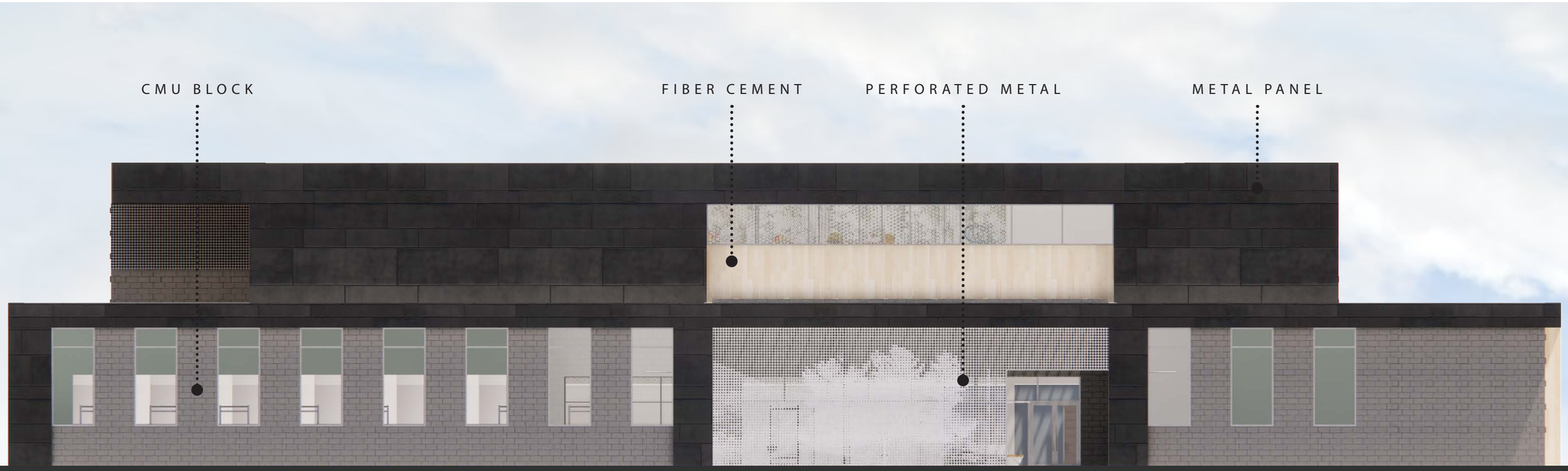
NORTH ELEVATION | NOT TO SCALE

SOUTH ELEVATION | NOT TO SCALE

ELEVATIONS

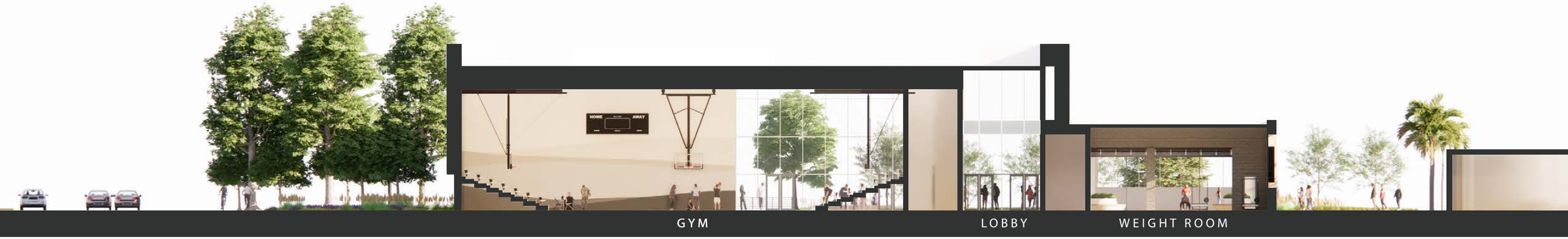


EAST ELEVATION | NOT TO SCALE



WEST ELEVATION | NOT TO SCALE

SECTIONS



SECTION A | NOT TO SCALE

SECTION B | NOT TO SCALE

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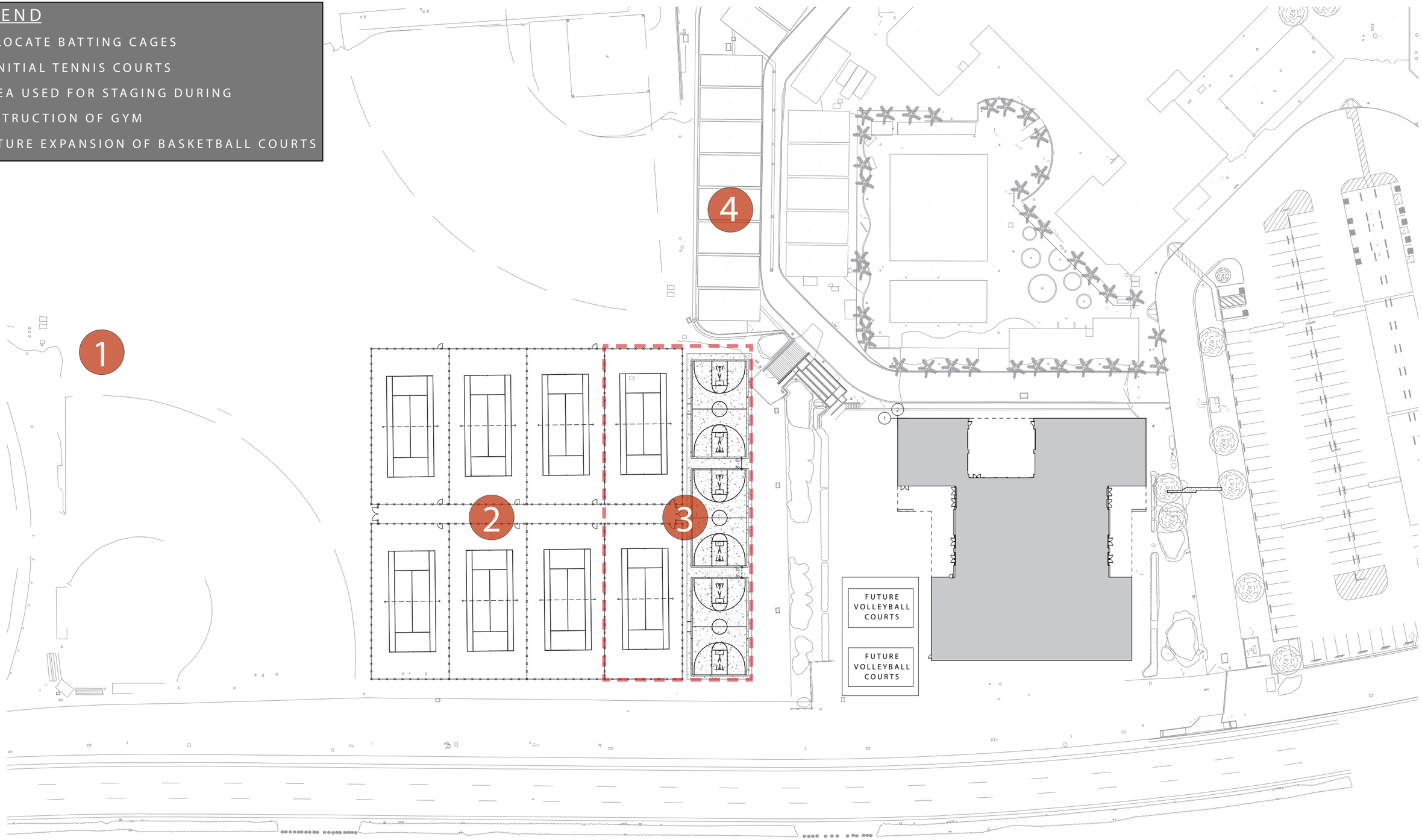
4-FUTURE EXPANSION OF BASKETBALL COURTS



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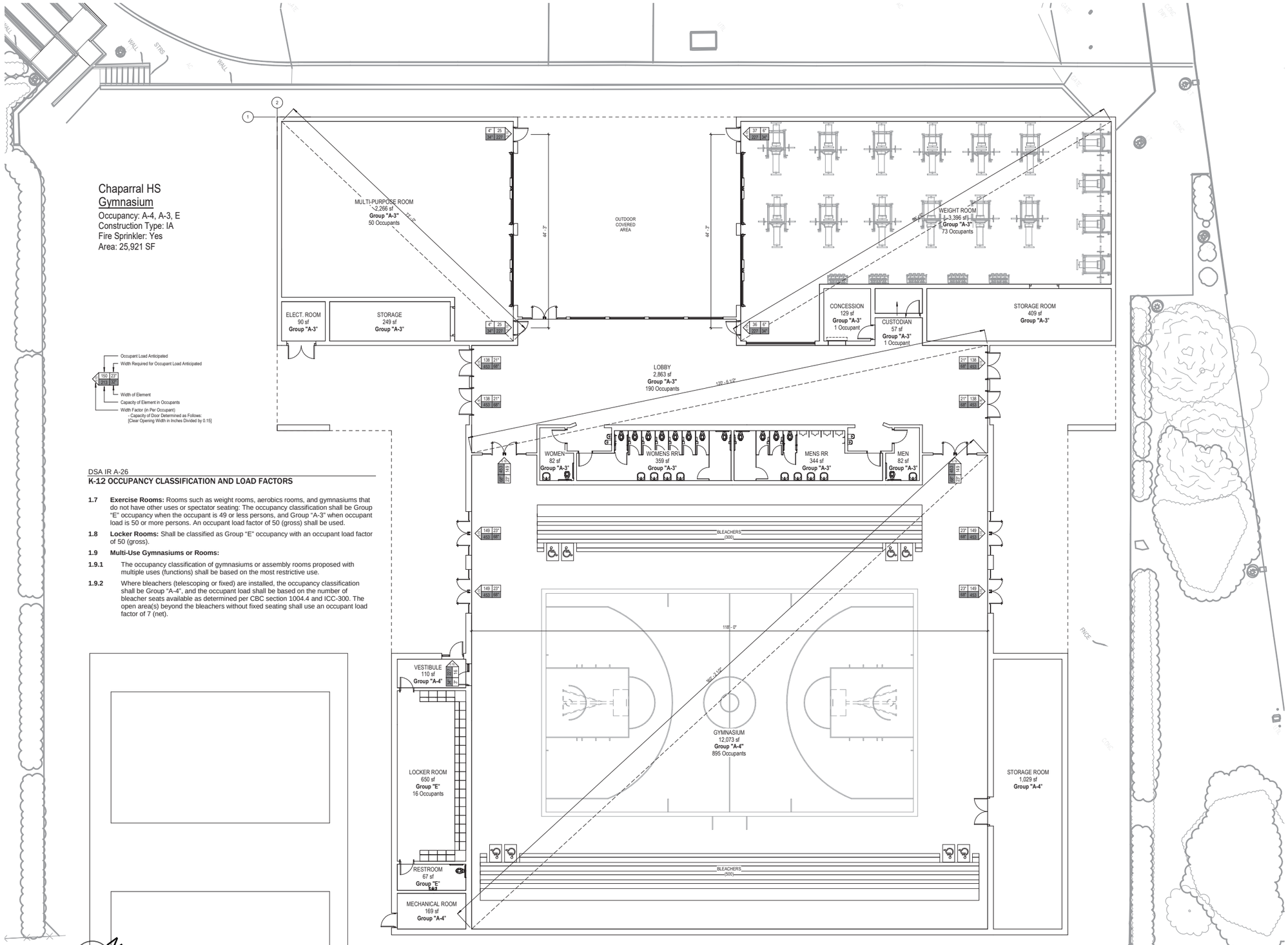
SCHEMATIC CODE AND EGRESS PLAN



DSA IR A-26

K-12 OCCUPANCY CLASSIFICATION AND LOAD FACTORS

1.7 **Exercise Rooms:** Rooms such as weight rooms, aerobics rooms, and gymnasiums that do not have other uses or spectator seating: The occupancy classification shall be Group "E" occupancy when the occupant is 49 or less persons, and Group "A-3" when occupant load is 50 or more persons. An occupant load factor of 50 (gross) shall be used.

1.8 **Locker Rooms:** Shall be classified as Group "E" occupancy with an occupant load factor of 50 (gross).

1.9 **Multi-Use Gymnasiums or Rooms:**

1.9.1 The occupancy classification of gymnasiums or assembly rooms proposed with multiple uses (functions) shall be based on the most restrictive use.

1.9.2 Where bleachers (telescoping or fixed) are installed, the occupancy classification shall be Group "A-4", and the occupant load shall be based on the number of bleacher seats available as determined per CBC section 1004.4 and ICC-300. The open area(s) beyond the bleachers without fixed seating shall use an occupant load factor of 7 (net).

NOT TO SCALE

01|INTERIOR DESIGN NARRATIVE

natural | organic | warm
sherwin williams palette

CHAPARRAL

Resilient | Adaptable | Outstanding

Chaparral:

An ecological community composed of shrubby plants that occursespecially in southern California. The shrubs have special adaptations to survive wildfires, hot summer droughts and moist winters by utilizing extensive root systems for gathering water deep underground.

District Mission:

High Quality Teaching and Learning for All

School Mission:

Puma's show P.R.I.D.E. at all times!
Passion, Respect, Integrity, Determination, Excellence

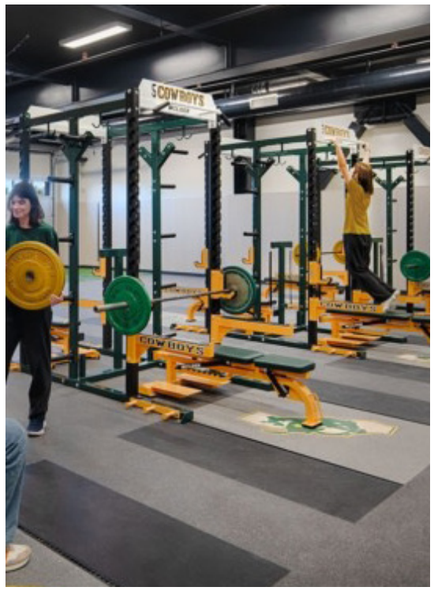
Design Concept:

The city of Temecula, meaning "place of the sun," is known for its beautiful hills and bright skies. Symbolisms of power, positivity, and resiliency are shared between the native Chaparral plant and Chaparral High School. The chaparral plant thrives in dense soil and dry weather, allowing for its distinctive growth to only exist in environments such as in Temecula. The intent of this re-imagined campus is in providing a foundation for students to grow and find resiliency in their dreams within this distinctive community.

LOOK & FEEL

Tenacious

Courageous

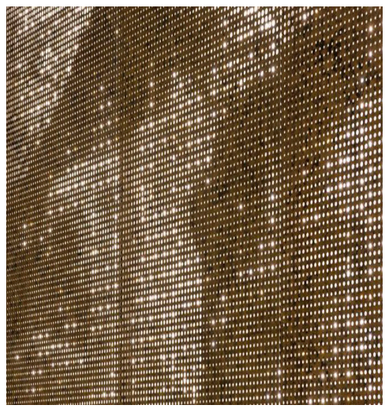


Environmentally Stimulated

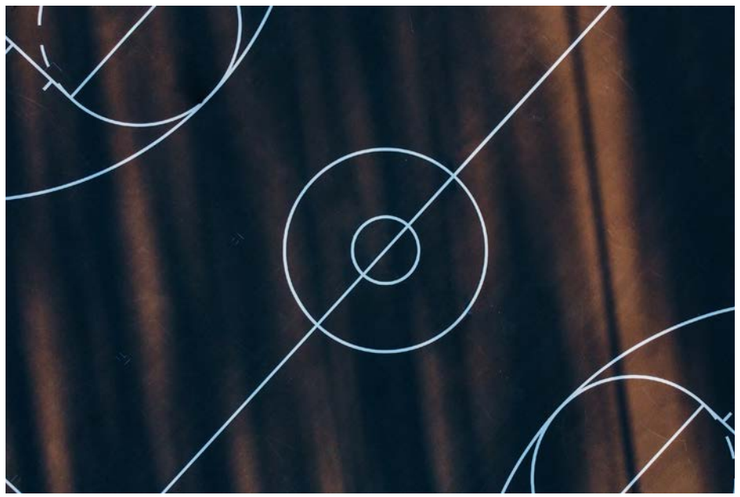
Directional

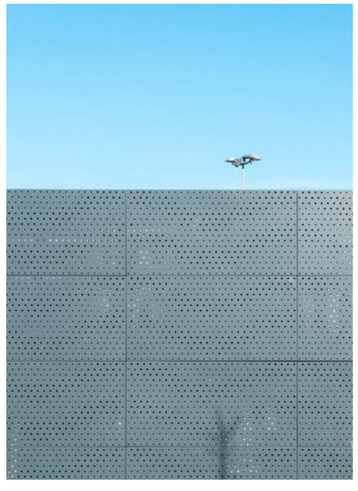
Movement

Dynamic

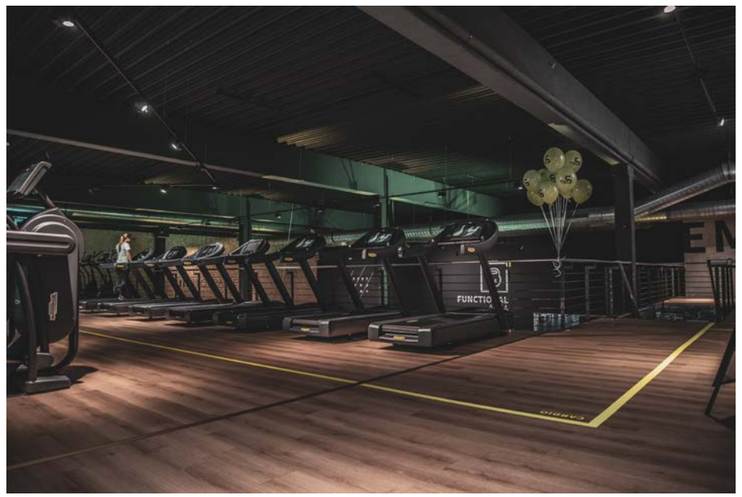


BASKETBALL

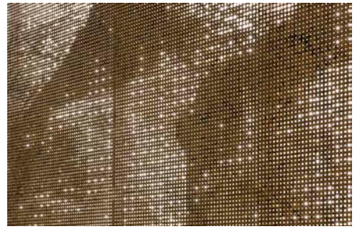


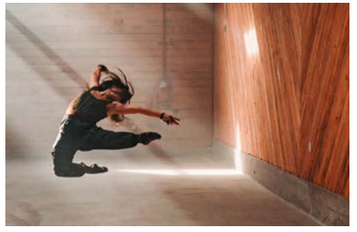


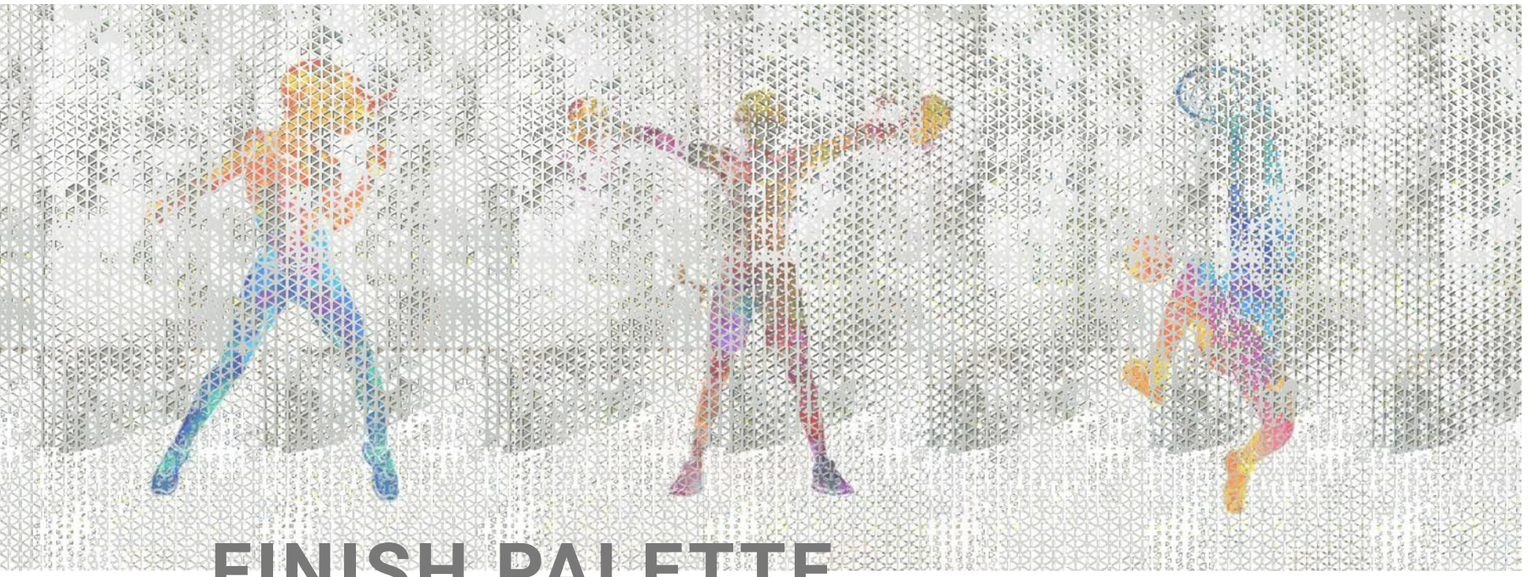
WEIGHTS

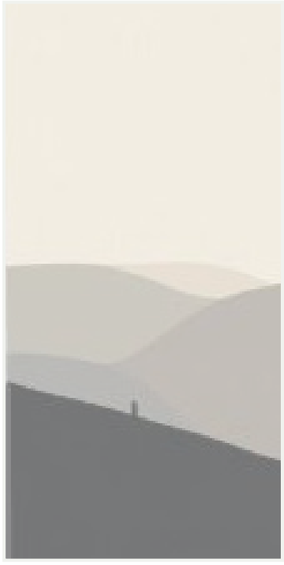


DANCE



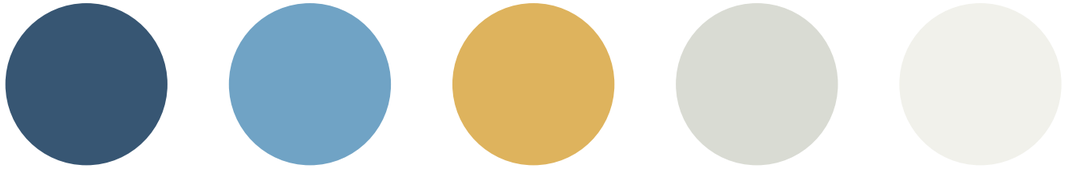




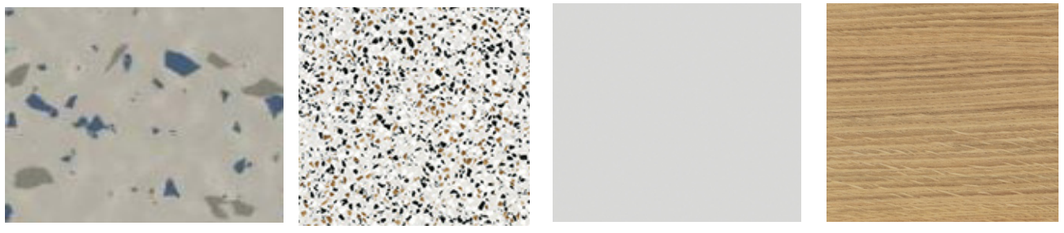


FINISH PALETTE

SCHEME 1

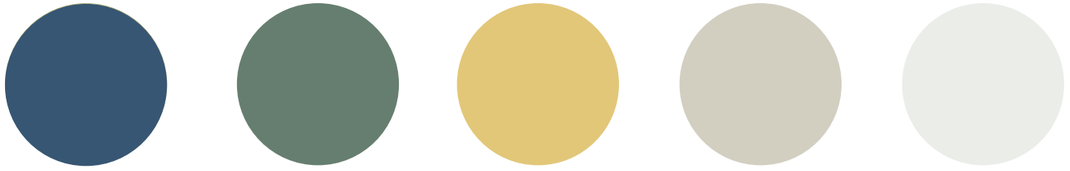


Blue Earth | Wandering River | Santa Fe Tan | Silver Creek | Coconut Groove



Nora 926 grano | Formica - SS - Dalmata Terrazzo | Formica - Folkstone | Formica - Finish Oak

Gerflor Sport M Plus - Oak



Blue Earth | Ecological | Waffle Cone | Lunar Landing | At First Light

Nora 5109 grano | Formica - SS - White Spex | Formica - Graystone | Formica - White Ash

Tarkett Omnisports- Beech

02|STRUCTURAL DESIGN NARRATIVE

FOUNDATION PLAN-LEVEL 01

Foundation Notes:

1. Subgrade prep per geotechnical notes.
2. Excavation/grading per geotechnical notes.
3. Top of footings to be at -18" below top of SOG, typ.
4. Steel column bases are at top of ftg, typ.

Concrete Notes:

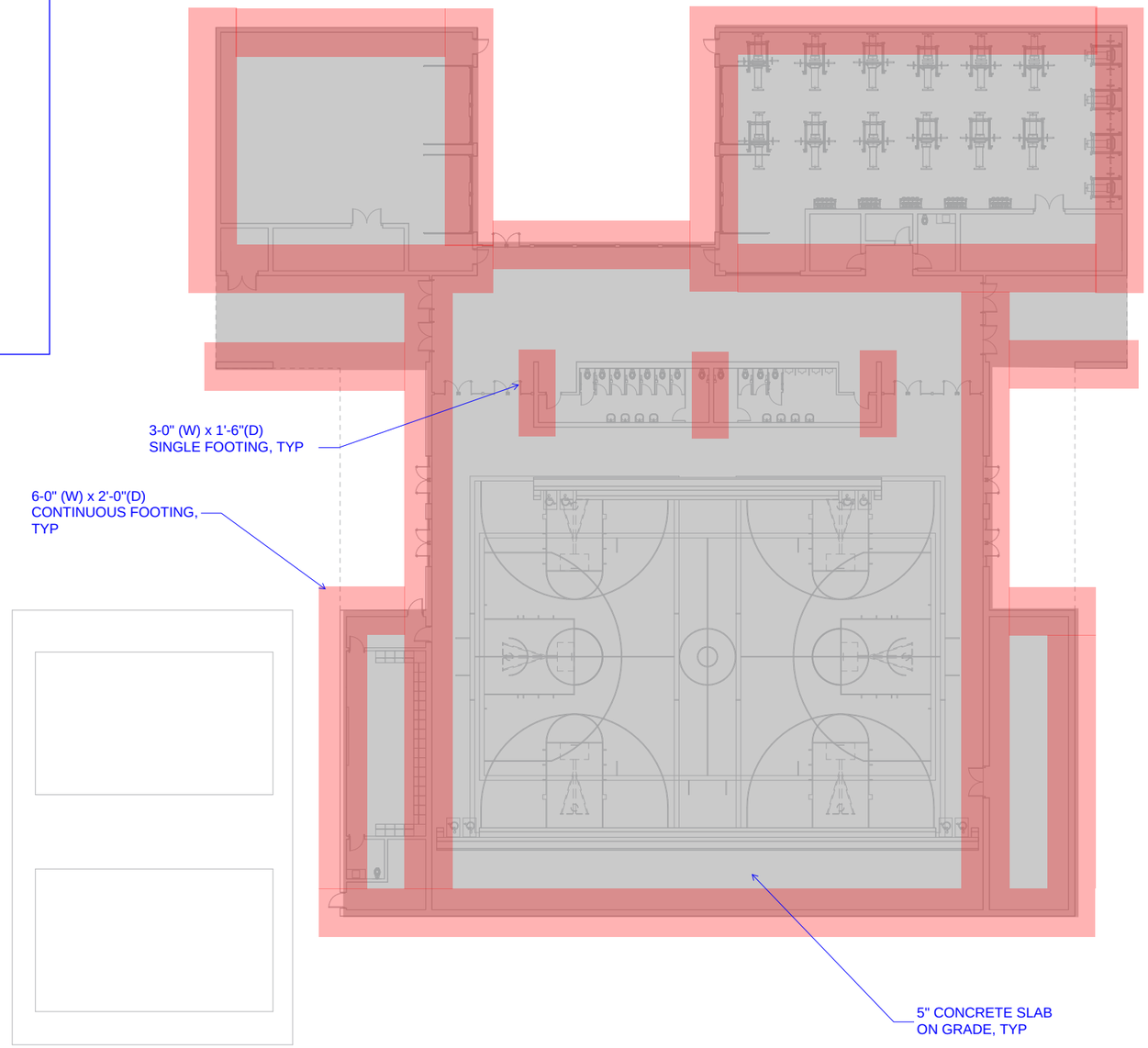
1. Foundations, Walls, and Slab on Grade to be NWC, f'c=3000psi
2. Concrete fill at metal deck to be LWC, f'c = 3000psi.
3. Slab on Grade extent to match building footprint (shown approx. on plan), allow for #4@16" OC EW
4. Foundation extent as shown are approximate. Allow for 300 LBS/CY reinforcing at all foundations.

CMU Notes:

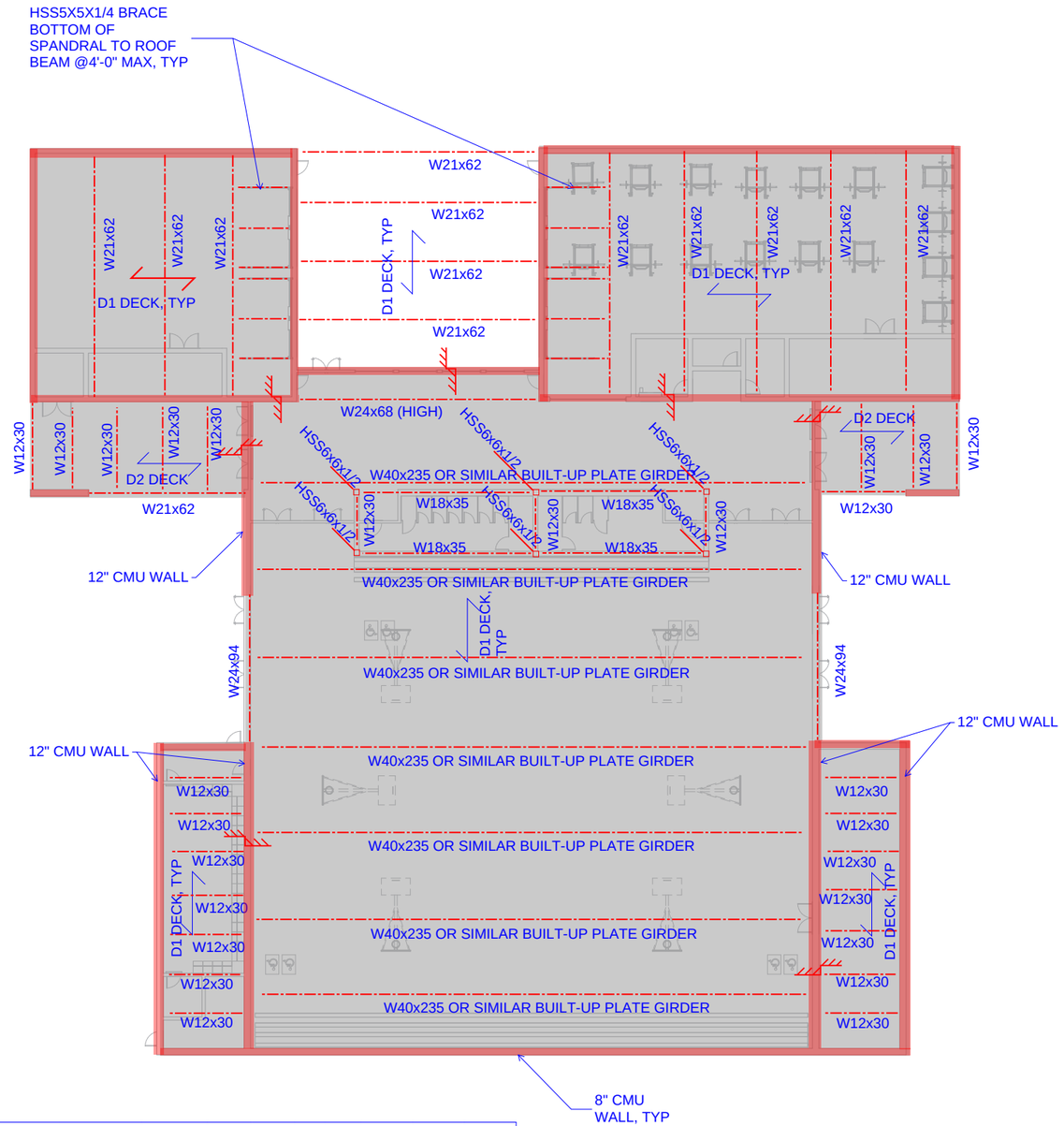
1. All CMU to be fully-grouted with medium-weight blocks, f'm=2000psi
2. At 8" (typical) CMU, allow for #6@8" OC Vertical, #4@16" OC Horizontal.
3. At 12" (double-height) CMU, allow for 2#6@8" OC EF Vertical, #4@16" OC EF Horizontal.
4. Where CMU supports metal deck, provide L4x4x3/8 cont. ledger angle with 3/4" AB@ 8" OC into CMU.

Structural Steel Framing Notes:

1. All steel HSS beams and post are A500 Gr. C (50ksi).
2. All steel WF beams are A993 (50ksi).
3. At HSS posts, allow 35lbs/ft.
4. At WF beams, see sizes indicated on plan.
5. Allow for 5/8" diameter headed studs @ 12" OC along all steel beams.



FRAMING PLAN-LEVEL 02



NOTES:
1. ALL CMU WALLS ARE 8" THICK UNLESS NOTED OTHERWISE.

METAL DECK SCHEDULE													
MARK	DECK TYPE	DECK GA	CONCRETE OVER METAL DECK	TOTAL SLAB DEPTH	DECK REINF	FASTENER PATTERN	FASTENER	PARALLEL & PERPENDICULAR EDGE FASTENER	EDGE FASTENER SPCG	SIDELAP FASTENER	SIDELAP SPCG	SECTION PROPERTIES	DECK SECTION & FASTENER PATTERN
D1	3" VLI	18	3 1/4" LW CONC	6 1/4"	#4 @ 18" OC EA WAY	36/4	5/8"Ø PUDDLE WELD	5/8"Ø PUDDLE WELD	12" OC	BUTTON PUNCH	12" OC	Ix (in⁴/ft) 1.25 Sx (in³/ft) 0.794 Fy (ksi) 50	
D2	3" VLI	18	-	3"	-	36/4	HILTI X-ENP-19L15	HILTI X-ENP-19L15	6" OC	VSC2	12" OC	Ix (in⁴/ft) 1.25 Sx (in³/ft) 0.794 Fy (ksi) 50	

03|MECHANICAL NARRATIVE

DCGA ENGINEERS
Consulting Mechanical and Electrical Engineers

MECHANICAL BASIS OF DESIGN

Project: Chaparral High School Gym – Temecula Valley Unified School District

Date: January 26, 2023

This project consists of:

New gymnasium, weight room and MPR.

DESIGN CRITERIA

Codes and Standards

Mechanical systems will comply with all applicable codes and State requirements and the Temecula Valley Unified School District Standards as a minimum basis for the project design.

- 2022 California Building Standards Administrative Code – Part 1, Title 24, California Code of Regulations (CCR)
- 2022 California Building Code – Part 2, Title 24, CCR
- 2022 California Electrical Code – Part 3, Title 24, CCR
- 2022 California Mechanical Code – Part 4, Title 24, CCR
- 2022 California Fire Code – Part 9, Title 24, CCR
- 2022 California Green Building Standards
- National Fire Protection Association
- 2022 California Building Energy Efficiency Standards for Non-Residential Buildings
- ANSI – American National Standards Institute
- UL – Underwriters' Laboratories
- ASME – American Society of Mechanical Engineers
- ASHRAE – American Society of Heating, Refrigeration and Air-Conditioning Engineers

Outdoor Design Conditions

Outdoor design conditions are based on ASHRAE Climatic Data for Region 10 for city of Temecula. For cooling design the 0.5%DB/MCWB conditions are 100°F/72°F. The winter heating design condition based on .6% is 35°F.

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Indoor Design Conditions

	Summer	Winter
Gymnasium, Classrooms and Support Areas	75°F	70°F
Electrical Rooms	85°F	40°F
Data Rooms	75°F	As Summer
Restrooms	Ambient Air	Tempered Air 70°F
Interior Storage Rooms	Indirectly Conditioned	As Summer

Offices

Offices shall be provided with 15-cfm/person outside air. The total air supplied shall meet the maximum cooling load. The occupancy shall be based on block load amount and not individual occupant room total.

Storage, Data and Electrical Rooms

Storage room three air changes exhaust per hour or 50 cfm minimum.

Storage rooms shall be exhausted 100% of indirectly conditioned (transfer) air.

Tele/data and control equipment rooms shall be provided with dedicated cooling only split systems.

Electrical rooms shall be provided with dedicated exhaust system with control via line voltage thermostat door louvers provided.

Toilets and Janitor Rooms

Ten air changes per hour exhaust for toilets (but not less than 70 cfm / fixture).

Six air changes per hour exhaust for janitor rooms.

Occupancy Load

Design occupant densities are assumed to be per Chapter 10, Table 1004.1.1 of the CBC and RCA's code analysis.

Sensible and latent loads per occupant are based on ASHRAE Fundamentals, 2009, Section 18, Table 1.

Room	Type	Load (Btu/Hr)
Offices, Classrooms and MPR	Sensible Latent	210 140
Gymnasium	Sensible Latent	635 1165

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Lighting Load

Preliminary lighting loads are as follows:

Toilets, Corridors	0.7 Watts/ft^2
Office, Classrooms and Support Areas	0.7 Watts/ft^2
Gymnasium/MPR	0.5 Watts/ft^2

Equipment Load

Preliminary equipment loads are based on T-24 as follows but will eventually be based on information provided by DLR during the DD phase. Equipment heat gain will be based on information developed during subsequent phases.

Offices, Receptacles	1.5 watts/ft^2
Data Room	4 watts/sf

Ventilation Requirement

Ventilation will meet T-24 requirements as a minimum basis.

Supply Air Design Values

The following design values will be used for preliminary load assessment and preliminary equipment sizes. Final equipment sizes and airflows will be based on load calculations.

Room	Air Supply Rate
Offices	1.0 to 1.6 cfm/ft^2
Corridors	0.6 to 1.0 cfm/ft^2
Gym/MPR	1.5 to 2.0 cfm/ft^2

Internal Noise Criteria

The following internal noise criteria for HVAC related background sound in rooms per ASHRAE. Applications Table 1 as follows:

Room	Max. Room NC Level
Classrooms and Offices	NC 35
Corridors	NC 35
General Work Rooms	NC 30
Gym/MPR	NC 35

HVAC SYSTEM DESCRIPTION

General

Variable Refrigerant Flow (VRF) with Dedicated Outside Air System (DOAS)

Air conditioning system shall be provided to control airflow and maintain positive pressure in the spaces while saving energy.

Exhaust system shall terminate at minimum 10 feet away, or if within 10 feet, 3 feet vertically above any outside air intake.

MISCELLANEOUS HVAC SYSTEMS

General Exhaust

Each toilet room shall be exhausted to atmosphere through roof mounted exhaust fan.

Exhaust fan shall ventilate electrical rooms, controlled via thermostat.

Ductwork System

General

General systems shall be designed to obtain lowest cost-beneficial pressure loss by limiting certain duct velocities, avoiding dynamic loss components where possible and utilization of low dynamic loss components. High-loss fittings, such as mitered elbows, abrupt transitions, and takeoffs and internal obstructions shall be avoided.

Distribution system pressure losses shall be determined by total pressure.

Design for the pressure distribution duct of dedicated outside air system shall be for pressure drops to 1.5 inches WG or less. Long duct runs shall be designed with special consideration of pressure loss since the maximum loss for any run shall be imposed upon the entire system.

Horizontal duct distribution shall be routed to maximize long, straight runs without multiple penetrations through fire and/or smoke partitions. Multiple horizontal mains shall be of comparable length and configuration to equalize pressure losses. The overall object is to route ducts that shall avoid or minimize architecturally and/or structurally induced dynamic losses.

Construction of ductwork shall be in accordance with CMC Chapter 6 for the appropriate duct pressure classification. Variations in duct size, and additional duct fittings shall be provided, as required to clear obstructions and maintain clearances.

Drive slip or equivalent flat seams for ducts exposed in the conditioned space or where necessary due to limitations, shall be provided. Longitudinal seams use Pittsburgh lock. Button punch snap lock shall not be used on the project. On ducts over 48” wide, provide standard reinforcing on inside of duct. Run outs to grilles, registers or diffusers on exposed ductwork shall be the same size as the flange outer perimeter on the grille, registers, or diffuser.

Return air system shall be ducted.

Friction Losses and Minimum Duct Sizes

Supply air ducts from fan coil to the air distribution device shall be sized for friction losses of up to 0.1 inches WG/100 feet and not exceeding a velocity of 1500 fpm.

Supply air ducts downstream of fan coil units or air valves, return air ducts, and general (e.g. toilet) exhaust ducts shall be sized for friction losses between 0.08 and 0.10 inches WG/100 feet but not exceeding 1000 fpm.

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Ductwork Accessories

Manual volume dampers shall be provided at all branch ducts for proper air balancing.

Grilles, Registers and Diffusers

The selection of the diffusers and grilles shall be carried out in conjunction with the Architect. The basis of design shall adhere to the following:

- Spaces shall use 2'x2' module aerodynamically adjustable modular core diffusers. Diffusers shall not include opposed blade dampers.
- To minimize noise and improve air discharge patterns supply registers shall have square necks and acoustically lined plenums.
- Return grilles shall be 2'x2' to lay-in-T-bar ceilings complete with plenum hood. Return and Exhaust grilles shall be 45° angled blade type.
- All inlets and outlets shall be selected at least 5 NC levels below the NC level of the room
- Where ducts are not exposed or in the MPR, all supply outlets shall be provided with a minimum of 5' of flexible ductwork to reduce vibration transmission, provide sound attenuation and assist in locating the diffusers in the ceilings or wall.
- Exposed ductwork with duct mounted air distribution devices.

Air Systems

Rooms requiring 24/7 cooling (telecom rooms) shall be provided with split-type air conditioning units, with DX cooling. Outdoor condensing units will be located on the roof.

Exhaust fans will be provided for general building exhaust. The fans will be roof mounted.

Temperature Control System

Thermostat manufactured by district standard controls equipment, Pelican control systems

Equipment and Piping Supports

All piping and equipment shall be supported and restrained in accordance with current OSHPD pre-approved systems/products or as detailed.

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04|PLUMBING NARRATIVE

PLUMBING BASIS OF DESIGN

Overview

The intent of this section is to promote the implementation of cost effective and energy efficient strategies for systems design and arrangements, equipment selection, distribution, and overall systems integration. These strategies will be undertaken during subsequent design phases.

Plumbing system components and distribution layouts will have the following characteristics:

- Modular approach
- Energy responsiveness
- Flexibility for future changes
- Durability
- Ease of maintenance
- Reliability

Every effort will be made to design, layout and install equipment in locations which will tend to encourage routine preventative maintenance by providing easy access for maintenance personnel.

Systems and equipment will be designed in accordance with the applicable Codes and Standards.

Sustainability

During design, the team will explore various opportunities to incorporate sustainable design principles within the building. While some concepts can prove to be costly, many are not, and these will be integrated into the base design. Proposed concepts will be prioritized and, with input from The Irvine Unified School District. The team will select the appropriate elements that fit within the confines of the project's budgetary allocations. Meet California's minimum Title 24 Standards, or as defined by The Cal Green Standards.

Some of the elements specified within the Plumbing systems that will be incorporated into the base design are as follows:

- Enhanced minimum pipe and insulation thicknesses
- Low flow plumbing fixtures
- Optimized system efficiencies

Applicable Codes, References and Standards

- 2022 California Plumbing Code (CPC)
- 2022 California Building Code (CBC)
- 2022 California Electrical Code (CEC)
- 2022 California Fire Code (CFC)
- 2022 California Green Building Standards

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System Design Criteria:

Sanitary Sewer

A complete sanitary waste and vent system will be provided throughout serving the toilet rooms, mechanical equipment, sinks and floor drains. Systems will run by gravity flow existing street connections. All the gravity sanitary waste and vent systems will be cast iron pipe with hub and spigot or no-hub joints within 5'-0" of each building footprint for connection to site piping system.

Provide floor drain/s in each toilet room with more than one water closet or toilet rooms with a single water closet and urinal, as indicated in architectural plans.

Provide a floor sink at each ice machine and other similar equipment requiring indirect drainage. One floor sink may be provided for each two pieces of adjacent equipment requiring indirect drainage.

Domestic Cold Water

Water supply pressure within the system will be maintained between 35 psi minimum and 80 psi maximum at all points.

Domestic water pipe sizing shall be based on maximum velocity of 8 feet per second with allowable pressure loss of 3 psi per 100 feet loss.

Potable water will be protected from contamination by the use of the Code approved cross connection control devices and practices.

All domestic water piping and all components shall be in compliance with NSF 61 Annex G and California Assembly Bill 1953 - LEAD free.

Hot and cold shall be supplied to staff restrooms, gender neutral staff restrooms, and break rooms.

All toilet rooms to be furnished with ball valve shutoff (in recessed areas, behind access panels).

Domestic Hot Water

Hot water will be distributed throughout the building (Staff Restrooms, Gender Neutral Staff Restroom and Breakrooms) at a temperature of 120 degrees F. The hot water return system will maintain the hot water supply temperature. A hot water recirculation pumps will operate when the temperatures of the hot water system drops to 110 degrees F.

Domestic water pipe sizing shall be based on maximum velocity of 5 feet per second with allowable pressure loss of 3 psi per 100 feet loss.

Domestic hot water will be generated centrally for each building by water heaters with a storage tank and pumps, as required.

Plumbing Fixtures

All fixtures shall comply with NSF 61 Annex G and California Assembly Bill 1953 – Lead free.

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Acceptable plumbing fixtures shall be American Standard, Kohler, Just Stainless-Steel Sinks, Elkay Drinking fountain, J.R. Smith Drains, Chicago Faucets or approved equal. Three manufacturers shall be selected to conform with public bid projects.

Water closets shall be wall hung vitreous china with Sloan manual type flush valve complete with J.R. Smith carrier and open Bemis front seat.

Urinals shall be wall mounted vitreous china, Sloan manual type flush valve with J.R. Smith carrier.

Lavatories shall be wall mounted vitreous china with Chicago manual type faucet complete with mixing valve (where applicable), stops and P-trap.

Sinks shall be stainless steel counter mounted type with Chicago manual type faucet complete with mixing valve (where applicable), stops and P-trap.

Drinking fountains/bottle filling station shall be Elkay wall hung dual height complete with stop and P-trap. Electrical water coolers shall be furnished in administration areas only.

Floor drains in toilet rooms shall be cast iron body with bronze strainer and with trap primer connection.

Floor sinks for indirect drainage shall be 12”x12”x8” deep with acid resistant coated interior with half grate where required.

Roof and Overflow drains shall be cast iron body with cast iron dome strainers and underdeck clamps.

Water Consumption of Plumbing Fixtures

- Water Closets: 1.28 gallons per flush
- Urinals: 0.125 gallon (1 pint) per flush
- Public Lavatories: metered 0.20 gpmc (code min. 0.5 gpm)
- Sinks: 1.5 gpm (code min. 2.2 gpm)
- Compliance with California Green Building Standards Code (CALGreen)

System Identification

All piping systems and equipment will be identified in accordance with current ANSI Standards.

System Testing

All systems will be tested in accordance with the requirements of The California Plumbing Code.

Plumbing Piping and Equipment Supports

All piping and equipment shall be supported and restrained in accordance with current OSHPD pre-approved systems/products, or as detailed.

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05|ELECTRICAL NARRATIVE

ELECTRICAL BASIS OF DESIGN

Project: Chaparral High School Gym – Temecula Valley Unified School District

Date: January 26, 2023

This project consists of:

New gymnasium, weight room and MPR.

DESIGN CRITERIA

Codes and Standards

Electrical systems will comply with all applicable codes and the Anaheim Elementary School District Standards where they exist as a minimum basis for the project design.

- 2022 California Building Standards Administrative Code – Part 1, Title 24, California Code of Regulations (CCR)
- 2022 California Building Code – Part 2, Title 24, CCR
- 2022 California Electrical Code – Part 3, Title 24, CCR
- 2022 California Mechanical Code – Part 4, Title 24, CCR
- 2022 California Energy Code – Part 6, Title 24, CCR
- 2022California Fire Code – Part 9, Title 24, CCR
- 2022 California Green Building Standards Code – Part 11, Title 24, CCR
- NFPA – National Fire Protection Association
- ANSI – American National Standards Institute
- UL – Underwriters' Laboratories

Electrical Power Distribution

1. Campus Site Service: A high demand of the meter will be requested from SCE so we will have an accurate understanding of the electrical load and determination if the campus site service will accommodate the modernization to the noted buildings

2. Electrical Distribution: The buildings will be supplied via underground electrical power feeders from the existing MS.
   a. Distribution Switchboards & Panelboards: Either 480/277-Volt, 3-phase, 4-wire or 208/120-Volt, 3-phase, 4-wire distribution switchboard and panelboard(s) will supply power to all Lighting and HVAC (>1 horse-power) loads. Distribution switchboards and panelboards are to be fully rated with copper bus bars manufactured Square D, General Electric or Cutler-Hammer.
   b. Transformers: Dry type step-down transformer will reduce voltage to 208/120-Volt and supply 208/120-Volt, 3-phase, 4-wire panelboard(s) for Receptacle and Miscellaneous loads. Transformers are to have copper windings with 150°C insulation rise manufactured by Square D, General Electric or Siemens.
   c. Branch Wiring: 120-Volt branch circuit wiring shall be distributed throughout the building to 20-Amp rated grounding type receptacles. All building wiring is to be type THHN copper routed in EMT conduit with compression fittings.
   d. Power Receptacles: Are to be white in color with stainless steel cover plates manufacturer by Hubbell, Leviton or Bryant. Receptacles will be provided with USB charge ports as directed by the District.
   e. Grounding System: A main electrical grounding bus will be provided in the new building main electrical room. The main electrical ground bus will be connected to a grounding electrode system and to panels located in the main electrical room, and to the telecommunications main grounding bus bar located in the Building Telecommunications Room (MDF). A separate equipment ground wire will be provided for all circuits. All conduits will have an equipment grounding conductor installed. The telecommunications main bus bar will connect to cable tray or ladder racks, IT panelboard equipment ground busses, and to the ground bus in the Building Telecommunication Room (MDF).

Lighting

1. Interior Fixtures: Shall be light-emitting diode (LED) type in compliance with Title 24 California Energy Code and IES Guidelines. LED's shall utilize a temperature rating of 4000°K. Drivers shall be electronic type and shall have 0-10volt dimming capabilities. Light fixtures shall be tested to LM-79 and LM-80 Standards.

2. Exterior Fixtures: Shall be LED type with a heavy-duty vandal resistant enclosure. All exterior lighting shall be controlled via photocell, relay panel with timeclock control and connected to the building Energy Management System (EMS). Where fixtures are over 40 watts and mounted below 24 feet, they will have their lighting power reduced by 50% when area is unoccupied as required by Title 24.

3. Interior Controls: All interior spaces shall have manual switches or wall dimmers with automatic lighting control in compliance with Title 24 guidelines. Automatic lighting controls shall be provided with ceiling mounted dual technology occupancy sensors. Single use restrooms, storage rooms and similar spaces shall be provided with wall mounted occupancy sensors/switches. Areas of common use (i.e. hallways, lobbies, etc.) and large restrooms will be provided with key-operated switches in addition to automatic lighting controls. Light fixtures located in primary daylit zones will be automatically controlled with photocells in addition to room controls.

4. Exit Signs: Shall be LED type with red lettering and vandal resistant polycarbonate shield. All exit sign backup power for lighting will be provided via self-contained emergency battery packs.

5. Emergency Lighting: For all interior and exterior emergency egress will be provided via the self-contained emergency battery packs.

6. Lighting Levels (foot-candles): Shall be designed in accordance with Illuminating Engineering Society (IES) guidelines. The following lighting levels will be provided:

Maintained Lighting

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Area	Level at the Work Plane
Classrooms/Offices	40-50
Gym	50-100
Workrooms	50-60
Storage/Janitor's Rooms	10-20
Toilets	20-30
Electrical/Mechanical Rooms	20-30
Communications Equipment Rooms	50-70

Fire Alarm System

1. Fire Alarm System Design: Shall be an extension of the existing system. Voice evacuation will be integrated into the system and provided for the building to comply with DSA requirements.

2. Terminal Cabinets: The Fire Alarm Remote Power Supply & Amplifier shall be provided and installed in building Data Room.

3. Initiation Devices: Manual pull stations will be provided adjacent exit doors only in specific areas recommended by the State Fire Marshal. Photoelectric smoke detection coverage and heat detection coverage will be provided throughout all specific spaces to comply with the California Fire Code.

4. Notification Devices: Typical areas of common use will be provided with combination speaker/strobes or strobes in compliance with the California Fire Code (CFC), NFPA and American with Disabilities Act Guidelines (ADA).

5. Wiring: All wiring shall be copper stranded type. No below grade splices will be accepted.

6. Site Work: Underground conduit & wiring will be required from the existing fire alarm control panel to the buildings.

Data and Voice Systems

1. Overall System Design: Shall be based on an open architecture design, completely terminated and punched down. All active network equipment (server, hubs, routers, etc.) will not be specified and shall be provided and installed by the District. All equipment will be mounted on full size racks as space dictates.

2. System Backbone: Site distribution shall be designed using 12-strand multi-mode OM3 50/125µm fiber optic cable terminated on rack mounted fiber distribution panels with "LC" connectors. Fiber optic cable shall be routed via inner-duct through conduit from the main distribution frame (MDF) to each building intermediate distribution frame (IDF). Fiber Optic cabling shall be manufactured by Corning or a District approved equal.

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3. Structured Cabling System: Inside distribution cable shall be designed based on EIA/TIA standards for Category 6 requirements. Cables shall be routed continuous from each Category 6 rated jack to each related "IDF" location and terminated on Category 6 rated patch panels. Patch cords, plus 15% spare shall be provided. No cable runs will exceed 100 meters (290'). Where the installation dictates, cabling shall be routed from each outlet via 4S outlet box in the wall with 1" conduit terminated 6" into the accessible ceiling space and then routed throughout the ceiling space bundled and supported using "j-hooks" at 48" on center. All data outlets shall be provided with dual jacks and white cover plates. All structured cabling components shall be manufactured by CommScope Systimax, AMP Netconnect, Hubbell-Premise or a District approved equal.

4. Voice Communication System: The campus currently utilizes a Voice over Internet Protocol (VoIP) system for voice communication. Structured cabling system cables, jack, fiber, etc. will also be used for providing voice communication in the buildings.

5. Terminal Cabinet: Shall be Hoffman #Access Plus II Type 1 double-hinged and provided & installed the Data Room.

6. Site Work: Underground Conduit & Fiber Optic Cabling will be required from the existing main data room to each building IDF.

Intrusion Detection Systems

1. Intrusion Detection System Design: Shall be an extension of the existing control panel installed in the main campus building administration area.

2. Terminal Cabinet: Shall be provided and installed in the new building Data Room.

3. Motion Sensors: Shall be provided & installed in all spaces.

4. Door Contacts: Shall be used only at doors to the exterior without windows.

5. Keypads: Shall be installed in spaces identified by the School District.

6. Cabling: Interior cabling shall be West Penn 244 or approved equal and Exterior cabling shall be West Penn AQ244 or approved equal.

7. Site Work: Underground Conduit & Wiring will be required from the existing main data room to the buildings.

Digital Video Surveillance (CCTV) Systems

1. CCTV System Design: Shall be conduit only and backboxes at locations determined by the District for equipment to be provided and installed by the District at a later date.

PA/Intercom, Clock & Bell Systems

1. Overall System Design: Shall be an extension of the existing public address (PA) rack located in the main campus building administration area.

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2. Interior Speakers & Clocks: Speakers and clocks shall be provided in all common spaces where required.

3. Site Work: Underground Conduit & Wiring will be required from the existing main data room to the buildings.

Audio / Visual Systems

1. Conduit only and backboxes will be provided at designated areas determined by the District. AV equipment shall be provided by District and installed by the Contractor.

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06|FIRE PROTECTION NARRATIVE

Chapparal High School New Gymnasium Building
Fire Protection Design Narrative

• Fire Protection System Design Overview

A city connection to the existing city public water main will be provided to service the proposed automatic wet fire protection system. A monitored double detector check valve assembly shall be present outside the building to protect the city water main. Downstream of the building double detector check valve assembly, a 2-way fire department connection will be provided to allow the fire department to pressurize the automatic fire sprinklers. All system control valves as well as the system flow switch will be monitored by an approved central station.

• Governing Codes

- California Building Standards Administrative Code (Title 24, Part 1), 2022
- California Building Code (Title 24, Part 2), 2022
- California Plumbing Code (Title 24, Part 5), 2022
- California Fire Code (Title 24, Part 9), 2022
- California Referenced Standards Code (Title 24, Part 12), 2022

• Reference Standards and Guidelines

- UL Underwriters Laboratories
- NFPA National Fire Protection Association
- NFPA 13 Standard for the Installation of Sprinkler Systems, 2022 Edition
- NFPA 24 Standard for the Installation of Private Fire Service Mains and Their Appurtenances, 2019 Edition
- NFPA 25 Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems (with California Amendments), 2013 Edition
- NFPA 72 National Fire Alarm and Signaling Code, 2022 Edition
- DSA GL-1 Project Submittal Guideline for Automatic Fire Sprinkler Systems

• Design Criteria

The hydraulically designed automatic fire sprinkler systems shall be provided with a minimum 10 percent safety margin from the available fire flow to the project site. The hydraulic calculations shall be based on water flow information provided from the water purveyor current within 6 months of the project submittal to the governing agencies.

• Automatic Fire Sprinkler Occupancy Hazard Design Requirements

- Light Hazard - 0.10 GPM per ft^2 over the most remote 1,500 ft^2
- Ordinary Hazard II – 0.20 GPM per ft^2 over the remote 1,500 ft^2

• Automatic Fire Sprinkler Information & Design Layout

Intermediate temperature quick-response fire sprinklers shall be installed throughout in accordance with the installation requirements of NFPA-13 as adopted by the 2022 California Fire Code.

Schedule 40 piping shall be concealed above ceilings and within walls except for non-public equipment rooms without ceilings. Sprinkler heads shall be spaced for symmetry with ceiling features.

Basis of fire sprinkler head locations shall be:

- Equal distance between lights.
- Equal distance between lights and wall.
- Equal distance between lights and air inlets and outlets.
- Equal distance between wall, lights, and air inlets and outlets.
- Locate in center of ceiling tiles.
- Provide coverage for rooms, void spaces, overhangs and other areas as required by applicable codes and standards.

Maximum Automatic Fire sprinkler spacing shall be as follows or limited by hydraulic calculations, whichever is less:

- Light Hazard for Noncombustible Construction
  - Smooth Ceiling Areas 225 ft^2
  - Obstructed Construction Ceiling Areas 225 ft^2
- Light Hazard for Combustible Construction
  - Smooth Ceiling Areas 130 ft^2
  - Obstructed Construction Ceiling Areas 130 ft^2
- Ordinary Hazard Group 2 130 ft^2

• Materials

Sprinkler heads in ceilings shall be of the semi-recessed pendent type with white or chrome finish cover plates flush with ceilings. Automatic sprinkler heads will generally be concealed but exposed in non-finished spaces such as mechanical rooms.

• Application

- Light Hazard -Public Access Areas, Restrooms, Offices, Hallways & Corridors, Locker Rooms, Vestibules, Weight Room, Etc.
- Ordinary Hazard 2 – MPR Room, Mechanical Rooms, Electrical Rooms, Storage Rooms, Custodian Rooms, Electrical/Data/IDF Rooms

• System Components

- Automatic fire sprinkler piping, sprinklers, hangers, and seismic bracing.
- Valve and water-flow switch monitoring.
- Audible sprinkler flow alarms on the exterior and interior of the building.

07|CIVIL+LANDSCAPE NARRATIVE

CIVIL

The Temecula Valley Chaparral High School project consists of the demolition of basketball courts and construction of a new Gymnasium and look out point west of the building. The Gymnasium will be one-story with a Multi-Purpose Room (MPR), locker rooms, weight room and an outdoor covered area. Grading for the building and the surrounding areas will be required to comply with current accessibility and drainage codes. Site utilities will be shown from the point of connection to within 5 feet of the proposed building. Storm water calculations will be provided to conformance with State Water Board regulations.

Codes

The Civil design of the project shall be based on the following codes and standards:

- 2022 California Building Code (CBC)
- 2022 California Fire Code (CFC)
- 2022 California Green Building Standards (CalGreen)

Standards

The Civil design of the project shall be based on the following codes and standards:

- ADA Americans with Disabilities Act
- EPA Environmental Protection Agency
- NFPA National Fire Protection Association,
- OSHA Occupational Safety and Health Administration
- DSA Division of the State Architect Standards.

General Design Criteria

The Civil design of the project shall be based on the following design standards:

- Providing new site utilities to the new building.
- Provide ADA compliant access to the building within scope.

ADA Compliance

Codes

The ADA compliance design of the project shall be based on the following codes and standards.

- 2022 California Building Code (CBC)

General Design Criteria

- Providing new sidewalk around the building to provide access from the public right-of-way and the existing campus to the proposed building.

Plumbing

Codes

The plumbing design of the project shall be based on the following codes and standards.

- 2022 California Building Code (CBC)
- 2022 California Fire Code (CFC)
- 2022 California Green Building Standards (CalGreen)

General Design Criteria

- Providing new domestic water and sanitary sewer plumbing connections to the Gymnasium. Pipe material shall be PVC unless otherwise noted on plans.
- Providing new fire line (PVC C900 DR14) connection for Gymnasium, Post Indicator Valve and Fire Department Connections.
- A new private fire hydrant may be required adjacent to the proposed building.

Stormwater

Codes

The stormwater design of the project shall be based on the following codes and standards.

- 2019 California Stormwater Quality Association (CASQA)

General Design Criteria

- Stormwater will be piped from the building and the adjacent areas into the existing campus storm drain system. A Maxwell drywell system will be installed downstream of the building and in the field area to the west of the site and overflow onto the existing fields.
- Pre-treatment will be provided via in line Stormceptor for debris and trash.

LANDSCAPE

The Temecula Valley Chaparral High School project consists of the demolition of basketball courts and construction of a new Gymnasium and look out point west of the building. The Gymnasium will be one-story with a Multi-Purpose Room (MPR), locker rooms, weight room and an outdoor covered area. This project includes the landscape and hardscape design for the building main entry located along the north side of the building, an area facing the new tennis courts to the west, and the proposed hardscape connections to existing campus.

Codes

The Landscape design of the project shall be based on the following codes and standards:

- 2022 California Building Code (CBC)
- California AB1881 – Model Water Efficient Ordinance

Standards

The Landscape design of the project shall be based on the following codes and standards:

- ADA Americans with Disabilities Act
- ANSI American National Standards Institute
- ASTM American Society of Testing and Materials
- DSA Division of the State Architect Standards

General Design Criteria

The Landscape design of the project shall be based on the following design standards:

- Replacement and upgrades from existing landscape and irrigation to efficient irrigation and low water use landscape in areas affected by civil improvements.
- Replacement and upgrades from existing landscape and irrigation to efficient irrigation and low water use landscape in areas affected by architectural improvements.
- Hardscape Improvements to areas affected by civil and architectural improvements.

08|ACOUSTICAL NARRATIVE

DLR Group inc.
a California corporation

1650 Spruce Street, Suite 300
Riverside, CA 92507

1-27-2023

Project Name: Temecula Valley USD Chaparral HS New Gym – Acoustic Design SD Narrative
DLR Group Project No.: 75-23604-00

This narrative includes the acoustic performance criteria and initial acoustic design guidelines for the new Chaparral High School Gymnasium. The Temecula Valley Unified School District Standards do not provide include acoustic criteria, and the District confirmed that the project will not be pursuing LEED, CHPS, or other certifications. Acoustic criteria are therefore informed by industry standards, including:

- ANSI/ASA S12.60 2010 Part 1, Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools.
- ASHRAE Chapter 49, Noise and Vibration Control.

For the athletic spaces in the project the acoustic criteria provided are intended to support:

1. The vocal effort of instructors and students, and ease of understanding of speech.
2. Adequate audio clarity and quality of amplified sound.
3. A safe environment where announcements and emergency notifications can be clearly understood.

It is understood that the site is not impacted by environmental noise sources (e.g., air traffic, freeway, or manufacturing) and as such a site noise study is not planned.

The program of the building is such that noise-producing spaces are not directly adjacent to noise-sensitive spaces. Due to this, interior sound isolation criteria (e.g. STC ratings) have not been provided for the project. The buffer spaces between program areas are expected to be acoustically sufficient.

Acoustic Design Program Summary

Gymnasium:
The space's primary use is for athletic functions. Sound amplification is expected during athletic events. Some extra-curricular activities may also take place, however it is understood that another gym on campus will continue to be used for this purpose. The gym has one competition-sized court and a planned height of 32 feet.

Weight Room:
The acoustic design is intended to support group instruction and control noise buildup. Amplified music is anticipated. The space is planned to be 16 feet in height.

Multi-Purpose Room:
Amplified music is anticipated for uses such as dance instruction. The room is planned to be 16 feet in height.

Lobby:
It is anticipated that some group gathering may occur in the is space before and after events. It is a large volume space, with a planned height of 32 feet. The acoustic design goal to control noise buildup in the space.

Interior Room Acoustics

The design of sound absorptive elements in athletic spaces can help reduce noise buildup in the space and promote clarity of sound. Acoustical finishes will be coordinated to meet the following reverberation time[1] criteria in *Table 1*.

Table 1: Reverberation Time Criteria

Space	Reverberation Time Criteria (seconds)
Lobby	1.5
Gymnasium	1.5
Weight Room	1.0
Multi-Purpose Room	0.9

Mechanical Equipment Noise Control

Criteria for maximum background noise levels by space type are provided in Table 2. HVAC equipment noise levels will be analyzed, and recommendations will be provided to control airborne and structure-borne noise.

Table 2: Background Noise Level Criteria

Space	Noise Criterion (NC)
Gymnasium	45
Lobby	45
Weight Room	40
Multi-Purpose Room	35

[1] Reverberation Time (T_{60}): The time it takes for sound to decay 60 dB in a room. Large rooms with hard surfaces, such as concert halls, have long reverberation times (e.g. 2 seconds). Smaller rooms with sound absorbing surfaces have shorter reverberation times. Music sounds richer in rooms with long reverberation times, but speech may be difficult to understand. Speech is more intelligible in rooms with shorter reverberation times, but music may sound dry.

ELEVATE *the*
HUMAN EXPERIENCE
THROUGH DESIGN

Where possible, ducts should be sized to limit maximum air velocities as indicated in Table 3 below, to ensure that regenerated noise due to air movement does not cause the design noise criteria to be exceeded.

Table 3: Air Velocity Guidelines (fpm) by Location.

Location	Noise Criterion (NC)		
	45	40	35
Riser – rectangular duct (fpm)	2500	2250	2000
Main branch above suspended ceiling - rectangular duct (fpm)	2000	1800	1500
Duct within 10 to 20 feet of supply diffuser/return grille (fpm)	900/ 1000	850/ 950	800 /900
Duct within 0 to 10 feet of supply diffuser/return grille (fpm)	700/ 800	650/ 750	600/ 700
Supply Diffuser - 'free' velocity (fpm)	550	500	450
Return Grille - 'free' velocity (fpm)	650	600	550
Open return duct above ceiling (fpm)	550	750	650

Notes:

1. These are guidelines only.
2. These velocity guidelines assume good airflow conditions. Presence of elbows, fittings, or abrupt duct transitions may require air to run at lower velocities.

Supply air diffusers and return air grilles should be selected with a manufacturer's noise rating 5-10 points below the HVAC design noise criterion of the area served. Where possible, connections to diffusers should utilize lined flex-duct to reduce any noise generated by flow through individual takeoffs.

The engineer shall evaluate manufacturer discharge and radiated noise data of volume control boxes and select units to provide noise levels at least 5-10 points lower than the criterion for the room served, and the room over which the control box is located.

Vibration Isolation

Generally, all reciprocating and rotating equipment shall be vibration-isolated from the building structure, per industry standard (e.g. ASHRAE).

All piping, 2" o.d. and larger, connected to reciprocating equipment shall be vibration-isolated from the building structure for a distance of 50 feet or 100 pipe diameters from connected equipment, whichever is greater. All piping of any size connected to reciprocating equipment should be vibration isolated for 50' of pipe length from equipment. Heat exchangers and expansions tanks shall also be vibration isolated per ASHRAE standards.

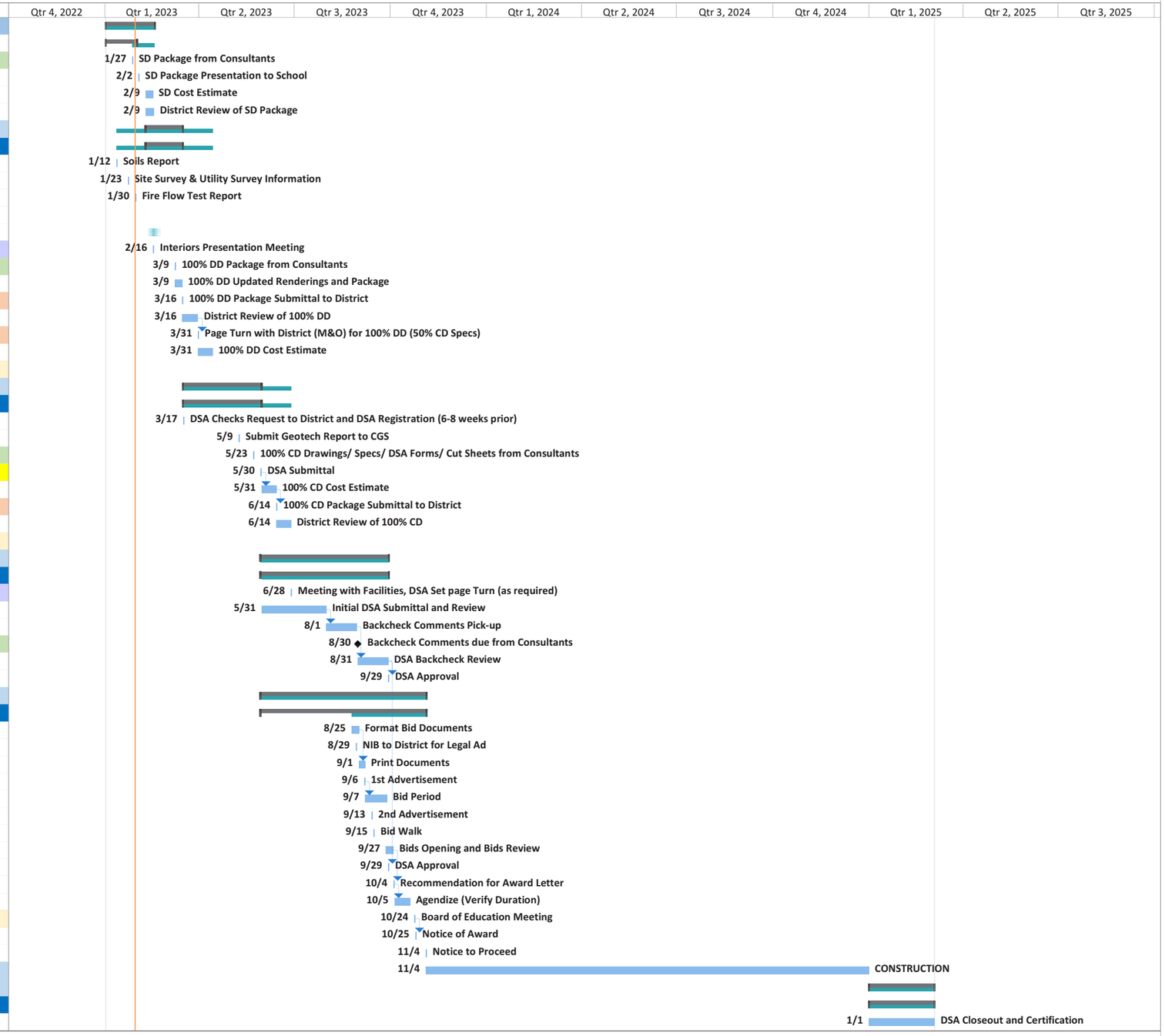
Ductwork connections to air handling equipment shall be flexible.

Electrical systems contain various components that create noise. Unlike noise from the HVAC system, which is typically broadband in nature, electrical components tend to generate highly tonal noise. Such noise can be annoying or distracting even at moderate noise levels. As such, noise and vibration control measures will be incorporated into the design of the electrical system. Typically, these measures would include the use of vibration isolators for transformers. Specific recommendations and specifications will be provided as the design develops.

Temecula Valley Unified School District
Chaparral HS - New Gym

Mon 1/30/23

ID	Task Name	Duration	Start	Finish
1	**1 SCHEMATIC DESIGN**	**35 days**	**Mon 1/2/23**	**Fri 2/17/23**
2	**1.1 Chaparral HS New Gym**	**22 days**	**Mon 1/2/23**	**Tue 1/31/23**
3	1.1.1 SD Package from Consultants	1 day	Fri 1/27/23	Fri 1/27/23
4	1.1.2 SD Package Presentation to School	1 day	Thu 2/2/23	Thu 2/2/23
5	1.1.3 SD Cost Estimate	5 days	Thu 2/9/23	Wed 2/15/23
6	1.1.4 District Review of SD Package	6 days	Thu 2/9/23	Thu 2/16/23
7	**2 DESIGN DEVELOPMENT, 35% CDs**	**26 days**	**Thu 2/9/23**	**Thu 3/16/23**
8	**2.1 Chaparral HS New Gym**	**26 days**	**Thu 2/9/23**	**Thu 3/16/23**
9	2.1.1 Soils Report	1 day	Thu 1/12/23	Thu 1/12/23
10	2.1.2 Site Survey & Utility Survey Information	1 day	Mon 1/23/23	Mon 1/23/23
11	2.1.3 Fire Flow Test Report	1 day	Mon 1/30/23	Mon 1/30/23
12	2.1.4 DSA Pre-Application Meeting	1 day		
13	2.1.5 Local Fire Review and Submittal	10 days		
14	2.1.6 Interiors Presentation Meeting	1 day	Thu 2/16/23	Thu 2/16/23
15	2.1.7 100% DD Package from Consultants	1 day	Thu 3/9/23	Thu 3/9/23
16	2.1.8 100% DD Updated Renderings and Package	5 days	Thu 3/9/23	Wed 3/15/23
17	2.1.9 100% DD Package Submittal to District	1 day	Thu 3/16/23	Thu 3/16/23
18	2.1.10 District Review of 100% DD	11 days	Thu 3/16/23	Thu 3/30/23
19	2.1.11 Page Turn with District (M&O) for 100% DD (50% CD Specs)	1 day	Fri 3/31/23	Fri 3/31/23
20	2.1.12 100% DD Cost Estimate	10 days	Fri 3/31/23	Thu 4/13/23
21	2.1.13 Board Meeting	1 day		
22	**3 CONSTRUCTION DOCUMENTS**	**53 days**	**Fri 3/17/23**	**Tue 5/30/23**
23	**3.1 Chaparral HS New Gym**	**53 days**	**Fri 3/17/23**	**Tue 5/30/23**
24	3.1.1 DSA Checks Request to District and DSA Registration (6-8 week	1 day	Fri 3/17/23	Fri 3/17/23
25	3.1.2 Submit Geotech Report to CGS	1 day	Tue 5/9/23	Tue 5/9/23
26	3.1.3 100% CD Drawings/ Specs/ DSA Forms/ Cut Sheets from Cons	1 day	Tue 5/23/23	Tue 5/23/23
27	3.1.4 DSA Submittal	1 day	Tue 5/30/23	Tue 5/30/23
28	3.1.5 100% CD Cost Estimate	10 days	Wed 5/31/23	Tue 6/13/23
29	3.1.6 100% CD Package Submittal to District	1 day	Wed 6/14/23	Wed 6/14/23
30	3.1.7 District Review of 100% CD	10 days	Wed 6/14/23	Tue 6/27/23
31	3.1.8 Board Meeting	1 day		
32	**4 AGENCY SUBMITTAL (DSA)**	**89 days**	**Tue 5/30/23**	**Fri 9/29/23**
33	**4.1 Chaparral HS New Gym**	**89 days**	**Tue 5/30/23**	**Fri 9/29/23**
34	4.1.1 Meeting with Facilities, DSA Set page Turn (as required)	1 day	Wed 6/28/23	Wed 6/28/23
35	4.1.2 Initial DSA Submittal and Review	44 days	Wed 5/31/23	Mon 7/31/23
36	4.1.3 Backcheck Comments Pick-up	21 days	Tue 8/1/23	Tue 8/29/23
37	4.1.4 Backcheck Comments due from Consultants	1 day	Wed 8/30/23	Wed 8/30/23
38	4.1.5 DSA Backcheck Review	21 days	Thu 8/31/23	Thu 9/28/23
39	4.1.6 DSA Approval	1 day	Fri 9/29/23	Fri 9/29/23
40	**5 BIDDING & NEGOTIATION**	**115 days?**	**Tue 5/30/23**	**Sat 11/4/23**
41	**5.1 Chaparral HS New Gym**	**115 days?**	**Tue 5/30/23**	**Sat 11/4/23**
42	5.1.1 Format Bid Documents	5 days	Fri 8/25/23	Thu 8/31/23
43	5.1.2 NIB to District for Legal Ad	1 day	Tue 8/29/23	Tue 8/29/23
44	5.1.3 Print Documents	4 days	Fri 9/1/23	Wed 9/6/23
45	5.1.4 1st Advertisement	1 day	Wed 9/6/23	Wed 9/6/23
46	5.1.5 Bid Period	15 days	Thu 9/7/23	Wed 9/27/23
47	5.1.6 2nd Advertisement	1 day	Wed 9/13/23	Wed 9/13/23
48	5.1.7 Bid Walk	1 day	Fri 9/15/23	Fri 9/15/23
49	5.1.8 Bids Opening and Bids Review	5 days	Wed 9/27/23	Tue 10/3/23
50	5.1.9 DSA Approval	1 day	Fri 9/29/23	Fri 9/29/23
51	5.1.10 Recommendation for Award Letter	1 day	Wed 10/4/23	Wed 10/4/23
52	5.1.11 Agendize (Verify Duration)	11 days	Thu 10/5/23	Thu 10/19/23
53	5.1.12 Board of Education Meeting	1 day	Tue 10/24/23	Tue 10/24/23
54	5.1.13 Notice of Award	1 day	Wed 10/25/23	Wed 10/25/23
55	5.1.14 Notice to Proceed	1 day	Sat 11/4/23	Sat 11/4/23
56	**6 CONSTRUCTION**	**304 days**	**Sat 11/4/23**	**Tue 12/31/24**
57	**7 DSA CLOSEOUT & POST OCCUPANCY**	**45 days**	**Wed 1/1/25**	**Tue 3/4/25**
58	**7.1 DSA Closeout & Post Occupancy**	**45 days**	**Wed 1/1/25**	**Tue 3/4/25**
59	7.1.1 DSA Closeout and Certification	45 days	Wed 1/1/25	Tue 3/4/25



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