



# MARBLE FALLS

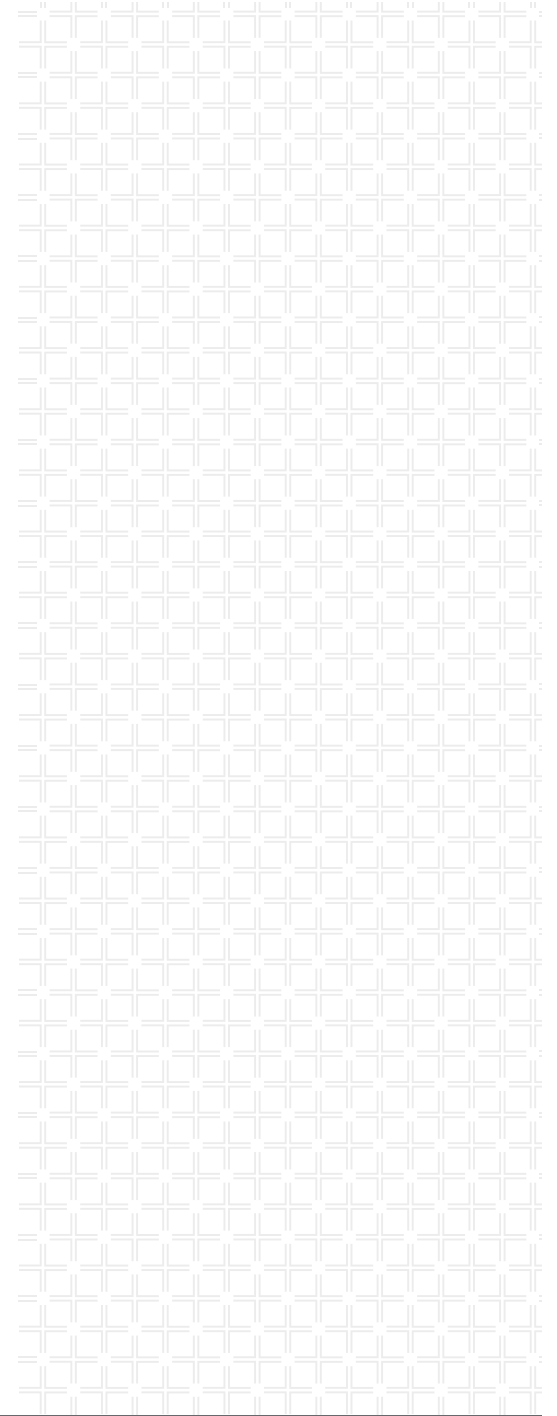
Independent School District

**Meeting Date:**

**Meeting Type:**

**LOVE & INSPIRE**

Marble Falls ISD has an unyielding commitment to love every child and inspire them to achieve their fullest potential.



MARBLE FALLS INDEPENDENT SCHOOL DISTRICT  
MARBLE FALLS HIGH SCHOOL ADDITIONS & RENOVATIONS - BAND, AUDITORIUM, DANCE/CHEER

March 9, 2026

# SCHEMATIC DESIGN PRESENTATION



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SCHEDULE 05



MARBLE FALLS INDEPENDENT SCHOOL DISTRICT  
 MARBLE FALLS HIGH SCHOOL ADDITIONS & RENOVATIONS - BAND, AUDITORIUM, DANCE/CHEER

District Board Members

Alex Payson Board President, Place 5  
 Mandy McCary Vice President, Place 3  
 Crystal Tubig Board Secretary, Place 2  
 Gary Boshears Board Member, Place 1  
 Larry Berkman Board Member, Place 4  
 Kevin Naumann Board Member, Place 6  
 Kevin Virdell Board Member, Place 7

Administration

Dr. Jeff Gasaway Superintendent of Schools  
 Stan Whittle Assistant Superintendent of Administration  
 Mackie Price Bond Project Manager  
 Eric Humiston Director of  
 Don Clark Maintenance Supervisor  
 Patrick Hinson MFHS Principal  
 Tony Leflet Band Director  
 John Tyree Asst. Band Director  
 Jon Clark Fine Arts Director  
 Bryce Gage Choir Director  
 Christi Gilpin Dance Teacher  
 Anyssa Canales Cheer Teacher

Project Design Team- Huckabee

Jason Andrus, AIA  
 Principal

Scotty Denney, AIA, NCARB, LEED AP, BD+C  
 Senior Designer

Edgar Torres  
 Project Leader

Civil Engineering  
 Kimley Horn  
 Austin, TX

MEP Engineering  
 IEG  
 Dallas, TX

Structural Engineering  
 IEG  
 Dallas, TX

Anna Abascal, RID  
 Senior Interior Designer

Gabriela Fernandez, RID  
 Interior Designer

Elizabeth Fulman  
 Project Associate

Ivan Sonera  
 Project Associate

Acoustics & Audio/Visual  
 WJHW  
 San Antonio, TX

Technology/Security  
 PMY  
 Austin, TX

Roofing & Building Envelope  
 Armko  
 Austin, TX



# MARBLE FALLS INDEPENDENT SCHOOL DISTRICT

## ADDITIONS & RENOVATIONS TO MARBLE FALLS HIGH SCHOOL AUDITORIUM, BAND & DANCE/CHEER

### Architectural Building and renovation scope

#### Auditorium:

Renovations to the auditorium lobby include new finishes throughout, new light/sound vestibules, new concessions counter, trophy case, and full renovation and reconfiguration of the group restrooms to become accessible, including the water fountains. Renovations to main auditorium house include new wall and floor finishes, painting the ceiling, new lights and HVAC registers, and replacement of all seats. The house level control booth receives a lift and, if budget allows, will be fully enclosed with an operable window. Renovations to the stage include demolition of the existing stage extension and rebuilding it. Both girls and boys dressing rooms receive full renovation including the adjacent restrooms. The existing fire sprinkler system will be retrofitted to include the entire auditorium.

#### Existing Gymnasium/New Band Area:

The existing practice gymnasium will be fully renovated to become the new Main Band Hall and will include premanufactured sound isolation practice rooms, instrument storage cabinets, offices, and a music library/conference space. The existing locker room showers and restrooms will be renovated to provide new boys and girls group dressing areas and uniform storage. A single user staff restroom and an instrument wash/repair space will be created. The existing dance spaces will be renovated to become the Auxiliary Band Hall with adjacent shared storage. The addition will consist of the new Percussion Hall, storage, and premanufactured sound isolation practice room. The Gymnasium building, new Auxiliary Band Hall building, and the new addition will receive a sprinkler system.

#### Dance and Cheer Studio

The existing Band Hall building is to be renovated to become the new Dance and Cheer building. The existing band hall will become the dance/cheer studio space and renovation will include new finishes, wood dance flooring, and mirrors with ballet bars. The two ensemble rooms will become a cheer mat room and a dance multipurpose space and will receive new finishes throughout. The central

support spaces will be renovated to include new dance and cheer locker rooms, storage, shared office space with a new staff restroom, a new boys locker room and restroom, electrical/IDF, custodial room, and a laundry room with washer, dryer, and ice machine. No work is included on the exterior of this building.

### INTERIORS NARRATIVE

#### Interior Partitions

Interior partitions shall be 5/8" gypsum wall board finished to level 4, unless noted otherwise. 1-hour rated partitions to have 1 layer of 5/8" type X each side and 2-hour partitions to have 2 layers of 5/8" type X each side, typ.

Latex paint to be eggshell on gyp. walls and flat on hard ceilings.

Epoxy paint to be specified on CMU walls.

Other interior wall finishes may include rolled tackable surface and vinyl wallcoverings. Walls receiving these interior wall finishes will require a gypsum wall board level finish of 5.

Rooms with acoustic considerations (e.g. Auditorium, Band, Percussion, Dance, and Cheer Studios) will receive fabric wrapped acoustic wall panels to mitigate sound reflection and absorption.

Multipurpose, Dance, and Cheer Studios will receive wall mirrors and ballet barres as requested by owner.

#### Corridor Wall Protection

A 4' tall porcelain tile corridor wainscot with a 4" rubber base shall be provided at all corridors of the building, unless otherwise noted.

Corridor walls constructed of CMU shall not receive tile wainscot and shall instead receive epoxy paint for durability, unless noted otherwise.

#### Corridor Flooring

Corridors to have polished concrete and 4" rubber base.

#### Carpet

Admin, Private Offices and Auditorium to receive carpet tile and a 4" rubber base.

#### Sealed Concrete Flooring

All Custodial, Storage, laundry room and IDF Rooms to receive

sealed concrete flooring and a 4" rubber base.

#### Polished Concrete Flooring

Polished concrete flooring will be specified in the Band Halls, Percussion Hall, and other non-Wenger Practice Rooms for durability and ease of maintenance.

#### Wood Athletic Flooring

Dance Studio, Cheer Studio, and Dance Multipurpose Room shall receive wood gymnasium flooring.

#### Terrazzo Flooring

Thin-set terrazzo flooring shall be specified at the Auditorium Lobby.

#### Ceilings

Typical corridor and classroom ceilings shall receive 2'x2' lay-in acoustic ceiling tile. Linear wood ceilings shall be specified in the Auditorium Lobby.

#### Wet Area Finishes

Wet areas (e.g., Toilet Rooms, Locker Rooms, Showers) shall receive full-height porcelain tile at walls subject to direct moisture. Non-wet walls shall receive a 4' high porcelain tile wainscot with epoxy paint above.

#### Toilet Partitions

All Toilet Partitions in Multi-User Toilet Rooms are to be NFPA 286 compliant.

#### Window Treatment

All exterior facing windows shall receive manual roller shades, unless otherwise noted. Interior facing windows at private offices to also receive manual roller shades for privacy.

#### Architectural Woodwork

Upper, tall, and lower cabinetry to be plastic laminate faced and receive solid surface countertops. Sinks to be under-mount to meet ADA. Countertops at Concessions shall be quartz with lower cabinetry plastic laminate. Dressing rooms shall receive solid surface countertops only.



# MARBLE FALLS INDEPENDENT SCHOOL DISTRICT

## ADDITIONS & RENOVATIONS TO MARBLE FALLS HIGH SCHOOL AUDITORIUM, BAND & DANCE/CHEER

### SCHEMATIC DESIGN CIVIL NARRATIVE

This Schematic Design Civil Narrative is based on proposed schematic plans and existing plans/drawings that have been provided by Huckabee on or prior to 2/20/26, past discussions with the design team, and available data from online GIS tools. An existing topographic and tree survey was reviewed for a portion of the site. A topographic and tree survey is forthcoming for the remainder of the scope and will inform design for this project. Multiple sets of record drawings of the existing campus have been provided by Huckabee and reviewed. Assumptions and constraints are subject to change based on additional information that may be obtained as the design stages proceed. All design on this site shall be subject to several criteria including the Lower Colorado River Authority Highland Lakes Watershed Ordinance (LCRA HWLO), Texas Administrative Code (TAC) Title 30, and applicable portions of the City of Marble Falls (the "City") Code of Ordinances.

### Land Status

The site is currently not platted but is exempt from platting per the MFISD and City of Marble Falls Interlocal Agreement.

Marble Falls High School is an existing approximately 78.95-acre MFISD campus located at 2101 Mustang Dr, Marble Falls, TX 78654.

### Zoning

This property is located within the City of Marble Falls full-purpose jurisdiction and is zoned NR (Neighborhood Residential). The existing zoning allows for the existing and proposed use.

This property is located within the Marble Falls Fire Rescue district for EMS and fire services.

### Summary of Proposed Improvements

The District plans to propose the following improvements:

- Band Hall additions and renovations
- Auditorium renovations
- Dance/Cheer renovations
- Restriping the existing marching band practice field to provide parking
- Sidewalk path from the band hall to the new marching band practice field
- Associated stormwater detention and water quality improvements for increases in impervious cover are included in a separate scope with the multipurpose building improvements.

### Access

- The site currently takes direct vehicular access from a driveway connection to Mustang Drive at the southwest side of the site.
- There is one driveway connection to Manzano Mile near the northeast corner of the site.
- No new access points or revisions to existing access points are proposed.

### Utilities

- Water
  - o The City of Marble Falls currently has jurisdictional rights to serve the property and is currently serving the existing campus' water needs.
  - o There is an existing 10" private water line on site running near the band hall building, connecting to an existing 12" public water line along the west side of Manzano Mile.
  - o There are several private water connections and two fire hydrants being served from the existing 10" water line.
  - o No water line relocations are anticipated at this time.
  - o It is anticipated that the proposed building addition for the band hall will continue taking domestic water service from the existing connection points.
  - o A new fire service will be added connecting to the existing 10" water line. If utility demands are proposed to increase, this data shall be submitted to the City for review to determine adequate infrastructure for the increased demand.

- o A hydrant flow test on the existing hydrants along the 10" private water line is forthcoming. The results of the test will be shared with the project team. The MEP engineer shall confirm if there is adequate pressure on this existing water main to handle the required fire demand from the building addition.
- o It is unknown at this time if any additional public improvements to the existing water infrastructure will be required by the City. As noted above, this should be determined once utility increases are communicated with the utility supplier, and they can determine the sizing of their existing infrastructure relative to the increased demand.

### Wastewater

- o The City of Marble Falls currently has jurisdictional rights to serve the property and is currently serving the existing campus' wastewater needs.
- o There is not currently a nearby wastewater line for the band hall addition. There is an existing 4" wastewater line located northwest of the band hall addition.
- o No wastewater line relocations are anticipated at this time.
- o It is anticipated that the proposed building addition for the band hall will continue taking wastewater service from the existing connection points. If not, underground wastewater infrastructure will need to be installed to route the discharge to the nearest gravity connection point. This may be an additional grinder pump for the additional building, a separate connection into the rerouted force main, or a gravity connection to the downstream manhole if possible.
- o It is unknown at this time if any additional public improvements to the existing wastewater infrastructure will be required by the City. As noted above, this should be determined once utility increases are communicated with the utility supplier, and they can determine the sizing of their existing infrastructure relative to the increased demand.

### Electric

- o There are existing Pedernales Electric Cooperative (PEC) 3-Phase overhead electric distribution lines and power poles on



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the northwest side of the property and the west side of Manzano Mile. The band hall building is served by overhead electric connecting to poles on the north side of the building, which connect to the overhead lines on Manzano Mile.

- o We assume the proposed work does not require the relocation of any power poles or electric infrastructure.
- o Coordination with the electric provider and MEP engineer shall continue into the design phase of this project.

## Grading/Drainage/Stormwater Management

- All drainage infrastructure will be designed with Atlas 14 rainfall data in accordance with National Oceanic and Atmospheric Administration (NOAA). Due to the impervious cover increase, a detention pond is required to maintain or reduce stormwater runoff rates for the site in the 2-, 25-, and 100-year storm events to comply with City of Marble Falls regulations. Water quality features are required to comply with LCRA HWLO regulations. The additional impervious cover from the proposed improvements will be accounted for in the “MFHS Multipurpose Building” project and is not included in this scope of work.
- It has yet to be determined if the downspouts from proposed buildings shall be discharged at grade or if they will utilize underground connections.
- GIS and survey contour information suggests that most drainage on-site flows overland across the site with a high point near the middle of the site splitting the drainage to the northwest and southeast.

## Pavement Design

- A geotechnical report was received from Raba Kistner, dated October 24, 2025.
- Pavement design will be determined by the geotechnical engineer based on their analysis of site soil conditions. The geotechnical engineer has performed bore holes on site to collect data for parking, building, and pond areas. Expansive clay soils were found.
- No new pavement or pavement repair is anticipated at this time.
  - The subbase of sidewalks adjacent to buildings can be pre-

pared the same way as the building footprint to mitigate differential settlement.

- There was no free water observed in the borings.
- The minimum parking space size for 90-degree angle spaces is 9’x18’ with a 26’ drive aisle.

## Miscellaneous

- Tree mitigation is required for trees larger than 12” DBH. The mitigation fee may be waived by the City. We will need to confirm with the City once potential tree impacts are finalized.

Protected Tree Type	Minimum Diameter Breast Height (DBH) <sup>1</sup>	Min. % Preserved of Combined Total Diameter Inches <sup>2</sup>	Mitigation Replacement Ratio
Protected Tree	12” or greater	20%	1:1 replacement ratio for 50% of the total diameter inches removed (replaced in caliper inches)
Heritage Tree	24” or greater	20%	2:1 replacement ratio for 100% of the total diameter inches removed (replaced in caliper inches)

Table Notes:  
<sup>1</sup> A tree connected at ground level with multiple trunks at DBH shall be measured by aggregating the total of the three largest trunks that each measure ≥8 inches at DBH.  
<sup>2</sup> This applies to trees located within the limits of construction of the site or subdivision boundary.

## STRUCTURAL NARRATIVE

### DESIGN CRITERIA

The following criteria are preliminary and subject to review and coordination with the project needs, as design develops.

- Codes and Standards The following codes and standards will be used for the structural design of the project:
  - o International Building Code (IBC), 2018 edition
  - o American Society of Civil Engineers (ASCE) 7, Minimum Design Loads for Buildings and Other Structures
  - o American Concrete Institute (ACI) 318, Building Code Requirements for Structural Concrete
  - o American Institute of Steel Construction (AISC) 360, Specification for Structural Steel Buildings

- o American Concrete Institute (ACI) 530, Building Code Requirements for Concrete Masonry Structures
- Structural Design Loads
  - Dead loads utilized for design include self-weight of structural elements and the following superimposed loads:
    - o Roof-supported ceilings and collateral 15 psf
    - o Roofing and rigid insulation 8 psf
  - Live loads utilized for design based on anticipated building functions include the following superimposed loads:
    - o Public areas, corridors at ground floor, lobbies 100 psf
    - o Storage (minimum) 125 psf
    - o Roof (unreducible) 20 psf
  - Wind loads utilized for design are per ASCE 7 considering the following anticipated parameters:
    - o Wind Speed (3-sec gust) 112 MPH
    - o Exposure Category C
    - o Building Enclosure Classification Enclosed
  - Seismic design criteria utilized for design are per ASCE 7 considering the following anticipated parameters:
    - o Site Class C
    - o Seismic Design Category A
    - o Seismic Importance Factor 1.25
    - o Response Modification Factor 3

### DESCRIPTIVE SPECIFICATIONS

- Concrete
  - Normal weight, Portland cement concrete with 5- to 6-inch slump (depending on application) and a minimum 28-day compressive strength as specified below for each component:
    - o Drilled Piers 3,000 psi
    - o Grade Beams, Pilasters, Pier Caps 3,000 psi
    - o Slabs on Grade and Existing Slab Infills 3,000 psi
- Reinforcing Steel
  - o Deformed bars (typical) ASTM A615, Grade 60
- Structural Steel
  - o Wide-flange (W) shapes ASTM A992
  - o Angles, channels, plates ASTM A36



# MARBLE FALLS INDEPENDENT SCHOOL DISTRICT

## ADDITIONS & RENOVATIONS TO MARBLE FALLS HIGH SCHOOL AUDITORIUM, BAND & DANCE/CHEER

- o Hollow Structural Shapes (HSS)
  - ASTM A500, GR C (50 ksi)
- o Structural pipes ASTM A53, GR B or A500, GR C
- o Field-bolted connections ASTM A325 Bolts
- o Anchor rods ASTM F1554, GR 36 (min, UNO)
- o Welding E70XX per AWS D1.1
- Concrete Masonry Units (CMU)
  - o Masonry Wall Compressive Strength (f'm) 1750 psi
  - o Mortar ASTM C270, Type N
  - o Masonry Unit
    - ASTM C90, 1900 psi net area compressive strength
  - o Grout ASTM C476, f'm 2000 psi min.
- Roof Deck
  - o Non-composite steel decks:
    - ☒ 1.5-inch deep, 20 ga, G90 galvanized finish where receiving cementitious fireproofing
    - ☒ 1.5-inch deep, 20 ga, ungalvanized with coat of manufacturer's standard primer paint over cleaned and phosphatized substrate where no cementitious fireproofing applied

### ANTICIPATED STRUCTURAL SYSTEMS ON AREA B – BAND HALL

The building structural components and systems must be adequate to resist the applied design loading, satisfy the performance criteria for such items as deflection and vibration control, and accommodate the architectural design.

- Foundation System:
 

Based on conversations with the District's Geotechnical Engineer, the foundation type likely to be recommended is a slab-on-grade with perimeter soil-supported grade beams supported by deep foundation elements (DFEs).

Should a slab on grade system be selected, it is anticipated that the ground floor will consist of a 5" thick slab reinforced with #3 bars at 16" on-center each way over prepared subgrade. Subgrade preparation will consist of removing six feet of on-site expansive soils and replacing with select fill or

on-site soils that have been moisture-conditioned per the geotechnical report. The slab will be placed over a 15 mil, Class A vapor retarder. Perimeter grade beams are anticipated to be approximately 18" wide and 30" deep with approximately 30 plf of mild reinforcing.

- Roof System:
 

The roof system is anticipated to consist of steel roof deck (refer to Descriptive Specifications section above) over open-web steel roof joists between wide flange girders. The roof framing will be supported by load-bearing masonry walls. It is anticipated that roof joists will be spaced at approximately 6'-0" on-center.
- Lateral Stability:
 

The lateral stability of the new addition will be provided by reinforced masonry shear walls located at exterior walls. The typical shear wall is anticipated to be 8" thick. The exact layout will be determined by the architectural layout of the building.

### STRUCTURAL RENOVATION SCOPE

- New Plumbing Under Existing Foundation Slabs:
 

Based on existing drawings provided by the owner, the existing foundation systems appears to consist of a slabs-on-grade with perimeter soil-supported grade beams supported by deep foundation elements. Saw-cutting of existing slabs will be required to accommodate new plumbing lines. After new utility work is complete, existing slab-on-grade repairs will consist of post-installed reinforcement into saw-cut edges of existing slabs-on-grade before pouring new concrete slab infills.
- Auditorium Stage Expansion:
 

The new stage expansion construction is anticipated to match the existing stage construction. The stage floor system will be a plywood deck supported by evenly spaced dimensional lumber supported by both the existing CMU wall at the front of the stage and a new reinforced CMU wall at the new front of stage.

### Plumbing Design Narrative.

Plumbing basis design and construction will be in accordance with IPC, IMC, ASHRAE, ASPE, ASME, Codes and Standards.

- The design intent is to modify the existing domestic water system as required for areas of renovation. All new above ground domestic water piping will be type L hard copper tubing with wrought copper fittings and silver-based solder joints. All new piping will be insulated as required by the applicable building codes.
- The existing hot water circulation loop system will only be modified as required for building renovation.
- The existing building sanitary waste system will only be modified as required for building renovation. All new sanitary waste and vent piping below and above grade will be schedule 40 PVC with solvent welded joints.
- Plumbing fixtures will only be replaced as required for building renovation. The specified plumbing fixtures will be water-conserving type and commercial grade to match the service occupancy. Public restrooms will have 1.28 GPF manual flush valve water closets, 0.125 GPF manual flush valve urinals, and 0.5 GPM sensor lavatory faucets.
- Any new storm drainage required will be designed for a 6-inch per hour rainfall rate. Primary interior storm drains will be routed throughout the addition and below grade, extended 5-feet beyond the exterior wall for connection into the civil engineer's on site storm sewer system. Emergency (overflow) interior storm drainage piping will also be routed throughout the building and discharge outside away from the building. All storm drain piping above grade and located within a return plenum will be service weight hubless cast iron soil pipe with heavy duty joint seals. All above grade storm drain piping will be insulated to reduce noise transmission as well as prevent condensation.
- A new wet fire sprinkler system will be installed throughout the existing gym building and addition to meet current fire protection codes. The new fire sprinkler riser will be located at the existing domestic riser room and will extend 5' to the building exterior where the civil engineer will provide the connection to existing fire water loop on site.



# MARBLE FALLS INDEPENDENT SCHOOL DISTRICT ADDITIONS & RENOVATIONS TO MARBLE FALLS HIGH SCHOOL AUDITORIUM, BAND & DANCE/CHEER

## Mechanical Design Narrative

Heating, Ventilating and Air Conditioning (HVAC) design shall be in accordance with the latest editions of ASHRAE standards and 2018 IMC and IECC codes, with any adopted amendments.

Summer Climatic Design: 100.7°F (DB)/ 71.4°F (WB)

Winter: 25.2°F

Indoor Design for Conditioned Spaces:

Summer: 75°F, 50% RH

Winter: 70°F

The proposed mechanical system for the Band Hall renovation/ addition is water heat source pump (WHSP) air handlers served by the existing condenser loop. The WHSP air handlers will be located inside the plenum above the ceiling. General exhaust fans will be installed to serve all the restrooms and custodial closets. Air will be distributed from WHSP air handlers to the spaces through rectangular ductwork with round run outs to air devices in all concealed ceiling applications, and through lined spiral ductwork with paint-grip finish for all exposed interior applications. Flex duct will only be allowed for the final 6ft run-out connection to the supply air devices, it will not be allowed on the return or exhaust duct systems.

The Auditorium will have new air devices in the audience seating area and in any other areas required for renovation.

The Dance/Cheer building will have new air devices and ductwork modification in the areas required for renovation. Design intent is to re-use existing mechanical systems.

The mechanical systems will be tested and balanced (TAB) by an accredited TAB contractor. The mechanical systems will be commissioned by a licensed commissioning agent. The TAB contractor and commissioning agents will be provided by the Owner and fully supported by the contractor.

All new mechanical equipment will be provided with controls and

integrated into the existing building management system for control and/or monitoring.

## Electrical Design Narrative

The electrical design will comply with City of Marble Falls Code of Ordinances, IECC 2018, and NEC 2017. IEG standard design complies with IECC 2018 and NEC 2017. Where there is a difference in cost, IEG will comply with the City's adopted codes.

The basis of electrical design for the Addition & Renovation will anticipate the following:

- -480Y/277V power to feed mechanical, lighting, and large equipment loads
- -208Y/120V power to feed receptacle and computer loads.
- -Additional panels to be added in new addition to meet space requirements.
- -All panelboards serving sensitive loads will be provided with 200% neutral for harmonic mitigation. Isolated grounds can be provided at Marble Falls ISD's request.
- -All transformers (except those serving kitchen loads) shall be K-13 rated.

The power requirements will be met for any specialty equipment from Marble Falls ISD and the technology consultant.

The basis of lighting design will be LED lighting in all areas: the building interior, exterior site, parking lot, emergency fixtures, and exit signs. Minimum footcandle design standards by space type shall follow Table 1 (see below). Exit signs with emergency battery packs will be utilized in all emergency egress pathways. Vacancy/ Occupancy sensors will be used to control interior lighting in each space. The lighting design will utilize Marble Falls ISD's preferred light fixture and lighting controls manufacturer selected at design deliverables. The lighting design will provide 90-minute emergency back up as required by NFPA 101.

Space Type	Minimum Average Illumination (FC)
Classrooms	40
Offices	40
Corridors / Hallways	20-40
Group / Single Restrooms	30
MDF / IDF / Elec	50

Table 1: Minimum Footcandle Design Standards by Space Type

## Technology Design Narrative

### INTRODUCTION

The Schematic Design (SD) Plan of the Marble Falls ISD High School Additions and Renovations includes Band, Auditorium, Dance and Cheer spaces. The technology program requirements detailed in this narrative shall be the basis for the final design documentation process. If revisions, additions, or subtractions are required, True North Consulting Group requires immediate notification in order to include any changes. Technology scope is not anticipated for the Auditorium renovation.

### CABLING INFRASTRUCTURE

"Cabling Infrastructure" in this section is defined as a combination of all copper and optical fiber telecommunications cables, patch cables, and connecting hardware. The cabling infrastructure recommended for installation will be a combination of unshielded twisted pair (UTP) copper cable and fiber optic cable.

### HORIZONTAL (STATION) CABLING

Horizontal cabling is the cabling between the work area telecommunications outlet and the telecommunications room (TR). Horizontal cabling is often referred to as "station cabling." The typical telecommunications outlet will have two data grade cables. These cables will terminate on modular patch panels in the telecommunication rooms (TRs). Typical classrooms will receive three dual data drops; one dual data drop on each wall with the exception of the wall with the main door. Classrooms will also receive two Cat6A drops for wireless ac-



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cess point, and a dual Cat6 ceiling drop with coil for future use for a total of eight Cat6 and two Cat6A drops per classroom. Offices will receive two data grade cables on two walls, with additional drops for larger spaces. Additional data outlets will be installed in accessible ceiling spaces throughout the building for wire-less network access points, environmental sensors, and security camera locations. Exterior wireless access points will be required for the outdoor areas.

### TELECOM ROOMS

Typical layout: each Telecom Room (TR) will include a row of two post racks with vertical cable man-agers, ladder rack securing each rack to the wall, and wire basket tray about 1' above the ladder rack running along the full perimeter of the room for cable routing. Backbone conduits shall stub up in the corner behind the racks. Walls shall be covered in fire-rated plywood for wall mounted equipment, including security panels, AV racks, grounding bars, etc. Racks will house all patch panels, network switches, PDUs, and UPSs. All network electronics including switches, UPSs, and wireless access points are to be contractor furnished and contractor installed. Grounding: each TR shall have a grounding busbar. The electrical contractor shall provide the connection to the main grounding system, while the telecom contractor shall provide the busbar and all grounding connections for the racks and other telecom equipment.

### PREMISE SECURITY

"Premise security" in this section is defined as a combination of door access control and IP digital video surveillance systems.

### ELECTRONIC ACCESS CONTROL

The access control system shall be composed of control panels, licenses, power distribution panels, card readers, lockdown switches, door releases, interfaces for ADA doors, and all associated components. This will be an expansion to the District's Genetec access control system. Doors requiring card readers will be fitted with electronic strikes or electronic panic hardware, request for exit motion sensors and recessed door position switches. Access control will be designed for all MDF/IDF locations, all exterior doors, and all pedestrian gates.

### VIDEO SURVEILLANCE SYSTEM

The video surveillance system shall be composed of cameras, cloud storage, licensing, and all associated components. Surveillance system shall be designed for coverage in all interior common areas, entrances and exits of the buildings, and along the exterior of the buildings. Additional cameras are required on poles throughout the baseball field and parking lots. The cabling for IP Cameras is the same cabling used in the voice and data distribution system, Cat6. Cameras shall receive one Cat6 drop each. This will be an expansion to the District's Genetec video surveillance system with Hanwha cameras.

### A/V MULTIMEDIA

The acronym "AVS" used herein in this document stands for Audio & Video Systems and represents inclusively the campus classroom and common area audio & video technology systems. Summary of campus technology subsystems below:

### PUBLIC ADDRESS SYSTEM

The general Public Address and Bell Clock System (PABC) shall be an expansion to the District's existing Informacast system.

- Public Address (PA) and administration front office communications systems shall include :
- Classroom independent audio zone paging with 2-way communication and call buttons in each classroom
- Specialty space independent audio zone paging, such as library, gym, cafeteria, etc.
- Hallways and outside public address audio paging shall be two independent zones.
- Simplified bell / MP3 audio event scheduling system
- Campus master clock system with secondary clocks in common areas only
- Radio AM & FM tuner with input for MP3 player and or internet radio
- Telephone paging interface
- Reception desk push-to-talk microphone
- Common area ceiling-mounted loudspeakers, 2x2 tile replacement type
- Exterior horn speakers
- UPS backup power for 45-minute up time

### CLASSROOM AUDIO & VIDEO

Classroom Audio & Video devices shall include:

- One Google EDLA interactive flat panel on mobile cart per typical classroom

### DIGITAL SIGNAGE

- Large flat panel displays mounted to the wall
- In-wall box behind each display for data and power
- Tilt wall mount
- Digital signage player behind each display

### SPECIALTY SPACE TECHNOLOGY SYSTEMS:

Large classrooms such as multipurpose, athletics, and fine arts shall be designed with video projection system with AV inputs, a ceiling-mounted non-interactive projector, and the image will be displayed on a large HD format motorized projection screen

- Any Large Group Instruction (LGI) space shall have a combinable/dividable room system that includes two standalone projection systems with typical classroom inputs, projectors, and motorized projection screens. Each side will have a wall controller for choosing which mode (divided/combined) to set the room to and for controlling the basic system functions (on/off, volume up/down, input selection). When the room is in divided mode, the systems will function independently. When the room is in combined mode, a single input will be displayed on both of the screens and the sound will play over all of the loudspeakers.
- The Dance and Cheer Gymnasiums shall have a local sound reinforcement system with an audio mixer, microphone input plates, CD player with MP3 input, and loudspeakers. Scoreboards and game clocks will be specified by the Architect elsewhere and are not included in this technology scope.

### ACOUSTICS NARRATIVE

#### 1. ROOM ACOUSTICS

##### 1.1 Room Acoustics Terminology

Reverberation Time (RT) is the amount of time (in seconds) it takes reverberant sound energy to decay 60 dB after a sound source ceases. RT is directly proportional to room volume and indirectly proportional to total room absorption. That is, larger room volumes,



# MARBLE FALLS INDEPENDENT SCHOOL DISTRICT ADDITIONS & RENOVATIONS TO MARBLE FALLS HIGH SCHOOL AUDITORIUM, BAND & DANCE/CHEER

with little absorption, will have longer RTs when compared to smaller volumes. Longer RTs are generally related to lively/louder environments with reduced speech intelligibility; Shorter RTs are generally related to increased speech intelligibility and are perceived as quieter. We typically evaluate a room's reverberant field at one-octave bands from 63Hz to 4kHz (RT). However, we can quickly summarize the effect of a room's RT on speech intelligibility by averaging the RT at 500 Hz and 1 kHz (RTmid).

### 1.2 RT Criteria Recommendations

We recommend the following range of mid-range RTs (RTmid) in Table 1 for the Auditorium, Band Hall, and Dance & Cheer areas of this project.

Table 1

Summary of Reverberation Time (RT) Criteria

Room	RTmid (seconds)
Auditorium	RTmid < 1.25
Band Hall	0.60 < RTmid < 0.80
Dance & Cheer	RTmid < 1.00

### 1.3 Room Design Recommendations

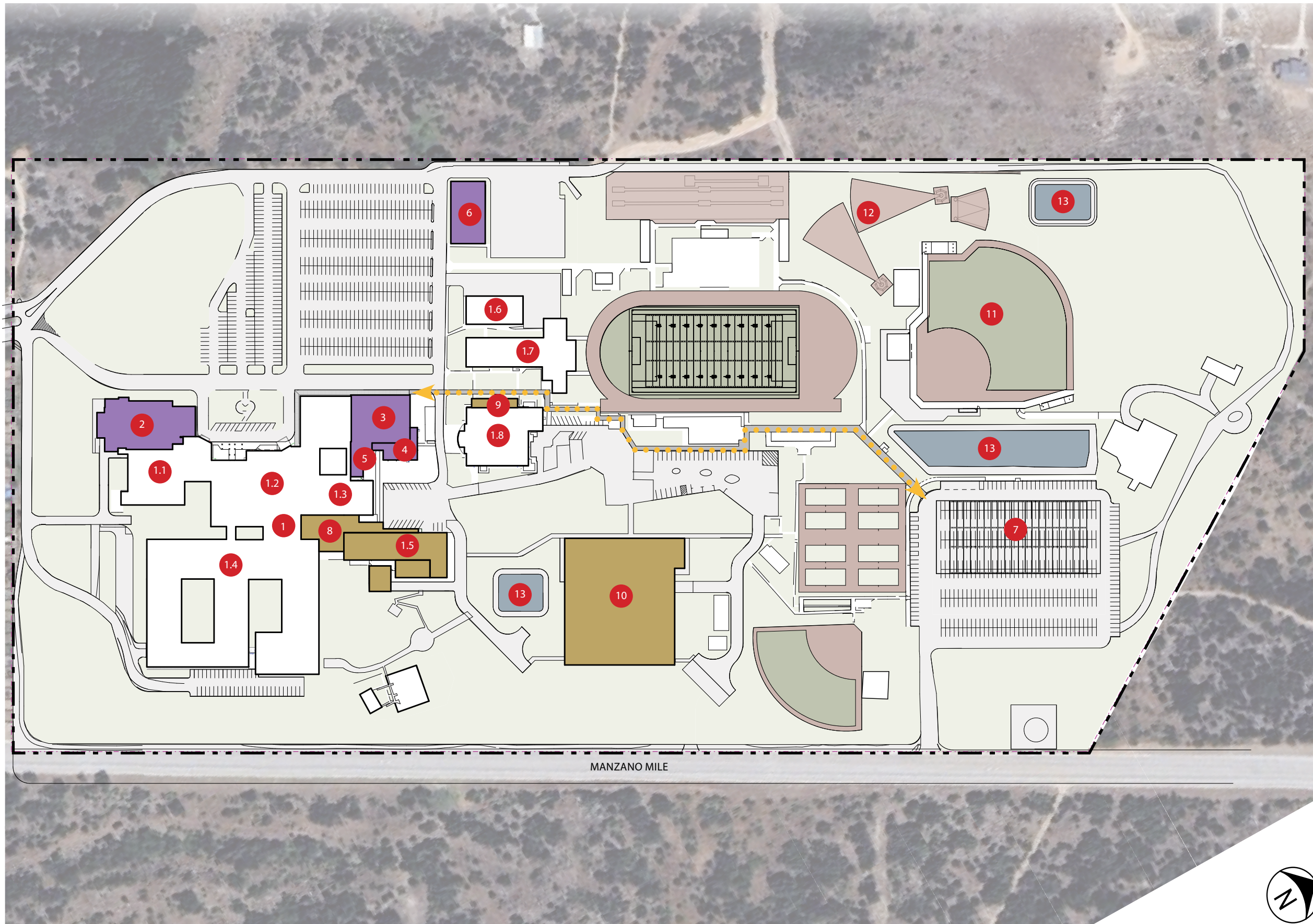
Table 2 summarizes items for room design to consider as the basis of design for the Auditorium, Band Hall, and Dance & Cheer. As the project progresses, we will continue to review design details and update our room design recommendations as necessary to reflect ongoing design developments.

Table 2

Room Design Recommendations

Room	Acoustics Treatments
Auditorium	The design team has informed us that the end users are currently satisfied with the acoustics of the auditorium. Therefore, as the project progresses, we will review all room design updates to the auditorium to ensure they do not negatively impact the existing room acoustic environment.
Band Hall	We recommend the design team consider the following room acoustic items for the basis of design for the Band Hall. <ul style="list-style-type: none"> <li>- An acoustic absorptive ceiling (minimum NRC 0.90) across 75% or more of the ceiling area.</li> <li>- 3 in. thick absorptive wall panels, with minimum NRC 0.90, should be included over 15-20% of the wall area, including some panels on the lower wall areas (below door head height) on two non-parallel walls.</li> <li>- Geometric diffusers (barrel or pyramid shaped) or similar should be incorporated over 10-15% of the ceiling area and 5-10% of the wall area.</li> <li>- Consider cabinets that are a diffusive/absorptive product.</li> </ul>
Dance & Cheer	We recommend the design team consider the following room acoustic items for the basis of design for Dance and Cheer.

- At minimum, an acoustic absorptive ceiling (NRC 0.90 or greater) should be specified across entire ceiling. However, depending on design developments, absorptive wall treatment may need to be considered.



**NUMBER LEGEND**

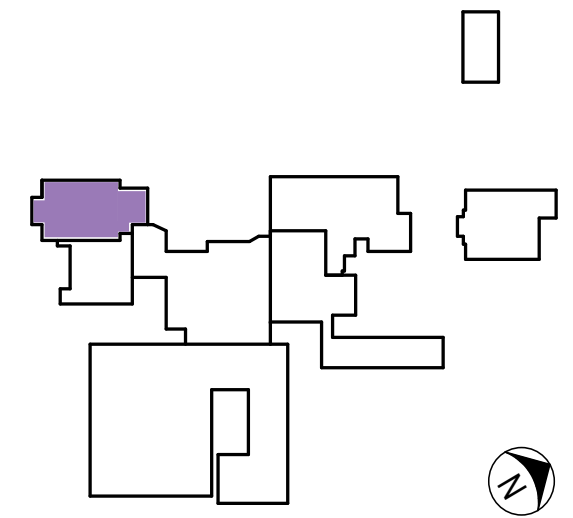
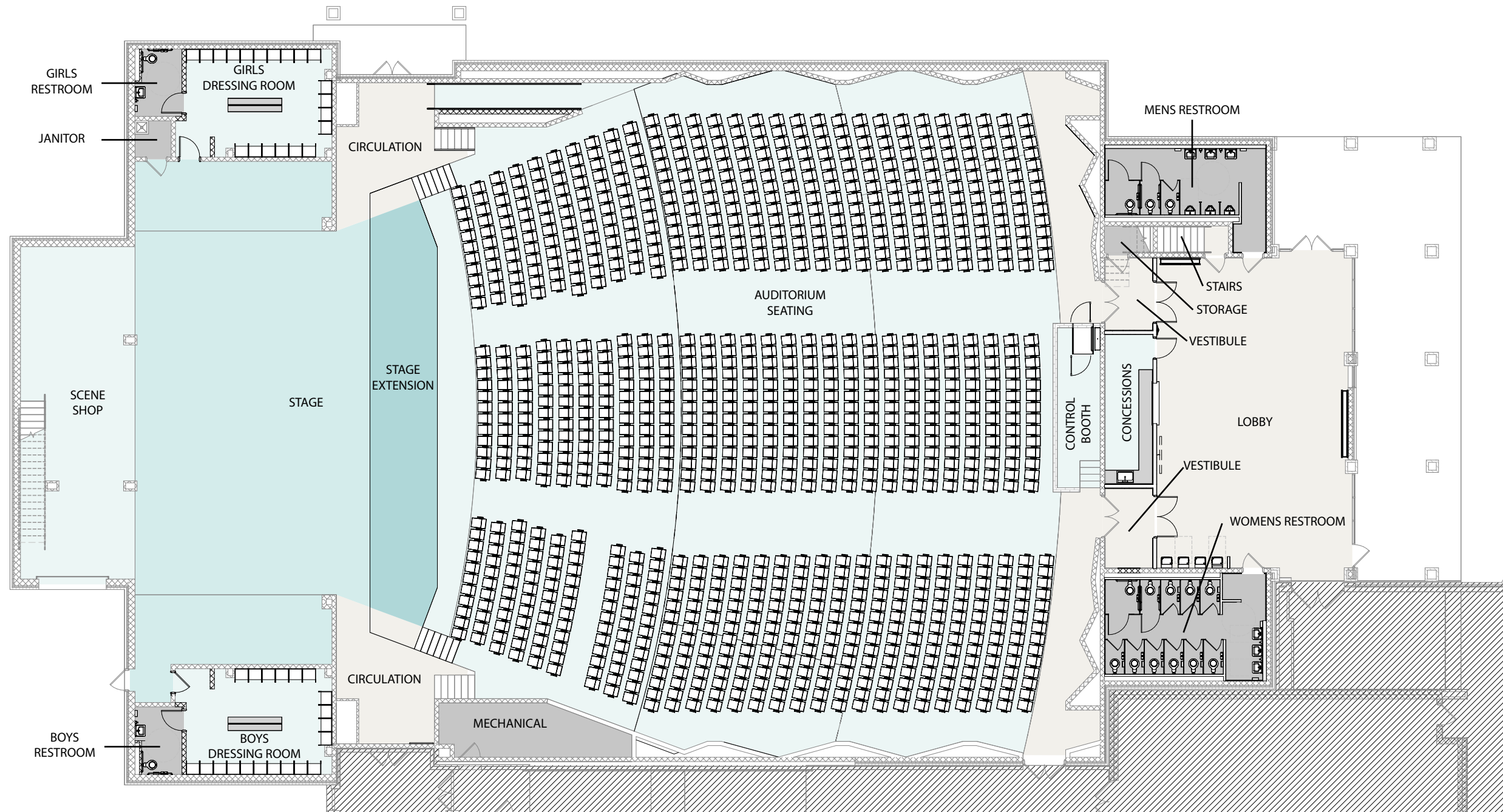
- 1 EXISTING MARBLE FALLS HIGH SCHOOL
- 1.1 EXISTING FINE ARTS
- 1.2 EXISTING ADMINISTRATION
- 1.3 EXISTING CAFETERIA & KITCHEN
- 1.4 EXISTING CLASSROOM WING
- 1.5 EXISTING CTE
- 1.6 EXISTING WEIGHT ROOM
- 1.7 EXISTING FIELD HOUSE
- 1.8 EXISTING GYMNASIUM AND LOCKER
- 2 EXISTING AUDITORIUM BUILDING
- 3 EXISTING GYM, NEW BAND HALL
- 4 PERCUSSION HALL BUILDING ADDITION
- 5 AUXILIARY BAND HALL
- 6 DANCE/CHEER BUILDING
- 7 MARCHING BAND PRACTICE - W/ NEW TOWER
- 8 CTE ADDITIONS & RENOVATIONS
- 9 LOCKER ROOM ADDITION
- 10 NEW MULTIPURPOSE BUILDING
- 11 NEW BASEBALL FIELD
- 12 NEW DISCUS AND SHOT PUT
- 13 DETENTION/WATER QUALITY POND

**TRAFFIC FLOW**



COLOR LEGEND

- Fine Art
- Fine Art- Stage Extension
- Fine Art Support
- Circulation
- Restrooms/Support Spaces



**Huckabee**

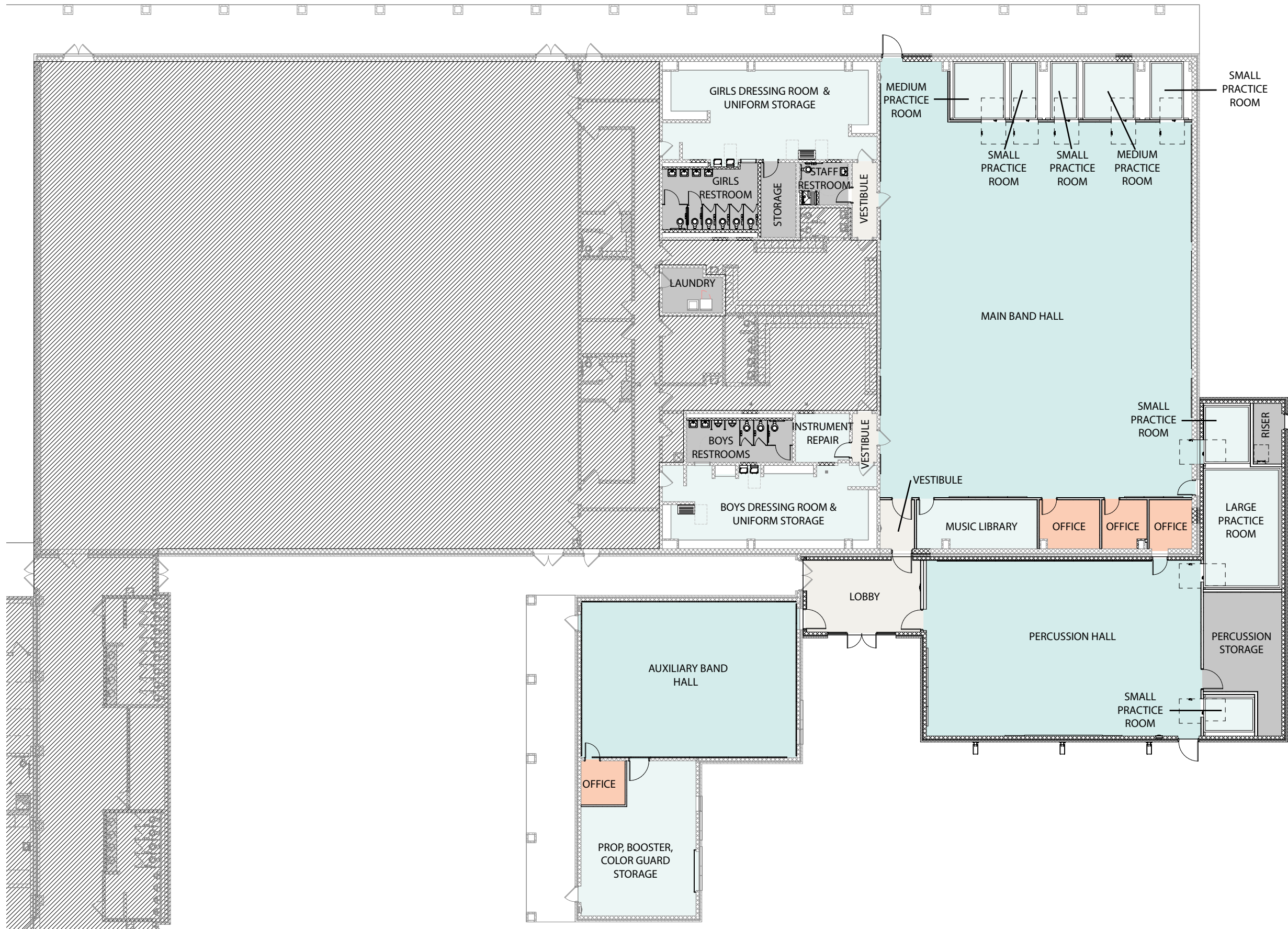
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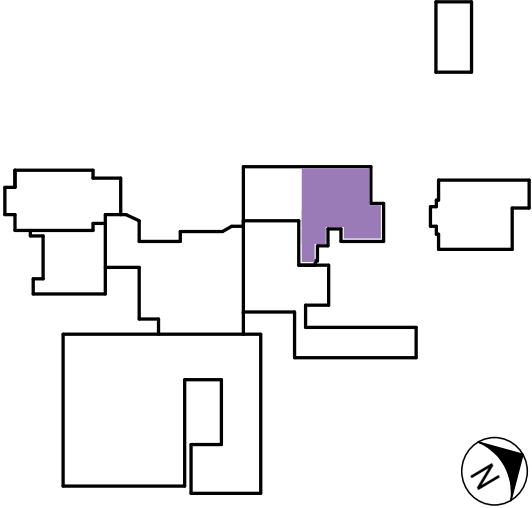
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FLOOR PLAN: AUDITORIUM



**COLOR LEGEND**

- Administration
- Fine Art
- Fine Art Support
- Circulation
- Restrooms/Support Spaces



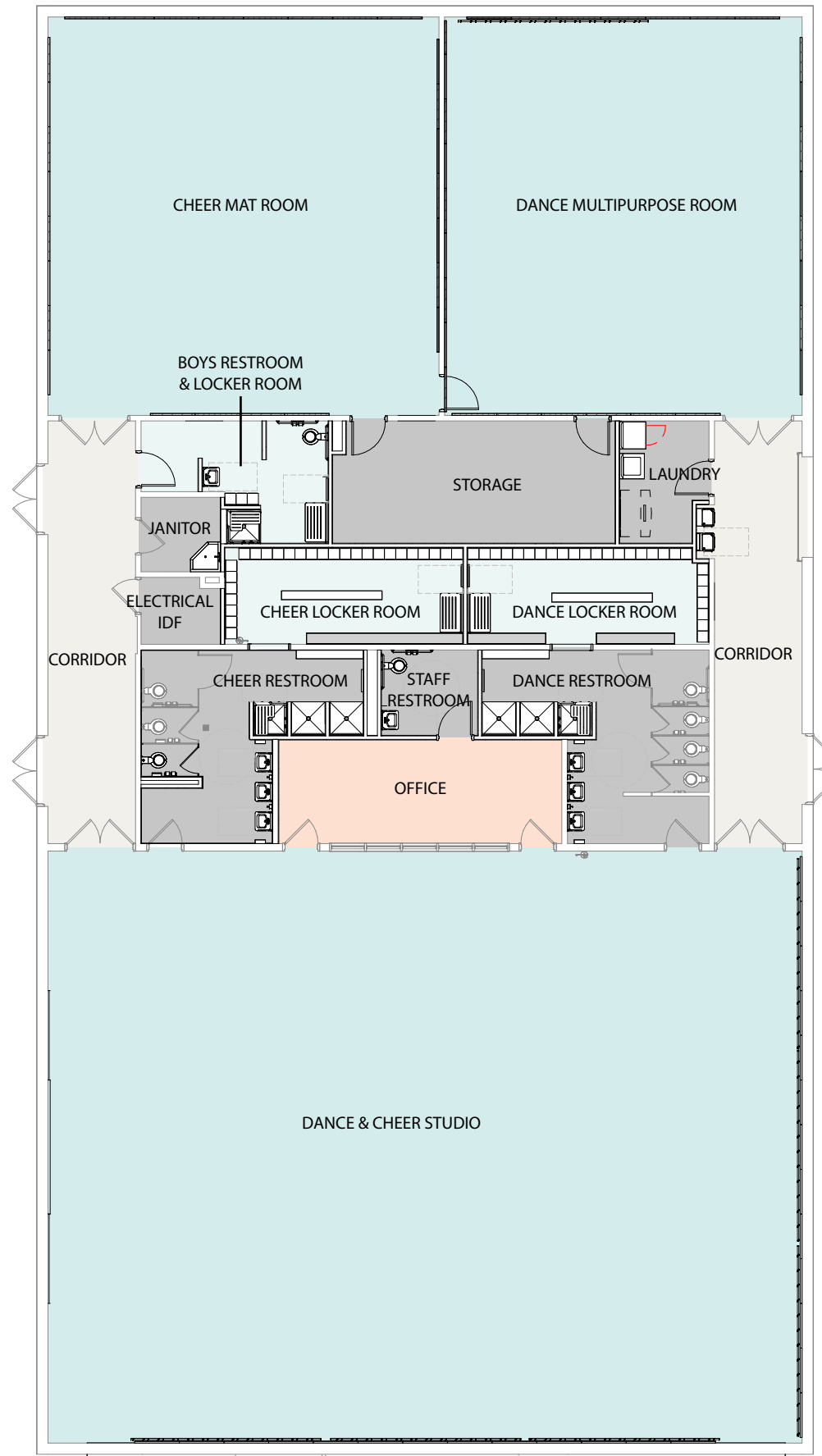
**Huckabee**

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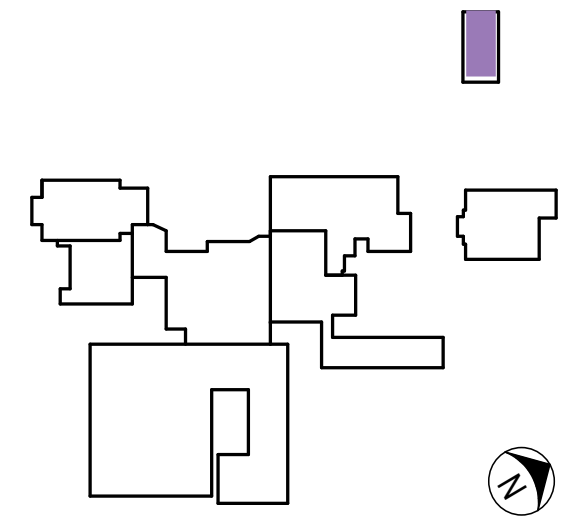
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**FLOOR PLAN: BAND**



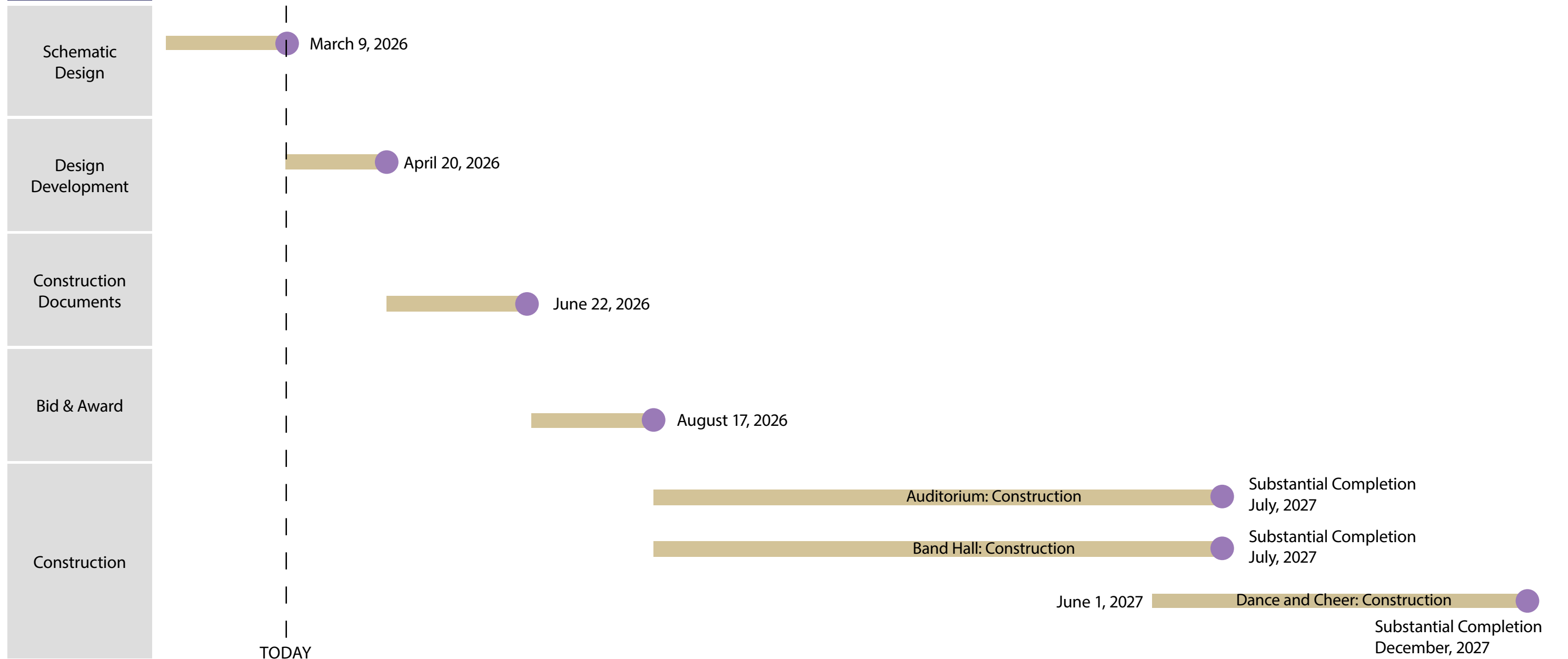
**COLOR LEGEND**

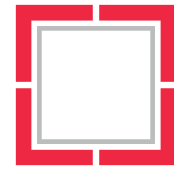
- Administration
- Fine Art
- Fine Art Support
- Circulation
- Restrooms/Support Spaces



**FLOOR PLAN: DANCE & CHEER**

**PROJECT DATES**





**MORE THAN** ARCHITECTS