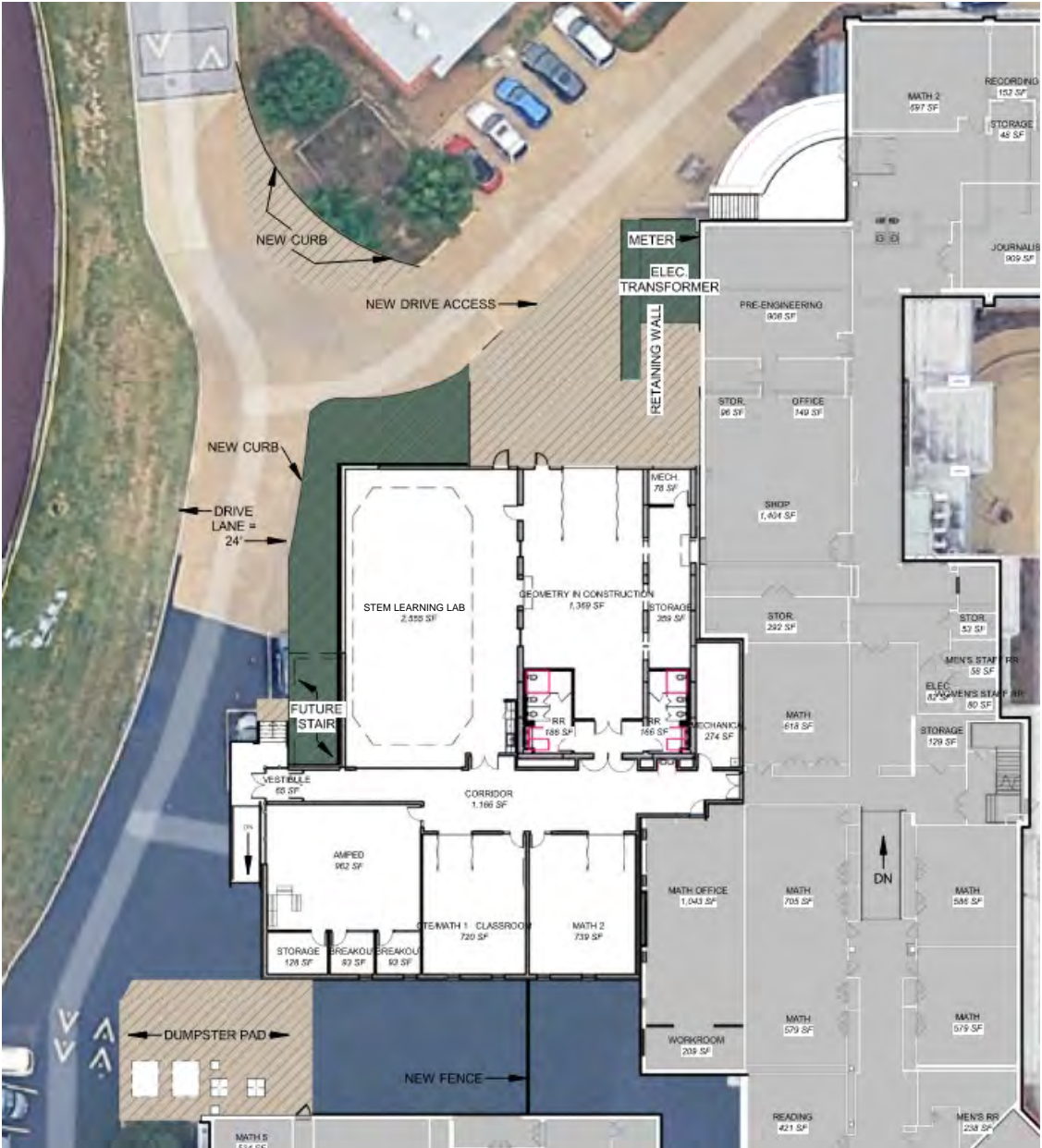




Clayton High School

**Clayton High School
1-Story CTE Addition
December 10, 2025**



SITE PLAN

In Progress Draft



Perkins&Will

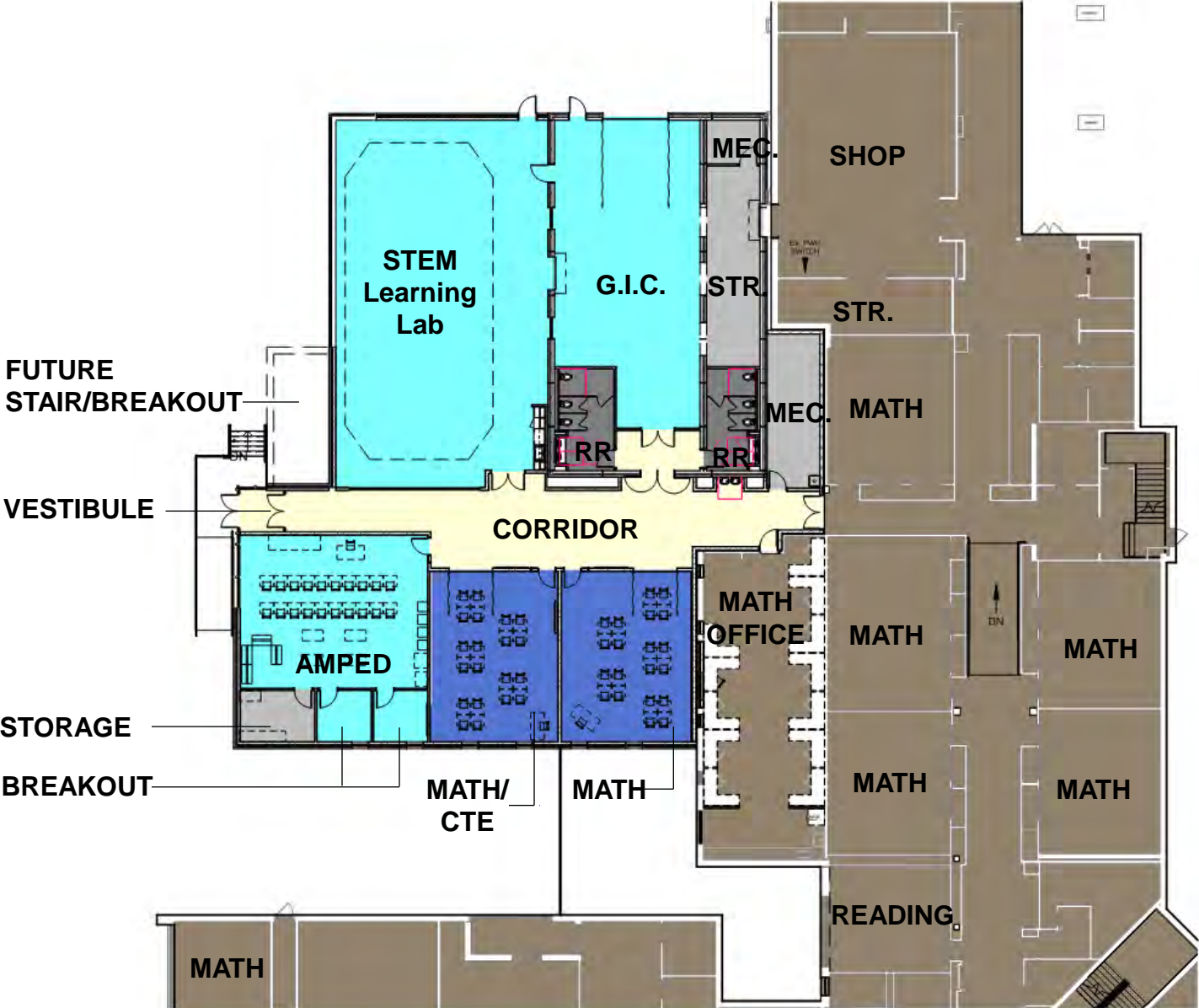


**Clayton High School
1-Story CTE Addition**
December 10, 2025

Department Legend

- CIRCULATION
- CLASSROOM - GENERAL
- EXISTING TO REMAIN
- RESTROOMS
- SPECIALS
- SUPPORT SPACES

10,097 SF New Floor Area



FLOOR PLAN



Perkins&Will



**Clayton High School
1-Story CTE Addition**
December 10, 2025



3D VIEW

In Progress Draft



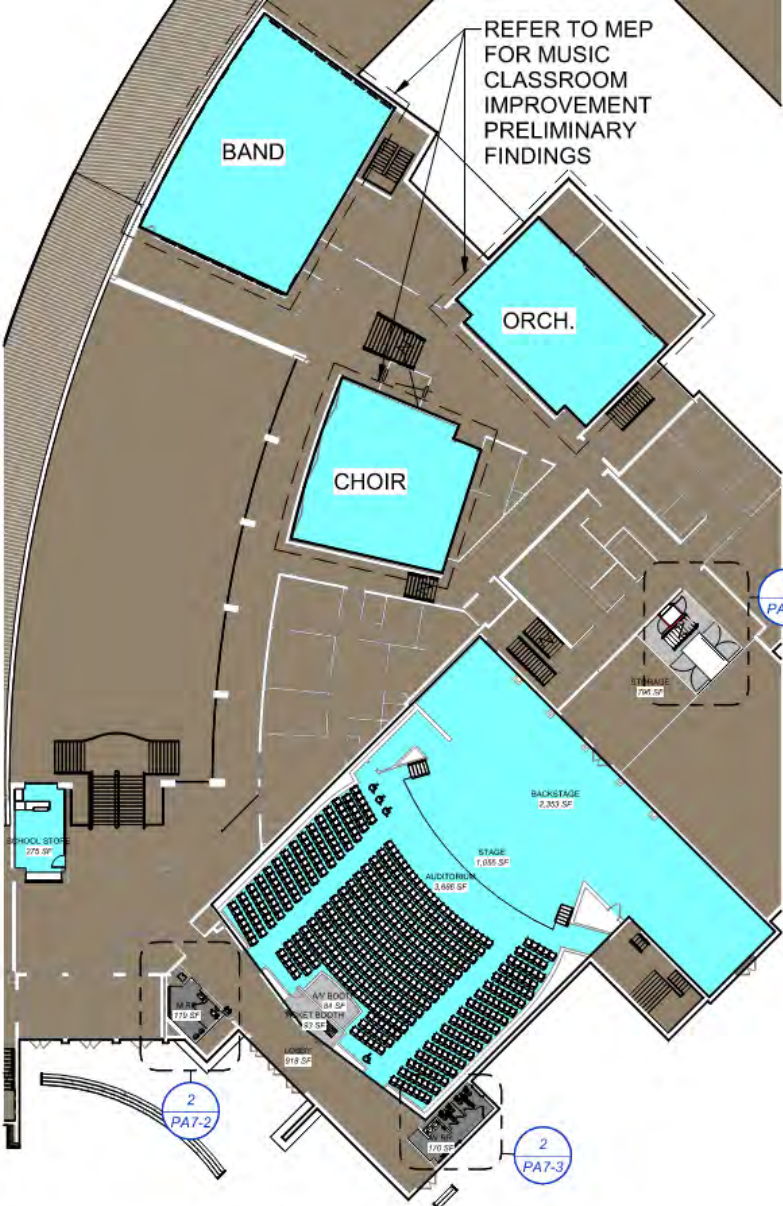
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**Clayton High School
Performing Arts Center Improvements**
December 10, 2025



GROUND FLOOR PLAN



FIRST FLOOR PLAN

Department Legend

- EXISTING TO REMAIN
- RESTROOMS
- SPECIALS
- SUPPORT SPACES

**13,288 SF
RENOVATION**

OVERALL FLOOR PLAN



Clayton High School
Performing Arts Center Improvements
 December 10, 2025

EXECUTIVE SUMMARY

Sound measurements were taken in the Clayton High School Band, Orchestra, and Choir Classrooms on October 27, 2025. Several impactful noise sources were evaluated to deduce the cause of elevated noise within each room. Potential noise sources included AHU-5, AHU-7, AHU-9, MAU-1, RLF-1, FTUs, and Kitchen Refrigeration Machinery (Compressors).

Through the analysis it was revealed that the Fan Terminal Units (FTUs) were the primary contributors to high noise levels in each room. In the Orchestra Room, however, duct breakout Noise and refrigeration compressor noise were equally impactful. The background noise levels in each space are well above the those recommended for music teaching. To achieve a significant reduction in noise, items 1-3 below must be addressed. In order to bring the music classrooms to the optimum background noise level, all of the items below should be considered.

1. FTU Replacement and Ductwork Design
 - Replacing FTUs with modern/quieter units or switch to a VAV unit design.
 - Improving the sound attenuation of the downstream ductwork via internal duct liner and/or duct silencers.
2. Orchestra Room Duct Break Out
 - Encapsulated the main supply duct at the southeast corner of the room by means of a soffit or duct lagging to reduce break-out noise.
3. Refrigerator Compressor Isolation
 - Isolate refrigeration compressors by means of decoupling from building structure and construct noise barriers to prevent airborne transfer.
 - Alternatively, the units should be relocated.
4. Full Ductwork Reconfiguration
 - Reconfigure the duct paths for AHU-5 and AHU-9 and implement acoustic design strategies such as use of internal duct lining, selection of duct fittings to reduce turbulent airflow, duct sizing for lower air velocities, etc.
5. Roof Curb Isolator Functionality
 - Verification of the spring isolated roof curb detailed in the 1998 Drawing Set is required to confirm that the 31.5 Hz vibration is not being transferred to the structure. This circumstance only occurs when AHU-5 is at 100% capacity and it accounts for only one portion of the noise spectrum in the classrooms, therefore, it is not the most critical of noise sources present.

Table 1 – Background Noise Summarized Results

| Room | Test | Measured NC Level | Target |
|----------------|---------------------------------------|--------------------|------------------|
| Band Room | FTUs On, AHU – 5 100% On | NC – 48 50.4 dBA | NC – 25 30 dBA |
| | Set Point - 10/27/2025 | NC – 47 50.2 dBA | |
| | FTUs On, AHU-5 Off | NC – 47 49.4 dBA | |
| | FTUs Off, AHU-5 100% On | NC – 34 37.1 dBA | |
| | FTUs Off, AHU-5 On | NC – 28 34.7 dBA | |
| | FTUs and AHU-5 Off | NC – 27 34.4 dBA | |
| Choir Room | FTUs and AHU-9 On, AHU 5 100% On | NC – 48 49.7 dBA | NC – 25 30 dBA |
| | Set Point - 10/27/2025 | NC – 48 49.9 dBA | |
| | FTUs On, AHU-5 and AHU-9 Off | NC – 46 48.6 dBA | |
| | FTUs Off, AHU-5 and AHU-9 100% On | NC – 38 40.6 dBA | |
| | FTUs and AHU-9 Off, AHU-5 at 100% | NC – 36 39.1 dBA | |
| | FTUs and AHU-9 Off, AHU-5 On | NC – 24 32.1 dBA | |
| | FTUs and AHU-5 Off, AHU-9 On | NC – 24 31.7 dBA | |
| | FTUs, AHU-9 and AHU-5 Off | NC – 22 28.2 dBA | |
| Orchestra Room | FTUs and Ref. Comp. On, AHU-5 at 100% | NC – 43 48.3 dBA | NC – 25 30 dBA |
| | Set Point - 10/27/2025 | NC – 41 46.5 dBA | |
| | FTUs On Only | NC – 40 45.7 dBA | |
| | FTUs Off, AHU 5 100% On | NC – 39 45.4 dBA | |
| | FTUs Off, AHU-5 and Compressor On | NC – 39 43.4 dBA | |
| | Everything Off | NC – 30 35.5 dBA | |



BAND, CHOIR, AND ORCHESTRA
ACOUSTIC REPORT



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