

SCHEMATIC DESIGN PRESENTATION

INTERMEDIATE SCHOOL CONVERSION RENOVATIONS

MONTGOMERY INDEPENDENT SCHOOL DISTRICT

Huckabee



**INTERMEDIATE SCHOOL
CONVERSION RENOVATIONS**
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Acknowledgments	2
Narrative	3-5
Floor Plan - Floor Plan and Vestibule Layout	6-7
Overall Space Program	8
Master Schedule	9



**INTERMEDIATE SCHOOL
CONVERSION RENOVATIONS**
MONTGOMERY INDEPENDENT SCHOOL DISTRICT

Montgomery ISD

Dr. Beau Rees	Superintendent
Bobby Morris	Assistant Superintendent
Clint Heard	Director of Athletics
Angela Chapman	Principal at MJHS
Mallory Kirby	Principal at MIS
Jada Mullins	Principal at MMS
Jody Davis	Director Maintenance Lead

Montgomery ISD Board Members

Ken Thomet	Board President
David Eargle	Board Vice President
Jim Dossey	Board Secretary
Kurt Stanberry	Board Member
Trey Kirby	Board Member
Kellie Anderson	Board Member
Trish Mayne	Board Member

Project Design Team

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Principal, Huckabee

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Design Leader, Huckabee

Mike King
Planning, Huckabee

Civil Engineering/Sports Design
Brooks & Sparks, Inc.
Houston, TX

MEP Engineering
DBR Engineering Consultants, Inc.
Houston, TX

Food Service
Foodservice Design Professionals
Conroe, TX

Structural Engineering
Huckabee

Technology/Security
CRUX
Fort Worth, TX

Roofing
Kuhn & Associates
Houston, TX

EXISTING MONTGOMERY INTERMEDIATE SCHOOL CONVERSION TO ELEMENTARY SCHOOL
NARRATIVE

OVERVIEW

In May 2015, the citizens of Montgomery, TX passed a bond that includes significant renovations and conversion of the existing Intermediate School to an Elementary School which will house 550 kids at maximum capacity. The project includes repurposing of classrooms, addition of restrooms for Pre-K to 1st Grade, secure entry vestibules at the main entry, HVAC upgrades, roof repairs, technology and security improvements, replacement of interior finishes, upgrading of site lighting, and other misc. improvements.

The existing facility resides at 700 Dr. Martin Luther King Jr. Drive in Montgomery, Texas on a 20 acre site. The complex includes the main school building which houses the 5th Grade along with detached Gym and Choir Hall. Upgrading of the Gym and Choir Hall is not within the scope of this renovation and conversion project.

Additionally, a secure entry vestibule will be created at the main entry, which will also include reconfiguring the entry to the clinic and creating additional office space in the administration area. Comprehensive replacement of Interior finishes will include floor finishes, ceilings, wall repairs, restroom renovations and painting. Eight new individual restrooms will be added to classrooms for Pre-K, Kindergarten and First Grades. Upgrade casework in classrooms and library checkout desk to match grade level requirements. Lower the height of the serving counter within the Food Service area as an alternate. Remove all lockers along corridors, refinish and paint (as base). As alternate plastic laminate wall panels will replace locker locations. For interior the building will be repainted and there will be door and hardware upgrades.

The project also includes replacement of the roofing of the main building. New roofing will be asphalt shingles to match the existing. Additionally, 21 DX units and 2 chiller units and associated components will be replaced. Various technology upgrades will be provided including access control, intercom, and camera surveillance.

The project is being designed to the 2012 International suite of codes (exception: 2009 Energy), 2014 NEC, and 2012 TAS.

MEP PROJECT SCOPE

This project will be an addition/renovation to the Existing Montgomery Middle School. This scope will require MEP services and coordination with the architect, design consultants and general contractor to develop construction documents for the project. The following items listed below are the MEP related scope items that will be designed and documented for the addition/renovations.

Further description and applicable codes and standards are listed below the scope list per each MEP construction division. These design items shall only be implemented as required per the scope list.

Scope List:

- Existing (21) DX HVAC mechanical units and (2) chillers with the associated piping and insulation shall be replaced with new units of similar size and capacity.
- Existing exterior site pole lighting are showing signs of corrosion and shall be replaced and upgraded with new site lighting.
- MEP Firm shall coordinate power requirements and rough-in requirements to upgrade Key Entry to access control on the campus and at the annex.
- MEP firm shall coordinate power and rough-in requirements for an increase in intercom coverage to the existing system.
- MEP firm shall coordinate power and rough-in requirements for added surveillance system cameras on the exterior, cafeteria and at the annex building.
- MEP firm shall coordinate power and rough-in requirements to add a storage room for any new or relocated surveillance system equipment.
- Exterior improvements and window improvements shall be provided per the architectural plans.

- Wall refinish shall be provided per the architectural plans. MEP firm shall coordinate uninstall and reinstall of the necessary devices in these locations for the architectural improvements.
- Ceilings refinish and improvements shall be provided per the architectural plans. MEP firm shall coordinate uninstall and reinstall of the necessary light fixtures and devices in these locations for the architectural improvements.
- New vestibules shall be designed and connected to the existing facilities systems to provide HVAC, lighting and power. New security vestibules shall be served from the existing HVAC system currently installed that serves the adjacent space. New LED lighting and occupancy sensors shall be installed in this area.
- Restrooms shall be renovated per the architectural plans. MEP firm shall coordinate renovations of plumbing fixtures, lighting/power locations and HVAC layouts of the restrooms with the architectural restroom renovation.
- Additional Fire alarm devices shall be provided as required throughout the school.
- Existing HVAC controls shall be upgraded.
- Existing toilets shall be removed and replaced per the architectural plans.
- Roof improvements/replacement shall be provided per the architectural plans. MEP firm shall coordinate uninstall and reinstall of the necessary roof mounted equipment per the architectural improvements.

DIVISION 22 | PLUMBING

Applicable Codes and Design Standards:

- 2012 International Building Code
- 2012 International Plumbing Code
- Fixtures utilized shall be in compliance with Texas Water Conservation requirements.

Sanitary Waste and Vent

- Waste and vent piping below grade shall be service weight cast iron bell and spigot pipe joined with neoprene gaskets and drainage pattern fittings for kitchen.
- Waste and vent piping above slab shall be service weight cast iron (bell and spigot or no-hub).
- Waste and vent piping below grade shall be schedule 40 PVC pipe for building services.
- Gang restrooms and mechanical rooms shall have 4" floor drains.

Storm Drainage Piping

- Upgraded and new roof drainage shall be combination of internal roof drains with overflow drains and gutters and downspouts where designated by the architect
- Storm drainage piping below grade shall be schedule 40 PVC pipe.
- Storm drainage above slab shall be service weight cast iron with no-hub joints and drainage pattern fittings.

Potable Water Distribution

- Potable water below grade and outside the building shall be schedule C-900 pvc pipe.
- Potable water below grade within the building shall be type K copper, with no joints allowed below building.
- Potable water above slab shall be type L copper, with no-lead solder joints
- Domestic hot water supply and return piping shall be insulated.
- Domestic cold water piping shall be insulated in exterior walls and within 8ft of exterior walls.

Natural Gas Distribution

- Natural gas piping below grade and outside the building shall be yellow polyethylene with socket heat fusion weld fittings.
- Natural gas piping above ground shall be seamless schedule 40 black steel.

Plumbing Fixtures

- Fixtures shall be of type and mounting height to comply with Texas Government Code, Chapter 469 with effective date of March 2012.
- Water closets and urinals shall be of the manual flush valve type, wall hung on cast iron carriers.
- Lavatories shall be of the wall hung type on concealed arm carriers with manual hot and cold levers.

- Drinking fountains shall have integral chilling units.
- Provide (1) hose bibs in each gang restroom below the lavatory counters.

Domestic Water Heating

- Satellite electric hot water heaters shall be utilized for gang restrooms, facility restrooms, office areas, classrooms, janitor's closets...etc. where the existing water heater capacity is not great enough for the new additions/renovation. Instantaneous hot water heaters shall **not be used**.
- Hot water shall be stored at 120F temperature and be distributed as required.

DIVISION 23 | MECHANICAL

Applicable Codes and Design Standards:

- 2012 International Building Code
- 2012 International Mechanical Code
- 2009 International Energy Conservation Codes

Building HVAC Design Criteria:

Outdoor Conditions

- Summer 97/77 °F DB/WB
- Winter 20 °F DB
- Ambient conditions for air cooled equipment 105 °F DB

Indoor Conditions

- Summer 74 °F DB
- Winter 72 °F DB
- Relative Humidity 50-55% maximum

Noise Criteria

- Indoor noise criteria 25-40 NC

Other considerations

- HVAC design shall emphasize energy efficiency, proper ventilation (per ASHRAE), thermal comfort, and controllability.

HVAC System design description:

Air Distribution systems:

- Supply, return, and exhaust ductwork shall be fabricated of galvanized steel in compliance with SMACNA standards. Supply and return ductwork shall be internally lined within 15 feet of air handling unit. Return air boots shall be lined. All other supply and return ductwork shall be externally insulated. Air devices shall be aluminum.
- All restroom exhaust shall be through the use of roof mounted exhaust fans.

Controls and Implementation:

- All Energy Management, Temperature and HVAC system controls shall utilize BACnet protocol Direct Digital Controls with web-based user interface.

DIVISION 26 | ELECTRICAL

Applicable Codes and Design Standards:

- 2012 International Building Code
- 2014 NFPA 70 – National Electrical Code
- 2009 International Energy Conservation Codes
- NFPA 101
- NFPA 72
- 2002 International Fire Code

Power Service and Distribution

- Addition/renovated areas shall be connected to the existing electrical distribution system.
- Branch circuiting - All branch circuits shall be installed in conduit, 3/4" minimum.
- Raceways shall be Schedule 40 PVC for underground feeders. Provide electrical metallic tubing and rigid metallic tubing (where exposed to potential damage) for all above ground, indoor applications. MC cable and AC cable are not permitted. Flexible metallic conduit shall be permitted only for connections to vibrating equipment such as motors. Intermediate Metallic Conduit (IMC) is not permitted. BX cable may be used for fixture whips to individual light fixtures. Schedule 40 PVC shall be used for underground conduit serving Parking lot and sports field lighting.
- Convenience outlets shall be 20 amps, specification grade as located on plans.
- Maximum receptacles per circuit shall be 7 duplex receptacles.

Lighting

- Lighting shall utilize LED fixtures throughout the school and for exterior lighting.
- Lighting control system shall utilize Wattstopper DLM Room controllers with digital occupancy sensors for additions and areas being renovated. The following type spaces shall have a network bridge for interconnection to BAS: corridors, exterior canopy lighting, exterior pedestrian poles, exterior wall packs, gym, dining area, library and auditorium.
- Wattstopper DLM lighting controls shall incorporate emergency lighting transfer devices for emergency lighting.
- Exterior site pole parking lot lighting shall be controlled by Wattstopper wireless network manager.
- Manual on vacancy sensor programming shall be used for any enclosed office, conference room, or meeting rooms.
- Photosensors shall be used for all areas requiring daylighting control per code. New commons area shall be programmed for On/Off photosensor control of day-lit zone lighting and classrooms shall be programmed for dimming photosensor control of day-lit zone lighting.

Fire Alarm/Detection

- Addition and renovated spaces shall be designed in full compliance with NFPA.
- Existing fire alarm system shall be expanded as required to accommodate the new additions and renovated areas. New hardware and software shall be provided as required for the addition/renovation work.
- New fire alarm devices shall match the style and functionality of the existing fire alarm devices.

TECHNOLOGY SCOPE

The following items listed below are the Technology and Security related scope items that will be designed and documented for the addition/renovations.

Scope List:

- Add new data cabling to new camera locations in the main building as part of the surveillance camera expansion.
- Add new data and fiber backbone to new construction areas, areas requiring a new telecommunications space or cabinet (IDF).
- Add new surveillance cameras to select areas around the main building and in or on new construction areas.
- Add access control, door monitoring to select doors around the main building and in new construction areas.
- Expand the existing intercom system to cover exterior areas of the existing building. Extend intercom coverage to new construction areas as directed by the owner.
- Remove abandoned communications cabling, termination hardware and other technology related items displaced due to renovation.

DIVISION 27 | COMMUNICATIONS CABLING

Applicable Codes and Design Standards:

- 2012 International Building Code
- International Fire Code 2012
- NFPA 13

Cabling

- New cabling shall be specified for all new surveillance locations in the existing main building.
- New cabling and termination hardware shall be specified for any new construction areas that require connectivity for data, wireless, surveillance or other technology related items.
- New fiber backbone connectivity shall be provided to any new telecommunications space (IDF Room) or new ancillary facility as needed.

DIVISION 27 INTERCOM

Applicable Codes and Design Standards:

- 2012 International Building Code

Intercom System

- Extend the intercom system with additional exterior speakers as directed by the client.

DIVISION 28 ACCESS CONTROL

Applicable Codes and Design Standards:

- 2012 International Building Code

Access Control System

- Expand, add access control to all exterior doors on the main building and on any new doors related to the construction of new facilities.
- Relocate devices as necessary that may be displaced as a result of the renovation work.

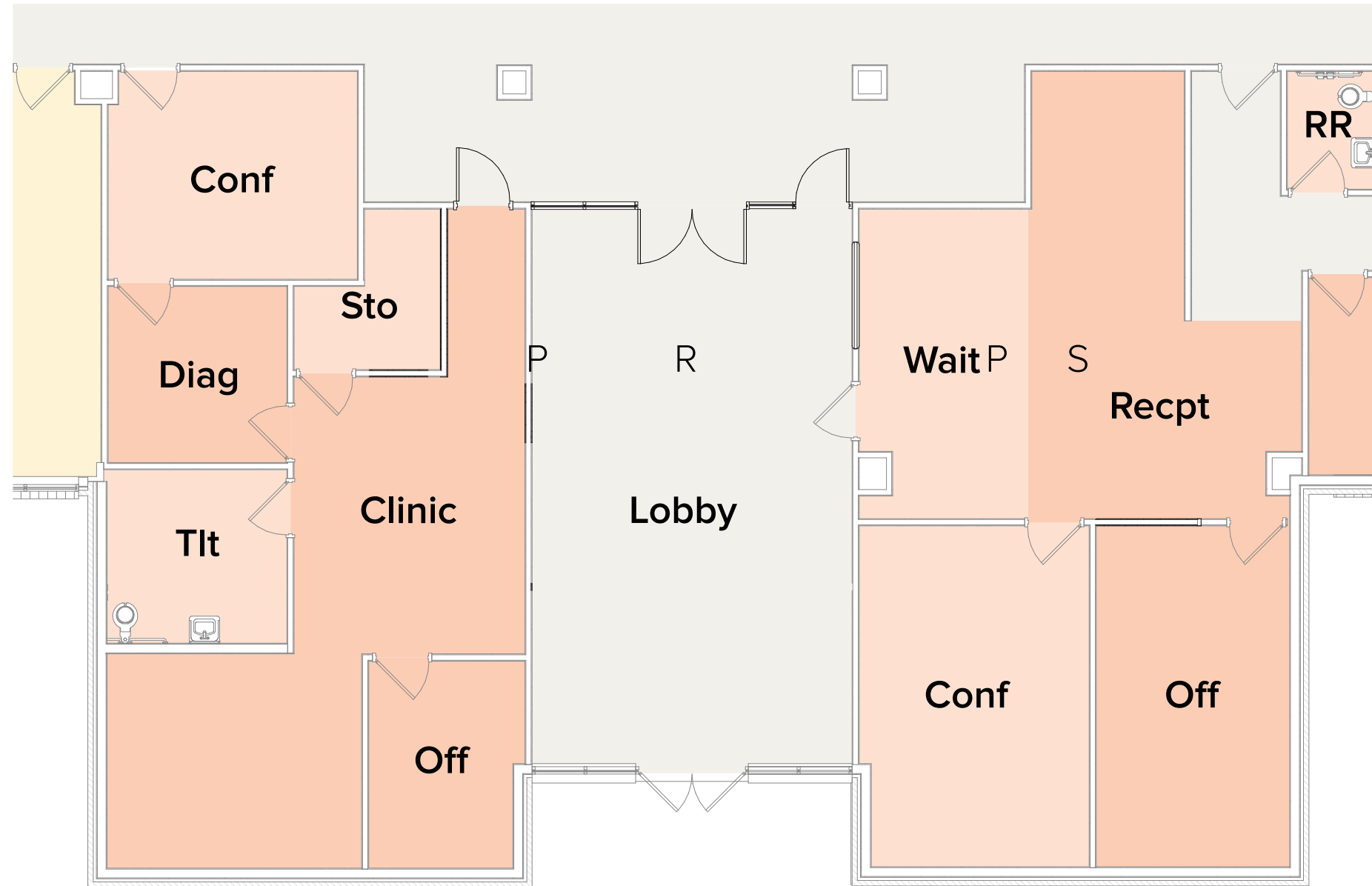
DIVISION 28 SURVEILLANCE

Applicable Codes and Design Standards:

- 2012 International Building Code

Surveillance System

- Add new cameras to all areas deemed necessary in or around the existing HS facility.
- Add new storage servers as needed.



COLOR LEGEND

- Administration
- Academic
- Circulation

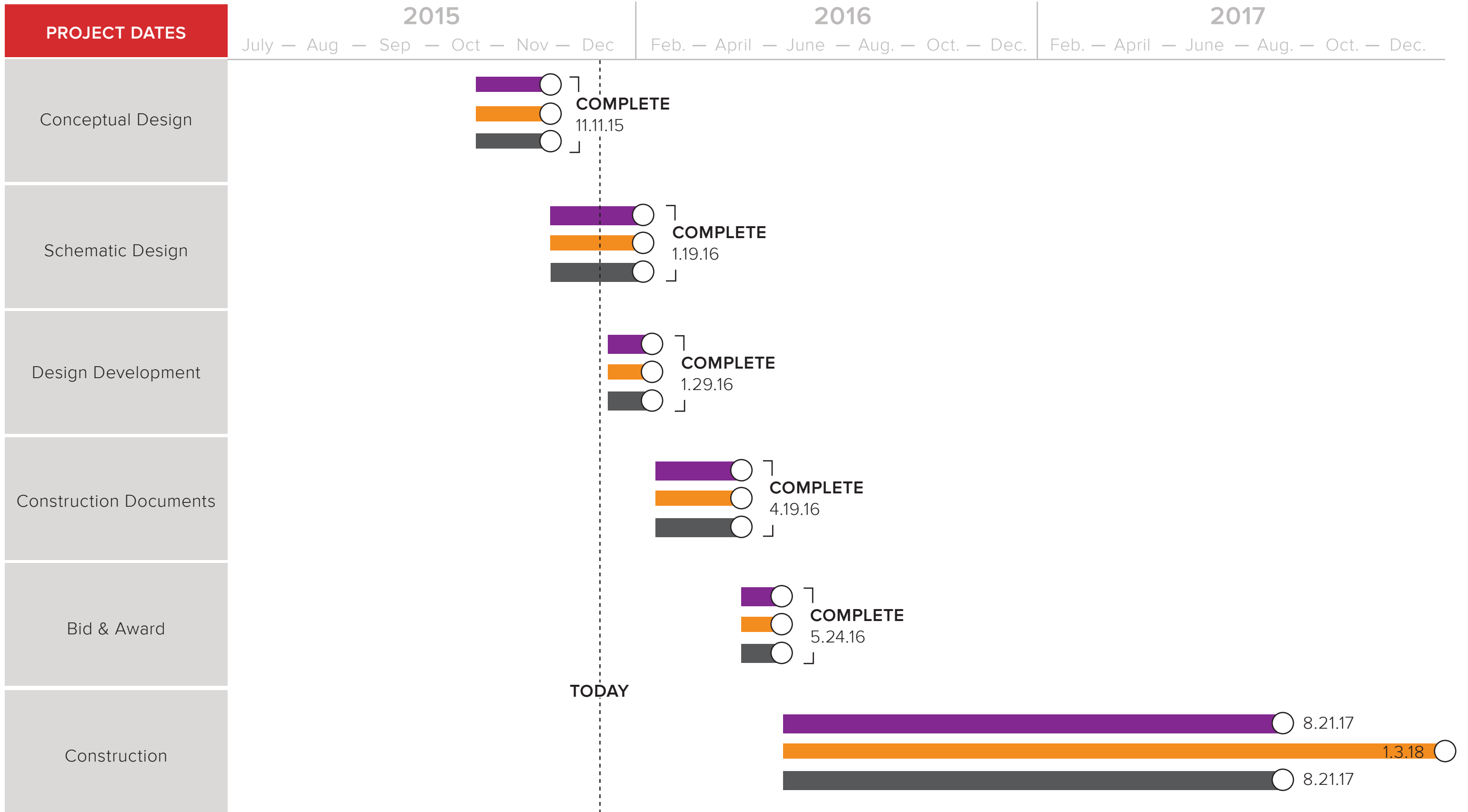
FLOOR PLAN - VESTIBULE LAYOUT

Montgomery Intermediate School -
Convert to Elementary School

Pre-Kindergarten (1)	20
Kindergarten (4)	80
1st Grade (4)	86
2nd Grade (4)	88
3rd Grade (4)	88
4th Grade (4)	84
5th Grade (4)	108
Total Max Capacity	554

Montgomery Middle School -
Convert to Elementary School

Pre-Kindergarten (2)	32
Kindergarten (6)	132
1st Grade (7)	136
2nd Grade (6)	132
3rd Grade (6)	124
4th Grade (6)	126
5th Grade (6)	143
Total Max Capacity	825



Junior High conversion
 Intermediate School conversion
 Middle School conversion

MASTER SCHEDULE



MORE THAN ARCHITECTS