

# DEEP RUN ELEMENTARY SCHOOL



Howard County Public School System  
 DESIGN DEVELOPMENT SUBMISSION | OCTOBER 22, 2013

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# DEEP RUN ELEMENTARY SCHOOL

## DESIGN DEVELOPMENT SUBMISSION

OCTOBER 22, 2013

### FOR THE BOARD OF EDUCATION OF HOWARD COUNTY

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<b>Cheif Facilities Officer</b>	Ken Roey
<b>Director School Construction</b>	Bruce Gist

## PLANNING ADVISORY COMMITTEE

Tricia McCarthy	HCPSS, Principal, Deep Run Elementary School
Nicole Epstein	HCPSS, RECC Program, Deep Run Elementary School
Ruth Gibson	HCPSS, RECC Program, Deep Run Elementary School
Eric Soskil	HCPSS, Deep Run Elementary School
Lisa Ditter	HCPSS, Deep Run Elementary School
Colleen Huelskamp	HCPSS, Deep Run Elementary School
Kathy Neumann	HCPSS, Deep Run Elementary School
Mike Sachs	HCPSS, Deep Run Elementary School
Julie Schwefer	HCPSS, Deep Run Elementary School
Marcy Hersl	HCPSS, Analyst, Safety, Environment, and Risk Management
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## DESIGN TEAM

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STRUCTURAL ENGINEER	Columbia Engineering, Inc.	Columbia, MD
MEP ENGINEER	James Posey Associates	Baltimore, MD
LEED CONSULTANT	Sustainable Design Consulting, LLC	Washington, DC
ACOUSTICS CONSULTANT	Henning Associates	Rockville, MD



## DESIGN DEVELOPMENT PHASE PARTICIPANTS

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Erica Ruxton	HCPSS, Second Grade, Deep Run Elementary School
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Gretchen Wagner	Grimm + Parker Architects
Michael Berry	Grimm + Parker Architects

## DESIGN PROCESS

The schematic design for Deep Run Elementary School was presented to the Board of Education for approval on July 11, 2013. The project was approved by the Board to continue forward and subsequently submitted to the state Interagency Committee for School Construction. The project was reviewed by the state and approved to proceed into the design development phase.

The design has undergone some refinements based on design development meetings held with the faculty and staff of Deep Run Elementary School. Almost every staff member had the chance to review the design of the new additions and renovated areas and make suggestions on the layout of teaching spaces. These collaborative meetings facilitated discussion and allowed the design team to address many of the concerns that current staff members are experiencing in the existing building.

The meetings addressed the following items:

- Overview of the process for the Howard County Public School System (HCPSS) renovations and additions.
- Review of the proposed classroom pods and how they will be modified to function more effectively for teachers and students.
- Review of proposed new additions and space adjacencies.
- Detailed review of furniture layouts for administration and educational spaces.

This submission reflects the consensus of deliberation and discussion among the Deep Run Elementary School staff and the design team to provide the most responsive layout to achieve the needs of the school and its students.



## PROJECT DESCRIPTION

Deep Run Elementary School is a one-story structure serving kindergarten through fifth grade along with the additional Regional Early Childhood Center (RECC) program. Construction of the original structure began in 1989, and the first students arrived at the beginning of the 1990 academic year. Two major renovations and additions have expanded the footprint of the building since its opening. The first renovation, completed in 1997, added classroom space to the east and west sides of the building and expanded the cafeteria to the north. The more recent 2008 addition expanded the Kindergarten and Pre-K space in the northeast corner of the school. The approximate gross square footage is 80,000 square feet. The current student population of the school is 750 students with 140 full and part-time staff members.

Due to the age of the school and its systems, coupled with its growing population, there are numerous program and functional deficiencies. To address these deficiencies, the project will proceed in two phases. The first phase will address the needed additions, while the second phase will include extensive renovations to the existing building.

The proposed new construction will include the replacement of six modular classrooms with permanent construction, a 100-seat four classroom addition with an additional two classrooms currently housed in portables, as well as a new administration suite adjacent to the main entrance with a secured entry sequence. The renovations, along with systemic upgrades to the existing building, will comply with the HCPSS "Guidelines Manual for Renovations and Modernizations of Existing Schools." This includes dividing the current open pod classroom arrangements into separate classrooms. The health suite will be renovated to comply with the current state standards. The music suite will also be renovated and enlarged to include the vocal music room and the the instrumental music room currently housed in a portable. Additional administration and student support offices will be relocated into the existing renovated administration space.

The design will employ sustainable practices to help achieve United States Green Building Council (USGBC) LEED certification. This is in keeping with the sustainable goals of the county, to reduce negative impact on the environment and enhance the health and comfort of the building occupants, thereby improving building performance. This project is currently tracking LEED Silver certification.

## SITE NARRATIVE

Deep Run Elementary School is located on Old Waterloo Road in Elkridge, Maryland in a residential neighborhood. The site is approximately 11.67 acres and is located adjacent to Waterloo Community Park.

The existing parking area adjacent to the school accommodates 12 school buses and 70 parking spaces which includes 3 handicap spaces. The existing parent drop-off area runs parallel to Old Waterloo Road. It is approximately 150 feet long and accommodates 8 cars at a time. The 140 staff members park in the school lot with overflow parking on Old Waterloo Road.

The site currently accommodates two playground areas, a hard play area, a multi-purpose field, and a baseball field. There is a significant grade difference between the school and these recreational areas. The areas are accessed by a sloping sidewalk on the south side of the site and a path from the bus loop on the north side of the site.

The grade change on the site creates limited opportunities for the location of the proposed additions. There are also challenges with needed emergency egress from the classroom addition to the fields. Additionally, a large existing use setback along Old Waterloo Road limits expansion opportunities to the west.

The new site design addresses egress issues for the south side of the building with the addition of an accessible paved ramp down to the play areas. The inadequate parent drop-off will be addressed by widening Old Waterloo Road to provide a drop-off lane with a sidewalk. Additional handicap parking spaces are being added and a parking expansion will be investigated with Alternate #1. Grade modifications are being made for the new additions, and a required bioretention area is being added for stormwater management.

# ARCHITECTURAL NARRATIVE

Deep Run Elementary School is currently arranged in a pod configuration with open classrooms divided with operable walls or partial gypsum board partitions. The typical pod has four classrooms, a smaller project room, as well as a central commons area. There are also four portable classrooms on the site that house two gifted and talented classes, instrumental music, and teacher planning and office functions for Title I programs.

The project construction will be divided into two phases to minimize the impact on the occupants of the school. Phase I primarily entails new construction, including the addition of a new two-story section of the building located at the existing modular construction. This addition will replace the six modular classrooms, provide four additional standard classrooms and two additional special program classrooms and include some additional service spaces as well as stairs and an elevator. This addition also includes new mechanical and electrical rooms that will serve the addition and also be designed to serve the entire building when the full build out is complete.

Phase I also includes the construction of a new administrative suite at the main entry of the building that would provide supervision and control of the entrance for building security. This addition creates space for renovation of the existing administrative areas into an adequately sized health suite as well as new centrally located administration and student support areas for the additional educators who are currently located throughout the building. This will free up space for Title I offices and planning currently located in a portable classroom. It also provides necessary support spaces such as a conference room, storage space, and staff toilet rooms.

Phase II includes the renovation of the entire building to bring the facility up to current HCPSS standards for renovations and modernizations. This would include replacement of the current HVAC system with a geothermal system, replacement of the entire roof, replacement of most plumbing and electrical services, replacement of many of the low voltage systems, and additional architectural upgrades. Since Phase I will be completed before Phase II has begun, the additional classrooms provided in Phase I will provide swing space for the students as this work is underway.

Phase II would also include the renovation of the music suite. This would involve the conversion of part of the existing mechanical room and the existing music space into an instrumental music room with instrument storage, which is currently housed in a portable classroom, and a vocal music room with storage. Since the mechanical functions will be located in the new mechanical room provided as part of the Phase I addition, most of the current space will be vacated to allow for a new use in this area.

# MECHANICAL & PLUMBING NARRATIVE

## HVAC Systems

HVAC for Deep Run Elementary School will be provided through a new ground source geothermal loop system feeding water-cooled heat pump equipment. A geothermal borehole field, consisting of approximately 100 boreholes at 600 feet deep, will be located in the open field behind the elementary school. Underground geothermal supply and return piping will extend from the borehole field into the mechanical room of the new addition.

A modular water-to-water heat pump unit and two lead-lag hot water circulating pumps, located in the new mechanical room, will be installed to provide heating water for the variable air volume (VAV) terminals and miscellaneous heating elements throughout the existing building and additions.

The existing 2008 two - Kindergarten classroom addition HVAC equipment (air-cooled DX, gas) will remain. All other existing HVAC systems will be replaced. Based on state IAC comments and owner preference, use of return air plenums will be eliminated unless inadequate ceiling space is available.

Typical classroom heating, ventilating and air conditioning will be provided through variable air volume, water-cooled heat pump rooftop units with single-duct VAV terminal units. The existing chilled/heating water rooftop units, fan coil units and unit ventilators will be replaced with rooftop units arranged to accommodate the construction phasing. Each classroom, learning space and office will have a dedicated VAV terminal with hot water heat to provide individual temperature control in each space.

The media center rooftop VAV unit (which also serves existing classrooms) will be removed and a new water-cooled heat pump rooftop unit with single-duct VAV terminals will be provided to serve the media center and adjacent support spaces.

The new administration area will have a separate rooftop unit with single-duct VAV terminals to provide individual space temperature control. This rooftop unit will be located on the roof of the new administration area. The renovation of the existing administration area will be conditioned by a new heat pump rooftop unit to serve the health suite.

A single-zone constant volume heat pump unit will replace the chilled/heating water air handling unit serving the cafeteria. A single zone gas-fired penthouse unit will replace the existing hot water air handling unit serving the gymnasium.

Heat pump loop water will be circulated to the heat pump rooftop units and the hot-water-producing heat pump unit via base-mounted end-suction pumps located in the new mechanical room. Pumps will operate in a lead-lag arrangement and will be equipped with variable frequency drives.

Duct systems will generally be rectangular sheet metal with flexible duct connecting to ceiling-mounted air devices; horizontal mains will be located above ceilings wherever possible.

Commissioning service requirements will be indicated in the contract documents.

### **Plumbing Systems**

Due to the removal of the existing chiller and masonry enclosure walls, the existing gas service will be relocated near the new generator. A dedicated gas line will be provided for the generator. A separate gas line will be reconnected to the existing to remain gas piping and be extended to the new gymnasium air handling unit.

The existing domestic cold-water service to the building is adequate to satisfy the needs of the existing building as well as the new additions. A second backflow preventer will be added to meet HCPSS current design standards. Existing plumbing piping will be reused where possible.

The recently replaced existing natural gas-fired domestic water heaters will remain to generate domestic hot water for the existing school and new additions.

Boiler room sump pumps will be replaced. An oil-minder type sump pump will be provided in the new elevator shaft.

Plumbing fixtures will be replaced with institutional grade ADA compliant fixtures. Water closet flush valves will be dual-position 1.6 / 1.1 gallon per flush and urinals will be 0.125 gallons per flush. Faucets will be provided with flow restrictors for 0.5 gallons per minute flow.

Sanitary and storm water from the new additions will connect into the existing building interior pipe mains. The existing storm water and sanitary piping in the building will be reused, where practical. New roof drains will be provided and connect to existing storm water mains above the ceiling. New overflow drains will be added to meet code and will discharge through exterior walls high above grade.

### **Automatic Temperature Control**

A complete new direct digital automatic temperature control (DDC) system will be provided to monitor and control the HVAC system, including the existing to remain 2008 addition equipment.

## **Fire Protection System**

According to available records, the entire existing building is fully sprinklered. The existing building is separated into several zones that match the fire alarm pull zones for the existing building. New sprinklers will be provided for the new additions as required. The existing combination water/fire system is adequate to provide the required pressure and flow to meet the requirements of both the existing and new fire protection systems. The existing sprinkler heads and most of the branch piping should be replaced to accommodate the new building layout. All work will be specified to conform to standards of the National Fire Protection Association (NFPA) and will include requirements for hydraulic calculations confirming the system's performance.



# ELECTRICAL NARRATIVE

## **Electrical Service Equipment**

The existing building electrical service will be replaced and upgraded to a 277/480 volt service. Based on updated building load information, the utility company will determine the size of the new exterior service transformer and secondary service entrance requirements. The existing utility company C/T cabinet will also be removed. A new electric service room will be provided in the new addition and the existing switchboard will be reconnected.

## **Normal Power Distribution**

The new main switchboard will be rated at 2500A. New electrical feeders will originate from the new switchboard to new branch circuit panelboards in renovated areas. Selected existing panelboards will remain. Selected branch circuit panelboards will be replaced to accommodate areas of significant renovation.

New transformers and panelboards shall be provided to serve the new computer power needs throughout the school. Transformers shall be K-13 type and transient voltage surge suppression provided at the panels. The panels shall be provided with 200% neutral bus and a separate neutral conductor provided with each branch circuit.

New panelboards and equipment will be provided to support the new HVAC and mechanical systems.

New lighting will be served at 277-volt, single-phase. New mechanical equipment will be served at either 120-volt, single-phase; 208-volt, 3 phase; or 480-volt, 3-phase, depending upon the load requirements.

## **Emergency Power Distribution**

The existing LP gas fueled emergency generator and associated transfer and distribution equipment will be replaced. The new emergency generator power system will include multiple gas fired exterior generators in sound attenuating housings and three automatic transfer switches. All new life safety and standby loads will be connected to the new emergency power distribution system and will have dedicated automatic transfer switches. Connection of new mechanical equipment to prevent freezing will be connected to the new optional standby automatic transfer switch and panels. This item will be furthered reviewed with Howard County Public School System at the conclusion of this design phase.

## **Lighting**

New lighting and branch circuit wiring will be provided throughout the project area, except the gymnasium.

In general, interior lighting will be fluorescent fixtures with 28 watt 4100 K T-8 lamps with electronic ballasts. Other energy saving light features such as compact fluorescent downlights and HID lights will also be provided for the interior and exterior lighting designs. Automatic lighting control and multi-level controls will be provided for room lighting systems in compliance with the new energy code. Exit lights will be LED type. Exterior lighting will be controlled by the BAS.

## **Intercom and Sound System**

The existing intercom equipment rack will be reconfigured and expanded to serve the project areas or replaced. Each new classroom will have a phone and paging speakers. Newly created corridors and restrooms will have ceiling-mounted speakers. This item will be further reviewed with the Howard County Public School System at the conclusion of this design phase.

New sound systems will be provided in the cafeteria and gymnasium. A new front door will have a new call in system.

## **Fire Detection and Alarm System**

The existing fire detection and alarm system will be replaced and upgraded to serve the building additions and the existing school building. Initiation and notification devices will be located through the project area in compliance with local life safety code requirements.

## **Telephone Cabling**

A new telephone cabling and outlet system will be provided throughout the project area. The system design will include outlet boxes, jacks, conduits, surface raceways, conduit sleeves, and properly sized telecommunications closets for the installation of the low voltage system cabling. A new administration phone system will be provided.

### **Intrusion Detection and Alarm System**

New intrusion detection and alarm system devices will be provided throughout the project area. System device locations will be determined by HCPSS standards. The existing intrusion detection and alarm system panel will be relocated, expanded and reprogrammed to accommodate new system devices, if possible, or new head-end equipment will be provided. This item will be reviewed with the HCPSS at the conclusion of this design phase.

### **Data and Video Distribution System**

New video distribution system cabling and data cabling will be provided throughout the project area. Changes to the existing media retrieval system will be made. All classrooms will be wired for short throw wall mounted LCD projectors.

New computer outlets will be provided throughout the project and the wireless access point system will be expanded into the new addition.

These items will be reviewed with HCPSS at the conclusion of this design phase.

### **Video Surveillance System**

Existing video surveillance system will be expanded to cover all interior corridors, all exterior entrances, cafeteria and gymnasium. Changes to the existing video surveillance system headend equipment and cameras are anticipated and will be reviewed with the HCPSS System at the conclusion of this design phase.

# GREEN BUILDING NARRATIVE

## Design for LEED

The USGBC established the Leadership in Energy and Environmental Design (LEED) program as a tool to evaluate the energy efficiency and environmental impacts of building projects. The LEED building rating system uses six categories in which projects can obtain credits to achieve certification (Sustainable Site, Water Efficiency, Energy & Atmosphere, Materials & Resources, Indoor Environmental Quality, and Innovation and Design Process). The four levels of certification (from highest to lowest) are, Platinum, Gold, Silver, and Certified. The credit threshold for each level of certification varies for different rating systems. To qualify for certification a project must meet certain prerequisite credits. The number of additional credits required is dependent on the level of certification that the project is seeking to attain.

## Project Objectives

Grimm + Parker is pursuing LEED certification at the Certified level for Deep Run Elementary School. The project will be registered under the LEED for Schools v3 (LEED-S) rating system. After a preliminary analysis, 55 credits were targeted as achievable for the school, with 13 additional possible credits. This means that the project is currently tracking LEED Silver certification. Credits have been identified as achievable based on economic and design feasibility and potential environmental benefits. The credit tally stands at a comfortable margin for achieving the targeted certification level for the building. However, additional credits may need to be included as the project develops as it is not uncommon for a few credits to become unattainable due to any number of factors.

## LEED Credit Goals

Credits targeted will be those that will help provide quality space at a greatly reduced environmental impact. Goals include:

- Providing dedicated walk and bike paths and bike racks, and including preferred parking for low emitting vehicles and fuel efficient vehicles.
- Reducing storm water runoff and pollution.
- Reducing potable water usage. A water savings of 30-35 percent is targeted through the use of water conserving fixtures such as dual flush toilets, low flush urinals, and low flow faucets.
- Reducing energy consumption by adopting high efficiency HVAC systems.
- Reducing impact of transportation and extraction of virgin material by the use of regional materials and those with significant recycled content.

- Providing lighting and thermal controls to ensure accommodation of the individual preferences of its occupants.
- Installing low-emitting paints, adhesives, sealants, and carpet systems.
- Installing permanent monitoring systems to ensure adequate ventilation.
- Using low-mercury lighting bulbs.
- Implementing a green housekeeping plan.

While some credits have a greater first cost associated with them, the long-term environmental and economic benefits justify including them in the LEED goals.

## **Moving Forward**

### *LEED Online*

All documentation will be submitted via United States Green Building Council's website ([www.leedonline.org](http://www.leedonline.org)) to be reviewed and approved by the USGBC for both the design and construction phases of the project through an account accessible by all team members.

### *LEED Tracking*

The LEED consultant will create a tracking tool that assigns credit responsibilities to team members. The tool records documentation progress and identifies pending tasks required to complete documentation. This is updated and circulated to the team on a regular basis in keeping with the pace of project progress.

# LEED SCORECARD

0	0	0	0	<b>Minimum Program Requirements</b>	<b>Possible Points: 0</b>
Y	?Y	?N	N		
Y				PIf1 - Minimum Program Requirements	0
Y				PIf2 - Project Summary Details	0
Y				PIf3 - Occupant & Usage Data	0
Y				PIf4 - Schedule & Overview Documents	0
17	1	2	4	<b>Sustainable Sites</b>	<b>Possible Points: 24</b>
Y	?Y	?N	N		
Y				SSp1 - Construction Activity Pollution Prevention	0
Y				SSp2 - Environmental Site Assessment	0
1				SSc1 - Site Selection	1
4				SSc2 - Development Density & Community Connectivity	4
			1	SSc3 - Brownfield Redevelopment	1
4				SSc4.1 - Alternative Transportation - Public Transportation Access	4
1				SSc4.2 - Alternative Transportation - Bicycle Storage & Changing Rooms	1
2				SSc4.3 - Alternative Transportation - Low Emitting & Fuel Efficient Vehicles	2
2				SSc4.4 - Alternative Transportation - Parking Capacity	2
			1	SSc5.1 - Site Development - Protect or Restore Habitat	1
1				SSc5.2 - Site Development - Maximize Open Space	1
	1			SSc6.1 - Stormwater Design - Quantity Control	1
		1		SSc6.2 - Stormwater Design - Quality Control	1
			1	SSc7.1 - Heat Island Effect - Nonroof	1
1				SSc7.2 - Heat Island Effect - Roof	1
		1		SSc8 - Light Pollution Reduction	1
			1	SSc9 - Site Master Plan	1
1				SSc10 - Joint Use of Facilities	1
6	0	1	4	<b>Water Efficiency</b>	<b>Possible Points: 11</b>
Y	?Y	?N	N		
Y				WEp1 - Water Use Reduction	0
4				WEc1 - Water Efficient Landscaping	4
			2	WEc2 - Innovative Wastewater Technologies	2
2		1	1	WEc3 - Water Use Reduction	4
			1	WEc4 - Process Water Use Reduction	1
13	6	6	8	<b>Energy &amp; Atmosphere</b>	<b>Possible Points: 33</b>
Y	?Y	?N	N		
Y				EAp1 - Fundamental Commissioning of the Building Energy Systems	0
Y				EAp2 - Minimum Energy Performance	0
Y				EAp3 - Fundamental Refrigerant Management	0
10	3	6		EAc1 - Optimize Energy Performance	19
			7	EAc2 - On-site Renewable Energy	7
2				EAc3 - Enhanced Commissioning	2
	1			EAc4 - Enhanced Refrigerant Management	1
1			1	EAc5 - Measurement & Verification	2
	2			EAc6 - Green Power	2
7	1	2	3	<b>Materials &amp; Resources</b>	<b>Possible Points: 13</b>
Y	?Y	?N	N		
Y				MRp1 - Storage & Collection of Recyclables	0
2				MRc1.1 - Building Reuse - Maintain Existing Walls, Floors & Roof	2



		1		MRc1.2 - Building Reuse - Maintain Interior Nonstructural Elements	1
2				MRc2 - Construction Waste Management	2
			2	MRc3 - Materials Reuse	2
2				MRc4 - Recycled Content	2
1	1			MRc5 - Regional Materials	2
			1	MRc6 - Rapidly Renewable Materials	1
		1		MRc7 - Certified Wood	1

7	3	1	8	<b>Indoor Environmental Quality</b>	<b>Possible Points: 19</b>
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Y	?Y	?N	N		
Y				IEQp1 - Minimum Indoor Air Quality Performance	0
Y				IEQp2 - Environmental Tobacco Smoke (ETS) Control	0
Y				IEQp3 - Minimum Acoustical Performance	0
	1			IEQc1 - Outdoor Air Delivery Monitoring	1
			1	IEQc2 - Increased Ventilation	1
1				IEQc3.1 - Construction Indoor Air Quality Management Plan - During Construction	1
	1			IEQc3.2 - Construction IAQ Management Plan - Before Occupancy	1
4				IEQc4 - Low-Emitting Materials	4
	1			IEQc5 - Indoor Chemical & Pollutant Source Control	1
1				IEQc6.1 - Controllability of Systems - Lighting	1
1				IEQc6.2 - Controllability of Systems - Thermal Comfort	1
		1		IEQc7.1 - Thermal Comfort - Design	1
			1	IEQc7.2 - Thermal Comfort - Verification	1
			3	IEQc8.1 - Daylight & Views - Daylight	3
			1	IEQc8.2 - Daylight & Views - Views	1
			1	IEQc9 - Enhanced Acoustical Performance	1
			1	IEQc10 - Mold Prevention	1

4	2	0	0	<b>Innovation &amp; Design</b>	<b>Possible Points: 6</b>
---	---	---	---	--------------------------------	---------------------------

Y	?Y	?N	N		
1				IDc1.1 - Green Housekeeping	1
1				IDc1.2 - Low Mercury Lighting	1
	1			IDc1.3 - Innovation in Design	1
	1			IDc1.4 - Innovation in Design	1
1				IDc2 - LEED Accredited Professional	1
1				IDc3 - The School as a Teaching Tool	1

1	0	1	2	<b>Regional Priority Credits</b>	<b>Possible Points: 4</b>
---	---	---	---	----------------------------------	---------------------------

Y	?Y	?N	N		
1				RPc1.1 - SSc4.1: Public Transportation Access	1
		1		RPc1.2 - SSc6.2: Stormwater Design, Quality	1
			1	RPc1.3 - SSc5.1: Protect or Restore Habitat	1
			1	RPc1.4 - More Regional Priority Credits	1

55	13	13	29	<b>Total</b>	<b>Possible Points: 110</b>
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Certified: 40-49, Silver: 50-59, Gold: 60-79, Platinum: 80+

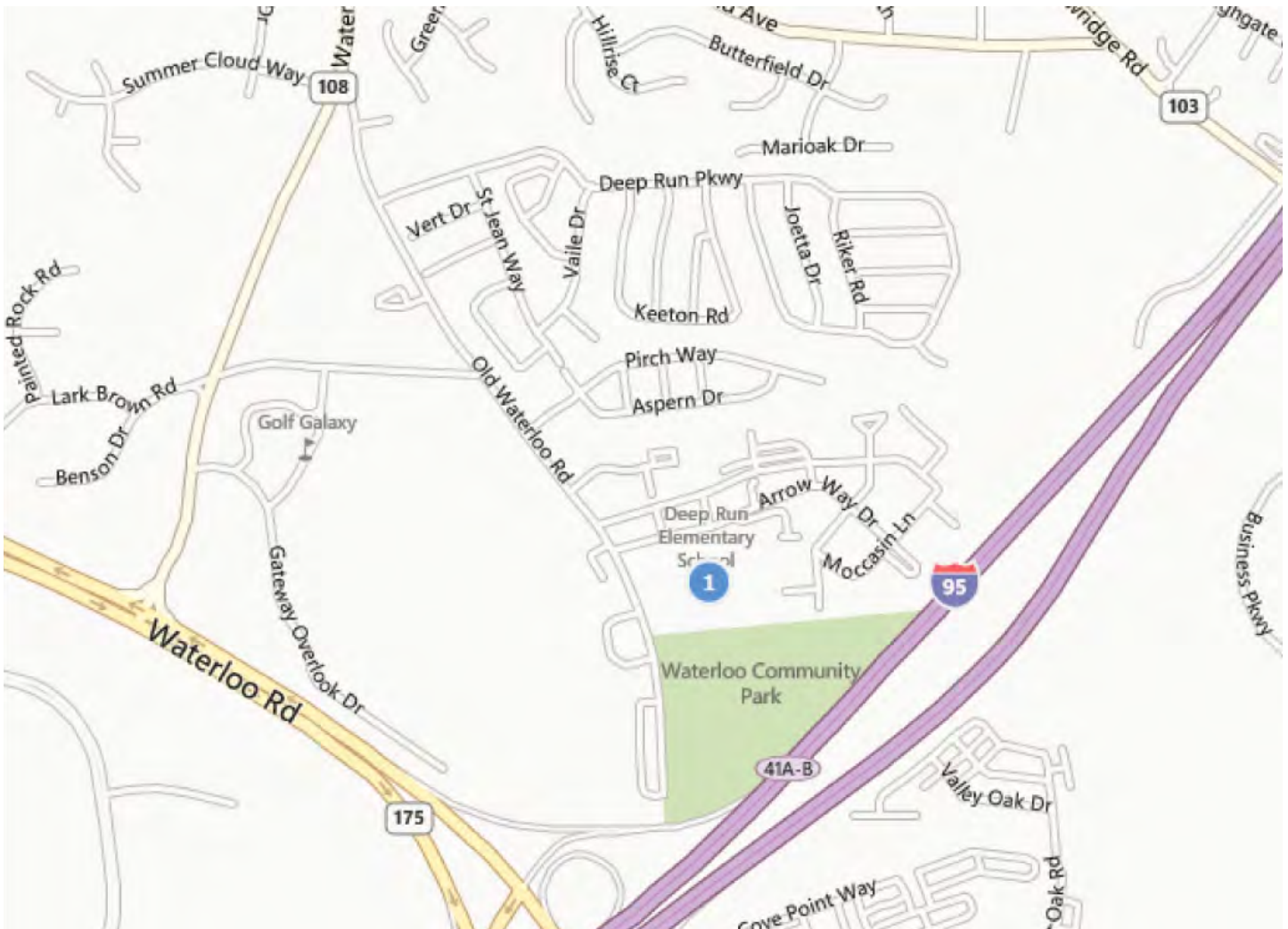
## PROJECT FACTS

	<b>SD PHASE</b>	<b>DD PHASE</b>
Existing Building Square Footage:	80,000 SF	80,000 SF
Existing Modular Construction to be Demolished:	- 6,758 SF	- 6,758 SF
New Addition Square Footage:	21,243 SF	21,328 SF
Total Building Square Footage with Additions:	94,485 SF	94,570 SF

## PROJECT SCHEDULE

Planning Meetings Completed	JUNE 2013
Schematic Design submitted to Board of Education	JULY 2013
Design Development submitted to Board of Education	OCTOBER 2013
Construction Documents submitted to Board of Education	FEBRUARY 2014
Project out for Bids	APRIL 2014
Bids Received	MAY 2014
Construction Start: Phase I	JULY 2014
Construction Start: Phase II	JULY 2015
Construction Complete: Phases I & II	AUGUST 2016

## VICINITY MAP



The existing Deep Run Elementary School is located on Old Waterloo Road in Elkridge, Maryland and is approximately 1 mile from Waterloo Road (Route 175). The site is approximately 11.67 acres.



## AERIAL SITE PHOTO



feet 800  
meters 200



## PROPOSED SITE PLAN

\* The following items are designated with numbers on the site plan on the following page.

- 1 Location of parking: 71 existing spaces.
- 2 Location of bus loop: 13 existing bus spaces.
- 3 Existing Grades 1 to 5 play area with playground equipment.
- 4 Existing Kindergarten play area with playground equipment.
- 5 Existing multipurpose field, location of new geothermal well field.
- 6 Existing softball field.
- 7 Existing hard play area.
- 8 Existing courtyard.
- 9 Existing service area.
- 10 Existing building restriction line (red) and right of way line (black).
- 11 Existing steep grade change on south and east side of building.
- 12 New secured school entrance, adjacent to administration.
- 13 New administration addition.
- 14 New classroom addition.
- 15 Waterloo Community Park.

## PROPOSED SITE PLAN ADJUSTMENTS

\* The following items are adjustments made to the site plan during the design development phase.

- 16 Added additional handicap parking spaces.
- 17 Widened Old Waterloo Road and added a sidewalk to provide an expanded parent drop-off and pick-up lane.
- 18 Added a stair and accessible ramp for students to egress out of the building.
- 19 Added a stormwater management facility to accommodate the new additions.
- 20 Added additional parking as proposed by Alternate #1 (45 spaces).
- 21 Added an addition to M.I.N.C. classrooms as proposed by Alternate #2.



PROPOSED SITE PLAN





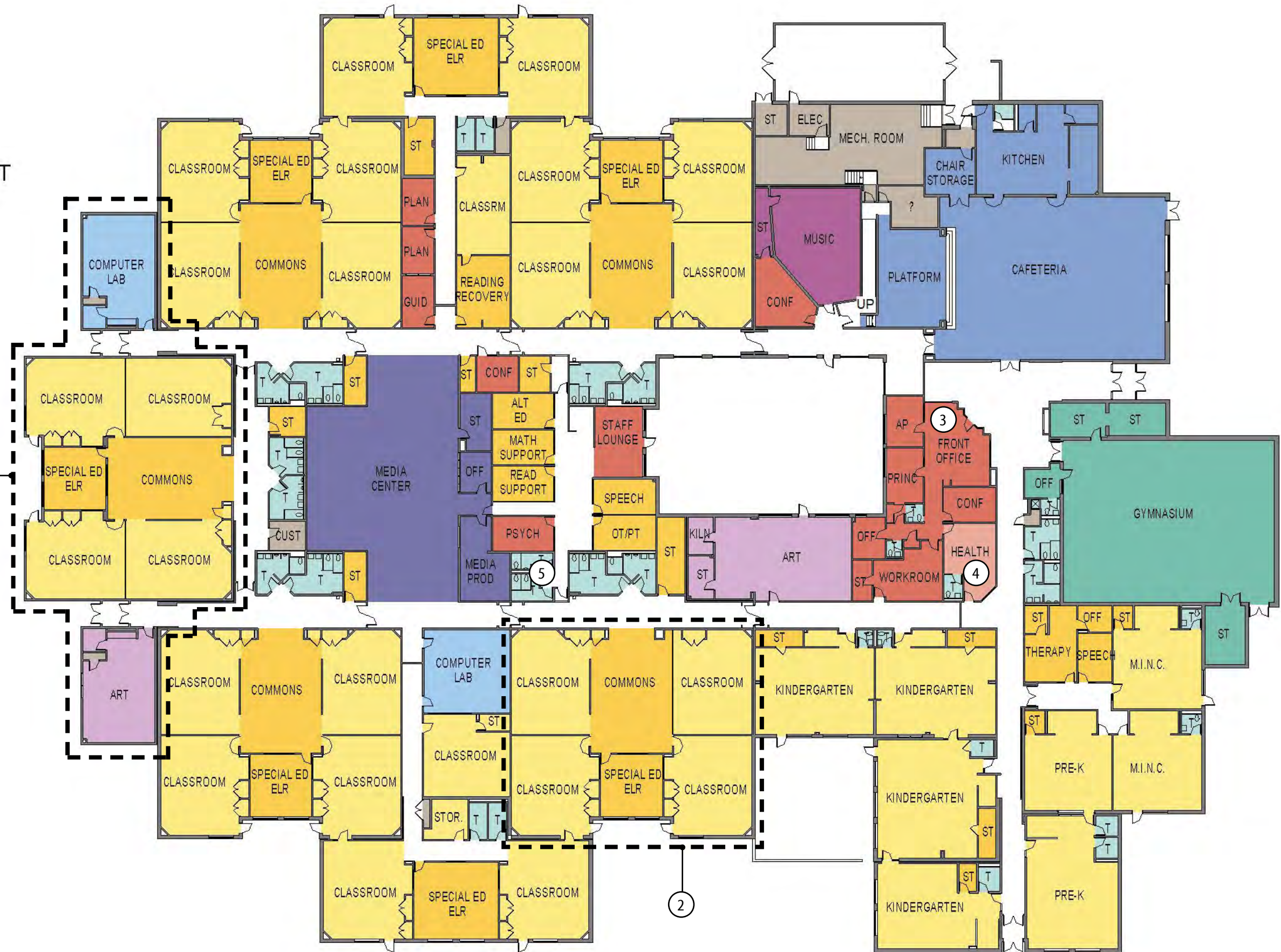
## EXISTING FLOOR PLAN

\* The following items are designated with numbers on the existing floor plan on the following page.

- 1      Modular construction classrooms.
- 2      Typical classroom pod layout. Currently separated with operable walls or partial walls making acoustic separation between classrooms very difficult.
- 3      Administration suite: location is not ideal to monitor entrance of the school and keep it secure during school hours.
- 4      Health suite: size and layout do not meet current state standards.
- 5      Staff restroom facilities: location is not convenient for all staff members and quantity is not sufficient.

EXISTING FLOOR PLAN

- ACADEMIC SUPPORT
- ADMINISTRATION
- ART
- CAFETERIA
- CLASSROOM
- COMPUTER LAB
- GYMNASIUM
- HEALTH SUITE
- MEDIA CENTER
- MUSIC
- RESTROOMS
- SERVICE



## PROPOSED FLOOR PLANS

\* The following items are designated with numbers on the proposed floor plans on the following page.

- 1 Two-story classroom addition includes: 6 rebuilt classrooms (from modular pod), 4 new classrooms (100 seats), 2 new gifted and talented classrooms (relocated from portable classrooms), staff restrooms, mechanical pump room, and electric room.
- 2 Administration addition: located at the main entry of the school to ensure secure access to the school during hours of operation. Includes additional staff restrooms and a separate entrance for staff access.
- 3 Health suite is renovated to meet current state standards.
- 4 Media center is enclosed with new walls and doors to separate it from the corridor.

## PROPOSED FLOOR PLAN ADJUSTMENTS

Adjustments to the floor plan based on planning meetings with HCPSS Building Services and staff at Deep Run Elementary School during the design development phase:

- 5 Adjusted the location of new permanent separation walls in the typical classroom pods to meet the square footage requirements for classrooms in the HCPSS standards for renovations and modernizations. The common area in the center of each pod is slightly smaller as a result.
- 6 Relocated student support offices and revised the location of the walls in the renovated area which was previously administration. Student support offices are being moved to this space so that they are centrally located rather than scattered throughout the building.
- 7 Relocated reading recovery and reading resource rooms so that they are adjacent to each other.
- 8 Relocated Title I office and planning so that they are adjacent to each other.
- 9 Relocated English for speakers of other languages (ESOL) rooms so that they are adjacent to each other and located near other student support programs.
- 10 Removed existing walls for the music classroom in order to provide a full music suite with two classrooms and adjacent music storage rooms.
- 11 Revised the layout of the staff lounge to provide an enclosed room.



- 12     Removed existing storage room walls to provide a larger more functional space for the therapy room.
- 13     Added an addition to the multiple intensive needs classrooms (M.I.N.C.) as proposed by Alternate #2.
- 14     Added pod storage rooms for the second floor addition.
- 15     Added a main custodial storage room and a custodial closet in the classroom addition.

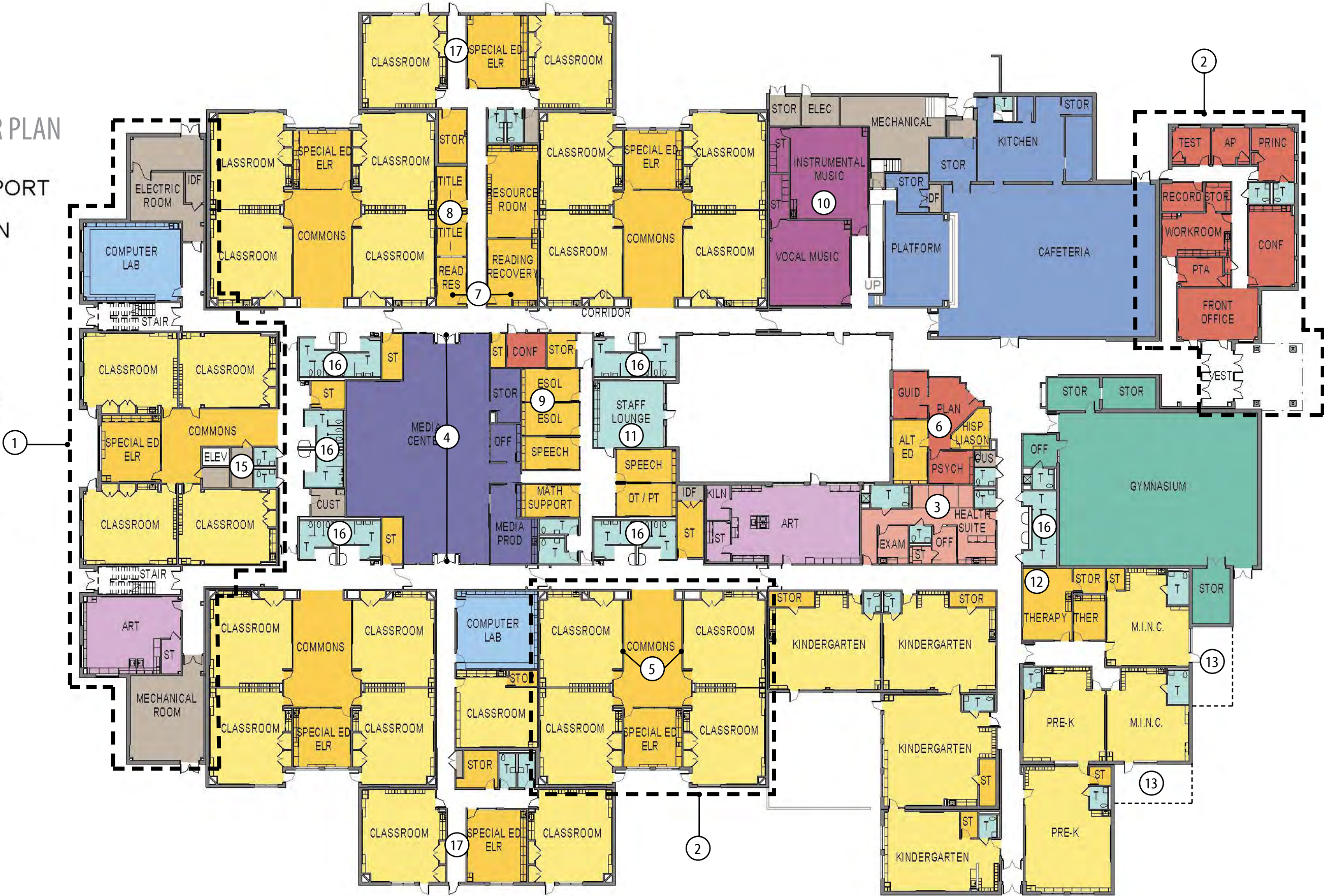
Adjustments to the floor plan based on code related issues during the design development phase:

- 16     Renovated the existing student restrooms to meet current accessibility standards. In this renovation the group lavatories will be provided on the wall outside of the restroom so that teachers have visual supervision over the students as they wash their hands.
- 17     Added two additional exits to accommodate student egress while the new classroom addition is under construction.



PROPOSED FIRST FLOOR PLAN

- ACADEMIC SUPPORT
- ADMINISTRATION
- ART
- CAFETERIA
- CLASSROOM
- COMPUTER LAB
- GYMNASIUM
- HEALTH SUITE
- MEDIA CENTER
- MUSIC
- RESTROOMS
- SERVICE





PROPOSED SECOND FLOOR PLAN

- ACADEMIC SUPPORT
- CLASSROOM
- RESTROOMS
- SERVICE



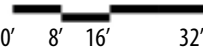


## BUILDING ELEVATIONS

The building elevations have been developed so that the new additions to the building blend with the existing character. The windows in the additions will keep the same proportion but will be slightly larger in the classrooms to allow additional daylight. The new front entrance canopy will adopt a slope, in keeping with the gabled roof of the gymnasium and the sloped roofs of the light monitors.

The existing building elevations will be modified slightly. The exterior insulation finishing system (EIFS) that occurs above the brick will receive a new sealant topcoat and color. The standing seam metal roof and coping will also be replaced, allowing the color to be adjusted to match the EIFS system.

BUILDING ELEVATIONS



NORTH ELEVATION



SOUTH ELEVATION

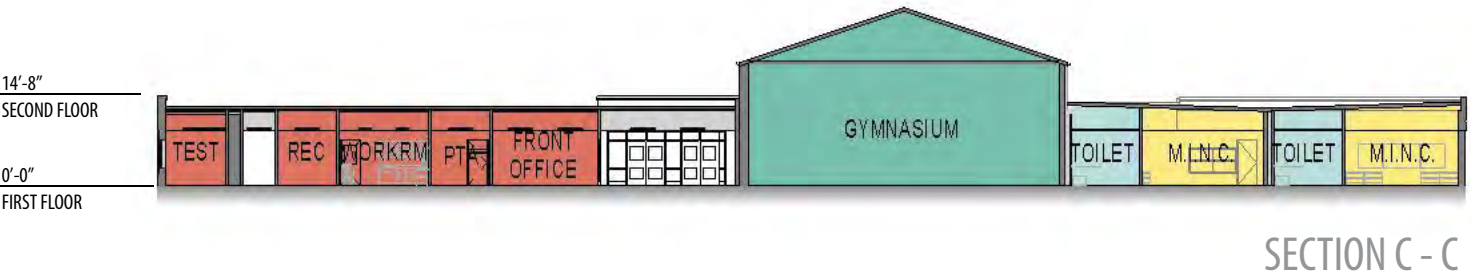
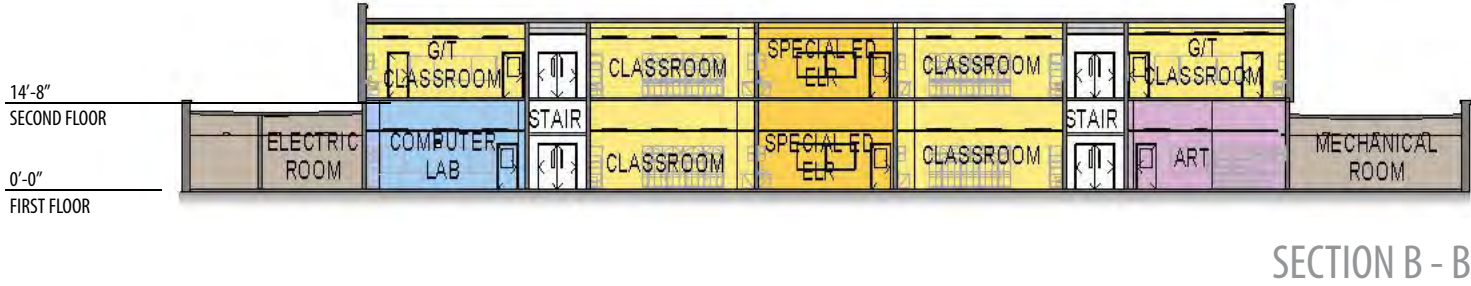
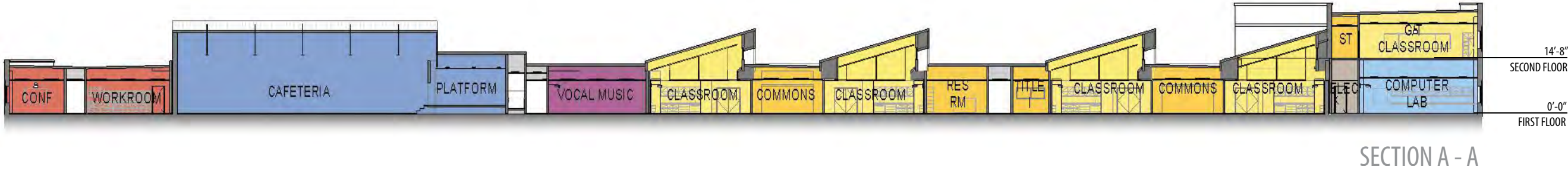
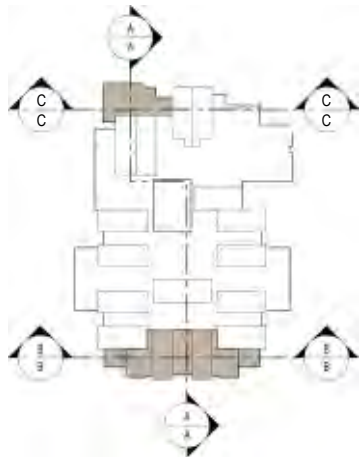
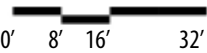


EAST ELEVATION



WEST ELEVATION

BUILDING SECTIONS



# SPACE SUMMARY

## SPACE SUMMARY/PROGRAM ANALYSIS

PROGRAM							
FACILITY		SD		DD		DEVIATION	
	ROOM / SPACE DESCRIPTION	AREA	UNITS	AREA	UNITS	AREA	UNITS
<b>ADMINISTRATION</b>		<b>4,239</b>	<b>SF</b>	<b>3,044</b>	<b>SF</b>	<b>(1,195)</b>	<b>SF</b>
	SECRETARIAL/RECEPTION AREA	513	SF	449	SF	(64)	SF
	PRINCIPAL'S OFFICE W/CLOSET	200	SF	230	SF	30	SF
	PRINCIPAL'S PRIVATE LAVATORY	44	SF	48	SF	4	SF
	ASST. PRINCIPAL'S OFFICE W/CLOSET	188	SF	146	SF	(42)	SF
	SECURE TEST PREP W/CLOSET	149	SF	147	SF	(2)	SF
	CONFERENCE ROOMS	822	SF	533	SF	(289)	SF
	RECORDS	125	SF	129	SF	4	SF
	PTA W/CLOSET	135	SF	148	SF	13	SF
	WORK PREP ROOM W/STORAGE	387	SF	397	SF	10	SF
	PLANNING	1,252	SF	273	SF	(979)	SF
	STAFF LOUNGE	380	SF	496	SF	116	SF
	TOILET ROOM	44	SF	48	SF	4	SF
<b>ALTERNATIVE EDUCATION AREA</b>		<b>202</b>	<b>SF</b>	<b>237</b>	<b>SF</b>	<b>35</b>	<b>SF</b>
	OFFICE	202	SF	237	SF	35	SF
<b>CAFETORNIUM/KITCHEN</b>		<b>5,363</b>	<b>SF</b>	<b>5,363</b>	<b>SF</b>	<b>-</b>	
	STUDENT DINING	3,436	SF	3,436	SF	-	SF
	STAGE	660	SF	660	SF	-	SF
	CHAIR STORAGE	215	SF	215	SF	-	SF
	KITCHEN AND SERVING	615	SF	615	SF	-	SF
	DISHWASHING AREA	186	SF	186	SF	-	SF
	DRY STORAGE	60	SF	60	SF	-	SF
	LOCKER/LAVATORY	47	SF	47	SF	-	SF
	LAUNDRY/ CUSTODIAL CLOSET	43	SF	43	SF	-	SF
	CAN WASH	51	SF	51	SF	-	SF
	KITCHEN OFFICE	50	SF	50	SF	-	SF
<b>CLASSROOMS K-5 and ELRs</b>		<b>36,235</b>	<b>SF</b>	<b>35,986</b>	<b>SF</b>	<b>(249)</b>	<b>SF</b>
	KINDERGARTEN CLASSROOMS (4)	4,152	SF	4,129	SF	(23)	SF
	KINDERGARTEN LAVATORIES	133	SF	171	SF	38	SF
	GRADES 1-5 CLASSROOMS W/CLOSETS (29)	22,771	SF	23,321	SF	550	SF
	COMMONS (5)	4,559	SF	3,798	SF	(761)	SF
	EXTENDED LEARNING ROOMS (ELR) (8)	3,532	SF	3,232	SF	(300)	SF
	KINDERGARTEN STORAGE	284	SF	284	SF	-	SF
	GRADES 1-5 STORAGE	804	SF	1,051	SF	247	SF
<b>REGIONAL EARLY CHILDHOOD CENTER</b>		<b>4,132</b>	<b>SF</b>	<b>4,145</b>	<b>SF</b>	<b>13</b>	<b>SF</b>
	PRESCHOOL/PK CLASSROOMS (2)	1,788	SF	1,788	SF	-	SF
	PRESCHOOL/PK LAVATORIES	86	SF	86	SF	-	
	STORAGE	41	SF	41	SF	-	SF
	MINC CLASSROOMS (2)	1,495	SF	1,418	SF	(77)	SF
	MINC LAVATORIES	72	SF	154	SF	82	SF
	MINC STORAGE	42	SF	42	SF	-	SF



PROGRAM							
FACILITY		SD		DD		DEVIATION	
	ROOM / SPACE DESCRIPTION	AREA	UNITS	AREA	UNITS	AREA	UNITS
	OT/PT LARGE THERAPY ROOM	307	SF	376	SF	69	SF
	OT/PT SMALL THERAPY ROOM/STORAGE	84	SF	84	SF	-	SF
	OT/PT OFFICE	156	SF	156	SF	-	SF
	OT/PT STORAGE ROOM	61	SF	-	SF	(61)	SF
<b>COMPUTER ROOM</b>		<b>1,453</b>	<b>SF</b>	<b>1,489</b>	<b>SF</b>	<b>36</b>	<b>SF</b>
	COMPUTER ROOM (2)	1,453	SF	1,489	SF	36	SF
<b>CUSTODIAL AREA</b>		<b>307</b>	<b>SF</b>	<b>433</b>	<b>SF</b>	<b>126</b>	<b>SF</b>
	STORAGE ROOM#1 W/ OFFICE	188	SF	148	SF	(40)	SF
	STORAGE ROOM #2	100	SF	100	SF	-	SF
	CUSTODIAL CLOSETS	19	SF	90	SF	71	SF
	MAIN STORAGE ROOM	-	SF	95	SF	95	SF
<b>GIFTED &amp; TALENTED AREA</b>		<b>1,755</b>	<b>SF</b>	<b>1,740</b>	<b>SF</b>	<b>(15)</b>	<b>SF</b>
	G/T RESOURCE ROOM (2)	1,755	SF	1,620	SF	(135)	SF
	STORAGE	-	SF	120	SF	120	SF
<b>GUIDANCE AREA</b>		<b>156</b>	<b>SF</b>	<b>176</b>	<b>SF</b>	<b>20</b>	<b>SF</b>
	GUIDANCE OFFICE	156	SF	176	SF	20	SF
<b>HEALTH</b>		<b>856</b>	<b>SF</b>	<b>787</b>	<b>SF</b>	<b>(69)</b>	<b>SF</b>
	WAITING ROOM	110	SF	114	SF	4	SF
	TREATMENT/MEDICATION	120	SF	110	SF	(10)	SF
	REST AREA	224	SF	157	SF	(67)	SF
	OFFICE/CONSULT/EXAM	98	SF	99	SF	1	SF
	EXAMINATION/ISOLATION	123	SF	125	SF	2	SF
	TOILET ROOM SHOWER & CHANGING TABLE	103	SF	103	SF	-	SF
	TOILET ROOM	38	SF	39	SF	1	SF
	STORAGE	40	SF	40	SF	-	SF
<b>LIBRARY MEDIA CENTER</b>		<b>3,590</b>	<b>SF</b>	<b>3,590</b>	<b>SF</b>	<b>-</b>	<b>SF</b>
	MAIN READING ROOM	2,968	SF	2,968	SF	-	SF
	OFFICE/WORK SPACE	121	SF	121	SF	-	SF
	MEDIA PRODUCTION/VIDEO AREA	336	SF	336	SF	-	SF
	STORAGE/TELECOM	165	SF	165	SF	-	SF
<b>MUSIC SUITE</b>		<b>1,752</b>	<b>SF</b>	<b>1,732</b>	<b>SF</b>	<b>(20)</b>	<b>SF</b>
	VOCAL MUSIC	848	SF	770	SF	(78)	SF
	INSTRUMENTAL MUSIC	801	SF	769	SF	(32)	SF
	STORAGE	103	SF	193	SF	90	SF
<b>PHYSICAL EDUCATION / GYMNASIUM</b>		<b>3,984</b>	<b>SF</b>	<b>4,012</b>	<b>SF</b>	<b>28</b>	<b>SF</b>
	GYMNASIUM	3,250	SF	3,250	SF	-	SF
	STORAGE	587	SF	587	SF	-	SF
	OFFICE W/ TOILET	147	SF	175	SF	28	SF
<b>PSYCHOLOGICAL SERVICES AREA</b>		<b>202</b>	<b>SF</b>	<b>158</b>	<b>SF</b>	<b>(44)</b>	<b>SF</b>
	PSYCHOLOGICAL SERVICES	202	SF	158	SF	(44)	SF
<b>READING RESOURCE AREA</b>		<b>202</b>	<b>SF</b>	<b>517</b>	<b>SF</b>	<b>315</b>	<b>SF</b>
	READING RECOVERY	-	SF	361	SF	361	SF
	OFFICE	202	SF	156	SF	(46)	SF
<b>HISPANIC LIASON</b>		<b>99</b>	<b>SF</b>	<b>131</b>	<b>SF</b>	<b>32</b>	<b>SF</b>
	OFFICE	99	SF	131	SF	32	SF

PROGRAM							
FACILITY		SD		DD		DEVIATION	
	ROOM / SPACE DESCRIPTION	AREA	UNITS	AREA	UNITS	AREA	UNITS
	<b>MATH RESOURCE AREA</b>	<b>202</b>	<b>SF</b>	<b>202</b>	<b>SF</b>	<b>-</b>	<b>SF</b>
	OFFICE	202	SF	202	SF	-	SF
	<b>TITLE I</b>	<b>413</b>	<b>SF</b>	<b>284</b>	<b>SF</b>	<b>(129)</b>	<b>SF</b>
	PLANNING	237	SF	142	SF	(95)	SF
	OFFICE	176	SF	142	SF	(34)	SF
	<b>ESOL</b>	<b>-</b>	<b>SF</b>	<b>404</b>	<b>SF</b>	<b>404</b>	<b>SF</b>
	ESOL	-	SF	404	SF	404	SF
	<b>SPEECH/LANGUAGE THERAPY</b>	<b>205</b>	<b>SF</b>	<b>407</b>	<b>SF</b>	<b>202</b>	<b>SF</b>
	SPEECH THERAPY	205	SF	407	SF	202	SF
	<b>OT/PT</b>	<b>207</b>	<b>SF</b>	<b>207</b>	<b>SF</b>	<b>-</b>	<b>SF</b>
	OT/PT	207	SF	207	SF	-	SF
	<b>VISUAL ART AREA</b>	<b>2,027</b>	<b>SF</b>	<b>2,061</b>	<b>SF</b>	<b>34</b>	<b>SF</b>
	STUDIO (2)	1,837	SF	1,800	SF	(37)	SF
	KILN/STORAGE	190	SF	261	SF	71	SF
	<b>TOTAL NET EDUCATIONAL AREA</b>	<b>67,581</b>	<b>SF</b>	<b>67,105</b>	<b>SF</b>	<b>(476)</b>	<b>SF</b>
	<b>TOILET ROOMS</b>	<b>2,270</b>	<b>SF</b>	<b>2,270</b>	<b>SF</b>	<b>-</b>	
	STAFF TOILET ROOMS	350	SF	338	SF	(12)	SF
	STUDENT TOILET ROOMS	1,920	SF	1,932	SF	12	SF
	<b>SERVICE AREAS</b>	<b>1,760</b>	<b>SF</b>	<b>2,350</b>	<b>SF</b>	<b>590</b>	<b>SF</b>
	MECHANICAL PUMP ROOM	670	SF	711	SF	41	SF
	MAIN ELECTRIC ROOM	670	SF	711	SF	41	SF
	ELECTRICAL/MECHANICAL AREAS	420	SF	928	SF	508	SF
	<b>TOTAL NET AREA</b>	<b>71,611</b>	<b>SF</b>	<b>71,725</b>	<b>SF</b>		
	<b>OVERALL GROSS BUILDING AREA</b>	<b>94,485</b>	<b>SF</b>	<b>94,570</b>	<b>SF</b>		
	<b>EFFICIENCY FACTOR</b>	<b>75.7%</b>		<b>75.8%</b>			

# PROJECT COST ESTIMATE

## CONSTRUCTION COSTS:

Phase I: Building

Phase I: Site Development

Phase II: Building

## SD PHASE:

\$ 6, 773, 293

\$194, 000

\$ 8, 736, 614

## DD PHASE:

## TOTAL :

**\$15,703,907**

## NOTES:

\* The construction cost estimate was prepared by the construction manager, Riparius Construction Inc., and assumes bids will be received in May 2014.

\* The following additional options will be considered as funding allows:

- Expansion of parking lot and student drop-off areas.
- Expansion of RECC classrooms.

\* Estimate includes a schematic design phase cost estimate contingency of 10%.

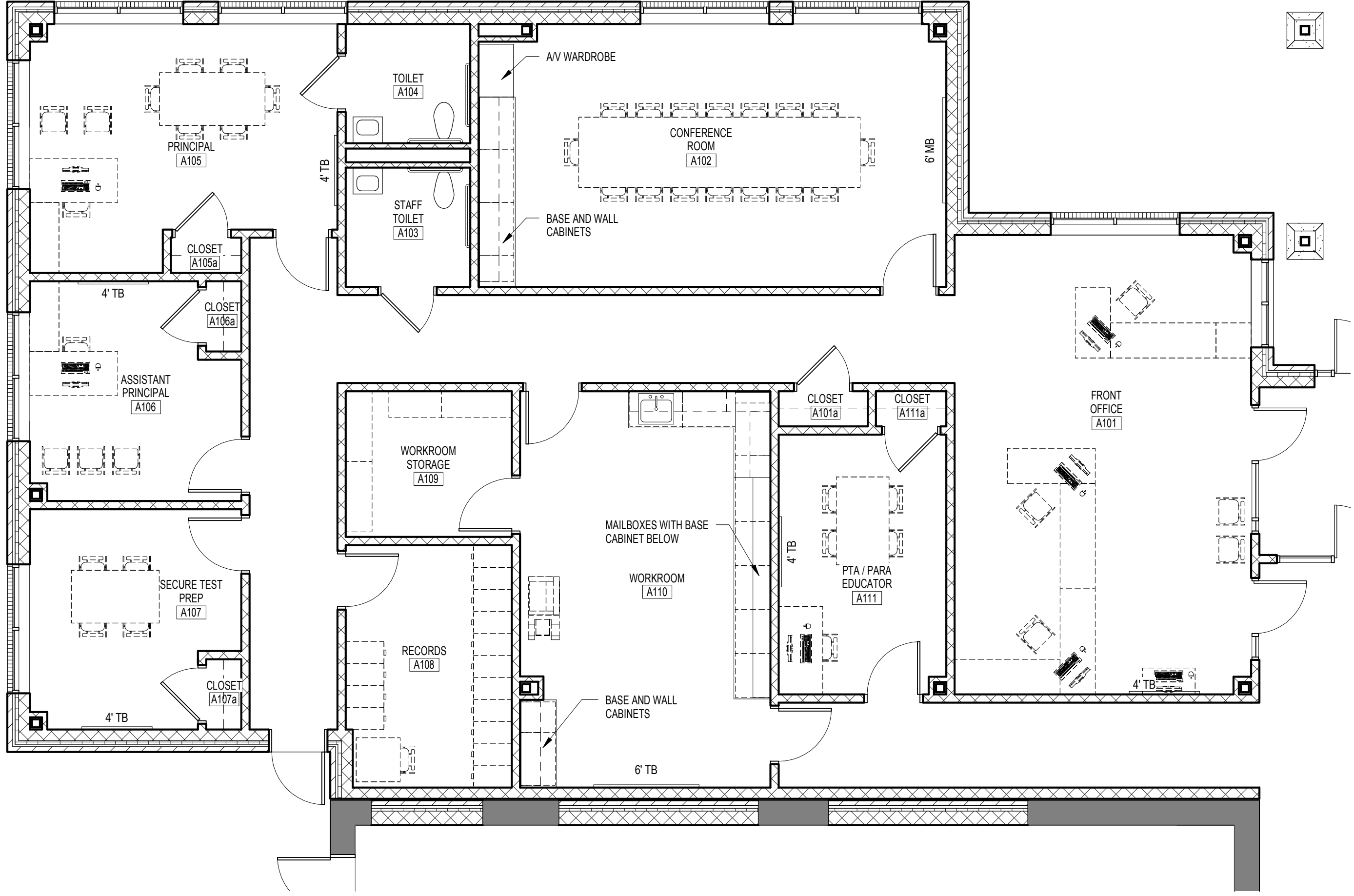
\* Estimate assumes non-wage rate pricing. (Add 8% for wage rate.)

\* Estimate does not include a project contingency.



## FURNITURE & EQUIPMENT PLANS

The drawings on the following pages were developed from planning meetings held with the Deep Run Elementary School faculty and staff and the architect. The layouts will be used to coordinate furnishing locations with mechanical, electrical, and plumbing systems during the construction documents phase of the design process.



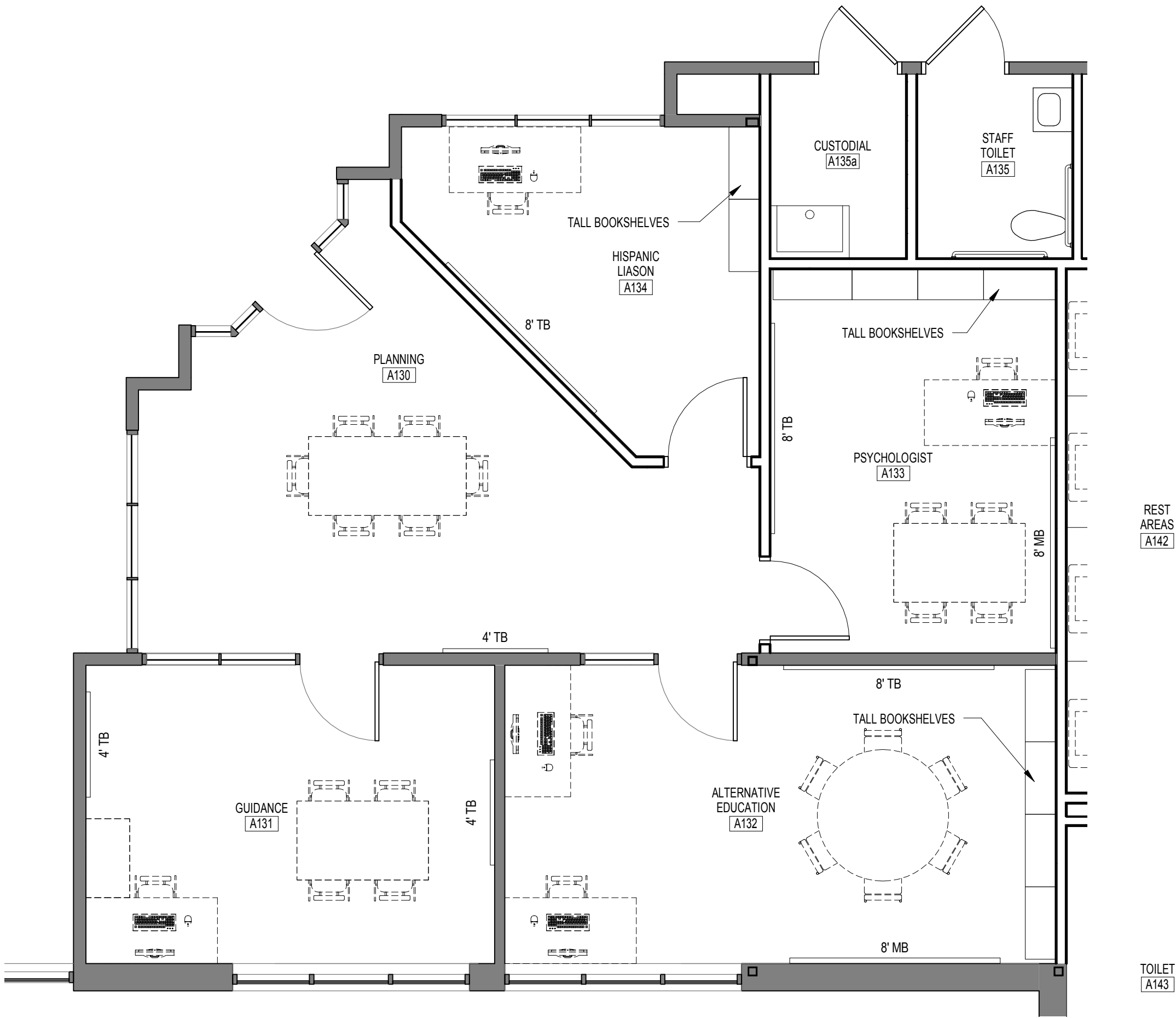
DEEP RUN ELEMENTARY  
ADMINISTRATION ADDITION

DATE 10/22/13  
SCALE: 3/16" = 1'-0"

- 40



11720 Beltsville Drive  
Suite 600  
Calverton, MD 20705  
www.grimmandparker.com



DEEP RUN ELEMENTARY  
ADMINISTRATION AND SUPPORT OFFICES

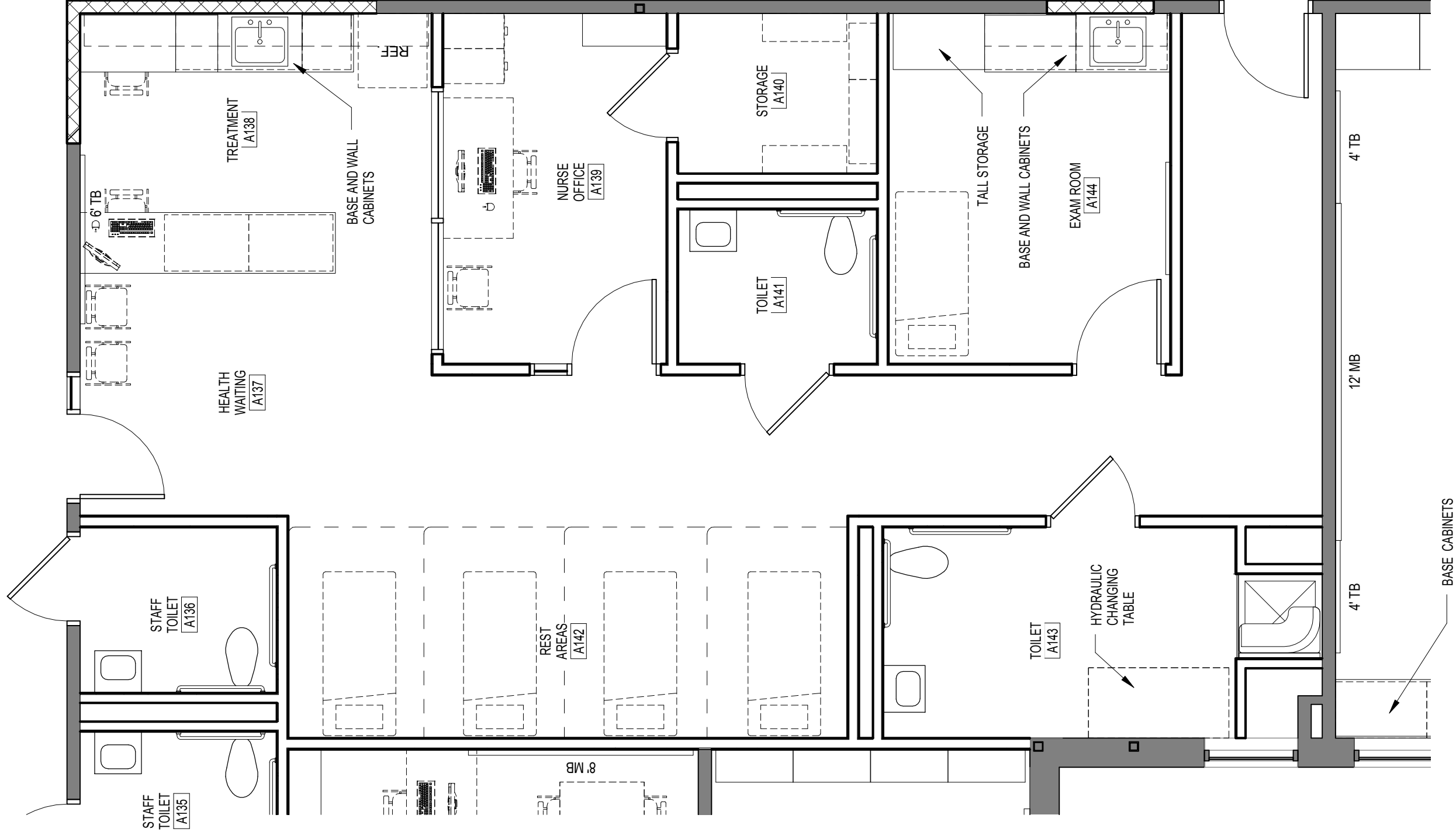
SCALE: 1/4" = 1'-0"

DATE  
10/22/13

-  
41



11720 Beltsville Drive  
Suite 600  
Calverton, MD 20705  
[www.grimmandparker.com](http://www.grimmandparker.com)



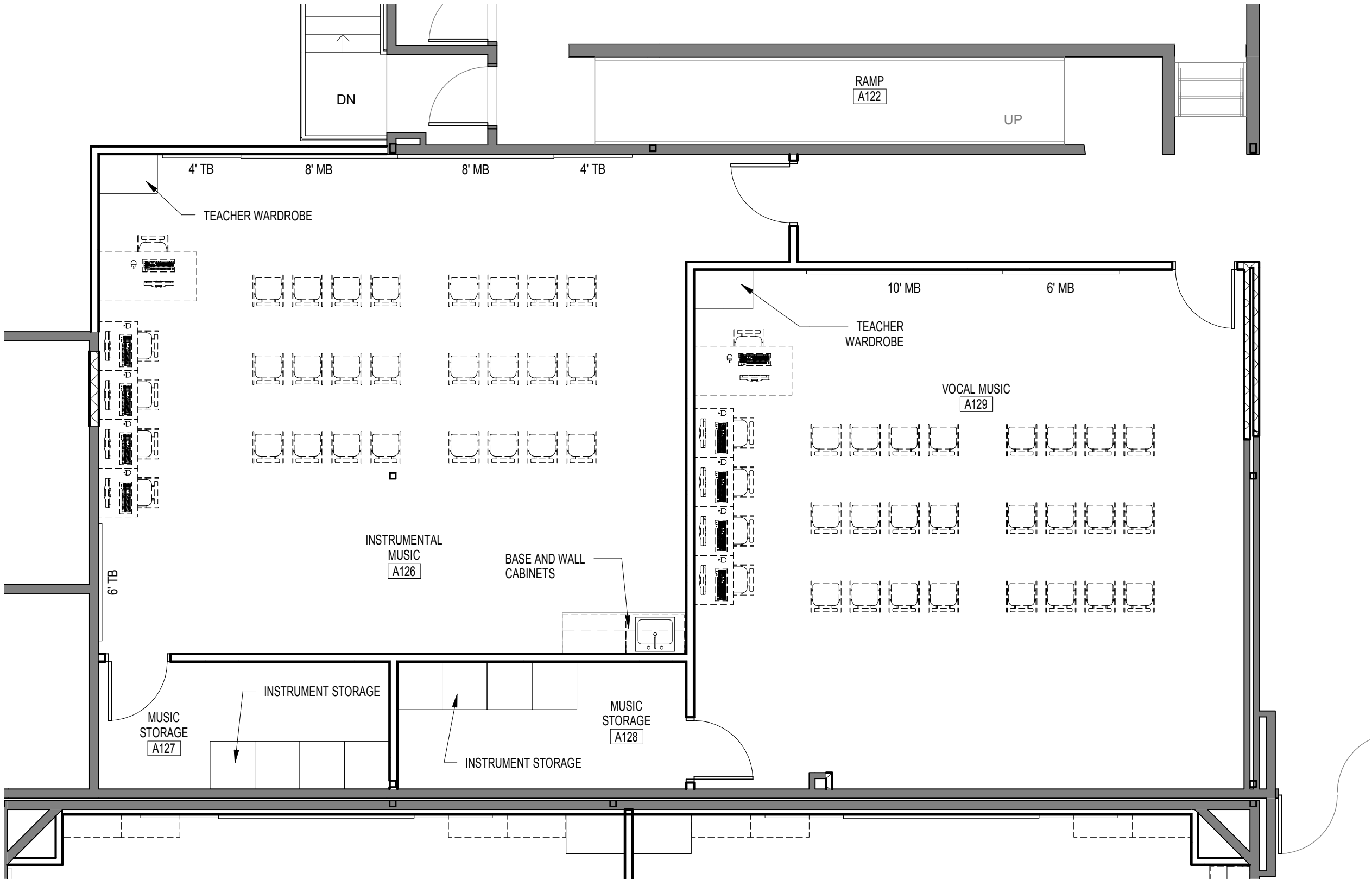
## DEEP RUN ELEMENTARY

HEALTH SUITE

SCALE: 1/4" = 1'-0"

DATE  
10/22/13

-  
42



DEEP RUN ELEMENTARY  
MUSIC SUITE

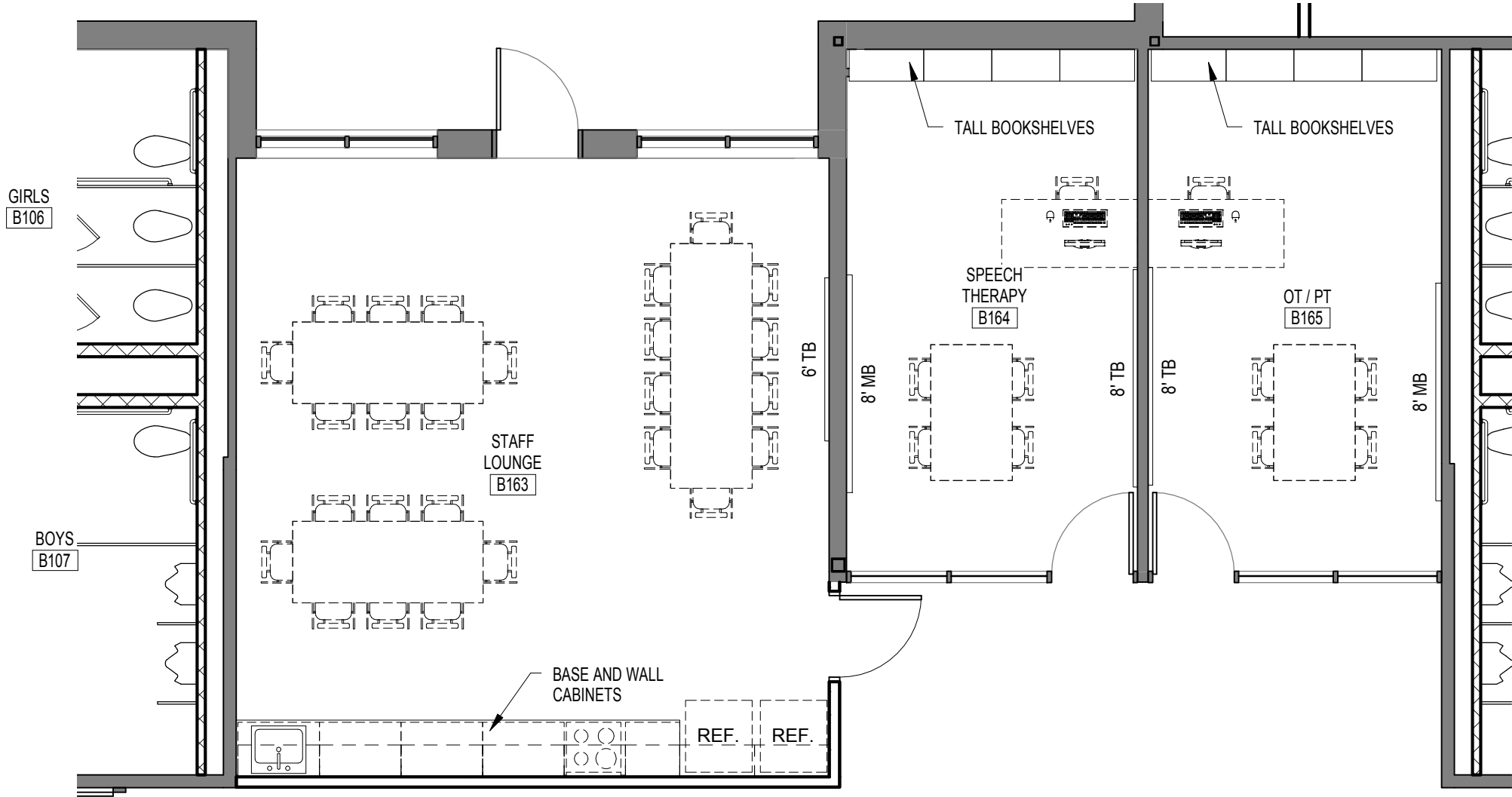
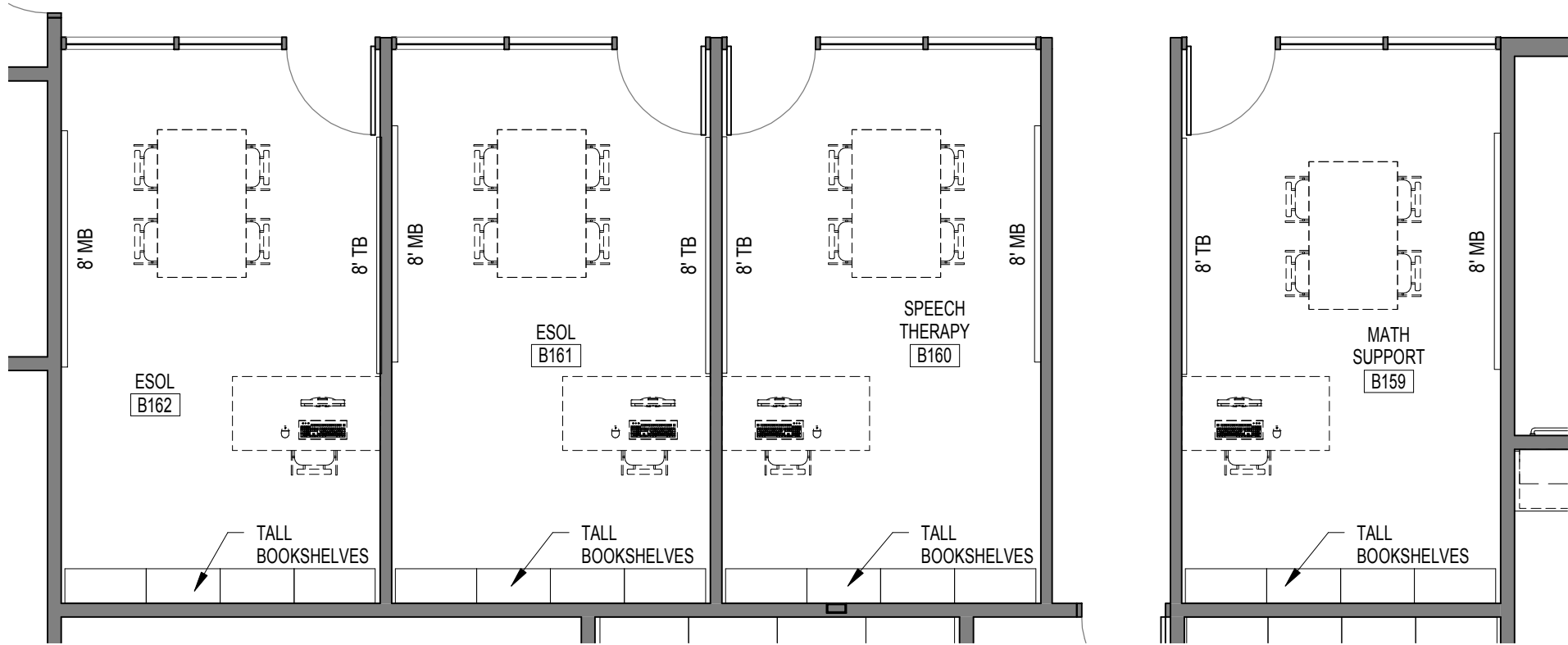
SCALE: 3/16" = 1'-0"

DATE  
10/22/13

- 43



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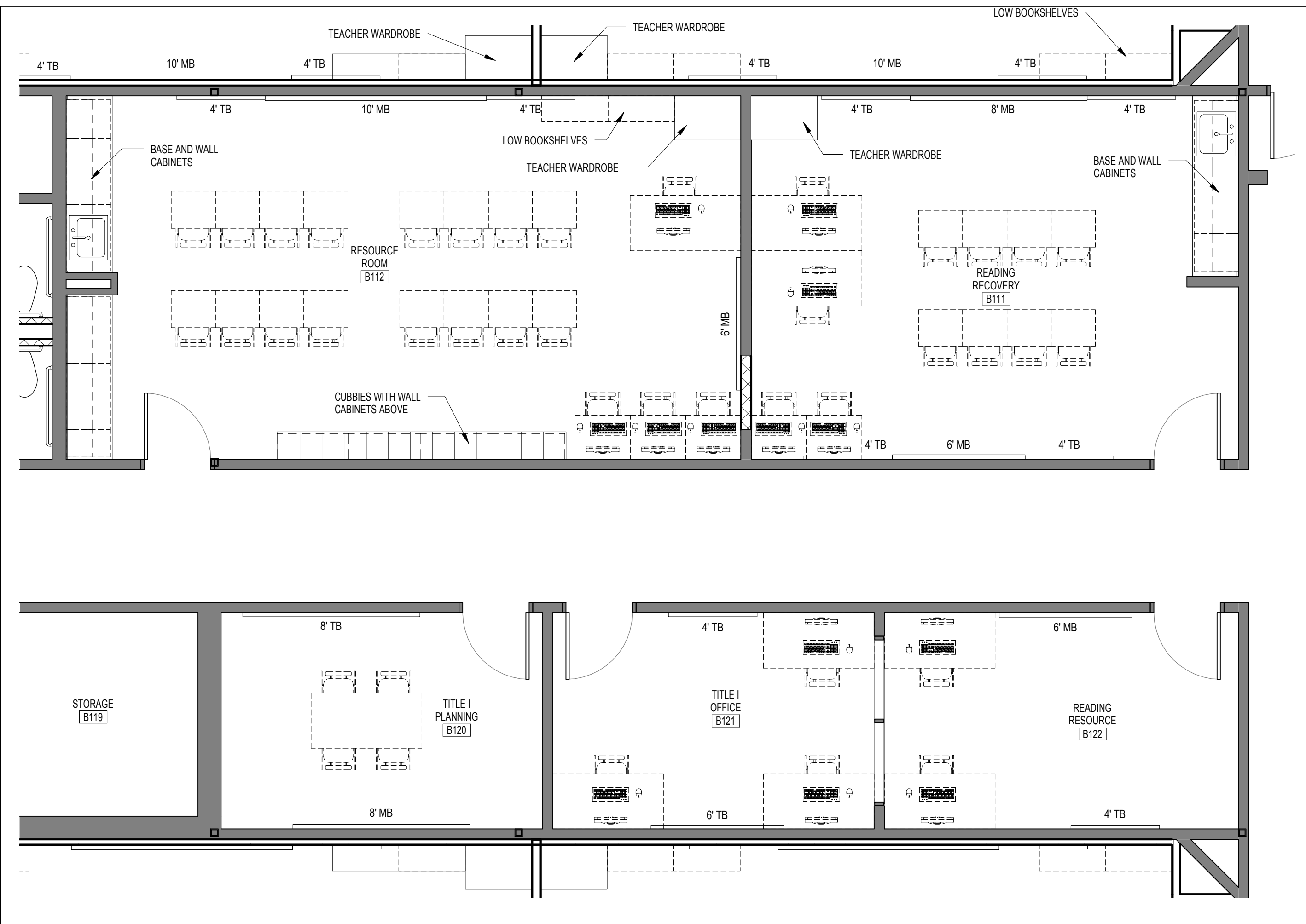
# DEEP RUN ELEMENTARY

STUDENT SUPPORT SPACES & STAFF LOUNGE

SCALE: 3/16" = 1'-0"

DATE  
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DEEP RUN ELEMENTARY  
TITLE I & READING RESOURCE

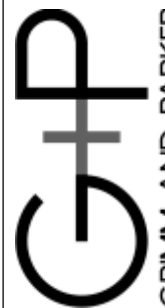
DATE  
10/22/13

SCALE: 1/4" = 1'-0"

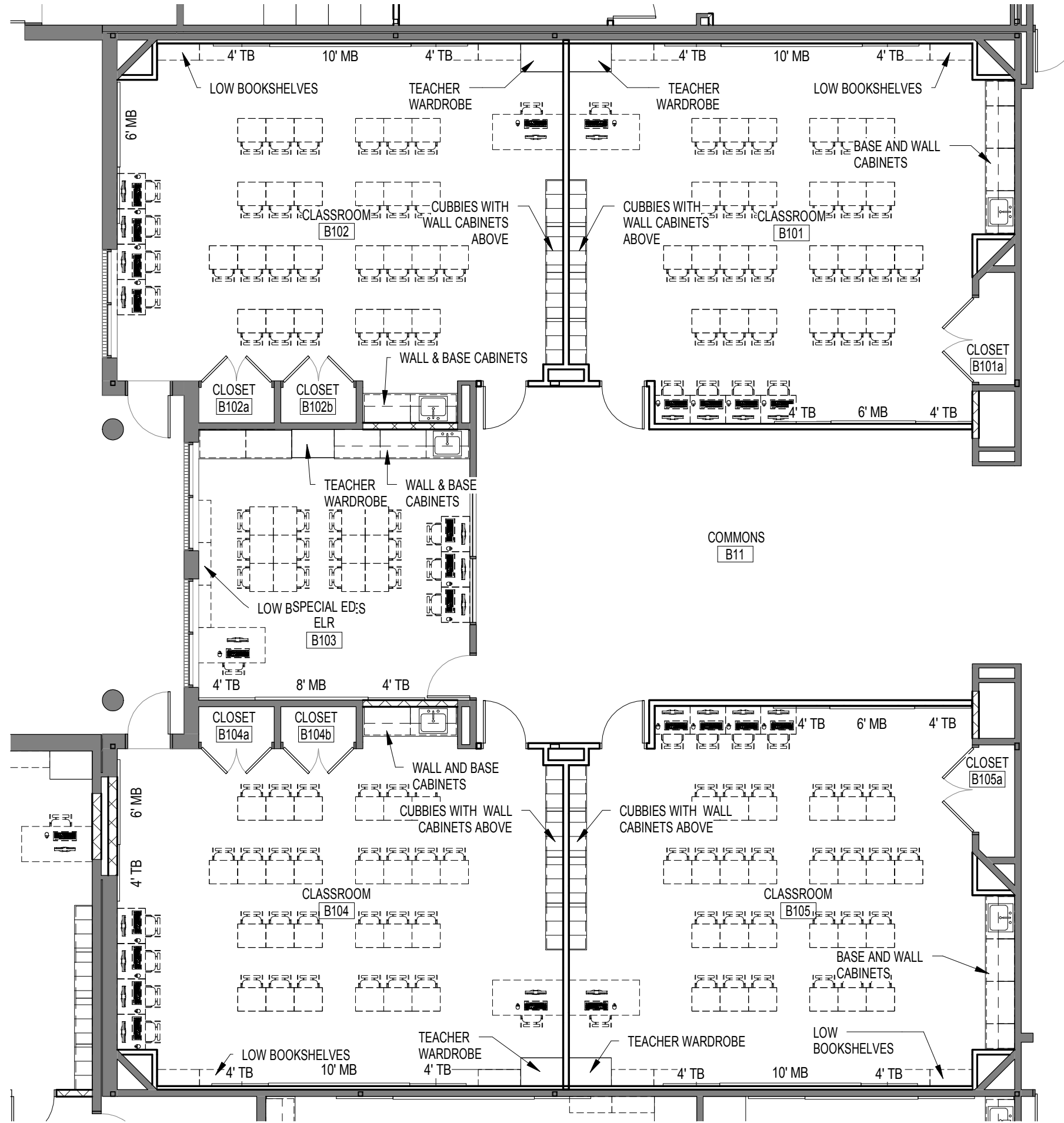
- 45

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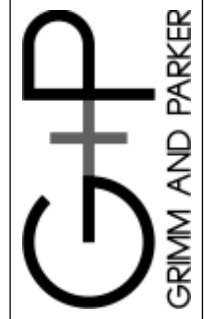


DEEP RUN ELEMENTARY  
TYPICAL CLASSROOM POD

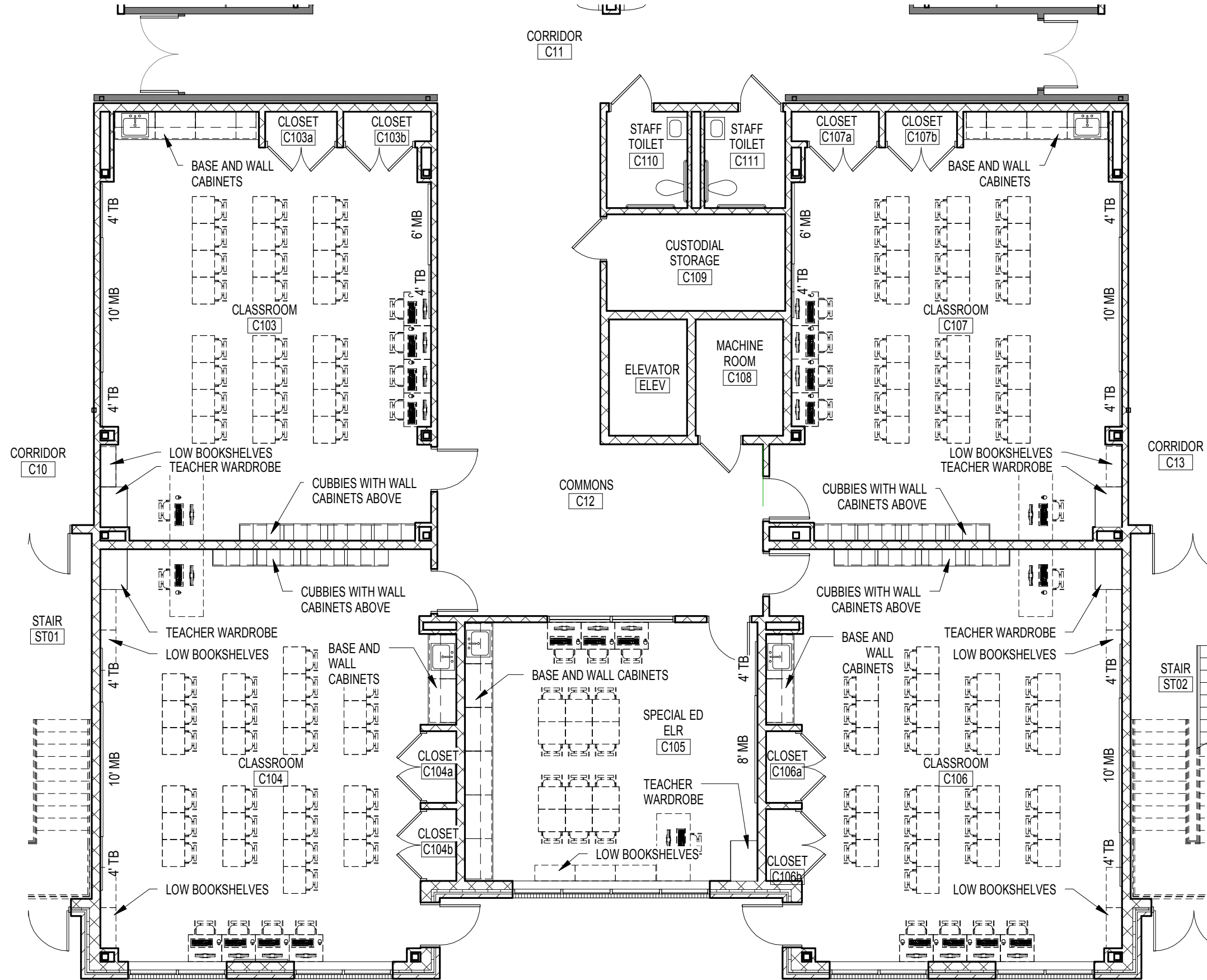
SCALE: 1/8" = 1'-0"

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DEEP RUN ELEMENTARY  
CLASSROOM POD ADDITION - FIRST FLOOR

SCALE: 1/8" = 1'-0"

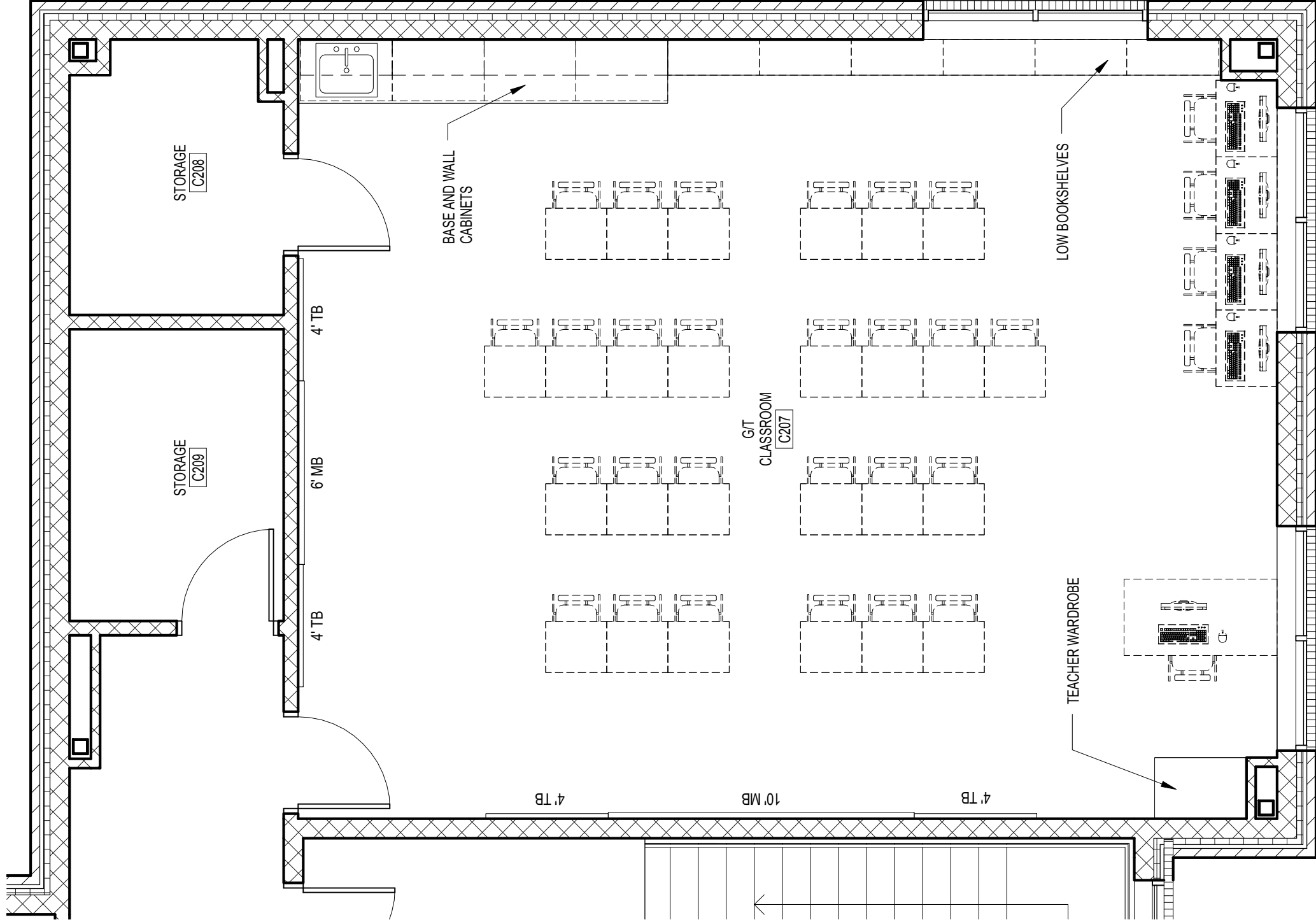
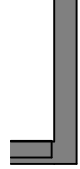
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DEEP RUN ELEMENTARY  
GIFTED AND TALENTED CLASSROOM

SCALE: 1/4" = 1'-0"

DATE	-
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