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MEMORANDUM

To	Julie Kukenberger, Jo Anne Sizemore, Todd Jepson, Kate Bolton, Donna Beeley, Christine Massengill, Kelly Johnston, Scarborough School Committee, DWC, AJR, LDS, HMG, JWT, BKB, FLC, RDM, JSC, file
From	Daniel Cecil, AIA Principal Lisa Sawin, AIA Architect Anthony Roy, Designer
Date	December 15, 2016
Project	Scarborough School Department Long Range Facilities Planning Project No. 13501
Subject	**School Committee Workshop – Long Range Facilities Plan Overview - December 15, 2016**

INTRODUCTION

Harriman Architects and Engineers has prepared a new update to the Lang Range Facilities Master Plan for review by the Scarborough School Committee in a workshop session. This is a condensation of the full draft report and contains new information from ongoing research and discussions with Scarborough Public Schools Administrators. Harriman looks forward to the School Committee's review and comments.

With Regards,

Daniel Cecil, AIA Principal
Lisa Sawin, AIA Architect
Anthony Roy, Designer

46 HARRIMAN DRIVE
AUBURN, ME 04210
207.784.5100

123 MIDDLE STREET
PORTLAND, ME 04101
207.775.0053

ONE PERIMETER ROAD
MANCHESTER, NH 03103
603.626.1242

www.harriman.com

SCARBOROUGH SCHOOLS LONG RANGE FACILITIES PLAN
SCHOOL COMMITTEE WORKSHOP
DECEMBER 15, 2016 DRAFT

UPDATE ON THE SCARBOROUGH PUBLIC SCHOOLS LONG RANGE FACILITIES PLAN 12/15/16

PART ONE - The Long Range Facilities Plan to Date

The Long Range Facilities Plan was charged to look beyond short term upgrades and to produce a long term plan to insure that facilities will be managed to serve the needs of students and provide an outstanding environment in which to learn, while managing scarce financial resources. To accomplish these tasks, Harriman conducted interviews with district stakeholders – administrators, teachers, staff, the Board of Education, community members, and others to identify areas of concern/ideas/research for the study. Harriman inventoried the school facilities to create technical and educational assessments as the basis for the proposals outlined in the LRFP. See final draft of the entire LRFP for more detail.

PART TWO - Long Range Facilities Plan Goals

- **Provide a Long Range Facilities Plan to ensure that the school facilities will be in alignment with the Scarborough Public School's Educational Goals.** Look beyond short term facilities upgrades and produce a long term plan to serve the needs of students and to provide an outstanding environment in which to learn, while managing scarce resources effectively.
- **Create a Technical Facilities Inventory of Scarborough schools** to determine needed upgrades, repairs, energy usage, Operations and Maintenance Costs
- **Create an Educational Inventory of the schools**, to complement the Technical Facilities Inventory, to document if the buildings serve your Educational Goals. Compare existing educational spaces to DOE standards. See Table 1.10 and Chapters Two and Three.
- **Eliminate all modular classrooms** from the District.
- **Update Scarborough's population projections**. Calculate the Functional Student Capacity of the existing schools.
- **Conduct an examination of areas of facilities improvement that could potentially reduce your cost of operations**, including the study of the pros and cons of consolidating some of the Primary Schools, the impact of reconfiguring grades to make better use of your facility capacity district wide, and other strategies.
- **Study the potential for expansion at the Middle School** to relieve overcrowding.
- **Provide educational equity among all the schools.**
- **Improve Security** in all the schools.
- **Catalog the existing floor and site plans of the schools**. Generate plans for potential options for improvements.

- **Create a system of standards to allow SPS to evaluate your facilities objectively** moving forward.
- **Identify potential funding sources** for improvements, repairs, renovations, additions.
- **Create a short and long term Capital Improvements Plan (CIP):**
  - to identify what level of funding will be required to meet your educational facilities needs
  - to prioritize Capital Improvement decisions using factual data
  - to identify ways to stretch your O & M and CIP budgets further
- **Produce a flexible, effective Long Range Facilities Plan which can be modified continuously in the future as needs change.**

PART THREE – Building Capacity, Student Enrollment Update and Projections

Planning Decisions conducted new population projections in January 2016. The new projections look at two models – Best Fit Enrollment Trends (BF) at each grade level as well as New Housing Impact Trends (NH). The New Housing model shows the population growing by about 200 students over the last projections for Year 2020-2021 when housing starts are factored in. Using the New Housing Impact model district-wide, the projections show the K-12 student population rising from 3,017 in 2015-2016 to 3,121 in 2025-2026, or about 3.4%. This is very moderate growth. However, the study projects a bulge moving through the Primary Schools starting in 2017 which would increase the population by about 25% from 2015-2016 through 2025-2026. See **Table 1.03** on following page.

Table 1.03 – Student Population Projections: Planning Decisions Jan 2016									
	School	Grades	Capacity Using Scarborough Standards**	Actual Student Populations – November 2016	Planning Decisions 2016-2017 Projections Best Fit	Planning Decisions 2016-2017 Projections New Housing	Planning Decisions 2025-2026 Projections Best Fit	Planning Decisions 2025-2026 Projections New Housing	Number of Modular Classrooms
1	Blue Point Primary School	K-2	241	193 (Under Capacity)	183	193	214	242 (At Capacity)	4
2	Eight Corners Primary School	K-2	236	227 (At Capacity)	206	218	243	274 (Over Capacity)	6
3	Pleasant Hill Primary School	K-2	178	174 (At Capacity)	171	182	204	230 (Over Capacity)	2
4	K-2 Subtotals		655	594 (Under Capacity)	560	593 (Within 1 student of actuals)	661	746 (Over Capacity)	12
5	Wentworth School	3-5	800	673	638	647	676	755	0
6	Scarborough Middle School	6-8	750+/- (But core spaces are very overcrowded)	714	700	710	640	736	12 (Modulars not attached to SMS)
7	Scarborough High School	9-12	1,270 at an assumed 80% utilization rate	989	1,005	1,016	754	884	0
8	Scarborough Schools Totals	K-12	3,475	2,970	2,903	2,966 (Within 4 students of actuals)	2,731	3,121	24
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NOTE:

THIS PLAN IS A COMPILATION OF SITE PLANS PROVIDED BY THE TOWN OF SCARBOROUGH, ARCHIVAL DESIGN DRAWINGS BY HARRIMAN AND PREVIOUS SURVEYS PROVIDED TO HARRIMAN FROM THE TOWN OF SCARBOROUGH. THIS PLAN DOES NOT REPRESENT ACTUAL AS-BUILT CONDITIONS AND SHOULD NOT BE CONSTRUED TO BE ACCURATE. THE INTENTION OF THIS PLAN IS TO FACILITATE MASTER PLANNING FOR THE SCARBOROUGH MUNICIPAL CAMPUS. FOR ANY FUTURE DESIGN, AN ACTUAL SURVEY MUST BE CONDUCTED TO OBTAIN ACCURATE EXISTING CONDITIONS.

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ALBANY PORTLAND PORTSMOUTH SAWYER

Scarborough Master Plan

Scarborough, Maine

Harriman Project No: 13021

Key Plan

Mark	Date	Description
	11.28.16	COMPOSITE SITE PLAN

PRELIMINARY NOT FOR CONSTRUCTION

Drawing Number

PM / PL: JDH

Drawn By: PLS

SITE OVERVIEW PLAN

C00.1

PART FOUR - State of the Facilities

Existing Educational Space

The Primary Schools

- The challenge at the Primary Schools is the inefficiency of operating 3 deteriorating, small schools cost-effectively. The following is an abbreviated summary of facilities issues. Additional detail can be found in the draft Facilities Master Plan.
- The Primary Schools have combined Cafeterias and Gymnasiums which are small for the intensity of their use and function. New schools typically build separate rooms for these two functions. The Kitchens are small but are primarily warming kitchens.
- There are no Stages
- There are 12 modular classrooms among the Primary Schools
- There is no adequate meeting space for administrators, students, families, outside consultants, and teachers
- Small Art rooms
- Small Library at Pleasant Hill
- No adequate Time Out or Seclusion spaces. When prided they don't have the right hardware, lighting, view windows, safe power plugs, etc.
- OTPT is too small. Eight Corners has a curtain to screen off private area for treatment.
- None of the Primary Schools have a security vestibule of the kind found at WIS, SMS and SHS.
- There is no driveway surrounding the schools for emergency services and security.
- Security cameras – The Primary Schools have about 2-3 units each which were recently installed. They need additional coverage.

The Middle School

The Middle School is now 20 years old. It is very overcrowded by any standard for its 714 students. Some examples are:

- The Passamaquoddy Wing contains 12 modular classrooms detached from the main school building. This is a security issue and a building management issue.
- Cafeteria is 63% of the DOE recommended size. Kitchen is small as well. Serving lines are very long and congested.
- Library is 850 sf smaller than the DOE recommended size.
- Narrow hallways – There are 4 very congested choke points leading from the classroom wings to the Cafeteria/STEM/Music Wing. These barely meet code for width.
- Small Art, SPED, Guidance, Nurse, Administration, and Foreign Languages rooms
- In 2015 there were 5 "Floating Teachers" without classrooms due to lack of space.
- Parking and Parent Drop-off systems are very inadequate.
- Separation of busses, cars and students needs improvement.
- There is only one access road to the school in an emergency.
- Mechanical systems are now outdated and replacement could provide more energy efficiency.

- Core spaces are very small and include the Library, Cafeteria, Kitchen, and Gymnasium
- No Stage
- No auditorium
- One Art room is a former classroom and is only 54% of the DOE recommended size.
- There is no adequate meeting space for administrators, students, families, outside consultants, and teachers
- Overall SPED spaces are small and crowded
- No Time Out or Seclusion spaces. They don't have the right hardware, lighting, view windows, safe power plugs, etc.
- No SPED storage
- ALS has a Kitchen but is too small overall
- Resource Rooms are too small. Should be a regular classroom size. Have 2-3 groups at a time.
- Need space for a co-treatment area with Speech and Social Workers together. Need conference space and office space for 4-6 professionals.
- OTPT is too small
- One G+T room is in a closet on a cart, the other is in a small Resource Room

Classroom and Core Space Comparisons to DOE Standards
A comparison of the size of the existing classrooms and core spaces to DOE standards for all 6 schools is cataloged in **Table 1.10** on the following pages. Spaces that are significantly smaller than DOE Standards are highlighted in yellow. The Primary Schools and the Middle Schools all have significant shortages.

Energy Efficiency of the Existing Building Envelopes
A comparison of the energy efficiency of the Building Envelopes for all 6 schools is cataloged in **Table 1.07** on the following pages. The buildings with the least energy efficient envelopes are the three Primary Schools. This is reflected in your Operations and Maintenance costs in **Table 1.04B** below.

The Wentworth School and Scarborough High School
Both schools are new and in good condition and are not candidates for major upgrades, renovations or additions.

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Table 1.10 - Classroom and Core Space Comparisons

Draft April 18, 2014
Rev December 15, 2016

Project No. 13501

Harriman Architects and Engineers

Classroom and Core Space Comparisons	Blue Point Primary School	Eight Corners Primary School	Pleasant Hill Primary School	Wentworth School- New	Scarborough Middle School	Scarborough High School	Totals and Notes
Number of Regular Classrooms Currently	12	12	9	40	43	52	
Regular Classrooms Size Range	740-780, Average- 751	680-756 Average- 717	628-751 Average- 650	Average- 800	708-805 Average- 728	624-1,026 Average- 761 Science Lab Avg- 1,178	DOE Recommended- Kindergarten, 1,000 sf, 1-12, 800 sf Science Lab- 900-1,200
Number of Modular Classrooms Currently	4	6	2		12		
Number of SPED or Specialty Classrooms	5	4	5	22	19	11	
Library Square Footage	1,290	1,299	997	6,460	3,823	6,369	
Library Size Needed Based on Capacity using DOE Standards	1,325	1,325	1,225	3,450	4,475	6,150	
Cafeteria Square Footage	2,560	2,400	2,400	6,500	2,552	7,961	
Cafeteria Capacity using DOE Standards (size/ 15 sf/seat)	170	160	160	430	170	530	The DOE standard of 15 sf/seat is on the small side as a practical matter. Most cafeterias lay out at about 17-18 sf/seat when you inlcude aisles and serving lines.
Current Number of Lunch Servings with Current Population and Space	2	2	2	4	5	3	
Kitchen Square Footage	490	372	378	3,400	2,450	3,516	Primary Schools have serving kitchens only.
Kitchen Size Recommended Based on Capacity using DOE Standards	950	950	950	2,240	2,663	3,556	
Gym/Multi-Purpose	2,560	2,400	2,400	10,125	6,762	1 @ 10,011 1 @ 14,154	Combined Gym and Cafeteria at Primary Schools. Middle School Gym too small for regulation play. Overhead track interferes with play as well.
Art	780	718	751	1 @ 1,272, 1 @ 1,330, 340 shared storage	1 @ 1,345, 1 @ 708	1 @ 1,298 1 @ 475 1 @ 1,477 1 @ 1,403	
Art Room Size Recommended Based on Capacity using DOE Standards	1,200-1,400 (including storage)	1,200-1,400 (including storage)	1,200-1,400 (including storage)	1,200-1,400 (including storage)	1,200-1,400 (including storage)	1,200-1,400 (including storage)	

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
5			**Blue Point Primary School**		**Eight Corners Primary School**		**Pleasant Hill Primary School**		**Wentworth School-New**		**Scarborough Middle School**		**Scarborough High School**		**Totals and Notes**	
21	**Music/Band/Chorus**		756		744		751		Chorus @ 1,140, Band @ 2,150		Band- 1 @ 1,132 1 @ 744, Stage/Band @ 680		Band @ 2,753, Chorus @ 1,323		The Primary Schools and theMiddle School have no stage.	
22	**Music Size Recommended Based on Capacity using DOE Standards**		800		800		800		1,200		1,600		1,800-2,400			
23	**Stage**		No		No		No		1,250		No		3,000			
24	**Stage Size using DOE Standards**		800		800		800		1,200		1,800		2,400			
25	**Computer Lab**		No		No		No		640		1 @ 400, 1 @ 594		2 @ 745			
26	**Computer Lab Size Recommended Based on Capacity using DOE Standards**		500-800		500-800		500-800		500-800		500-800		500-800			
27	**STEM**		N/A		N/A		N/A		1 @ 1,665 1 @ 1,093 2 @ 1,116		2 @ 1,188					
28	**Shared Spaces**		Multi-Purpose room used for Café/Gym		Multi-Purpose room used for Café/Gym		Multi-Purpose room used for Café/Gym Music/Art share room				Band and Stage					
29																

Revised Table 1.07 - School Building Envelope Comparisons February 11, 2014 DRAFT 121516 — HARRIMAN ARCHITECTS AND ENGINEERS — Project No. 13501

School	Wing	Square Feet	Wall Types	Approx. Assembly R-Value	ASHRAE 90.1 -2010 Wall Type	Code Req. Assembly U-Value	Code Req. R-Value	Roof Insulation	Approx. R-Value	ASHRAE 90.1 -2010 Wall Type	Code Req. R-Value	Foundation or Floor Insulation	Approx. R-Value	Code Req. R-Value	Window Types	Approx. R-Value	Code Req. R-Value	Ext. Door Types	Approx. R-Value	Code Req. R-Value	Notes
Blue Point																					
	1965	12,651	4" brick, 8" block no insulation	3	Mass	0.08	20.5	wood deck, 3" Batt ins Replaced in 1993?	15	Attic and Other	38.0	None	0	R-10 for 24 inches	replaced			Hollow metal w/glazing	1	1.3	
	1993	13,549	Brick/Wood siding on 6" Ins. Steel Studs	12.8	Steel Framed	0.064	20.5	EPDM membrane, MTL deck, 5'" rigid ins.	30	Insulation Above Deck	20 ci	2" Rigid ins to 4' below grade	10	R-10 for 24 inches	Nonmetal framing	2.8	2.9	Hollow metal w/glazing	1	1.3	
	2001 mod.	3,670	Pre-fab 2x4 wood studs	19	Wood Framed	0.051	19.6	EPDM membrane. Verify construction.	30	Insulation Above Deck	20 ci	Floor Insulation	19	Crawl space R-38	Nonmetal framing	2.8	2.9	TBD			Approx. R-values for the modulars were obtained from Schiavi Leasing.
	Total SF	29,870																			
Eight Comers																					
	1959	9,538	4" brick, 8" block no insulation	3.5	Mass	0.08	20.5	Wood joist w/ 3" blanket ins	10	Attic and Other	38.0	None	0	R-10 for 24 inches	replaced			Hollow metal w/glazing	1	1.3	
	1993	10,675	4" Brick, 2" Rigid ins, 8" CMU	15.9	Mass	0.08	20.5	EPDM membrane, MTL deck, 5'" rigid ins.	30	Insulation Above Deck	20 ci	2" Rigid ins to 4' below grade	10	R-10 for 24 inches	Nonmetal framing	2.8	2.9	Hollow metal w/glazing	1	1.3	
	2001 mod.	3,728	Pre-fab 2x4 wood studs	19	Wood Framed	0.051	19.6	Pre-fab	30	Verify	Verify	Floor Insulation	19	Crawl space R-38	Nonmetal framing	2.8	2.9	TBD			Approx. R-values for the modulars were obtained from Schiavi Leasing.
	2008 mod.	1,950	Pre-fab 2x4 wood studs	19	Wood Framed	0.051	19.6	Pre-fab	38	Verify	Verify	Floor Insulation	19	Crawl space R-38	TBD			TBD			Approx. R-values for the modulars were obtained from Schiavi Leasing.
	Total SF	25,891																			
Pleasant Hill																					
	1957	8,322	4" brick, 8" block no insulation	3.5	Mass	0.08	20.5	Wood joist w/ 3" blanket ins	10	Attic and Other	38.0	None	0	R-10 for 24 inches	replaced			Hollow metal w/glazing	1	1.3	
	1993	12,924	Brick/Wood siding on 6" Ins. Steel Studs	12.8	Steel Framed	0.064	20.5	EPDM membrane, MTL deck, 5'" rigid ins.	30	Insulation Above Deck	20 ci	2" Rigid ins to 4' below grade	10	R-10 for 24 inches	Nonmetal framing	2.8	2.9	Hollow metal w/glazing	1	1.3	
	2001 mod.	2,048	Pre-fab 2x4 wood studs	19	Wood Framed	0.051	19.6	Pre-fab	30	Verify	Verify	Floor Insulation	19	Crawl space R-38	Nonmetal framing	2.8	2.9	TBD			Approx. R-values for the modulars were obtained from Schiavi Leasing.
	Total SF	23,294																			
Scarb. Middle																					
	1996	109,600	7 1/4" ins Steel Studs	TBD because of a variety of siding types	Steel Framed	TBD	20.5	EPDM membrane, MTL deck, 5'" rigid ins.	30	Insulation Above Deck	20 ci	2" Rigid ins to 4' below grade	10	R-10 for 24 inches	TBD			Hollow metal w/glazing			
	2004 mod.		Pre-fab 2x4 wood studs	19	Wood Framed	0.051	19.6	Pre-fab	38	Verify	Verify	Floor Insulation	19	Crawl space R-38	TBD			TBD			Approx. R-values for the modulars were obtained from Schiavi Leasing.
	2008 mod		Pre-fab 2x4 wood studs	19	Wood Framed	0.051	19.6	Pre-fab	38	Verify	Verify	Floor Insulation	19	Crawl space R-38	TBD			TBD			Approx. R-values for the modulars were obtained from Schiavi Leasing.
	Total SF	128,856																			

General Notes:

1. R-values for existing materials and total assemblies were calculated based on methods described in ASHRAE Fundamentals 2013. The State of Maine has not yet adopted Ashrae 90.1-2013 but thiose standards are included in this summary.
2. For roof insulation R-38 is required in pitched roofs because the batts are not continuous. On Low Slope roofs over metal decks, the code requires R-20 ci which means continuous rigid insulation.
3. R-values for Modular Classrooms were obtained from Schiavi Leasing records. Verify modular construction systems before final publication. No information was available for the R-value of the modular windows. Contact @ Schiavi Leasing is Jenn Currier, office 539-8211, cell 515-1119.
4. Verify the air tightness of the 1993 replacement windows in the Primary Schools. Verify R-values.
5. Verify where faculty and staff report cold and hot spots in the Primary Schools.
6. Verify if Modular Classroom foundations were insulated at the time of construction.

PART FIVE - Operations and Maintenance Costs

Harriman gathered information on three years of O&M costs and compared the schools to each other. The Primary Schools had a significantly higher cost of operations in dollars per square foot for overall physical plant and heating costs than the other schools. The technical inventories determined that this is due to several factors.

- **Primary Schools** – High O&M costs are due to:
  - Less insulation in many places than current industry standards.
  - The R-values for exterior wall assemblies are well below industry standards.
  - Building envelope needs to be tightened up – selected windows, exterior doors, roof, etc.
  - Some schools have ventilation systems that allow uncontrolled outside air to enter the school. In winter this causes very cold conditions in many classrooms.
  - Mechanical and electrical upgrades are needed.
  - The Primary Schools have a heating and electrical cost/square foot similar to the Middle School but they have no air conditioning. Therefore, they should cost much less to operate than the Middle School.
  - Small schools are generally less efficient to operate than larger schools. All the primary schools qualify as small schools:
    - Blue Point – 193 students
    - Eight Corners – 227 students
    - Pleasant Hill – 174 students
- **Wentworth School** - Harriman now has O&M costs for the first two full years of operations. The systems are working more efficiently than planned, saving $35,000/year more than projected. Both Wentworth and the Middle School are air conditioned. But Wentworth's newer technology is about $0.36/sf less expensive than the SMS.
- **The Middle School** has higher electrical costs compared to the other schools due to the type of cooling system it has. Substantial energy efficiency improvements should be considered if a major addition/renovation project is undertaken for the SMS. Some tightening of the building envelope should be done as a CIP project.
- **Scarborough High School** was renovated extensively in 2005 and operations costs are reasonable.

Table 1.04B catalogs the actual Operations and Maintenance Costs for the six schools for the 2015-2016 School Year. See the following page.

Table 1.04B – Existing Financial Profiles – O & M Costs in the 2015-2016 School Year

		Blue Point Primary	Eight Corners Primary	Pleasant Hill Primary	New Wentworth Intermed.	Scarbor. Middle	Scarbor. High incl. District Space	Scarbor. Schools Total	% of Total
1	All Physical Plant Costs, O & M, CIP, Supplies, etc.	$180,949	$155,474	$149,496	$501,907	$660,324	$888,037	**$2,536,187**	10%
2	Staff Salaries & Benefits only	$1,603,144	$1,453,541	$1,252,272	$4,698,629	$5,221,853	$8,649,508	**$22,878,947**	90%
3	Total 2015-16	**$1,784,093**	**$1,609,015**	**$1,401,768**	**$5,200,536**	**$5,882,177**	**$9,537,545**	**$25,415,134**	100%
4	Square feet	29,870	25,891	23,294	168,313	128,856	300,097	**676,321**	
5	$/square foot	$59.73	$62.14	$60.18	$30.89	$45.64	$31.78	**$37.58**	
6	Actual Students 2015-16	191	222	172	635	744	1,020	**2,984**	
7	$/student	$9,340.80	$7,247.81	$8,149.81	$8,189.82	$7,906.15	$9,350.53	**$8,517.13**	
8	SF/student	156	117	135	265	173	294	**227**	
9	Student Capacity with Scarbor. Standards	241	236	178	800 (new WIS)	750-800 at 80% Utilization. See Chapter 3.	1,270 at 80% Utilization	**3,525**	
10	All Physical Plant Costs, O & M, etc. - $/square foot	$6.06	$6.00	$6.42	$3.08	$5.12	$2.96	**$3.78**	

		Blue Point Primary	Eight Corners Primary	Pleasant Hill Primary	New Wentworth Intermed.	Scarbor. Middle	Scarbor. High incl. District Space	Scarbor. Schools Total	% of Total
11	All Utilities only –oil, nat. gas, propane, electricity, water, sewer, phone	$44,454	$42,049	$36,231	$207,567	$222,127	$342,902	**$895,330**	
12	$/square foot	$1.49	$1.62	$1.55	$1.27	$1.72	$1.14	**$1.33**	
13	Staff Salaries & Benefits only	$1,603,144	$1,453,541	$1,252,272	$4,698,629	$5,221,853	$8,649,508	**$22,878,947**	
14	$/square foot	$53.67	$56.14	$53.76	$27.92	$40.52	$28.82	**$33.83**	
15	$/student 2015-16	$8,393.42	$6,547.48	$7,280.65	$7,399.42	$7,018.62	$8,479.91	**$7,667.21**	

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Table 1.06D catalogs the combined heating and electrical costs for the six schools for the 2015-2016 School Year. It is a better apples-to-apples comparison between the schools. By combining Heating and Electrical costs, the variable of the geothermal system at Wentworth, which uses both natural gas and electricity, is taken out.

Table 1.06D: Combined Heating and Electrical Cost Comparisons 2015-2016

	School	Combined Heating and Electrical Cost 2015-2016	Square Feet	Cost/SF	Multiple of Scarb. HS in $/SF	Notes
1	Blue Point	$39,745	29,870	$1.33/sf	1.25X	
2	Eight Corners	$37,518	25,891	$1.45/sf	1.37X	
3	Pleasant Hill	$33,060	23,294	$1.42/sf	1.34X	
4	New Wentworth	$189,993	168,313	$1.13/sf	1.10X	
5	Middle School	$192,057	128,856	$1.49/sf	1.41X	
6	High School	$318,345	300,097	$1.06/sf		
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Notes:

- The Wentworth and Middle Schools both have air conditioning. But the Wentworth School is much less expensive to operate per square foot because of more modern technology. If a major renovation/addition project is done at SMS, the building systems should be upgraded to improve energy efficiency.
- The Primary Schools have a heating and electrical cost/square foot similar to the Middle School but they have no air conditioning. Therefore, they should cost much less to operate than the Middle School.

PART SIX - Potential Options

Note that these Options are numbered differently that the original ones in the draft Facilities Master Plan for simplification. The draft Facilities Master Plan looked at several options for closing K-2 schools before it became clear that Scarborough's Primary School population was predicted to rise significantly by 2025-2026.

Option A – Maintain the Status Quo – The "Do Nothing Option"
In this option, Scarborough Public Schools would continue to address only the most urgent problems when they arise on the Primary Schools and Middle School into the foreseeable future just to keep them open at minimal cost. This option can serve as the basis of comparison for other options that might be considered that involve construction of some kind. In RSU 21, one of the options they considered closed two elementary schools and consolidated students into the remaining facilities. Those facilities were then upgraded with new systems for increased efficiency and new educational program space to serve their needs. Even factoring in the cost of the construction bond, the project paid for itself over time due to increased energy efficiency, reduced overall square footage, and reduced O&M costs to maintain them. **See RSU 21 Option 4A Cost/Benefit graph on the following pages.** Not all options studied did this but they can all be modeled to determine their cost/benefit.

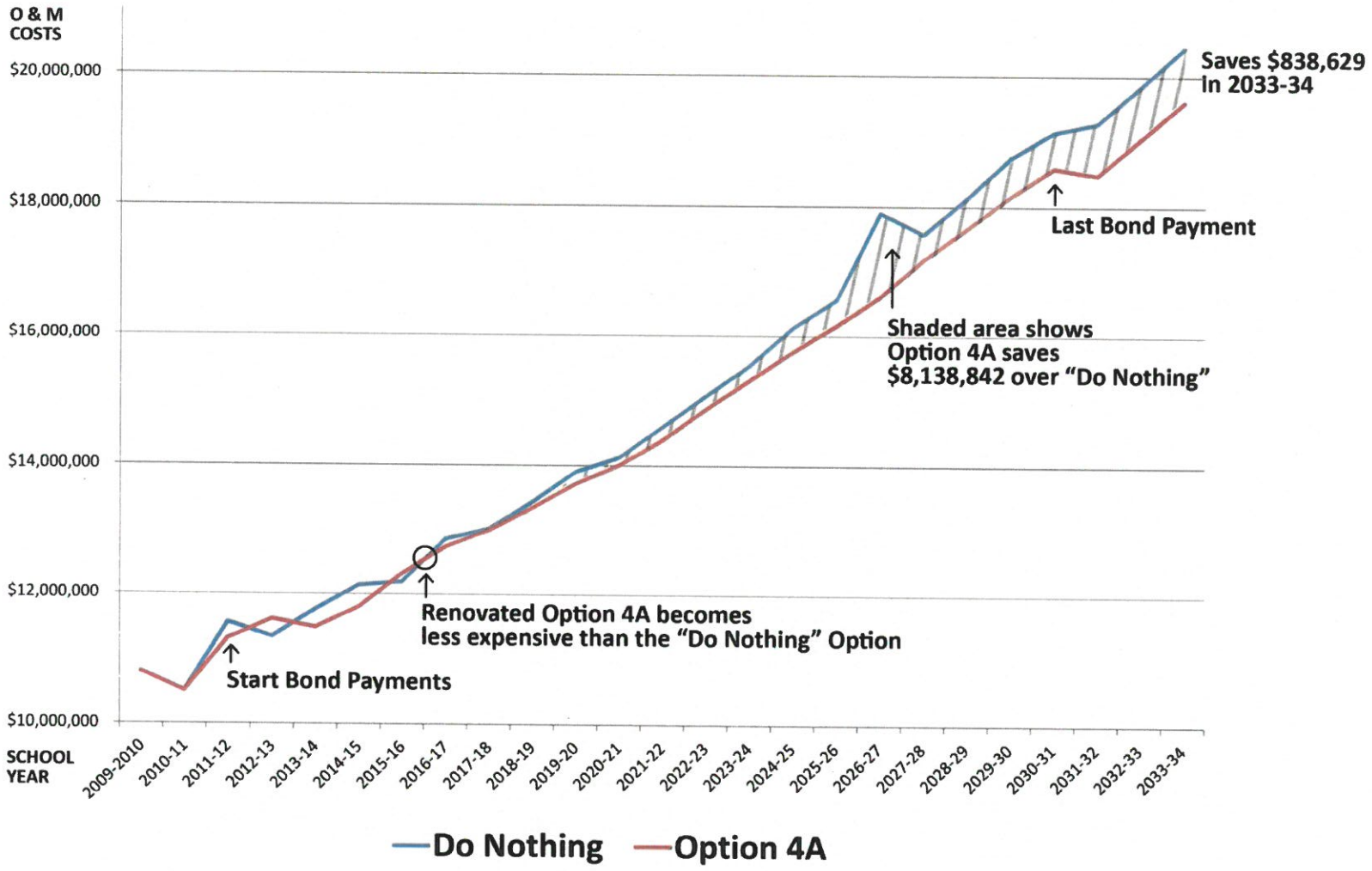
Option B – Renovate existing facilities to improve energy efficiency and sustainability
In this Option, the Primary Schools would be renovated with new building systems and building envelope upgrades to increase their energy efficiency. This Option could also include removing the modulars and replacing them with permanent space.

Option C – New Construction – Replace all existing modulars with new modular construction of a more permanent kind
There are companies in New England that manufacture modular buildings including entire classroom wings. These are not your standard double-wide, modular classrooms, but factory built components that are assembled on site. Harriman's research to date shows a large variation in potential costs from $188/sf to $300/sf nationally. These may be construction costs only, not Total Project Costs, and must be verified. Each manufacturer has a different set of technical specs and method of building components in the factory and assembling them on site. The interior and exterior finishes vary greatly as well. Additional research and drawings would be needed to get an actual quote from a manufacturer. There are several companies in New England that claim to have the capability, including one Harriman contacted in greater Boston. From them we received a national study comparing standard vs. modular cost comparisons to assist our research..

PreK – 8 RESTRUCTURING STUDIES

Facilities and Financial Studies

RSU 21 Option 4A – Close 2 Schools



Option D – New Construction – Create a new, consolidated Primary School Building on the Municipal Campus

The LRFP was charged with evaluating the potential of consolidating the Primary Schools into a single new Primary School on the Municipal Campus. The LRFP Committee looked at this option and developed a potential Site Use Diagram and preliminary Budget two years ago. Scarborough's enrollment projections have since increased and therefore so have the potential size and cost of a consolidated school. **See a preliminary Site Use Diagram and Budget on the following pages.**

Option E – New Construction – Renovate and expand the Scarborough Middle School to right size its program spaces and replace the 12 modular classrooms with new construction

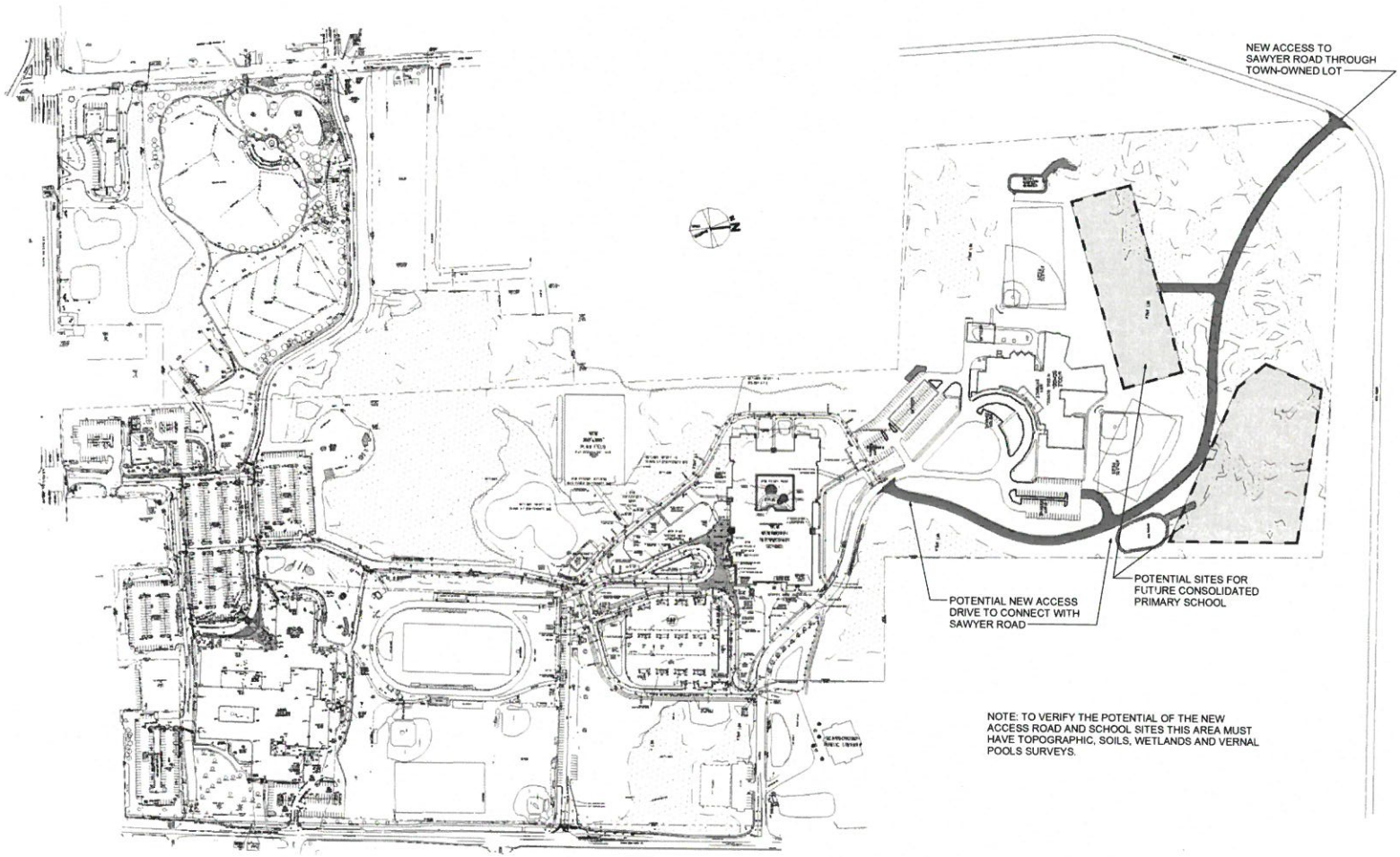
The Facilities Master Plan also looked at this option and developed a potential Site Plan, Floor Plans, and preliminary Budget. **See a preliminary Site Plan, Floor Plans, and Budget on the following pages.**

Option F – New Construction – Expand the Wentworth School and move the 6th grade into the building

The Facilities Master Plan also looked at this option and developed potential Floor Plans. Wentworth's capacity is about 800 students with about 673 students in school now. That only leaves about 127 students of additional capacity and the sixth grade currently has about 225 students (about 11 classrooms). Therefore at least 4-6 new classrooms would have to be added. The attached plans looked at cramming the additional 6th grade students into the existing Wentworth but it doesn't work educationally. It requires taking SPED rooms and space for other programs to boost the count of regular classrooms. It would also require raising the student/teacher ratio in each classroom. It leaves no room for future growth. Art and Music may not have enough available sections to offer classes to the additional student population. For these reasons it was rejected but adding 4-6 classrooms to Wentworth would resolve some of these problems. A study of the adequacy of core spaces and scheduling would have to be done. **See preliminary Floor Plans on the following pages.**

PART SEVEN – Identifying Potential Funding Sources – The DOE Application Process

Scarborough Pubic Schools and Harriman will prepare applications to the DOE in the new funding cycle for Major Capital Improvements to school facilities. The last time applications were accepted was in 2010-2011. The application form is now available on the DOE website and is due in April 2017. The DOE will require separate applications for Blue Point, Eight Corners, Pleasant Hill, and the Middle School. If one or more of the Primary Schools ranks high on the list, the DOE is very likely to require consolidation for the three schools in return for giving Scarborough State funding for construction. The DOE says it will release the new ranking of facilities about a year after applications are received. In the interim, they will tour every school that submits an application to assess their need in detail. In the last round, 71 schools applied and 14 have gotten DOE funding.



HARRIMAN

SCARBOROUGH STRATEGIC FACILITIES STUDY

CONSOLIDATION OPTION 7

09/22/14

HARRIMAN

Scarborough School Department
Facilities Long Range Plan
New Consolidated Primary School

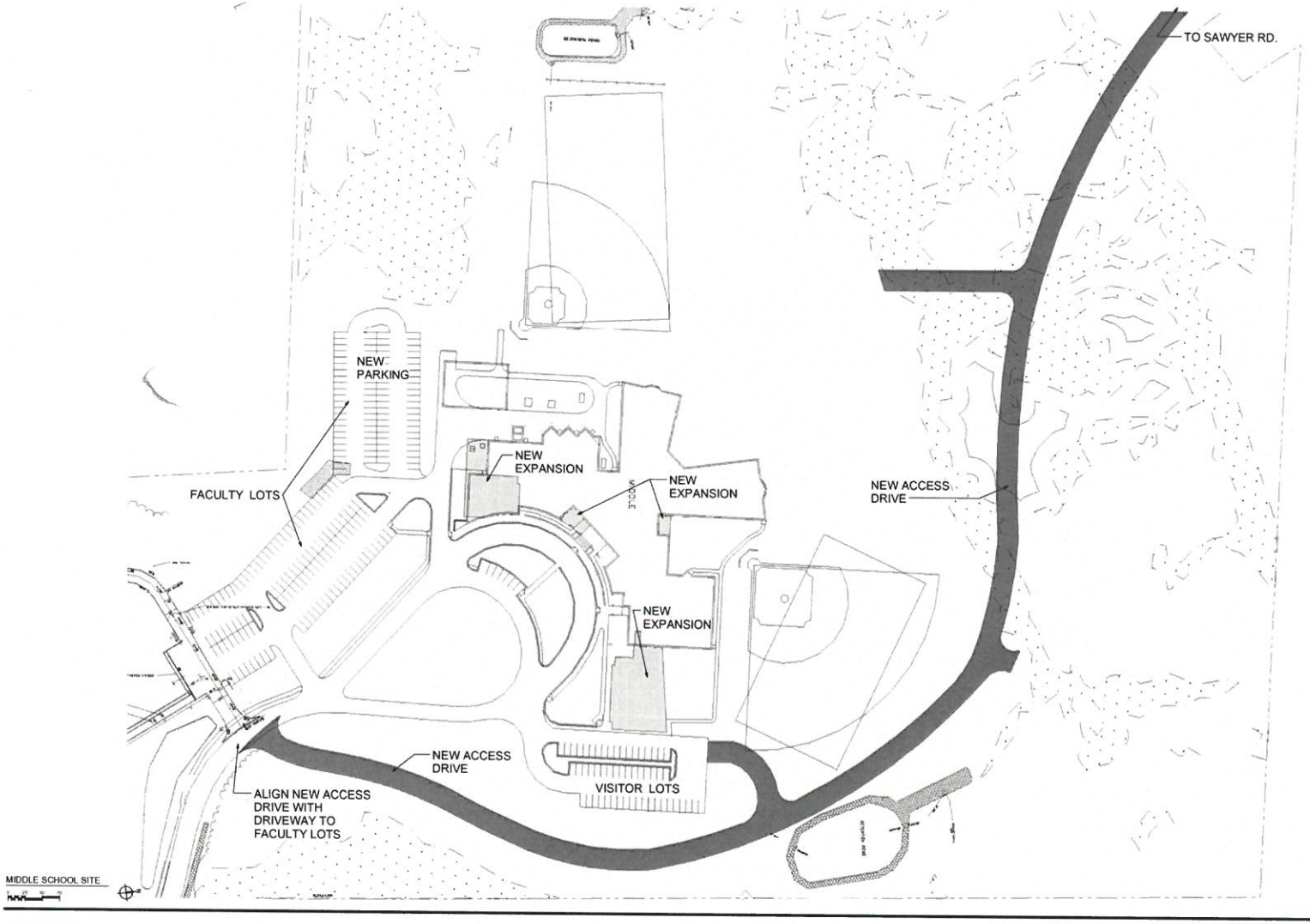
Harriman Architects and Engineers
Project 13501
Concept Design Budget

Grades K thru 2, Assume 750 Students (Planning Decisions FY 2025-2026 = 746 students)
125,250 square feet (Based on the new Corinth Elementary School @ 167 sf/student)

DRAFT 09/03/2014
Rev 12/15/16

Pricing Assumptions			
	New Construction	125,250 x $250/sf =	$31,312,500
	Sitework	$5,000,000	$5,000,000
	Estimating Contingency 10%		$3,631,250
			$39,943,750

			TOTAL	
A	**CONSTRUCTION**			
1	Construction Cost (Based on Corinth Elem. School @ $226/sf in Fall 2014. Use $250/sf.)		$39,943,750	1
2	New Campus Drive with sidewalk from the Middle School to Sawyer Road - 2,400 feet		$500,000	2
		Subtotal	**$40,443,750**	
B	**ADMINISTRATIVE COSTS & RESERVES**			
3	Land Purchase and Related Costs (Allowance if new land required.)		$300,000	3
4	Moveable Equipment (6% of Bldg only. Assume $31mm.)		$1,860,000	4
5	Technology (3% of Bldg only. Assume $31mm.)		$930,000	5
6	Advertising and Legal		$42,500	6
7	Percent for Art		$0	7
8	Project Contingency 10% of A1		$4,044,375	8
		Subtotal	**$7,176,875**	
C	**FEES AND SERVICES**			
9	Architect / Engineer Basic Services 6.7% of Part A		$2,709,731	9
10	Architect / Engineer Additional Services - TBD		$0	10
11	Architect / Engineer Reimbursables		$15,000	11
12	Permitting & Approvals		$45,000	12
13	Wetlands Mitigation, Permitting, New Campus Access Drive		$250,000	13
14	Construction Testing		$140,000	14
15	Survey and Soils		$130,000	15
16	Project Coordination (Assume 24 mos x $5,000/mon)		$120,000	16
17	Clerk of the Works (Assume 24 mos x $8,000/mon)		$192,000	17
18	Commissioning		$85,000	18
19	Consultants		$83,000	19
		Subtotal	**$3,769,731**	
D	**TOTAL PROJECT COST in 2014 dollars**		**$51,390,356**	
E	**Credits, Grants and Gifts, Efficiency Maine, etc. - TBD**		**$0**	
F	**Final Bond Amounts**		**$0**	

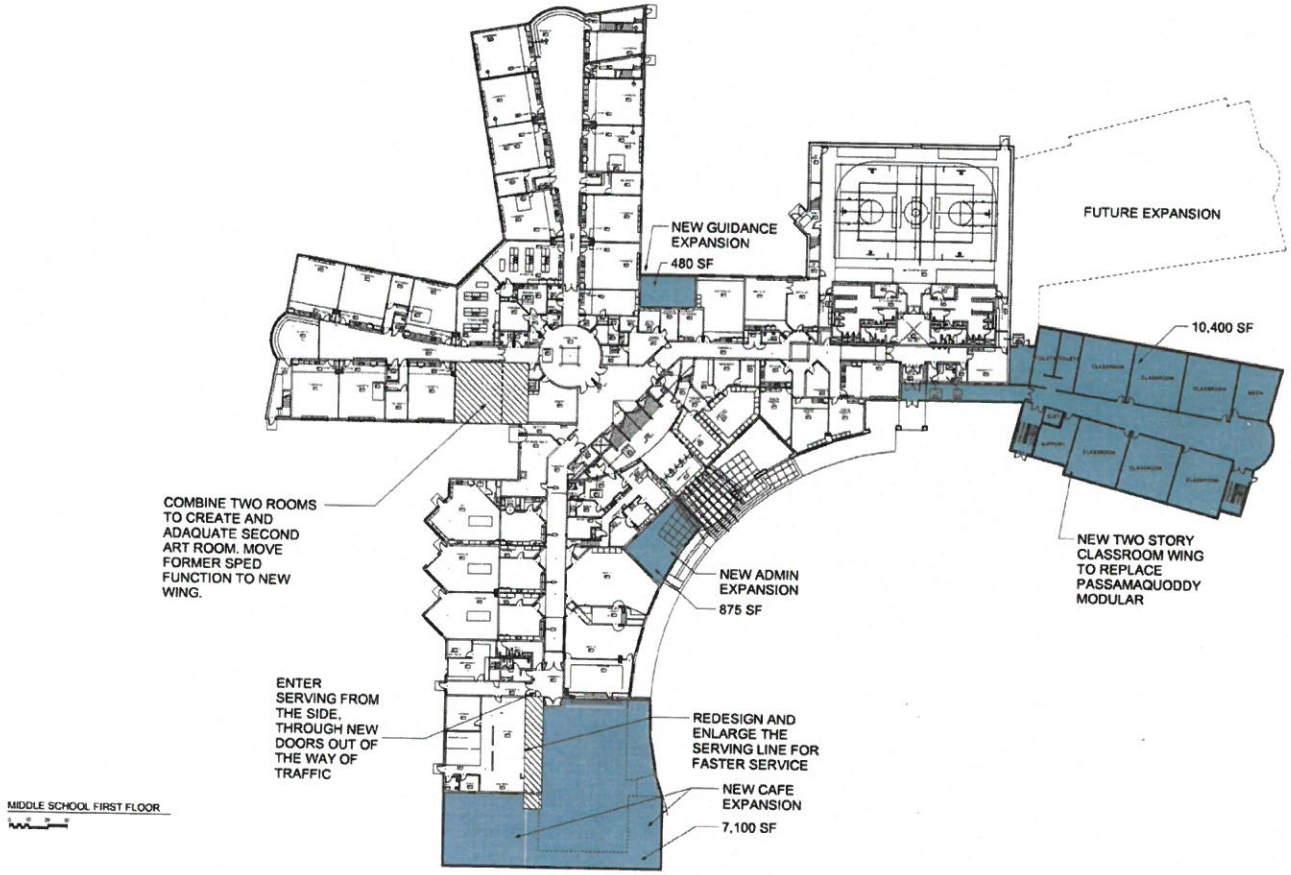


HARRIMAN

SCARBOROUGH STRATEGIC FACILITIES STUDY

SITE PLAN WITH ADDITIONS AND ROAD TO SAWYER RD.

10/01/14

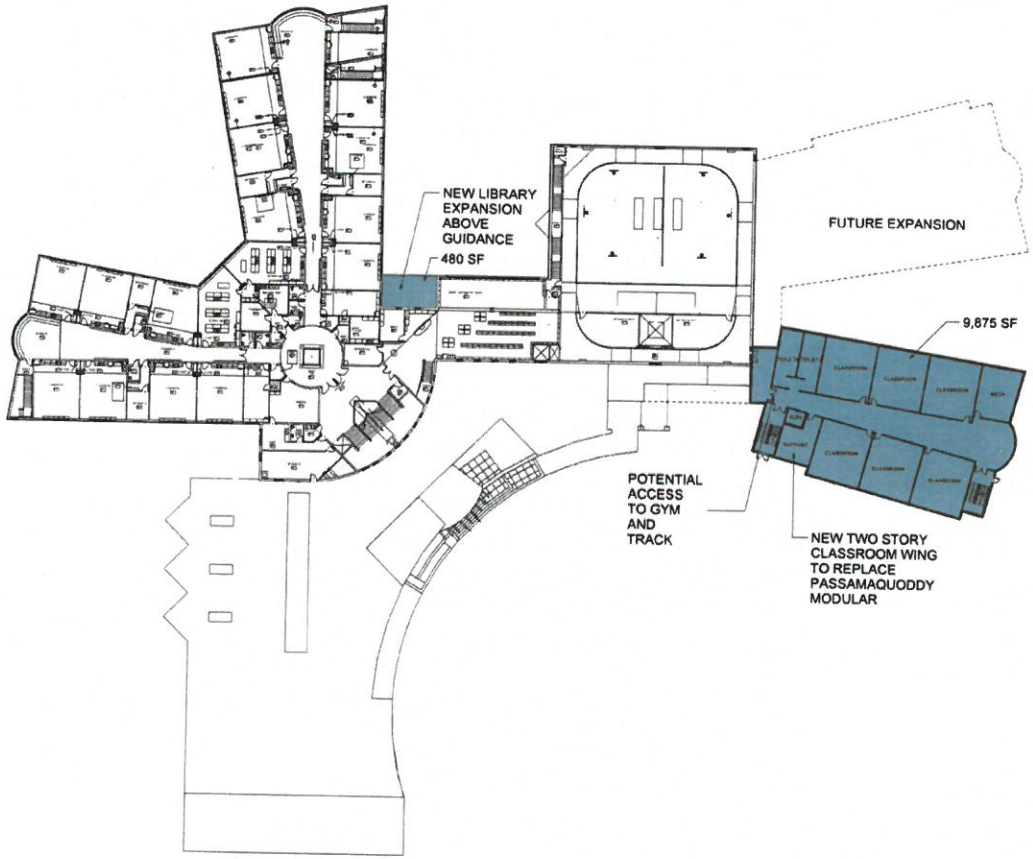


HARRIMAN

SCARBOROUGH STRATEGIC FACILITIES STUDY

PROPOSED FIRST FLOOR PLAN
OPTION TWO

10/01/14



MIDDLE SCHOOL SECOND FLOOR

HARRIMAN

SCARBOROUGH STRATEGIC FACILITIES STUDY

PROPOSED SECOND FLOOR PLAN
OPTION TWO

10/01/14

HARRIMAN

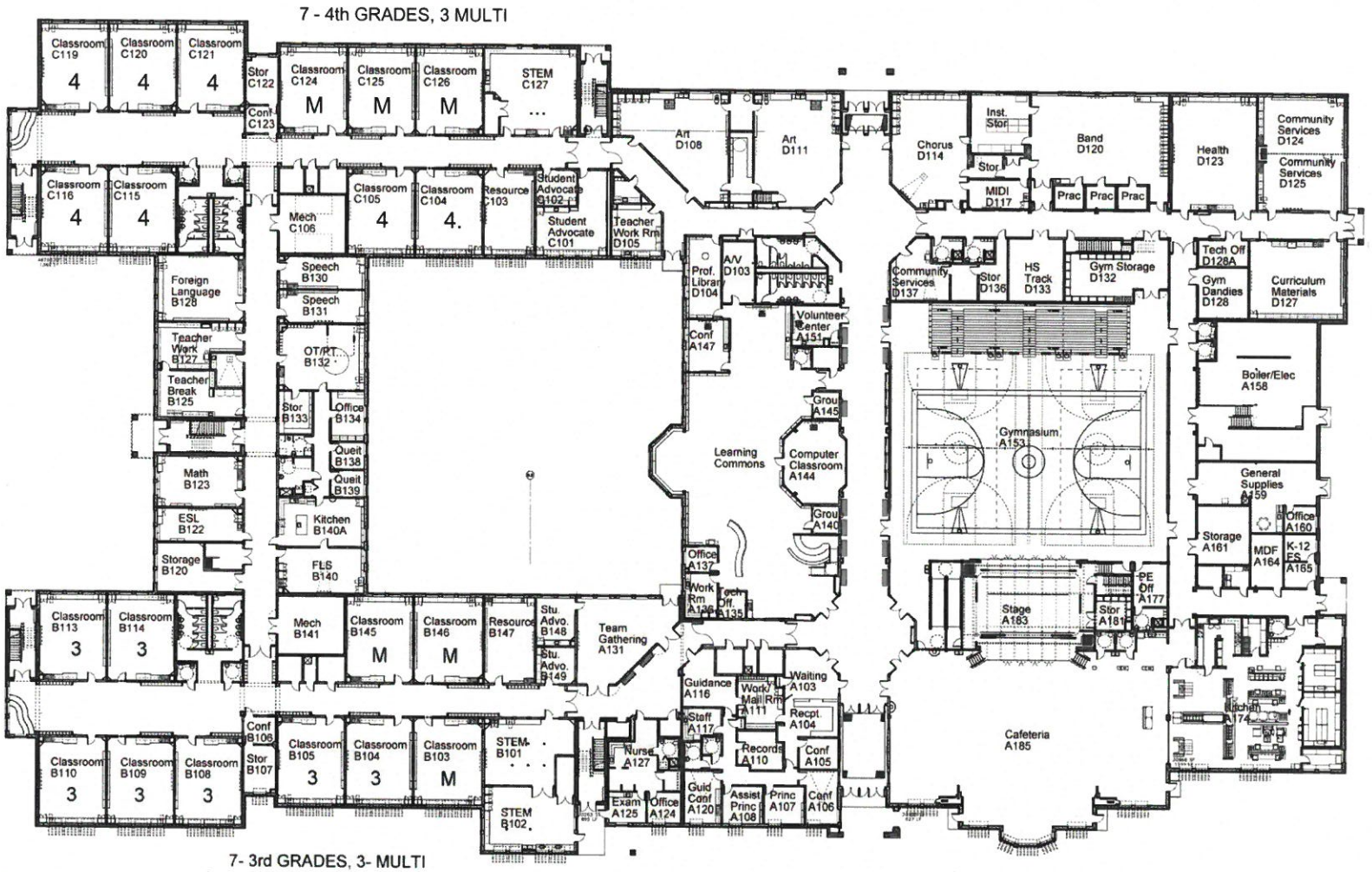
Scarborough School Department
Facilities Long Range Plan
Scarborough Middle School Additions & Renovations

Harriman Architects and Engineers
Project 13501
Concept Design Budget

Grades 6 - 8, Assume 750 Students (Planning Decisions Projection 2025-26 is 736 students)

Pricing Assumptions		
Existing Renovations 128,856 sf x $25/sf =	$3,221,400	**DRAFT 12/06/2016**
New Construction 29,735 sf x $250/sf =	$7,433,750	**Rev 12/15/16**
Sitework $1,750,000	$1,750,000	
Estimating Contingency 10%	$1,240,515	
Total	$13,645,665	

				TOTAL	
A CONSTRUCTION					
1	Construction Cost in 2016 dollars (See notes above 2014)			$13,645,665	1
2	New Campus Drive with sidewalk from the Middle School to Sawyer Road - 2,400 feet			$500,000	2
		Subtotal	76.79%	**$14,145,665**	
B ADMINISTRATIVE COSTS & RESERVES					
3	Land Purchase and Related Costs (Allowance if new land required.)			$0	3
4	Moveable Equipment (6% of Bldg only. Assume $11mm.)			$660,000	4
5	Technology (3% of Bldg only. Assume $11mm.)			$330,000	5
6	Advertising and Legal			$45,000	6
7	Percent for Art			$0	7
8	Project Contingency 10% of A1			$1,414,567	8
		Subtotal	13.30%	**$2,449,567**	
C FEES AND SERVICES					
9	Architect / Engineer Basic Services 7.1% of new, 10.3% of reno			$1,117,735	9
10	Architect / Engineer Additional Services - TBD			$0	10
11	Architect / Engineer Reimbursables			$15,000	11
12	Permitting & Approvals			$60,000	12
13	Wetlands Mitigation, Vernal Pools			$75,000	13
14	Construction Testing			$75,000	14
15	Survey and Soils			$90,000	15
16	Project Coordination (Assume 18 mos x $5,000/mon)			$90,000	16
17	Clerk of the Works (Assume 18 mos x $8,000/mon)			$144,000	17
18	Commissioning			$85,000	18
19	Consultants			$75,000	19
		Subtotal	9.92%	**$1,826,735**	
D TOTAL PROJECT COST in 2016 dollars			**100%**	**$18,421,967**	
E Credits, Grants and Gifts, Efficiency Maine, etc. - TBD				**$0**	
F Final Bond Amounts				**$0**	



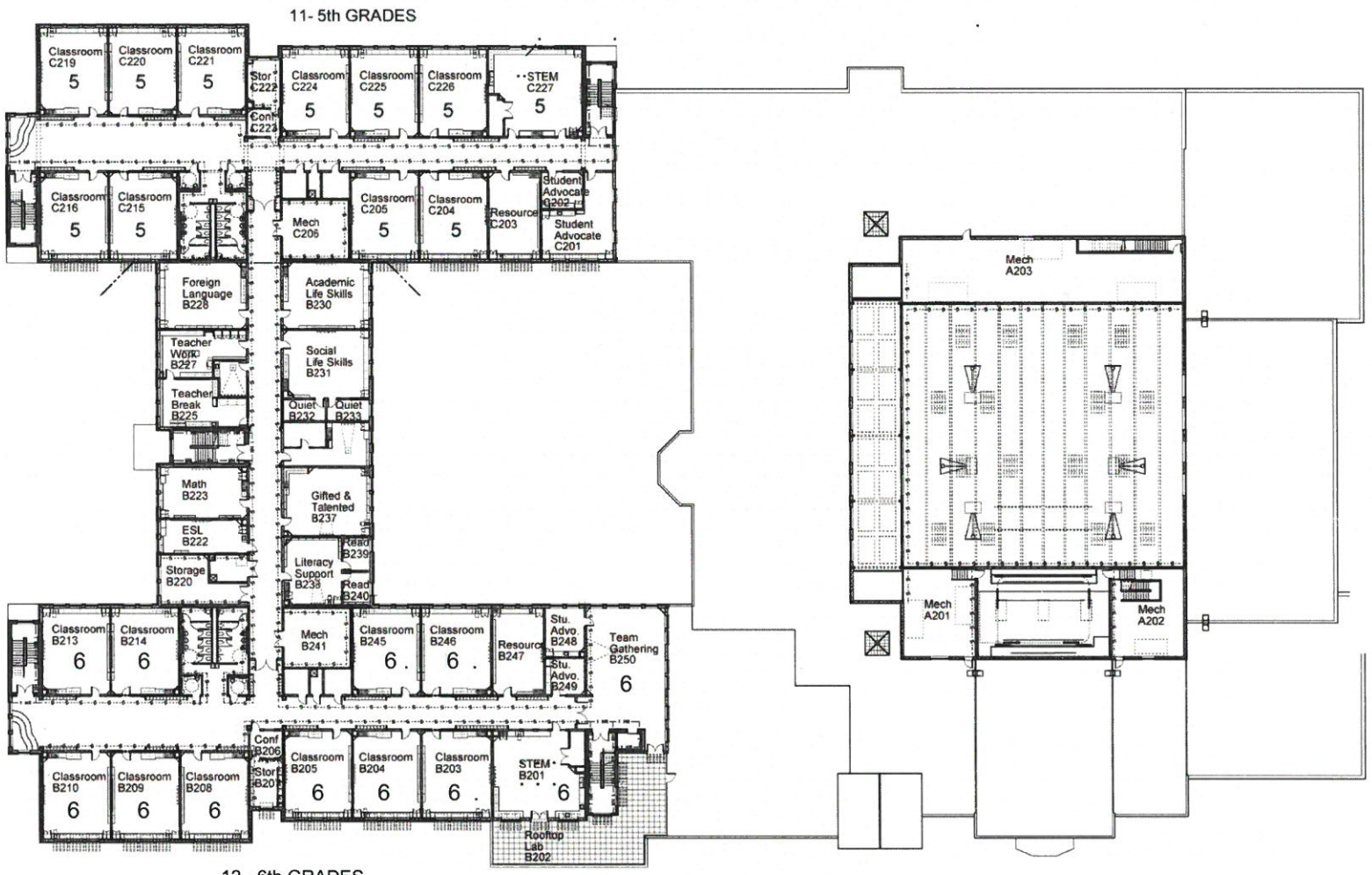
WENTWORTH SCHOOL 1ST FLOOR

HARRIMAN

SCARBOROUGH STRATEGIC FACILITIES STUDY

MIDDLE SCHOOL OPTION 3

12/19/14



WENTWORTH SCHOOL 2ND FLOOR

HARRIMAN

SCARBOROUGH STRATEGIC FACILITIES STUDY

MIDDLE SCHOOL OPTION 3

12/19/14

PART EIGHT – Existing Site Plans and Floor Plans

See attached.

NOTE:

THIS PLAN IS A COMPILATION OF SITE PLANS PROVIDED BY THE TOWN OF SCARBOROUGH, ARCHIVAL DESIGN DRAWINGS BY HARRIMAN AND PREVIOUS SURVEYS PROVIDED TO HARRIMAN FROM THE TOWN OF SCARBOROUGH. THIS PLAN DOES NOT REPRESENT ACTUAL AS-BUILT CONDITIONS AND SHOULD NOT BE CONSTRUED TO BE ACCURATE. THE INTENTION OF THIS PLAN IS TO FACILITATE MASTER PLANNING FOR THE SCARBOROUGH MUNICIPAL CAMPUS. FOR ANY FUTURE DESIGN, AN ACTUAL SURVEY MUST BE CONDUCTED TO OBTAIN ACCURATE EXISTING CONDITIONS.

HARRIMAN

ALBANY PORTLAND PORTSMOUTH BOSTON

Scarborough Master Plan

Scarborough, Maine

Harriman Project No. 10621

Key Plan

No.	Date	Description
1	11.08.10	COMPOSITE SITE PLAN

PRELIMINARY NOT FOR CONSTRUCTION

Drawing Notes

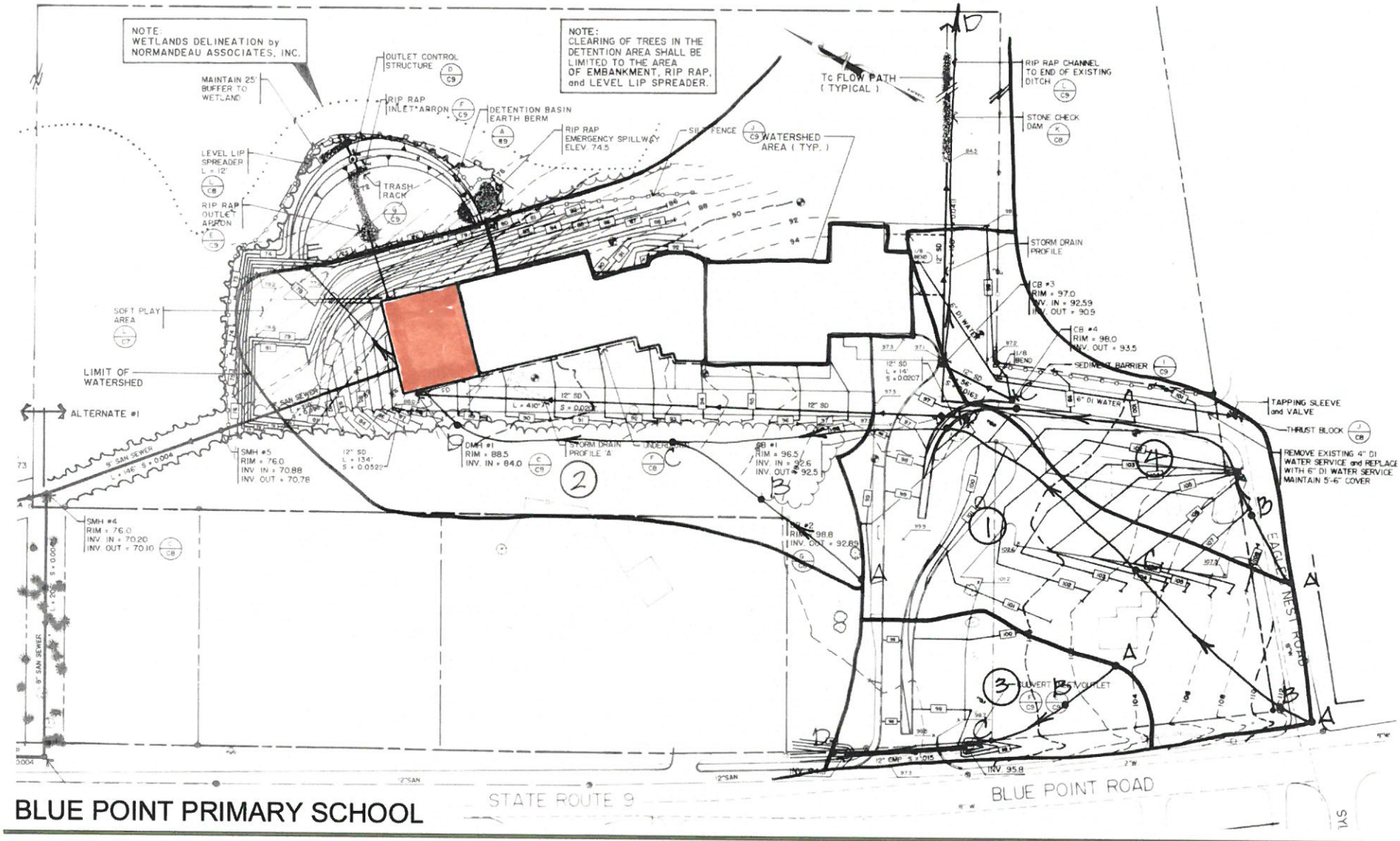
PA/PL JDK

Drawn by PLS

© 2010 Harriman Associates

SITE OVERVIEW PLAN

C00.1



BLUE POINT PRIMARY SCHOOL

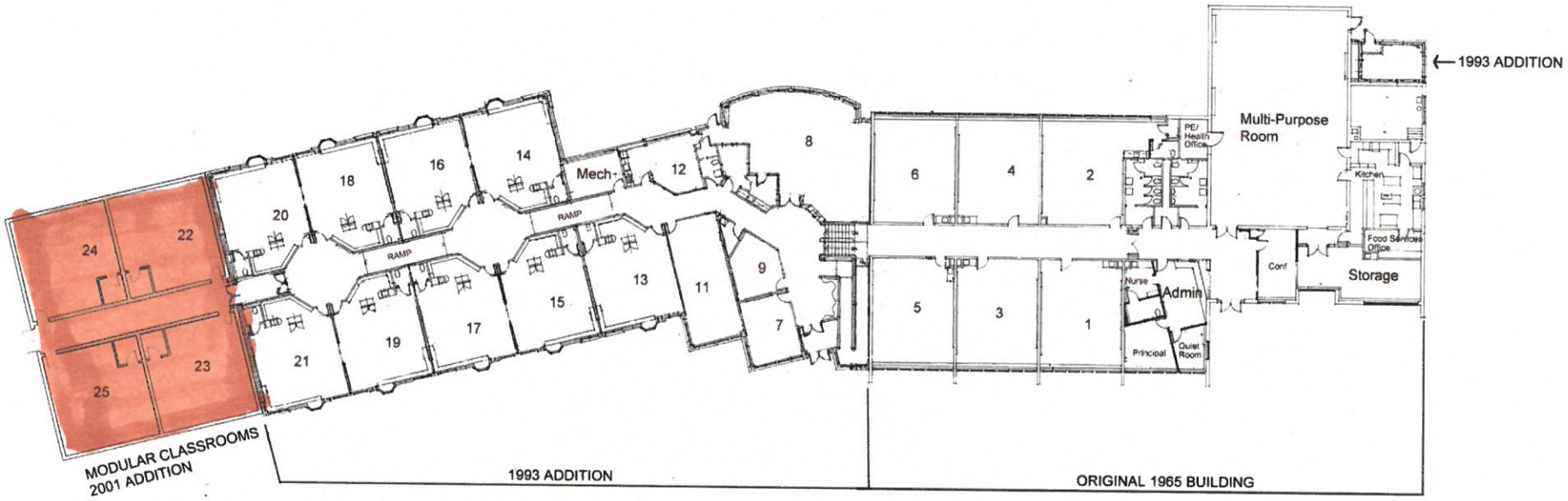
HARRIMAN

SCARBOROUGH STRATEGIC FACILITIES STUDY

NORTH

EXISTING SITE PLAN

01/07/2014



BLUE POINT PRIMARY SCHOOL

HARRIMAN

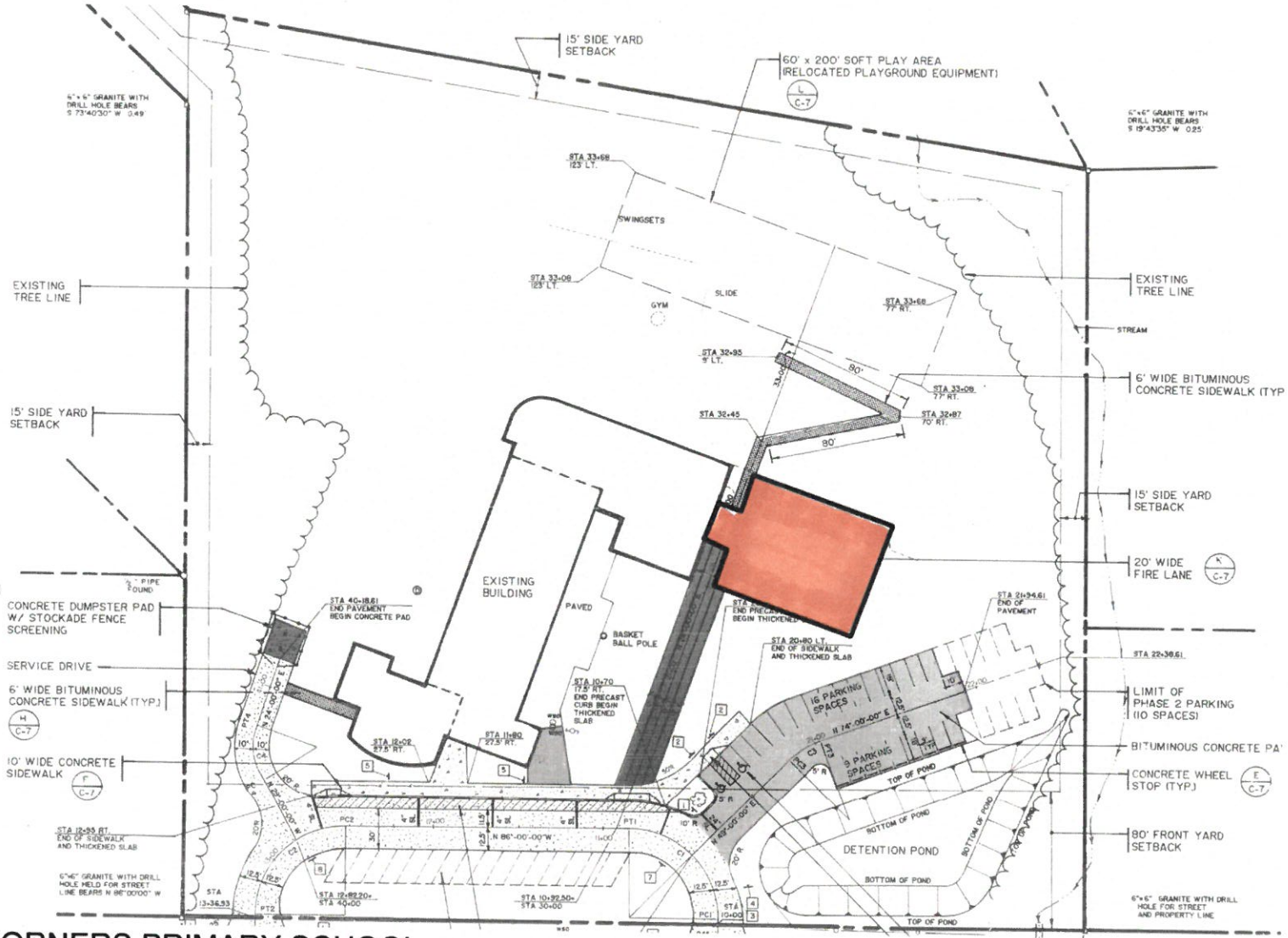
SCARBOROUGH STRATEGIC FACILITIES STUDY

EXISTING FLOOR PLAN

NORTH

0 16' 32'

01/07/2014



EIGHT CORNERS PRIMARY SCHOOL

HARRIMAN

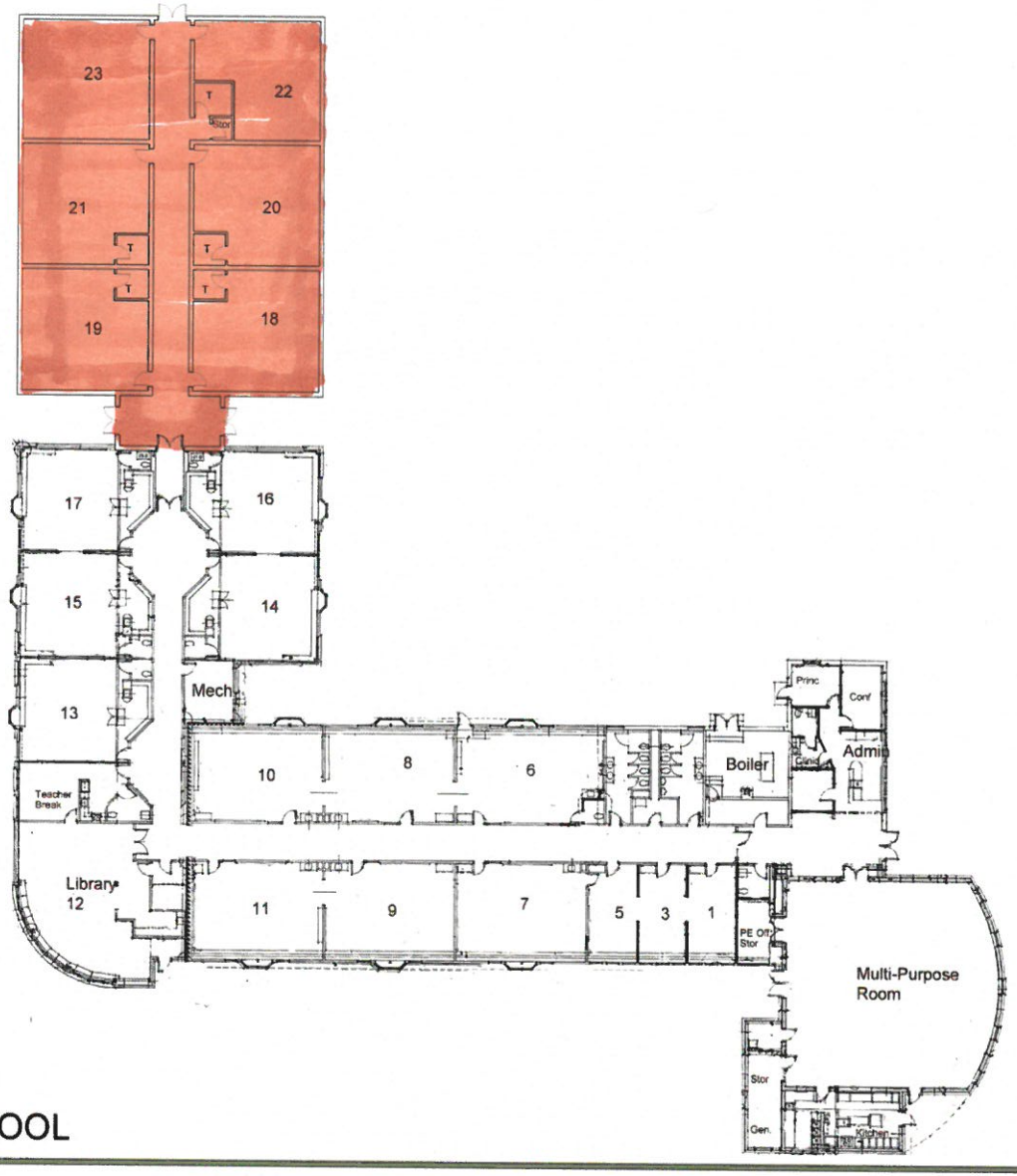
SCARBOROUGH STRATEGIC FACILITIES STUDY

NORTH

EXISTING SITE PLAN

40 0 40 80 scale feet

01/07/2014



EIGHT CORNERS PRIMARY SCHOOL

HARRIMAN

SCARBOROUGH STRATEGIC FACILITIES STUDY

NORTH

EXISTING FLOOR PLAN

0 16' 32'

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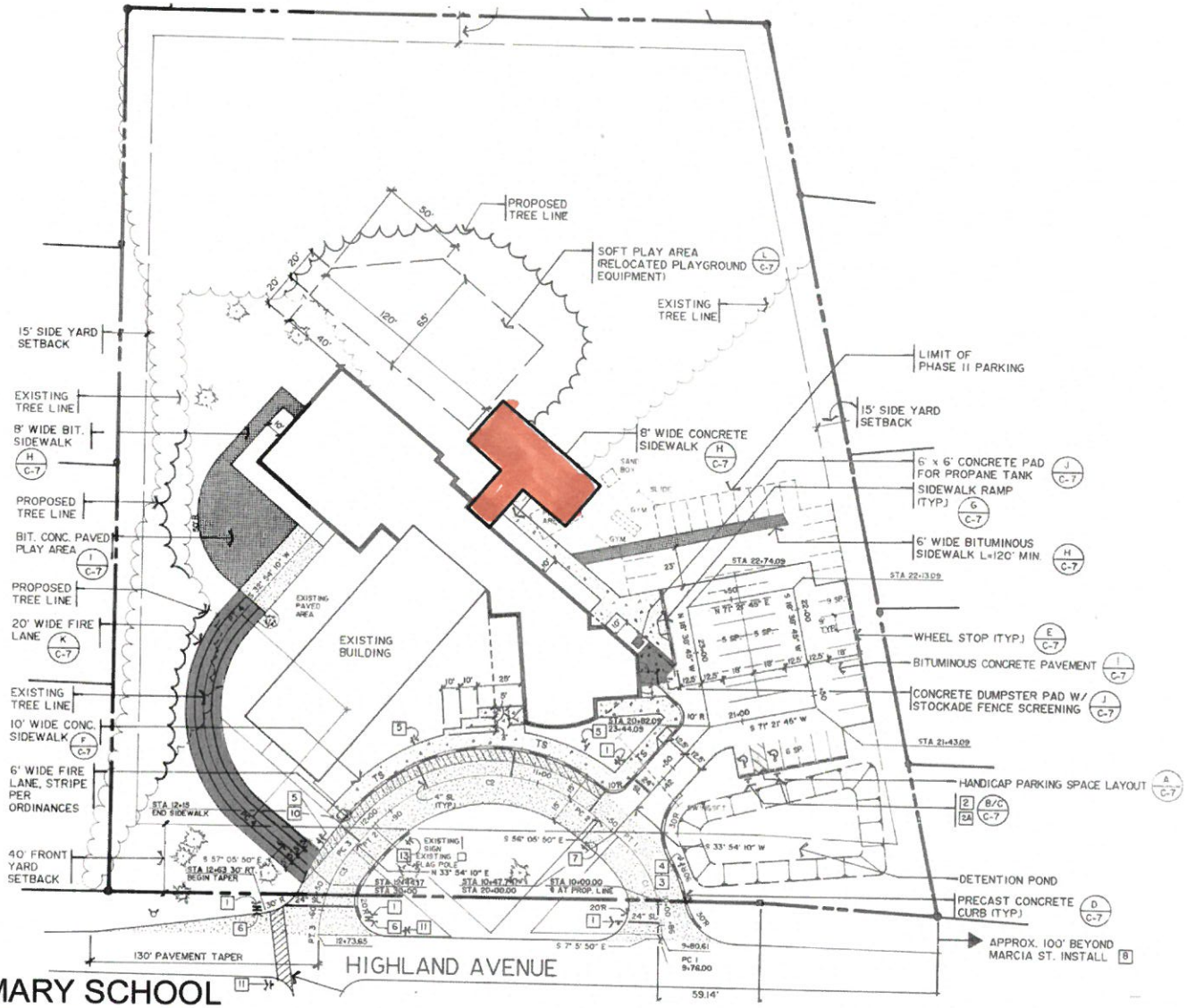


PLEASANT HILL PRIMARY SCHOOL

HARRIMAN

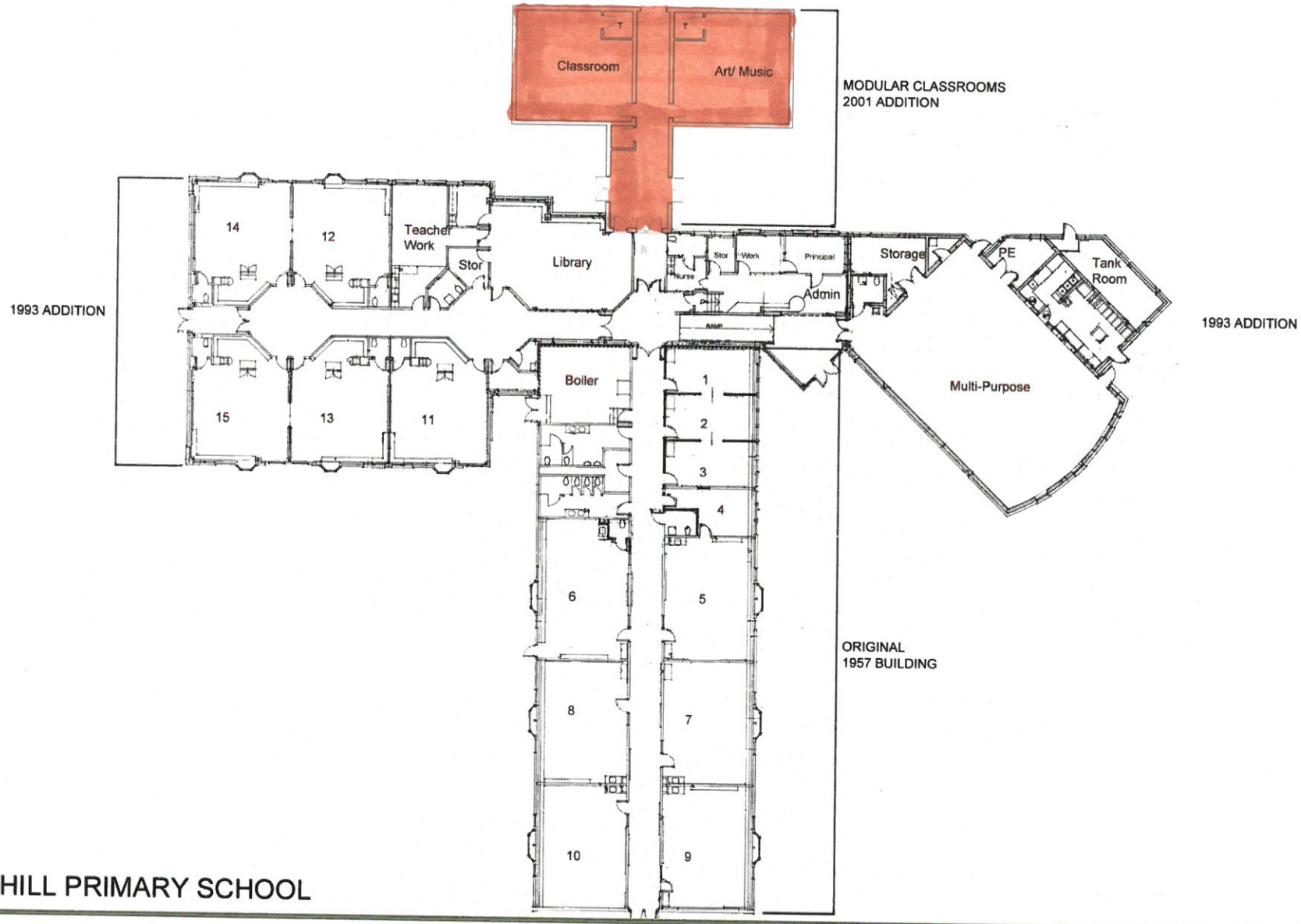
SCARBOROUGH STRATEGIC FACILITIES STUDY

EXISTING SITE PLAN

NORTH

scale 40 0 40 80 feet

01/07/2014



PLEASANT HILL PRIMARY SCHOOL

HARRIMAN

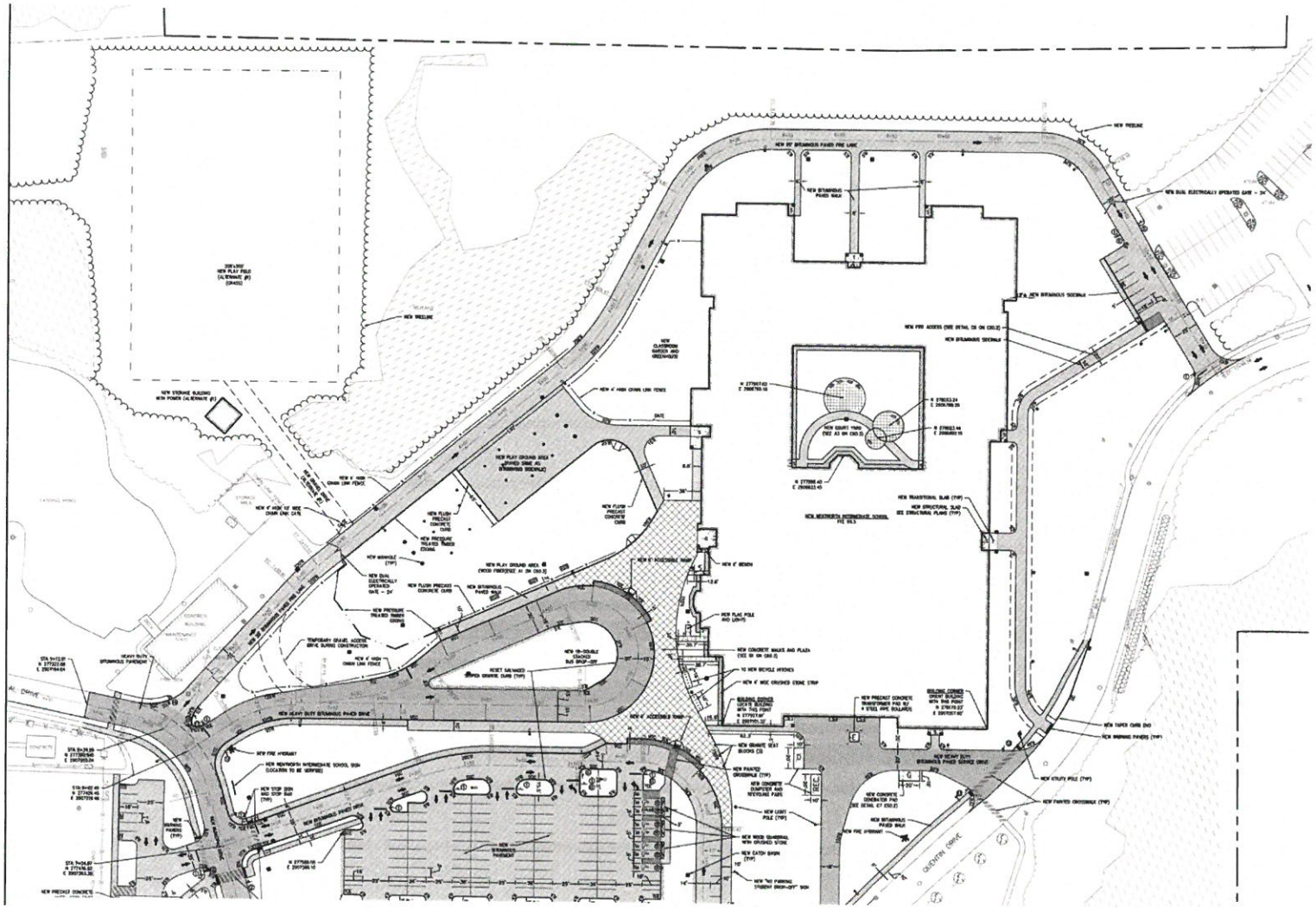
SCARBOROUGH STRATEGIC FACILITIES STUDY

NORTH

EXISTING
FLOOR PLAN

0 16' 32'

01/07/2014



WENTWORTH SCHOOL

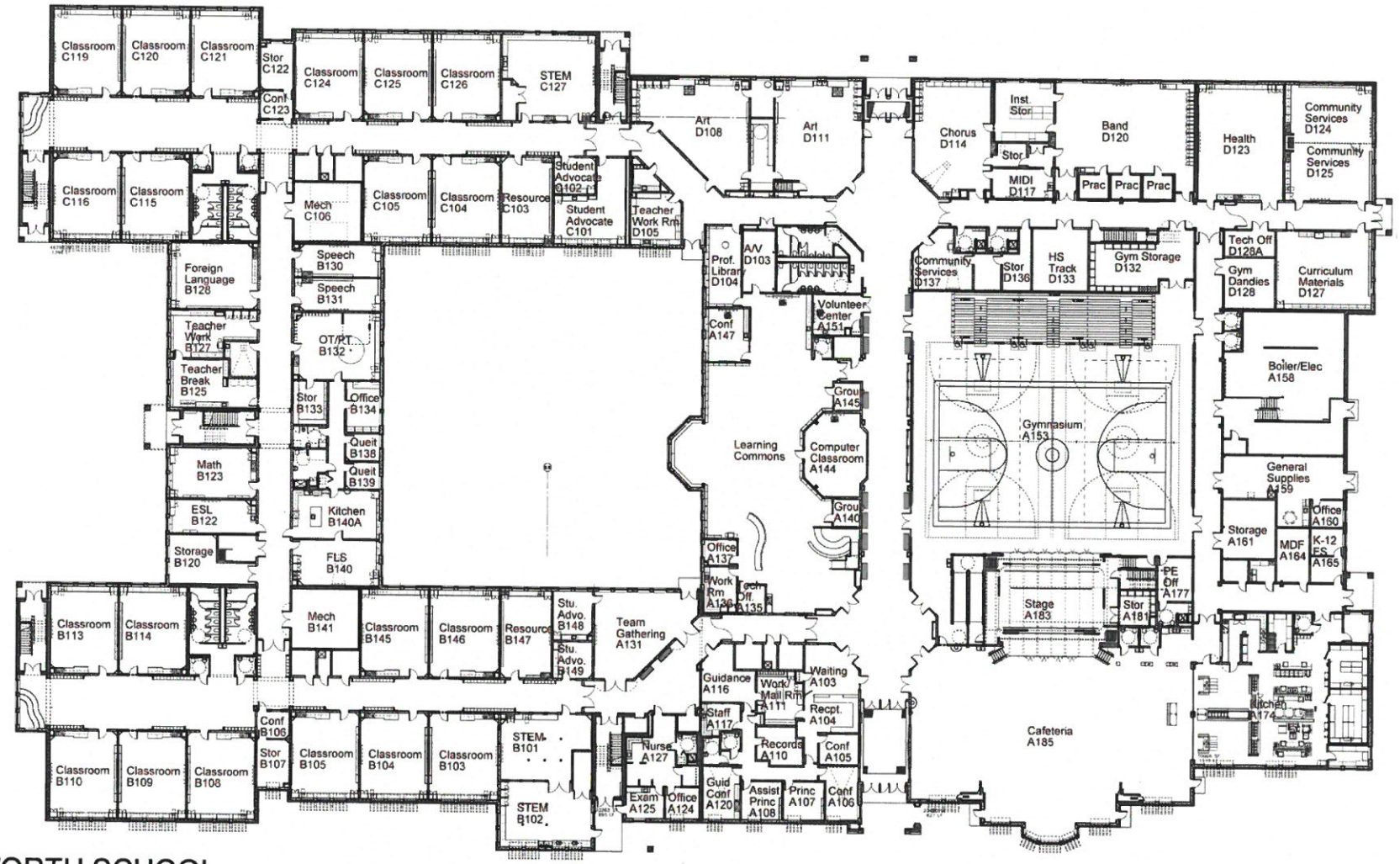
HARRIMAN

SCARBOROUGH STRATEGIC FACILITIES STUDY

NORTH

EXISTING SITE PLAN

01/07/2014



WENTWORTH SCHOOL

FIRST FLOOR

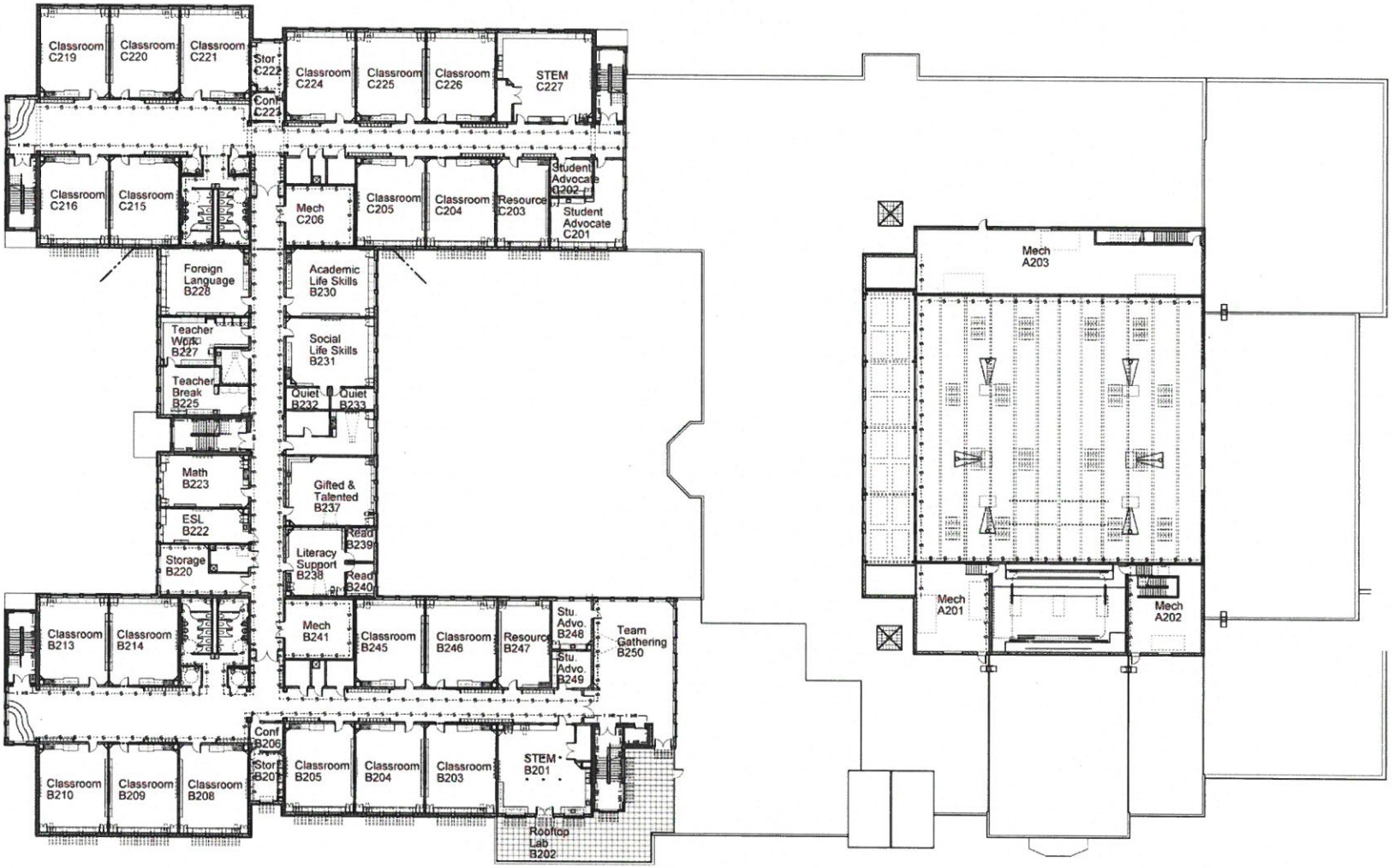
HARRIMAN

SCARBOROUGH STRATEGIC FACILITIES STUDY

EXISTING FLOOR PLAN

NORTH

01/07/2014



WENTWORTH SCHOOL

SECOND FLOOR

HARRIMAN

SCARBOROUGH STRATEGIC FACILITIES STUDY

EXISTING FLOOR PLAN

NORTH

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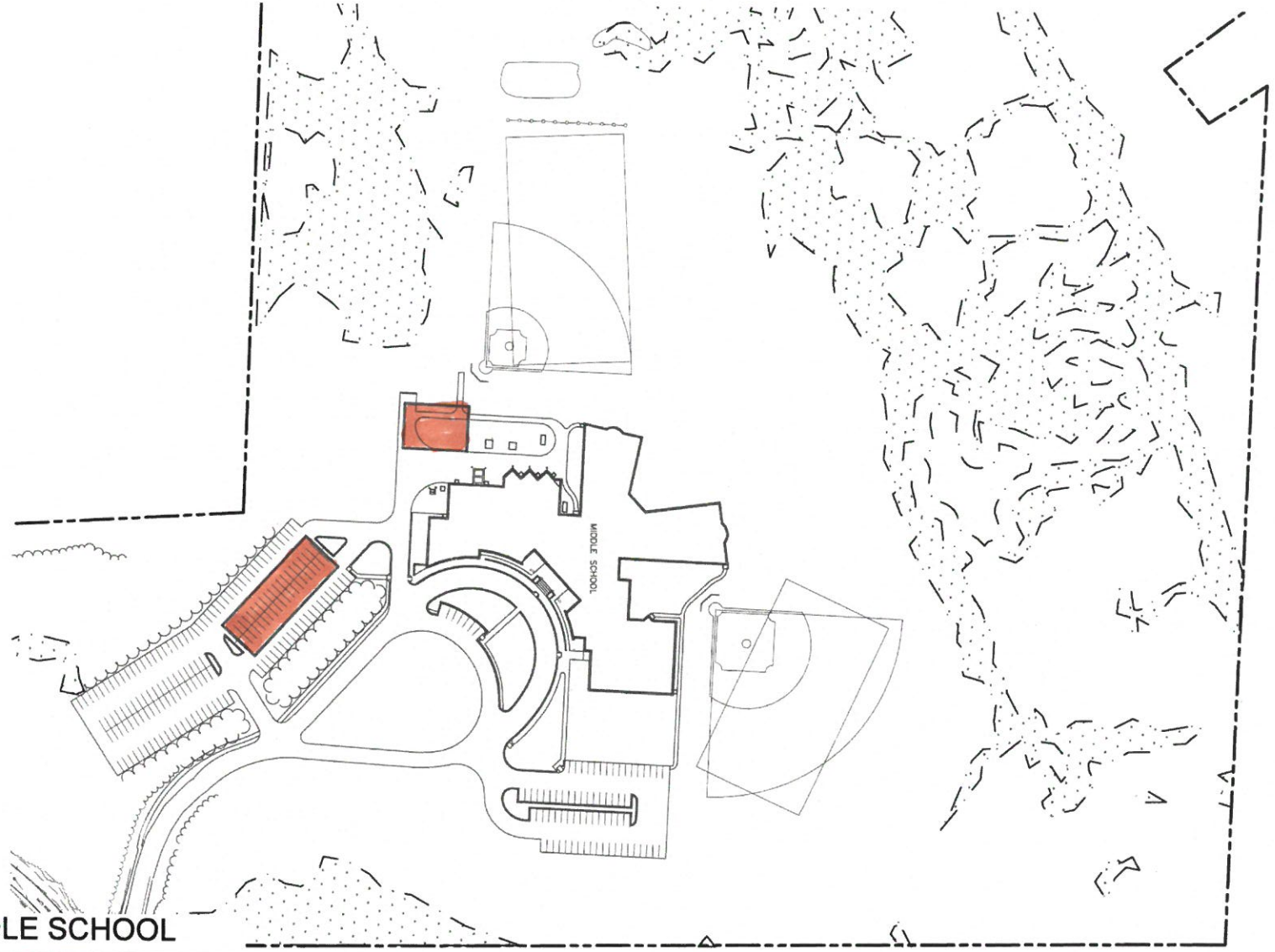


SCARBOROUGH MIDDLE SCHOOL

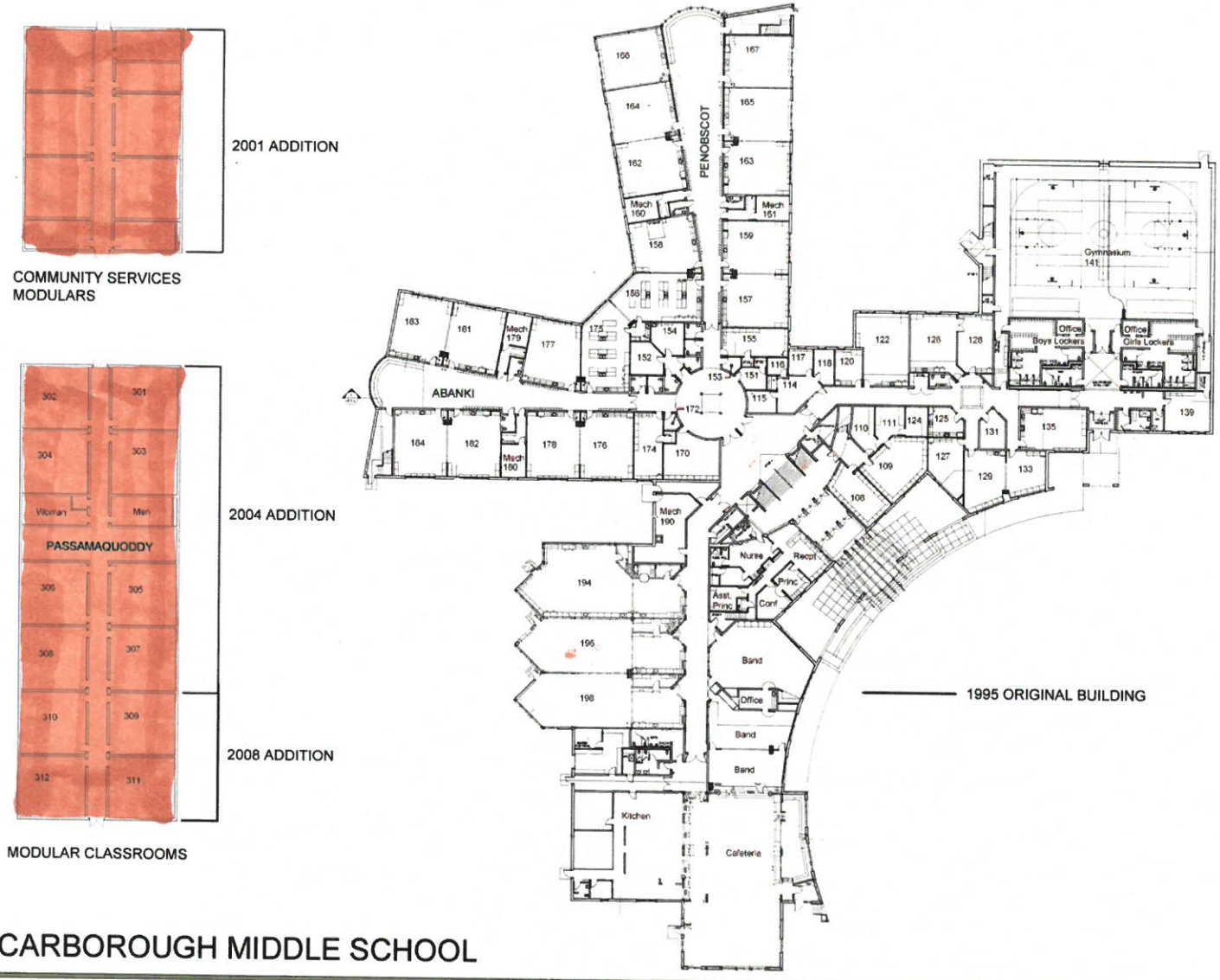
HARRIMAN

SCARBOROUGH STRATEGIC FACILITIES STUDY

NORTH

EXISTING SITE PLAN

01/07/2014



SCARBOROUGH MIDDLE SCHOOL

FIRST FLOOR

HARRIMAN

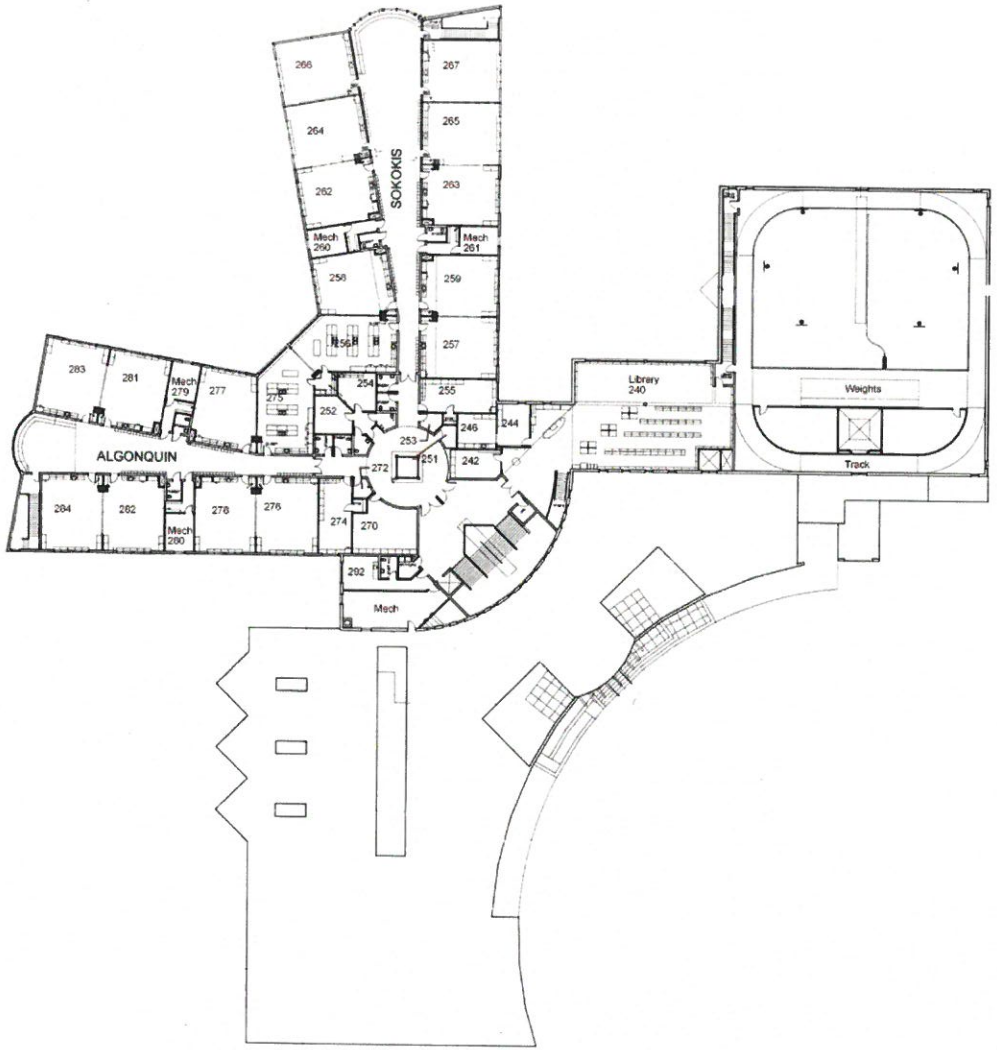
SCARBOROUGH STRATEGIC FACILITIES STUDY

NORTH

EXISTING FLOOR PLAN

0 16' 32' 48'

01/07/2014



SCARBOROUGH MIDDLE SCHOOL

SECOND FLOOR

HARRIMAN

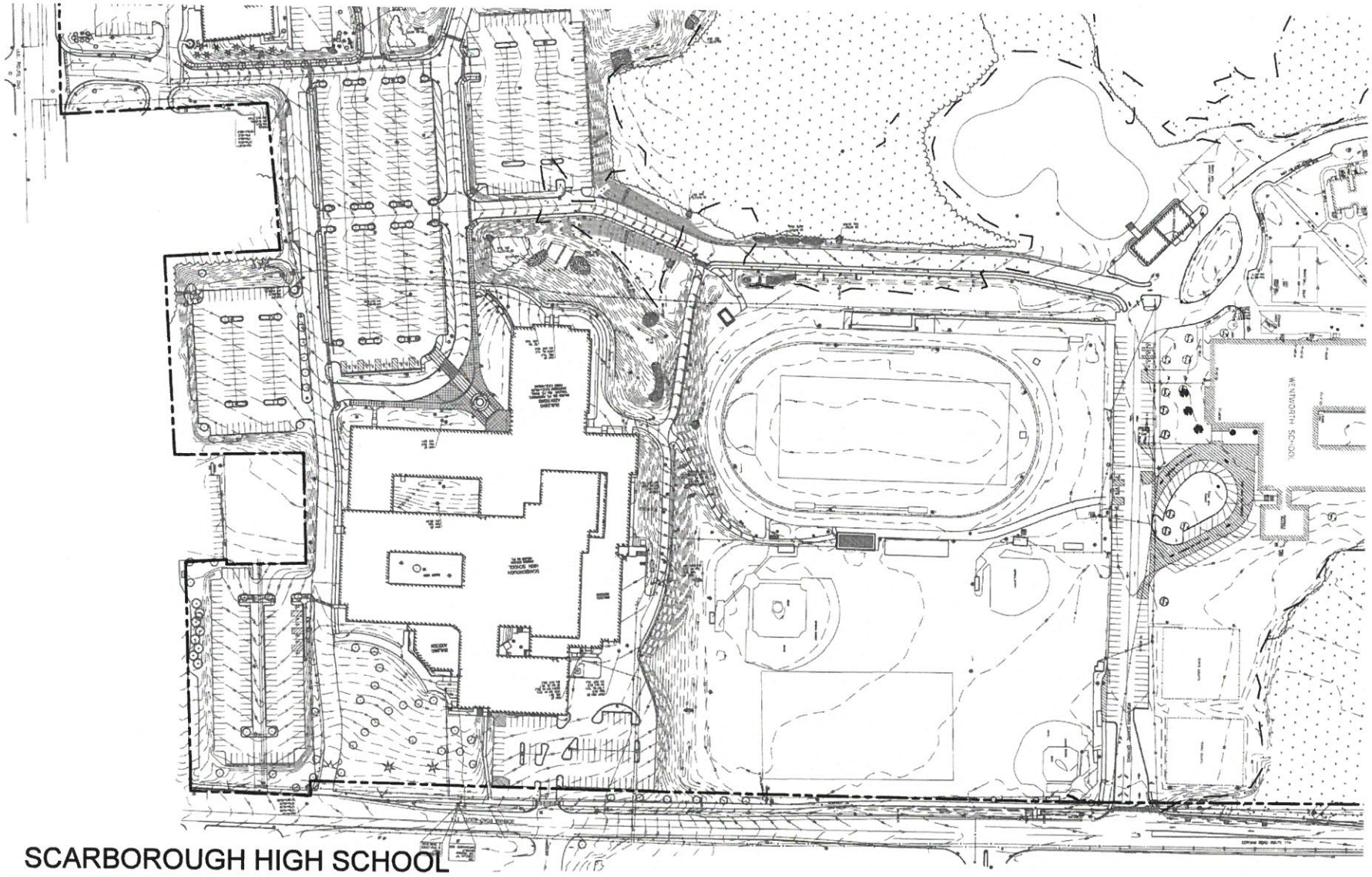
SCARBOROUGH STRATEGIC FACILITIES STUDY

NORTH

EXISTING FLOOR PLAN

0 16' 32' 48'

01/07/2014



SCARBOROUGH HIGH SCHOOL

HARRIMAN

SCARBOROUGH STRATEGIC FACILITIES STUDY

NORTH

EXISTING SITE PLAN

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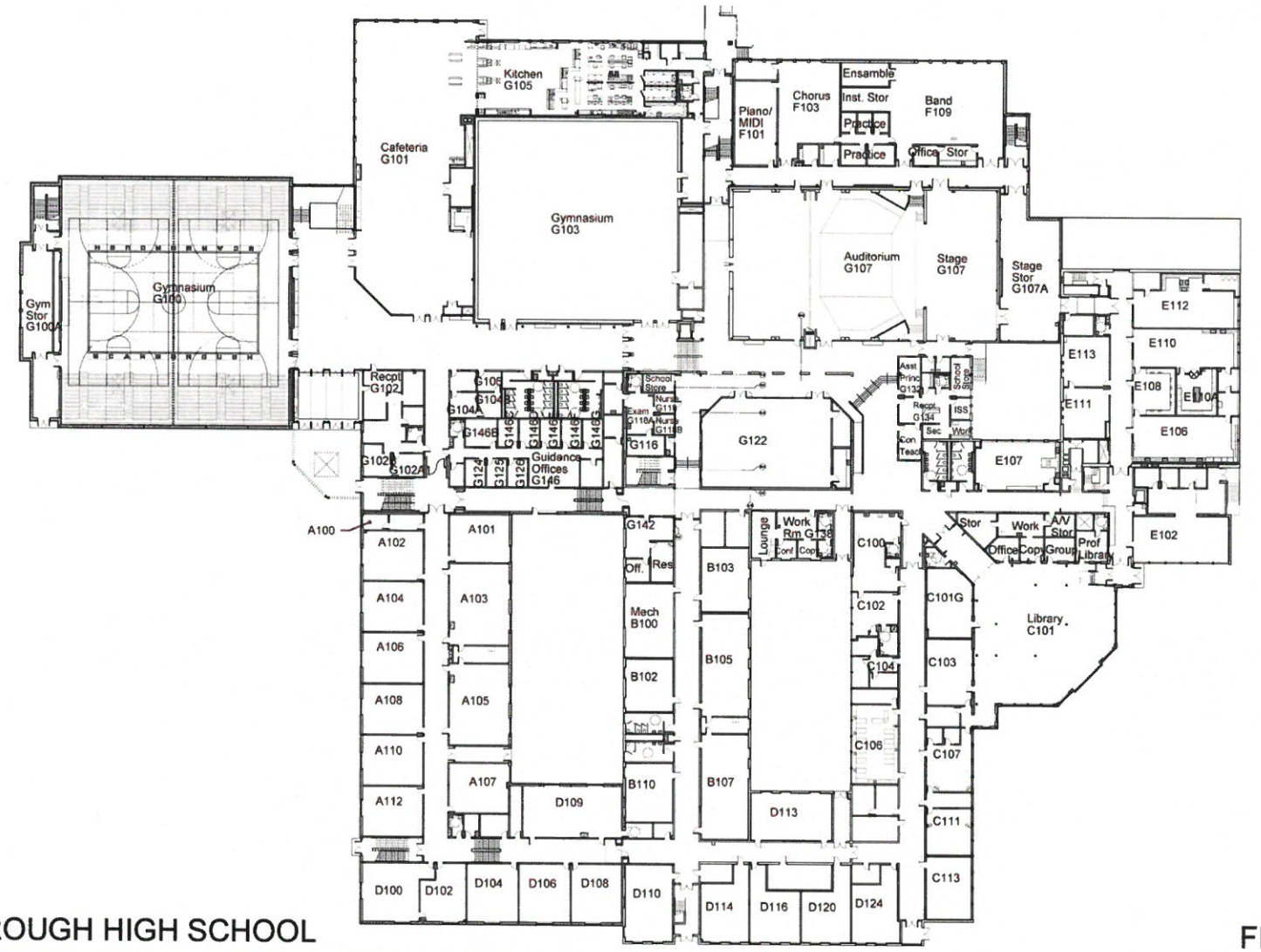


SCARBOROUGH HIGH SCHOOL

FIRST FLOOR

HARRIMAN

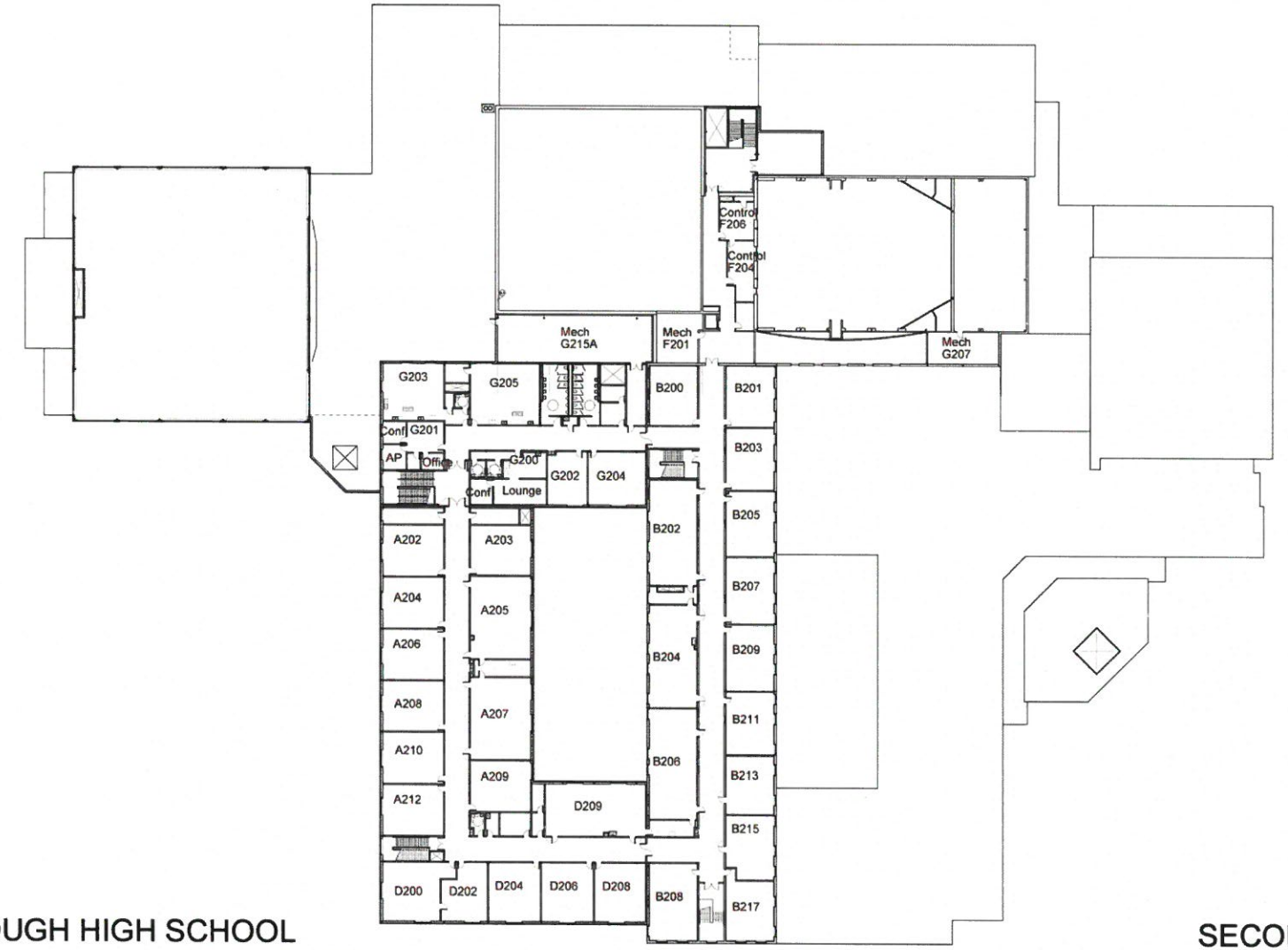
SCARBOROUGH STRATEGIC FACILITIES STUDY

EXISTING FLOOR PLAN

NORTH

0 16' 32' 48'

01/07/2014



SCARBOROUGH HIGH SCHOOL

SECOND FLOOR

HARRIMAN

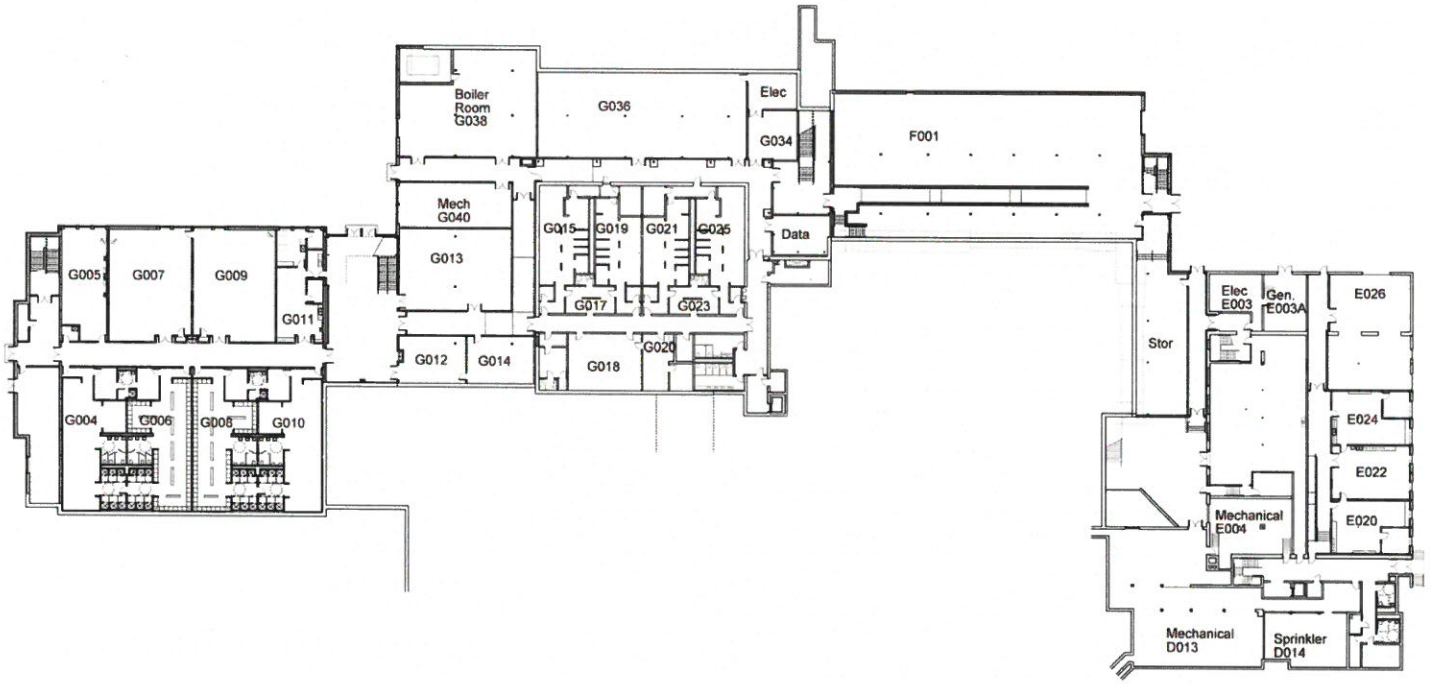
SCARBOROUGH STRATEGIC FACILITIES STUDY

EXISTING FLOOR PLAN

NORTH

0 16' 32' 48'

01/07/2014



SCARBOROUGH HIGH SCHOOL

GROUND FLOOR

HARRIMAN

SCARBOROUGH STRATEGIC FACILITIES STUDY

NORTH

0 16' 32' 48'

EXISTING FLOOR PLAN

01/07/2014