

MASTER PLAN:
CONSOLIDATION OF THREE RIVERS COMMUNITY COLLEGE

PROJECT NO. BI-CTC-401

Fletcher-Thompson, Inc.
Mitchell/Giurgola Architects

January 31, 2005

Table of Contents:

I. Executive Summary

II. Master Plan

III. Alternate Master Plan Concept Studies

Appendices:

a) Concept Materials and Systems Report

b) Opinion of Probable Cost: Master Plan

c) Project Schedule

d) Project Team

e) Permitting Requirements

I. Executive Summary

Introduction:

Mitchell/Giurgola Architects and Fletcher/Thompson Architects have been working with Three Rivers Community College and The Connecticut Department of Works since October 2004 to develop a master plan for the consolidation of Three Rivers Community College on the Thames valley campus in Norwich, Connecticut. The design team is pleased to present our recommended master plan for the site.

Consolidation/ Phasing:

Currently, Three Rivers Community College has facilities on both the Mohegan Campus, located two miles north of downtown Norwich, and the Thames Valley Campus, located two miles southeast of downtown. A primary goal of the master planning process is to develop a plan that will allow the consolidation of all of TRCC's facilities on the Thames Valley campus and allow the Technical School to relocate to the Mohegan campus when it becomes available for occupancy in the summer of 2008. One of the significant challenges of the project will be phasing construction so that disruption to the College and to the Technical School is minimized.

The Site:

The 29-acre Thames Valley site is located on the east side of New London Turnpike. The topography of the site slopes from west to east with a wetlands boundary bordering the east side of the site. A 100-year flood plain boundary runs across the southeast corner of the site demarking the buildable portion of the property. There is currently on site parking serving the Technical School and the Thames Building for approximately 720 cars. The new program of requirements calls for parking accommodation for 1,250 cars.

Building Analysis:

The existing Thames Valley Campus consists of the Thames building, currently occupied by Three Rivers Community College (TRCC) and the Norwich Regional Vocational Technical School (RVTS), currently occupied by Norwich VoTech High School. The 108,000 square foot Thames building houses classrooms, offices, laboratories, a cafeteria, a library and a gymnasium and was constructed in 1962 and expanded in 1967. The 96,000- square foot RVTS Building houses, classrooms, offices, a gymnasium, cafeteria and an assortment of vocational shops and was constructed in 1954 and expanded in 1967 and 1969.

Program:

The design team used *The Three Rivers Community College Campus Master Plan Update* completed by Rickes Associates in September 2003 as a base program for the master plan. The program called for 212,652 net square feet of assignable program space, which translates to approximately 333,000 gross square feet.

Concurrent with the master planning for the Thames Valley site, the design team has been evaluating the Rickes program through a series of meeting with TRCC faculty and administrators. The design team examined the Rickes program both in terms of the current needs of the College and with respect to the affordability of the full build out of the program in light of the project budget. In collaboration with the user groups, the design team has identified a series of potential reductions to this original program in order to align it with the project budget. These programmatic reductions should be carefully reviewed and endorsed by the college before we begin the schematic phase of the project.

It should be noted that the proposed master plan is based on a "reduced" program of 191,961 net assignable square feet, which translates to approximately 309,240 gross square feet. The Rickes Program, the potential program reductions and diagrammatic room layouts of most of the program spaces are included in a companion volume to this submittal titled *Program Analysis: Consolidation of Three Rivers Community College*.

Master Plan Alternatives:

The design team presented several master plan alternatives to the College and DPW during the course of the master planning process, all of which are included in this volume. Each of the alternatives anticipates reusing the Thames building to accommodate a portion of the program and providing some amount of new construction for the remaining program components.

Several alternatives explored the possibility of renovating the existing RVTS building and incorporating it into the new campus. Through the course of several meetings, the college and design team reached consensus that it was not prudent to try and reuse the RVTS school. Significant technical obstacles to reutilizing the school included the expense of the extensive renovation; the compromised spaces yielded by the existing structural bays and floor to floor heights and the awkward site relationship that would result from attempting to connect the school to the Thames building.

Additionally, the necessity for the Technical school to remain in use until the spring of 2008 would require that the renovation of the RVTS building take place in a second phase of construction, after the relocation of the school to the Mohegan campus. This delay would mean that the approximately one third of the programmatic elements located in the school would not be available to TRCC until 18 to 24 months after the bulk of new construction was completed. The disruption caused by not having access to these critical programmatic spaces and the subsequent erosion of the construction budget due to inflation all contributed to the decision to demolish rather than reutilize the RVTS.

The Master Plan:

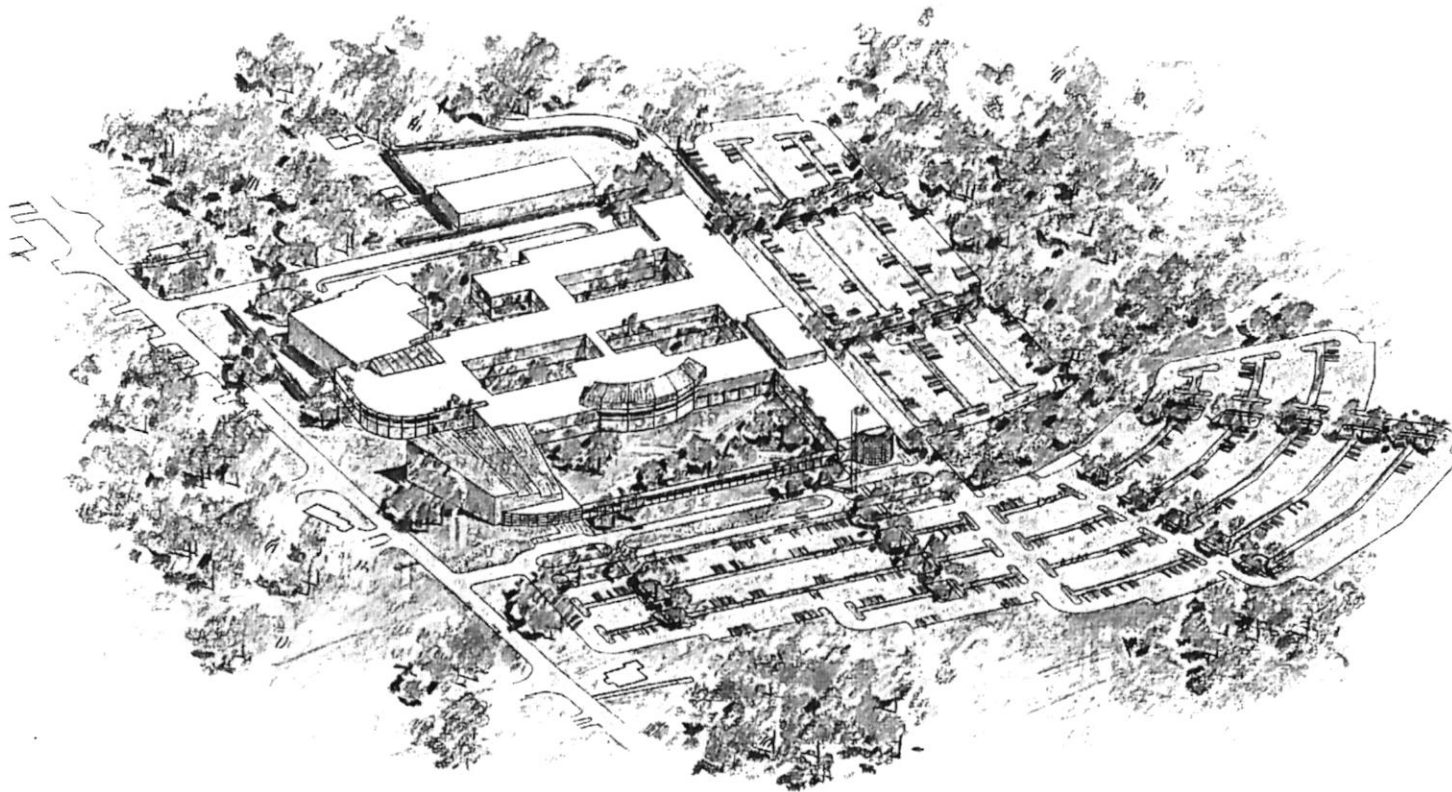
The College and design team reached consensus that the proposed master plan offers a number of advantages over the alternatives:

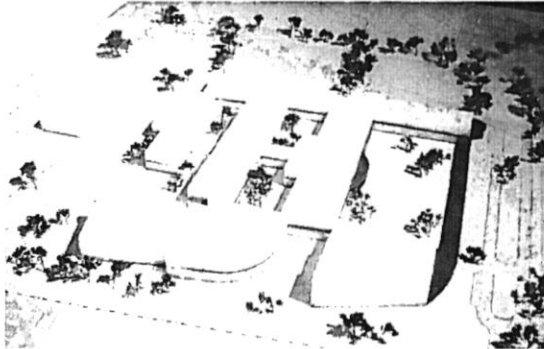
- By siting the bulk of the new construction clear of the RVTS, the majority of the program can be built in one construction phase, minimizing disruption to the college and maximizing the use of construction funds.
- The demolition of the RVTS in a second phase allows for a more efficient use of the south end of the site resulting in an improved vehicular circulation pattern and an enhanced distribution of parking.
- In general, the construction of new spaces rather than the reuse of existing space allows for ideal relationships to be developed between various programmatic elements.
- The new wings will create a gracious front door for the campus and an inviting landscaped academic quad that will serve as the college's "front lawn".

Opinion of Probable Cost:

An opinion of probable cost has been prepared by the design team's cost estimator, John Noble and by the project construction manager, Skanska USA Building Inc., at various points in the master planning process. The final cost estimate for the proposed master plan is included in Appendix B and represents the design team's opinion of probable cost. A separate opinion of probable cost will be submitted under separate cover by Skanska USA Building Inc.

II. Master Plan





The consolidation of the Three Rivers Community College facilities provides a unique opportunity to create a new campus that enhances the College's learning and community-based mission, while at the same time integrating it with its surrounding landscape. The campus will be transformed through the renovation of the existing Thames Valley facility, the addition of over 205,000 sf of new space and the near doubling of current parking provisions.

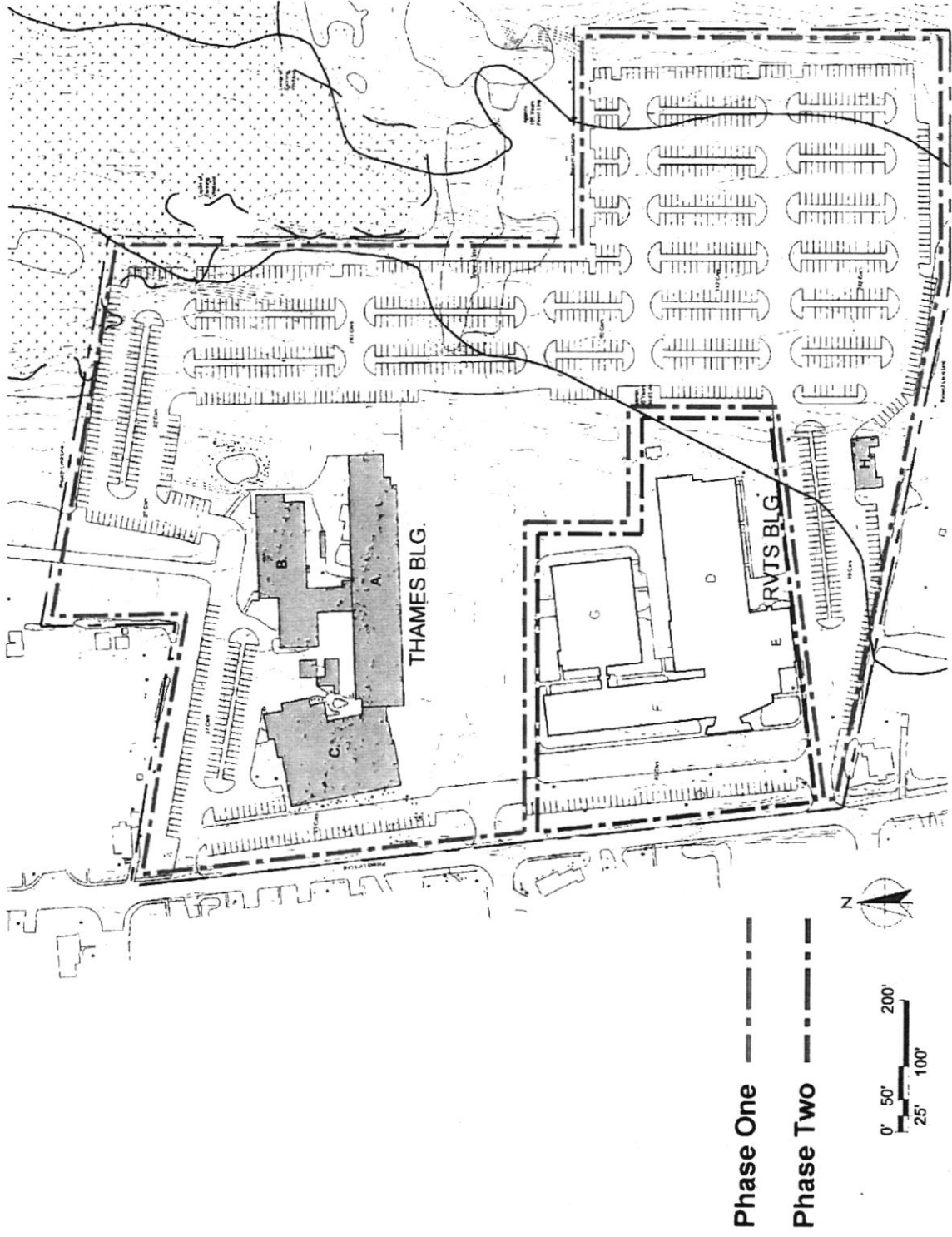
The heart of the master plan design concept centers on the creation of a welcoming "front door" to the college, achieved through thoughtful grouping of the library, auditorium, and student services center. The placement of this ensemble of buildings calls for the library to front the newly created commons, which is, in turn, flanked on either side by the auditorium and student services center, which are themselves connected by an open arcade.

A new landscaped entrance boulevard will serve both practical and aesthetic concerns by providing drop-off areas and access to parking as well as offering visual/design balance through its parallel position to the aforementioned "front door". Further, the entrance boulevard will be oriented toward a large bio-swale, which will draw the natural landscape into the campus and provide articulation between the south and north parking areas. Bio-swales oriented towards the east wing entries will further articulate and visually enhance the north parking sector.

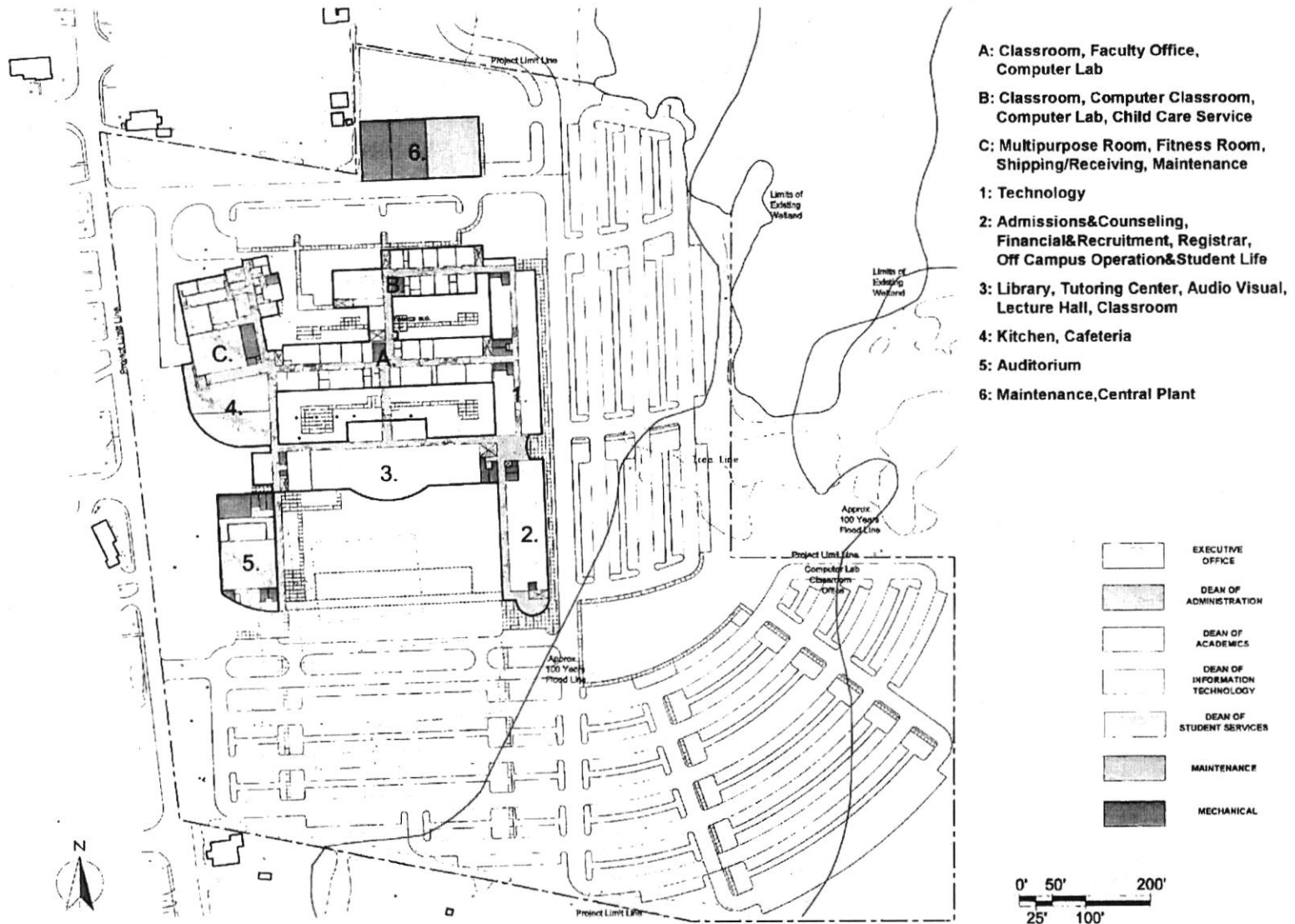
The addition of a 2-story academic wing on the east side of the existing Thames facility, with cafeteria / bookstore on its west side, will eliminate current dead-ends and provide connectivity within, and to the new addition. The resultant enclosed courtyards will become private meeting / study areas and a play area for the day care center, respectively. Faculty and day care center parking, as well as servicing for the cafeteria and bookstore, will be provided to the north of the Thames facility. A new free-standing maintenance building and enclosed service yard, located at the north end of the campus, will house chillers, boilers, and staff work areas.

The new addition will be clad in red masonry compatible with that of the existing Thames facility, punctuated with solar protected glazed elements at major entry points, as well as areas of the cafeteria and library. Principles of sustainability will be incorporated into the design to the maximum extent possible. The project will be constructed in two phases, with all but the auditorium, commons and south entry / parking sector constructed in Phase I.

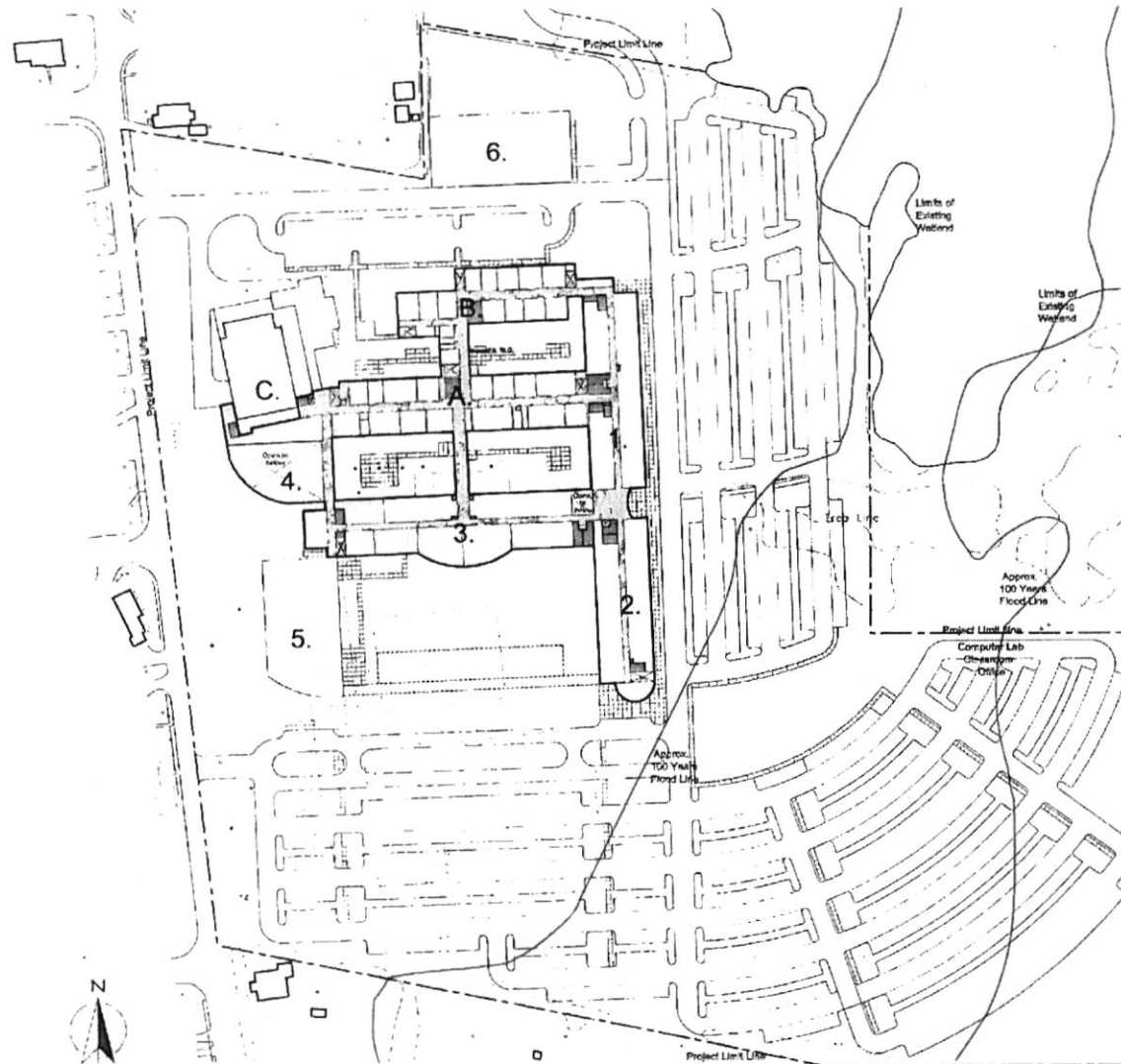
Master Plan: Proposed Phasing Diagram



Master Plan: First Floor Plan



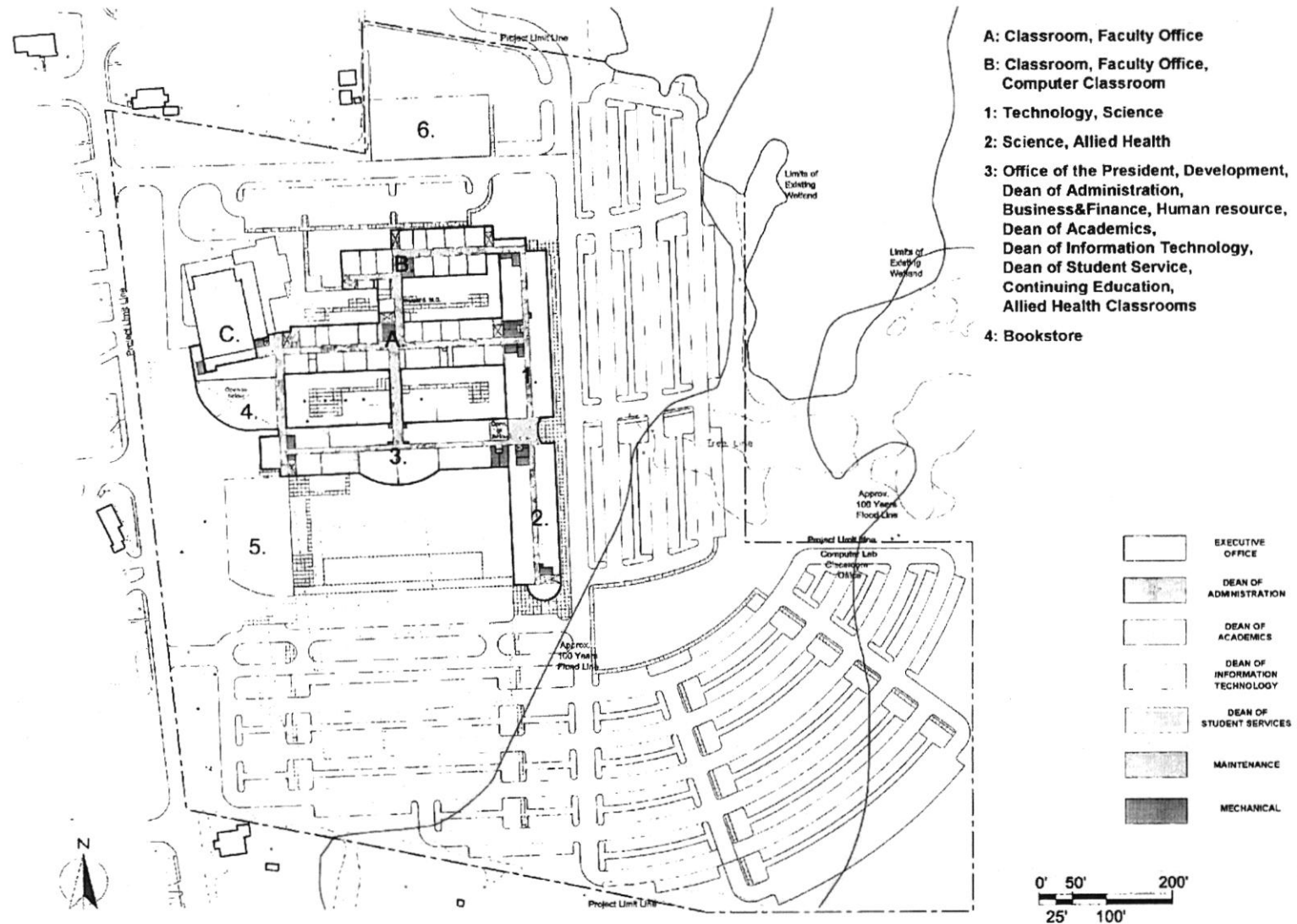
Master Plan: Second Floor Plan



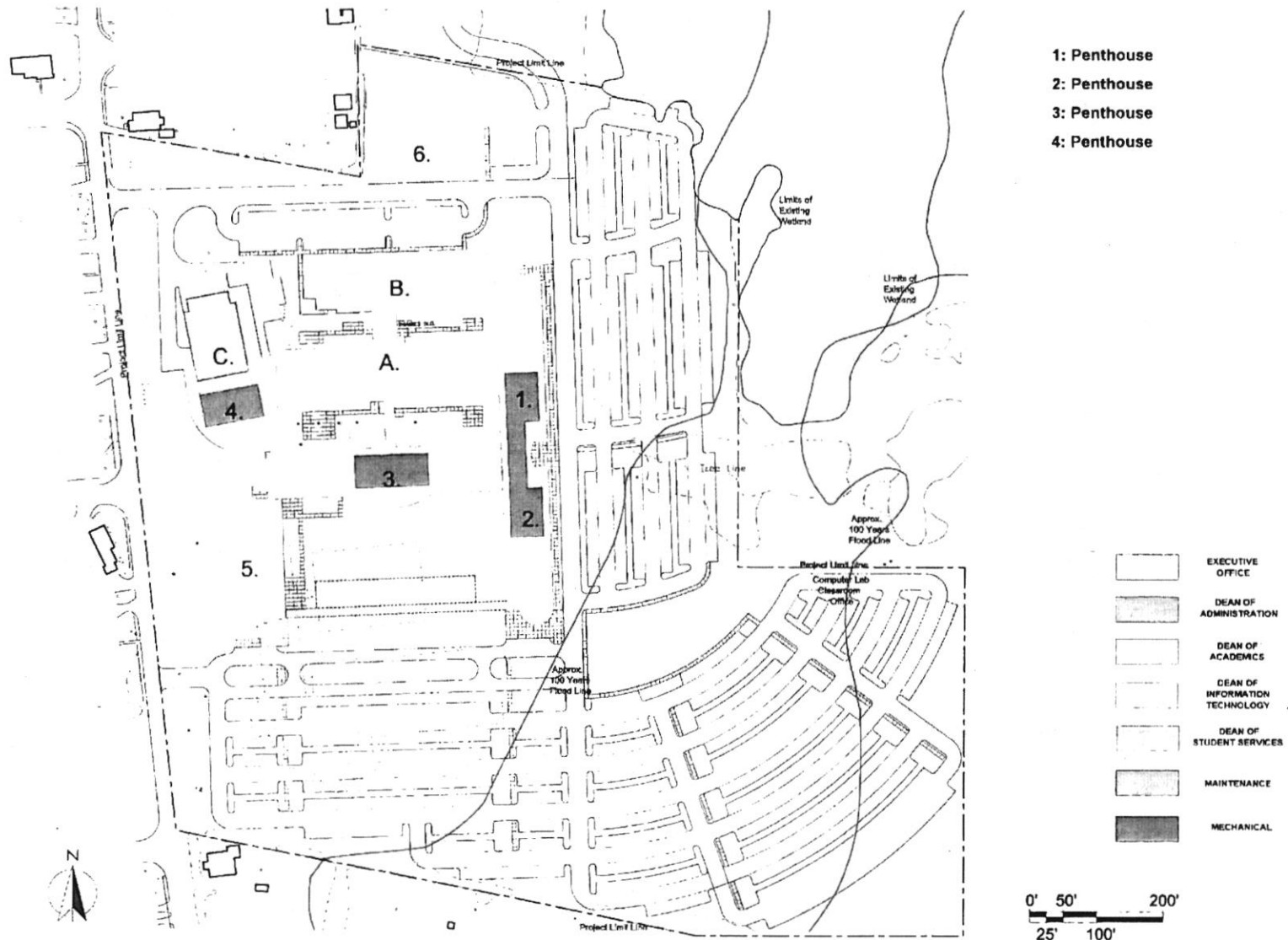
- A: Classroom, Faculty Office
- B: Classroom, Faculty Office, Computer Classroom
- 1: Technology, Science
- 2: Science, Allied Health
- 3: Office of the President, Development, Dean of Administration, Business & Finance, Human resource, Dean of Academics, Dean of Information Technology, Dean of Student Service, Continuing Education, Allied Health Classrooms
- 4: Bookstore

	EXECUTIVE OFFICE
	DEAN OF ADMINISTRATION
	DEAN OF ACADEMICS
	DEAN OF INFORMATION TECHNOLOGY
	DEAN OF STUDENT SERVICES
	MAINTENANCE
	MECHANICAL

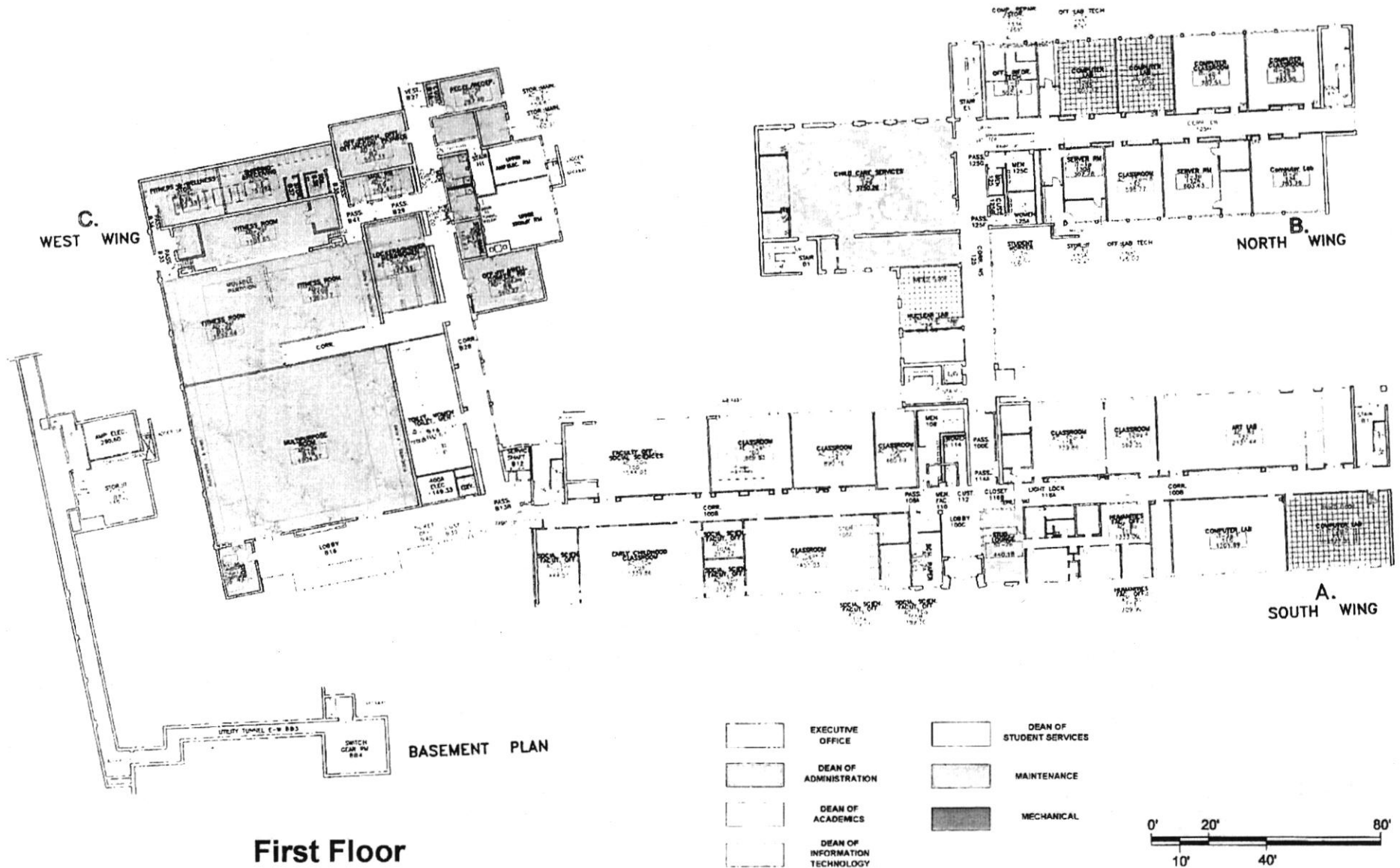




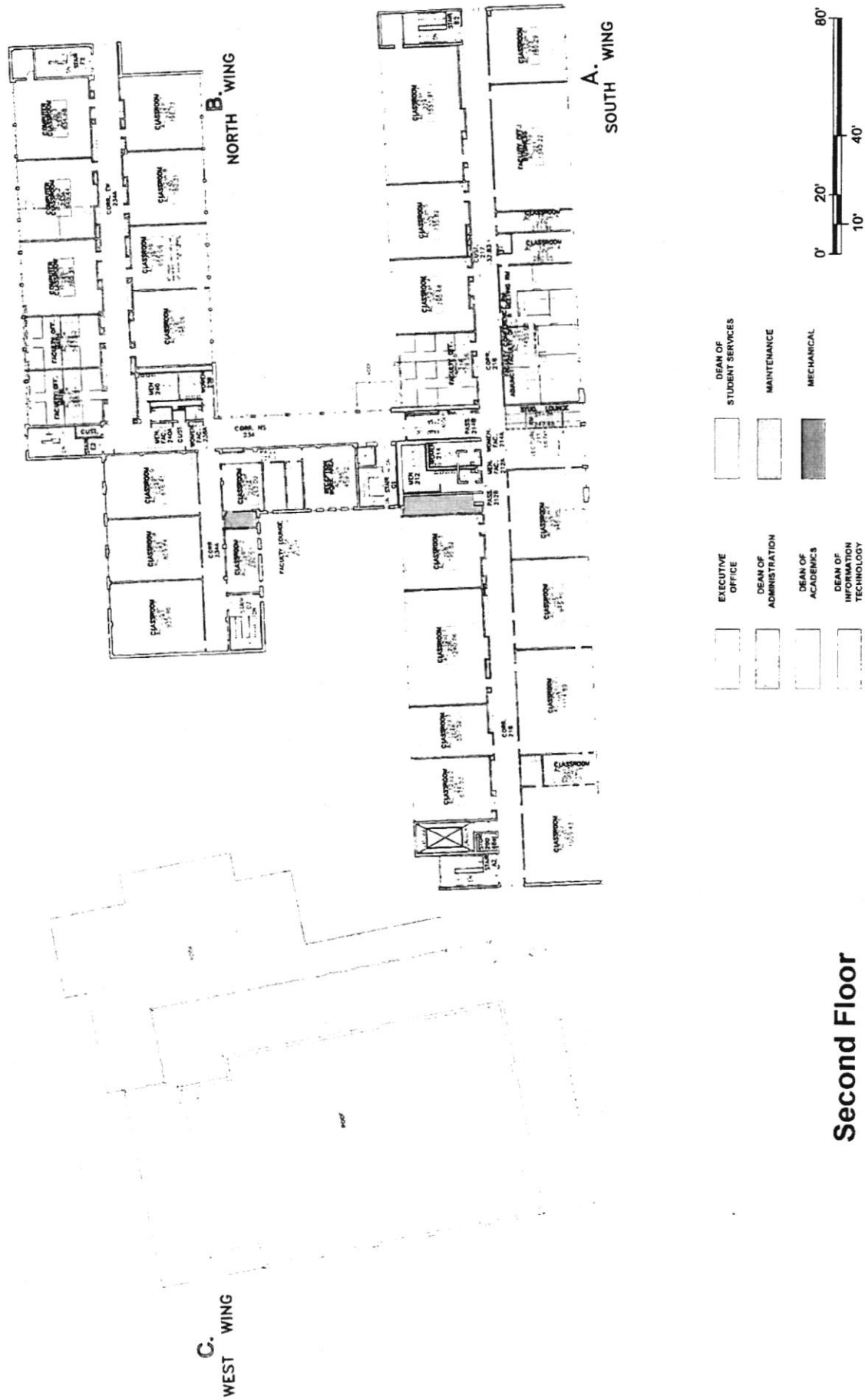
Master Plan: Third Floor Plan



Master Plan: First Floor Re-Programmed Thames Building



Master Plan: Second Floor Re-Programmed Thames Building



Second Floor

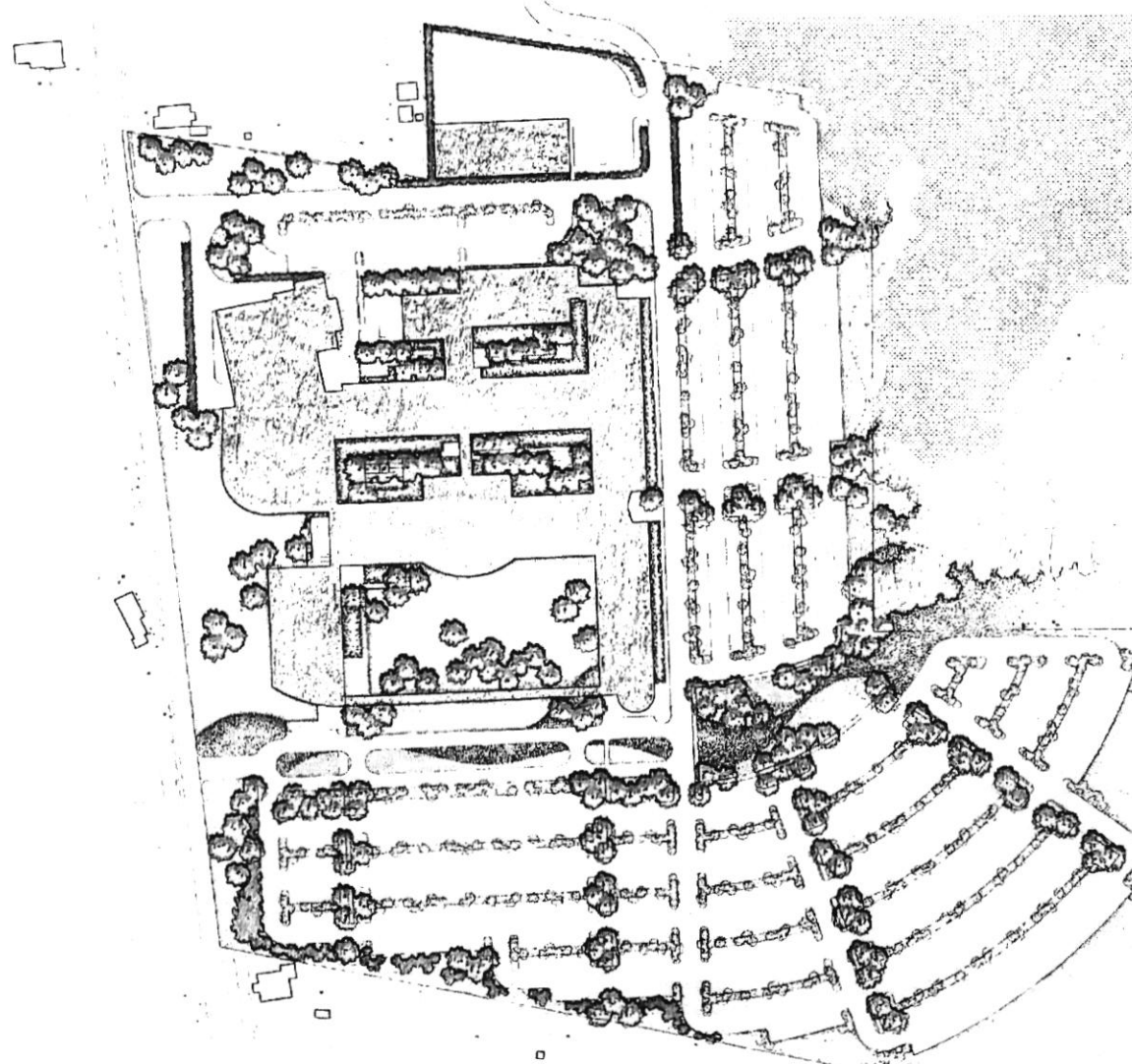
Three Rivers

COMMUNITY COLLEGE

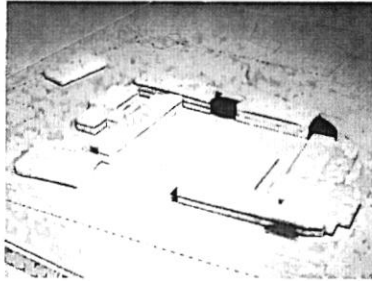
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Master Plan: Site Plan

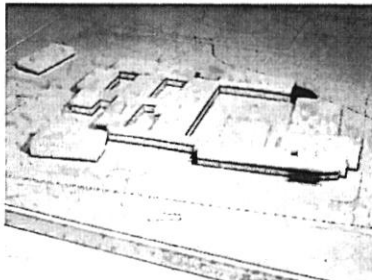


III. Alternate Master Plan Studies



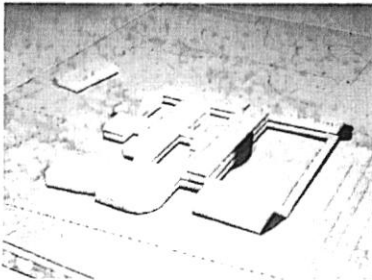
Alternate I:

- Preserves the Thames Building with the exception of the tiered classroom at the end of wing "A"
- Preserves and renovates the RVTS building in its entirety.
- Creates a new north-south three story wing ("1" and "2") to connect the two existing buildings.
- Creates a new central plant/ maintenance storage facility in the northeast corner of the site.



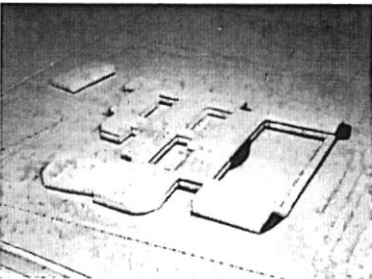
Alternate IIA:

- Preserves the Thames Building with the exception of the tiered classroom at the end of wing "A"
- Preserves and renovates the RVTS building with the exception of the "G" wing, which is demolished.
- Creates a new north-south two story wing ("1" and "2") to connect the two existing buildings.
- Creates a new east-west two story wing ("3").
- Creates a new central plant/ maintenance storage facility in the northeast corner of the site.



Alternate III:

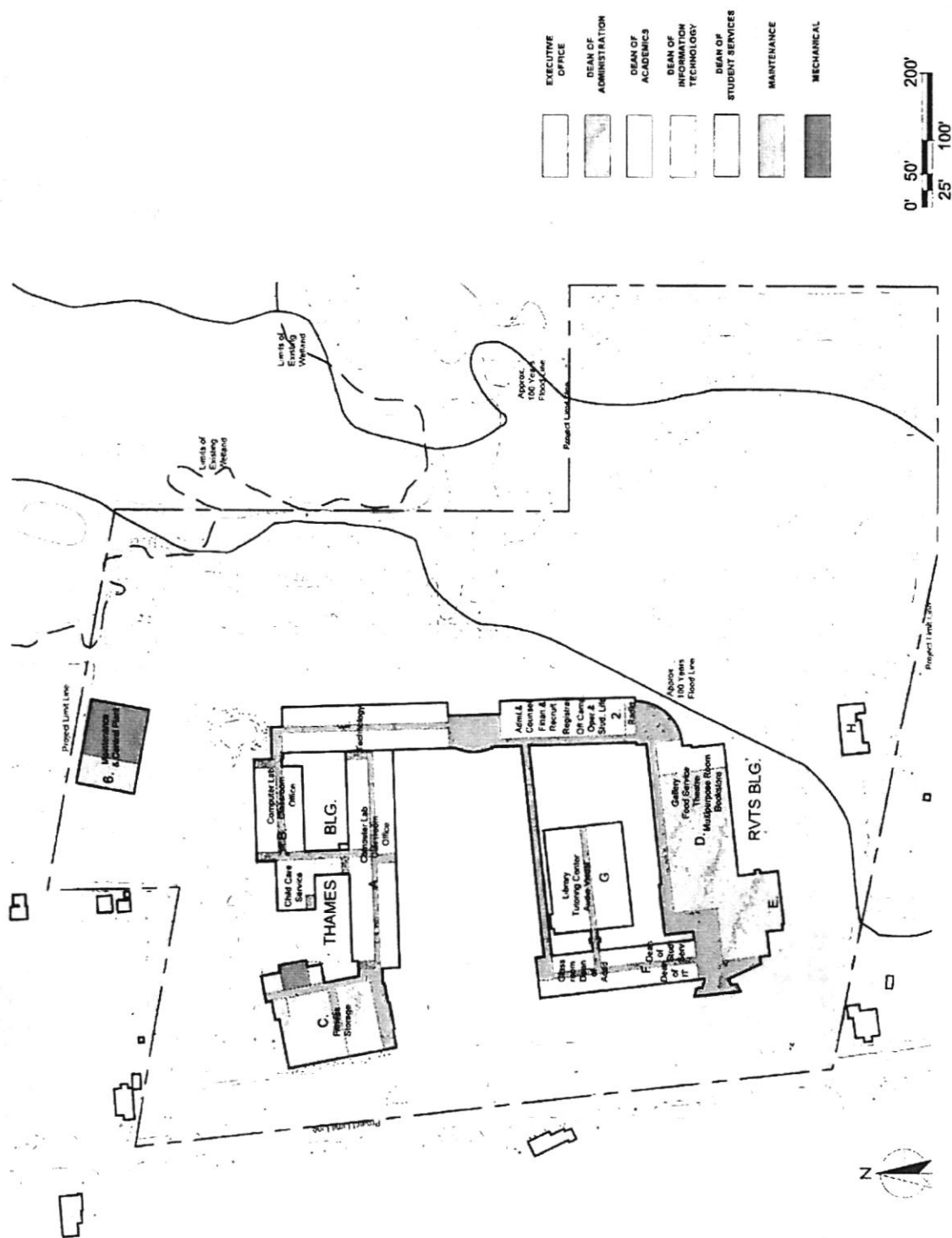
- Preserves the Thames Building with the exception of the tiered classroom at the end of wing "A"
- Demolishes the RVTS building in its entirety.
- Creates a new north-south two story wing ("1" and "2").
- Creates a new east-west three story wing ("3").
- Adds a new two story Dining facility/ Bookstore adjacent to the existing Thames Gymnasium ("4")
- Creates a new auditorium ("5") along New London Turnpike.
- Creates a new central plant/ maintenance storage facility in the northeast corner of the site.



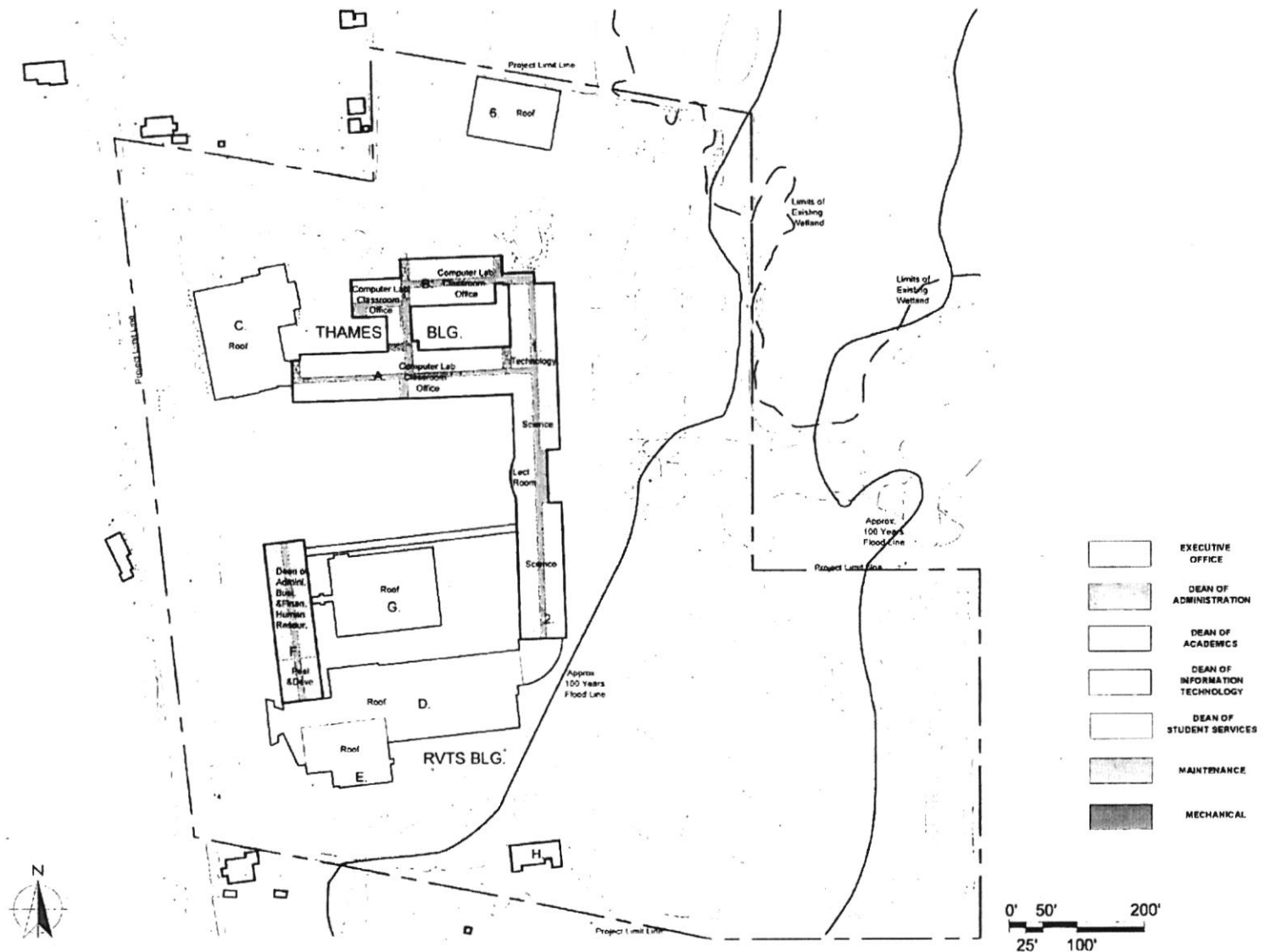
Alternate IIIA:

- Preserves the Thames Building with the exception of the tiered classroom at the end of wing "A"
- Demolishes the RVTS building in its entirety.
- Creates a new north-south two story wing ("1" and "2").
- Creates a new east-west two story wing ("3"). This wing is longer than the wing in Alternate III and assumes that building on the Native American Burial Ground is acceptable.
- Adds a new two story Dining facility/ Bookstore adjacent to the existing Thames Gymnasium ("4")
- Creates a new auditorium ("5") along New London Turnpike.
- Creates a new central plant/ maintenance storage facility in the northeast corner of the site.

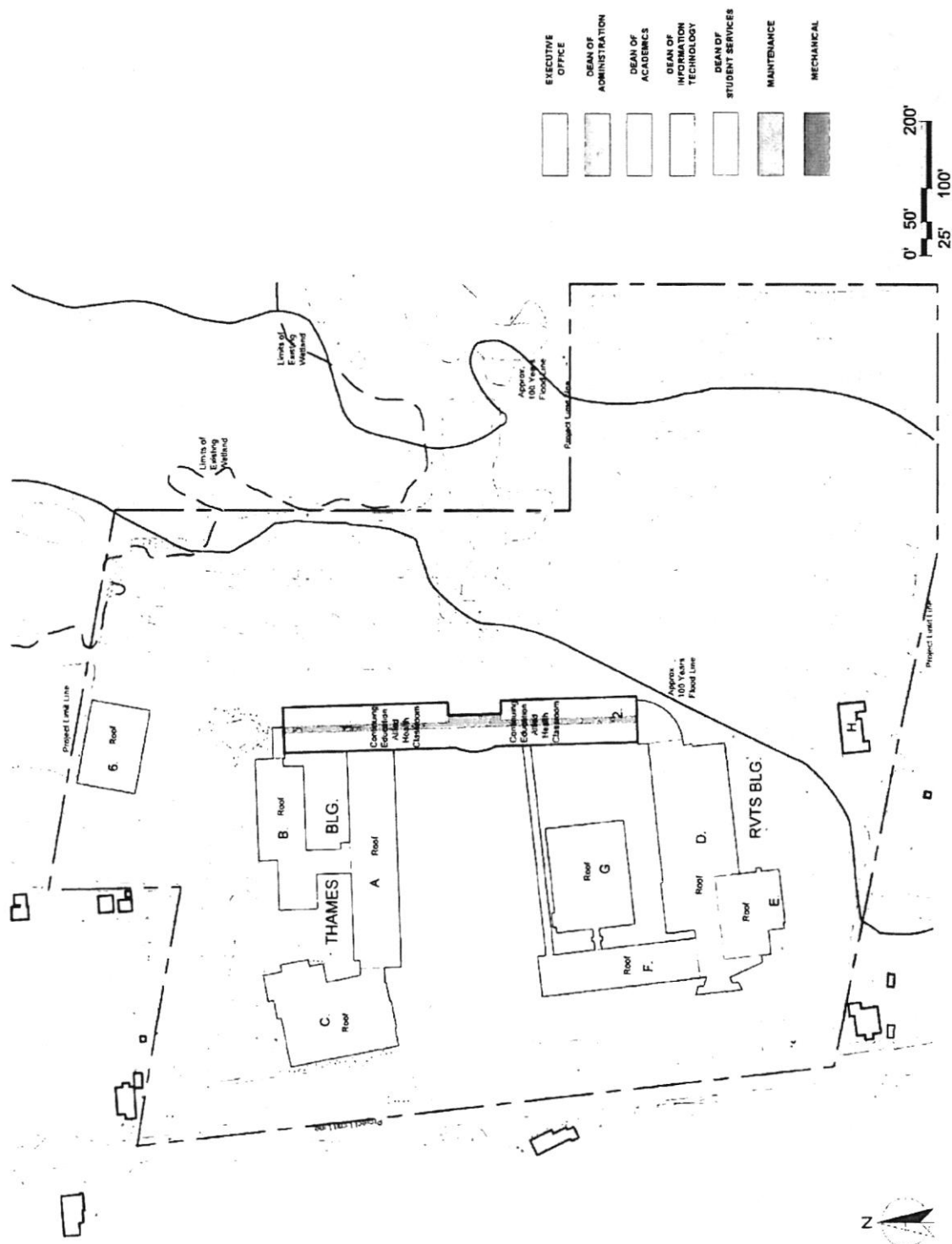
Alternate 1: First Floor Plan

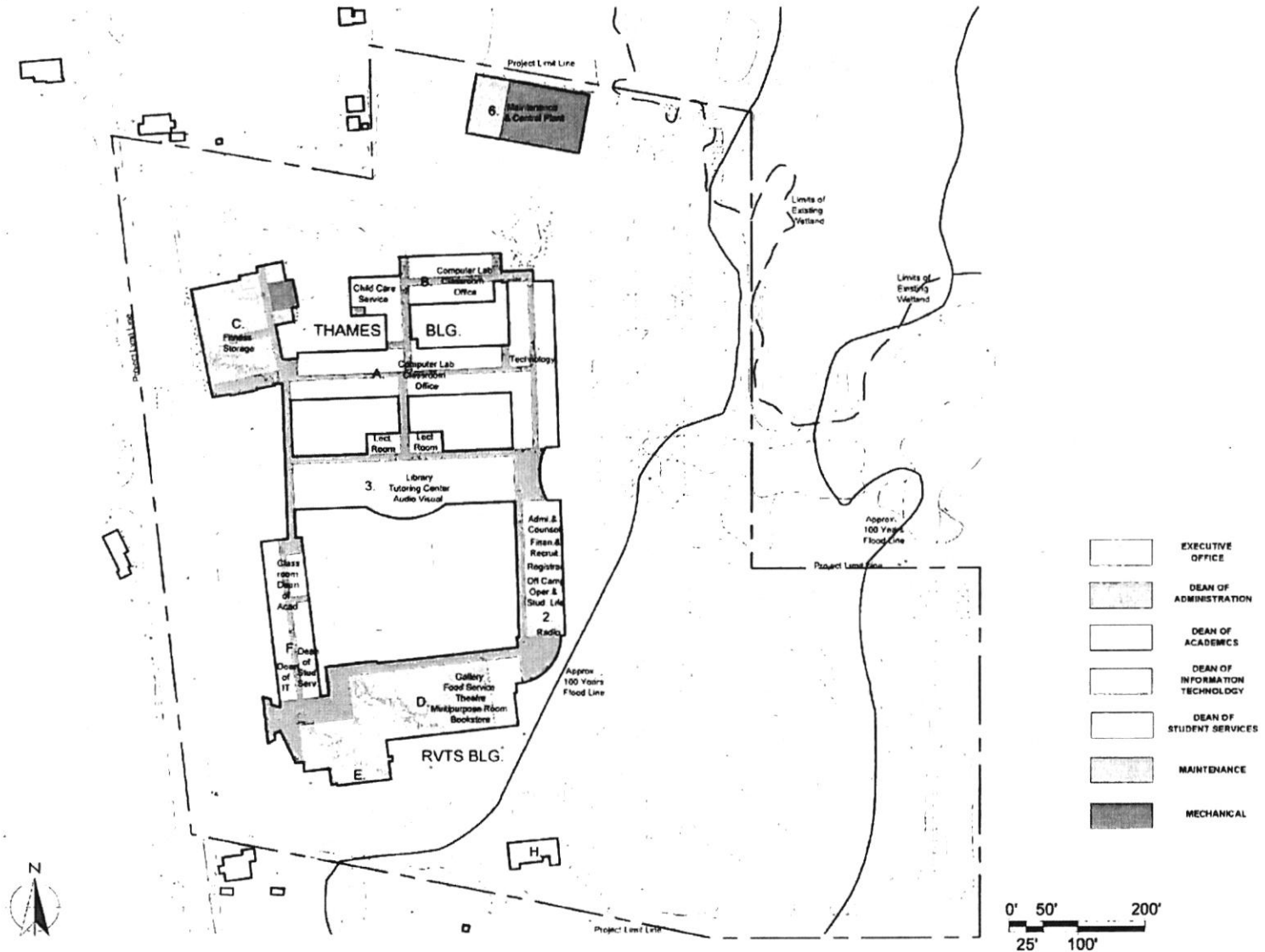


Alternate I: Second Floor Plan

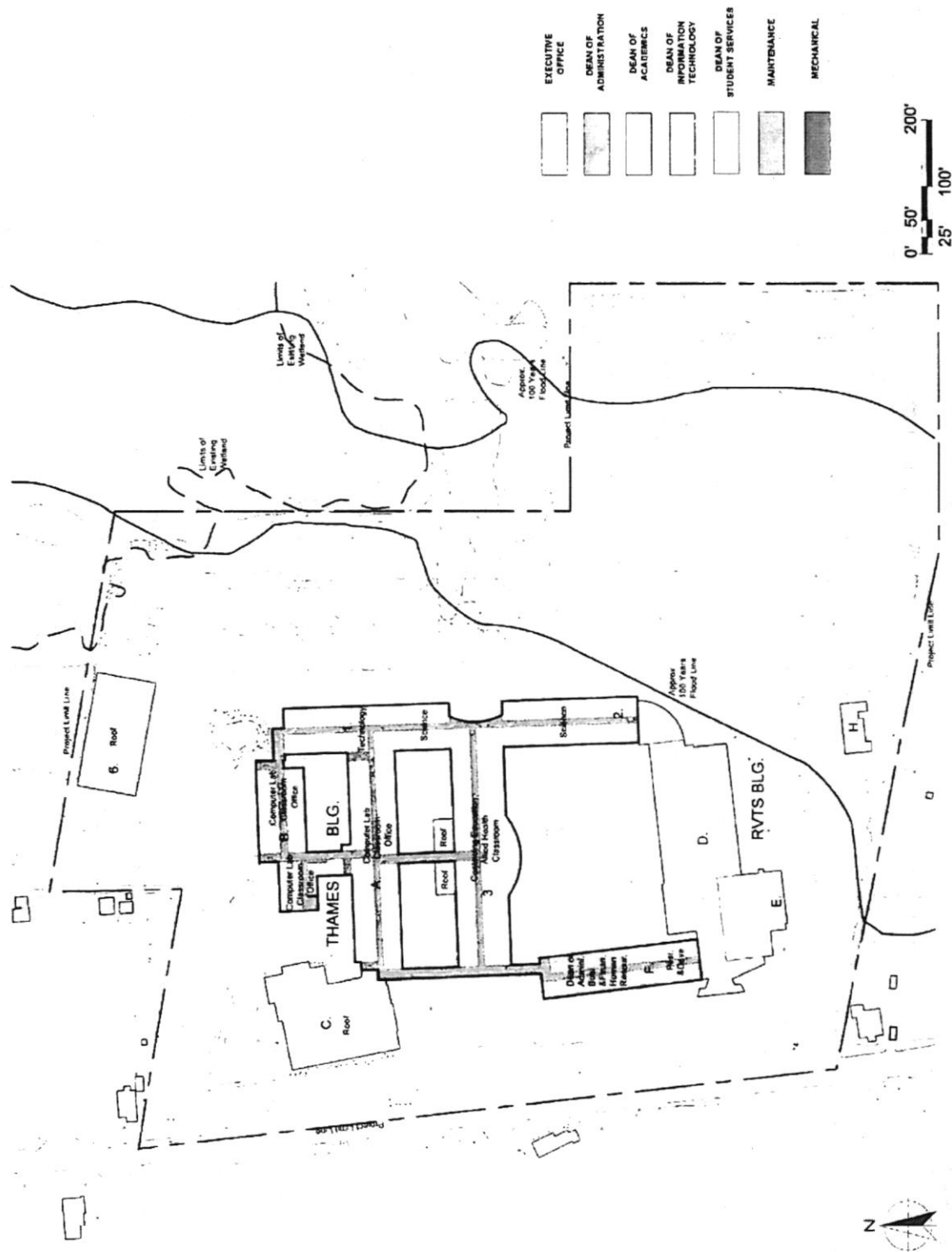


Alternate 1: Third Floor Plan

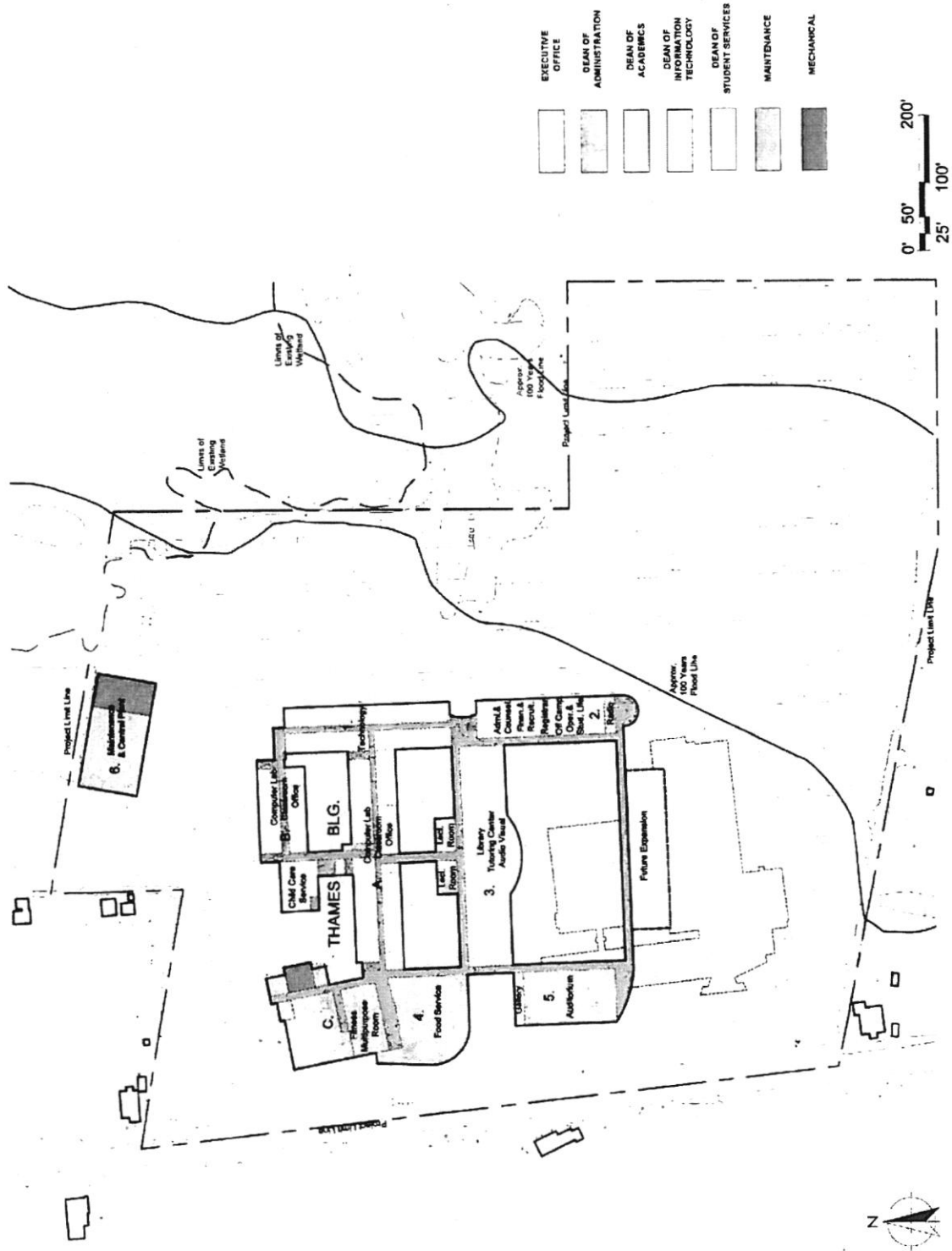




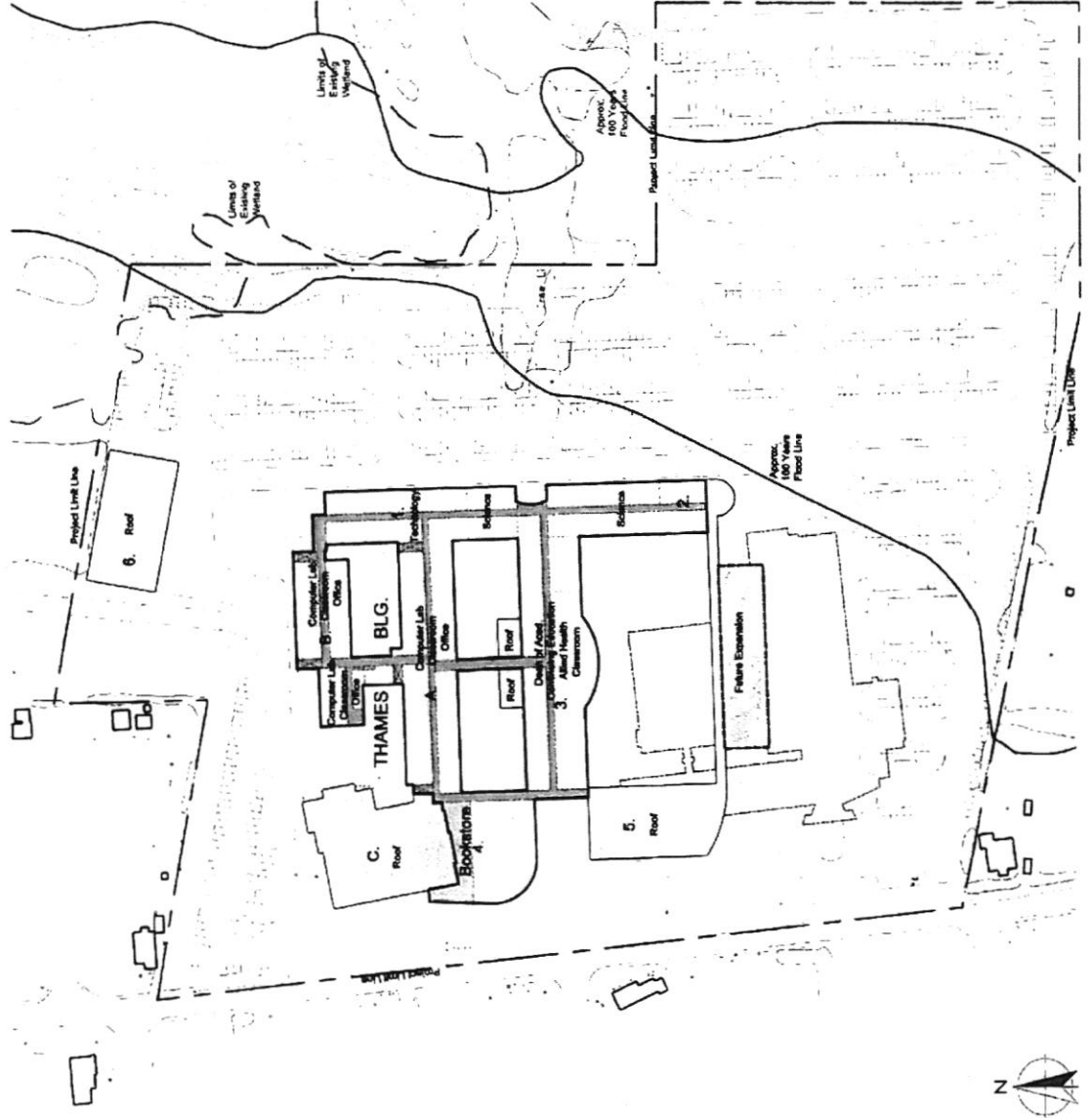
Alternate IIA: Second Floor Plan



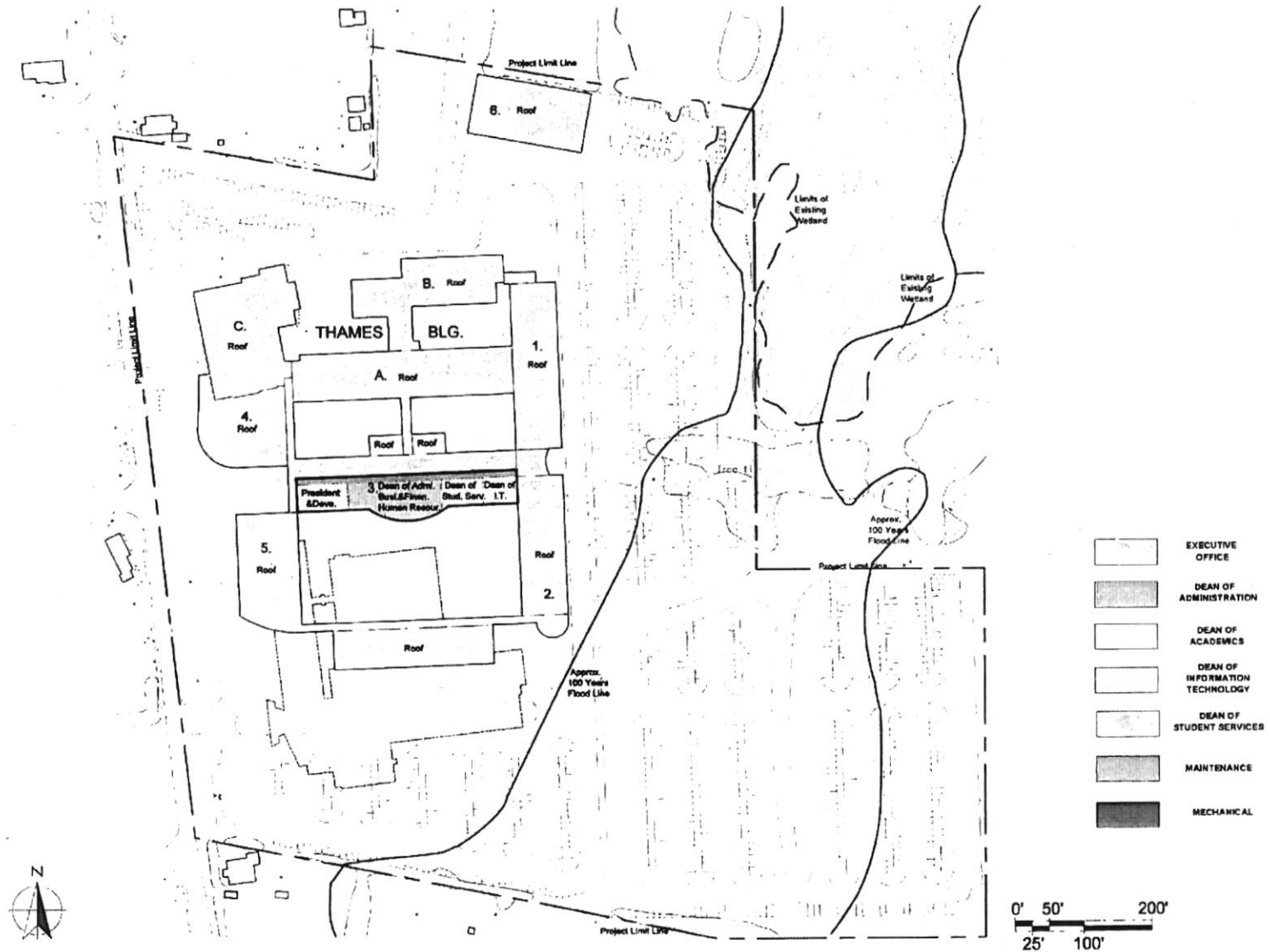
Alternate III: First Floor Plan

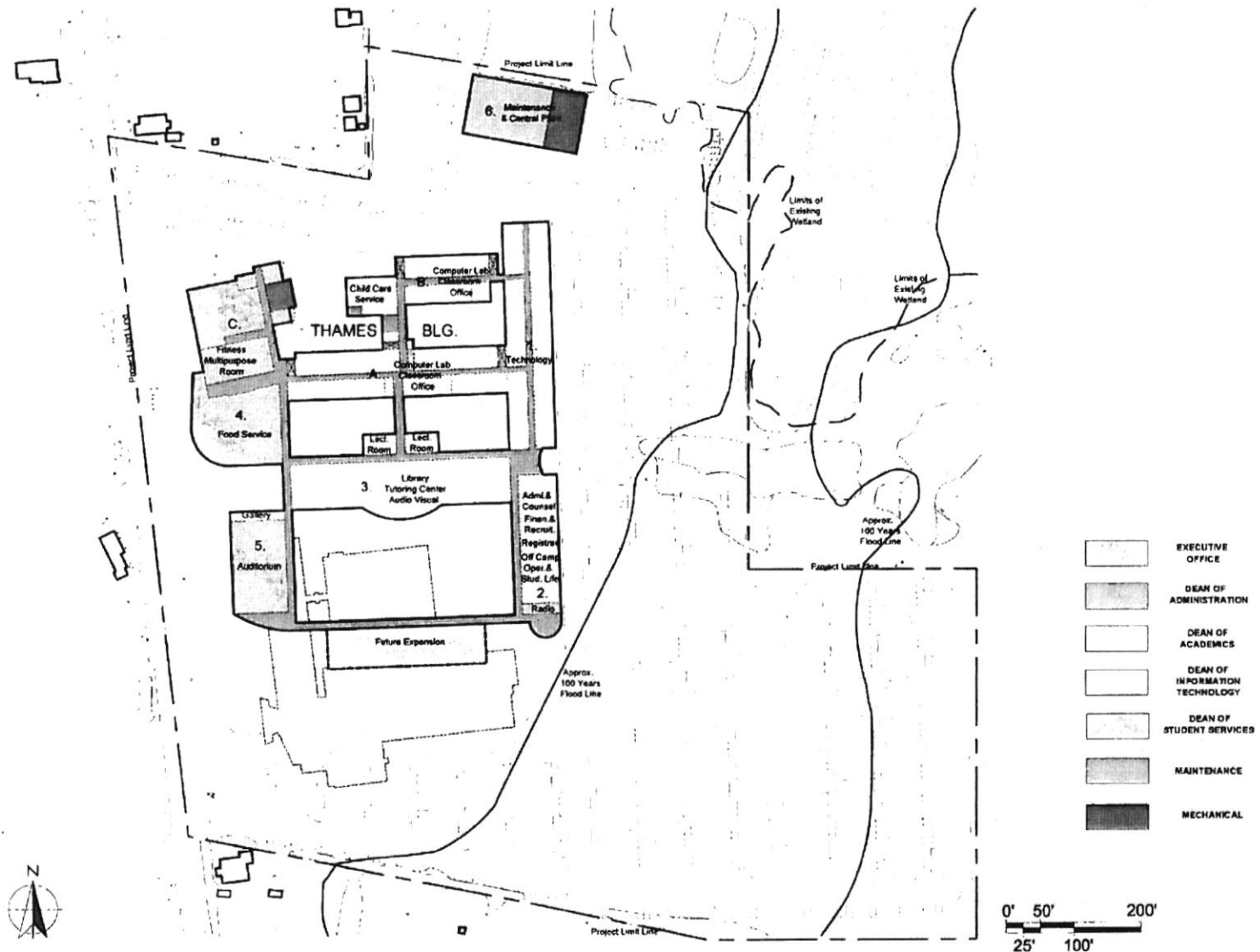


Alternate III: Second Floor Plan



Alternate III: Third Floor Plan





31 January 2005

Appendix A:

**Concept Materials and
Systems Report**

CONCEPT MATERIALS AND SYSTEMS REPORT

I. Three Rivers Community College New Building and Campus Construction Scope:

1.0: General:

This project scope addresses the \pm 205,000 SF new construction scope as indicated by Alternate III.

2.0: Sitework for New Building and Campus:

Water Service

Extend 8" FP around East side of existing building, connecting to existing FP main in vicinity of existing Sports Equipment Shed, completing the loop. Provide taps for FP and Domestic water service to new construction from loop as needed.

Remove or abandon existing 8" FP in conflict with proposed building construction.

Sanitary Sewer

Extend 8" sanitary sewer easterly from southeast corner of existing TRCTC building to a new MH, then southerly to beyond southeast corner of proposed Administration wing to a new MH, then westerly to a new MH off the southwest corner of the new Auditorium, then continue westerly to a new MH over the existing main in New London Turnpike. Provide service connections for new construction to the 8" main as needed. (Additional connections may be able to be made to the existing 8" line presently servicing the NRVTS, depending upon building interior plumbing requirements.)

Remove septic tanks (2) and other related appurtenances in conflict with the new building construction. Remove or abandon existing 8" sewer lines in conflict with proposed building construction.

Gas Service

Extend 6" gas service northerly to the south side of the proposed building from existing main located south of NRVTS. (Existing gas service is also provided to the north side of TRCC.)

Electric and Telephone/Data

Provide new underground services to existing and proposed buildings as needed.

Storm Drainage

The Conceptual Grading for the Master Plan appears to lend itself to several distinct drainage areas: one in the northwest section of the site, one in the southwest section, and possibly three collecting runoff from the central portions to the northeast, east, and southeast.

The intent will be to minimize the use of structured drainage systems as much as possible, incorporating sheet flow and bio-swales into the design. However, where structured systems are necessary, the following requirements shall apply:

Provide all new storm drainage structures and piping. Catch basins to have 4-foot deep sumps with trap hoods. Install water quality structures (swirl or cyclonic technology) at all outlet locations. Construct underground detention basin(s) outside of 100-year flood limits.

It is anticipated that due to the topography of the site, the influence of the 100-year flood, and the conceptual grading plan, that as many as 3 detention systems may be required: one in the northwest corner of the site to detain collected runoff before it enters the New London Turnpike system, one in the northeast section to intercept storm runoff prior to entering a bio-swale, and the third in the south central portion, south of the proposed building. The size and shape of these systems will be defined upon further analysis.

Remove or abandon existing storm drainage structures and piping in conflict with proposed building construction.

Underdrainage concerns, if any, should be addressed by the Geotechnical Engineer.

Erosion and Sedimentation Controls

ESC Measures shall comply with the CT Guidelines for a General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities. Drainage outfalls, both existing to remain and proposed, are to be stabilized with riprap, plunge pools, or other acceptable measures.

Other General Site Considerations

Fuel oil tanks, both above and below grade, generators, transformers, and other similar equipment to be removed and/or relocated as appropriate for construction of the improvements.

If wetland impacts are unavoidable, they must be mitigated (at the east central portion of the site, proposed parking infringes upon the wetlands in two locations).

The location of the proposed maintenance & Central Plant encroaches upon the existing Right-of-way to the UConn New London County Cooperative Extension Center.

The northern portion of the "Future Expansion" for parking appears to encroach upon the property line.

Landscape Types:

Courtyard

Grading/Drainage: Grading will be minor and will achieve positive drainage inside the courtyards. Earthwork will connect the courtyards to the buildings that surround it. Traditional catch basins and grates will be used, with below grade piping.

Paving: Approximately 30-50% of the area may be paved with granite, pressed asphalt or pre-cast concrete unit pavers (type of paver dependent upon budget).

Planting: Trees, shrubs, groundcovers and herbaceous perennials will be used. A high degree of maintenance will be required. Soil will be amended as determined by soil tests.

Lighting: Lights mounted to the exterior of the building and minor low-voltage landscape lighting will be included (Budget dependent). If steps or handrails are necessary to connect to buildings, these will be lit with low-level lighting.

Irrigation: A drip irrigation system will be required to maintain healthy plantings. Water supply should come from cisterns that hold roof run-off from adjacent buildings, using gravity flow, supported by pumps as required (Budget dependent).

Bio-Swale/Wetland

Grading/Drainage: Drainage from parking lots will be directed to swales between stalls and aisles as shown on the plan. Ultimately run-off will flow to either a detention structure or off-site to the existing wetland.

Planting: Trees shrubs and grasses specifically selected for their ability to assist in absorbing pollution will be planted in and along the swales to help cleanse the run-off as it travels to the detention structures and wetland. Soil will be amended as determined by soil tests.

Campus Landscape

Grading/Drainage: There will be minor grading in these areas. The goal will be to nestle the new development into the exiting contours.

Paving: There will be a minimal amount of concrete paving for pedestrian connections as required.

Planting: Canopy and minor trees, as well as open lawns will be planted. Soil will be amended as determined by soil tests.

Lighting: Minimal security lighting mounted on adjacent buildings will be provided.

Irrigation: A spray irrigation system will be required to maintain healthy lawns during times of drought. Water supply should come from cisterns that hold roof run-off from adjacent buildings, using gravity flow, supported by pumps as required (Budget dependent).

Parking Lot

Grading/Drainage: Cut and fill will be kept to a minimum. Grading shall stay as close to existing grades as possible. Run-off will flow to bio-swales as much as possible. In other cases, the traditional system of catch basins and below grade piping will be provided.

Paving: 6'-0" wide cement concrete pedestrian ways will connect parking to buildings.

Planting: Canopy and minor trees and some shrubs will be installed. Most medians will be lawn. Soil will be amended as determined by soil tests.

Lighting: Pole lights and luminaries will be used to light the parking lots as required. Fixtures will be selected to complement the architecture and landscape.

Screen/Edge

Grading/Drainage: Construction of minor berms will be necessary to add to screening desired in specific locations. Most grading will be minor.

Planting: Evergreen trees with occasional deciduous trees will be planted. Soil will be amended as determined by soil tests.

Children's Play Area/Garden

Grading/Drainage: There will be minor grade changes to achieve positive drainage inside the Children's Play Area/Garden. Earthwork will connect the children's area to the buildings that surround it. Drainage will be the traditional system of catch basins and below grade piping.

Paving: Safety surfacing will be required beneath the play equipment. A small amount of unit pavers will be used to connect the garden to the facility.

Planting: Mostly Canopy trees and shrubs will be used.

Lighting: Lights mounted to the exterior of the building and minor low-voltage landscape lighting will be included (Budget dependent). If steps or handrails are necessary to connect to buildings, these will be lit with low-level lighting.

Irrigation: A drip irrigation system will be required to maintain healthy plantings. Water supply should come from cisterns that hold roof run-off from adjacent buildings, using gravity flow, supported by pumps as required (Budget dependent).

Special Equipment: Age appropriate Creative Play equipment will be installed for those who are cared for in the adjacent facility.

Entry

Grading/Drainage: Earthwork will create a smooth transition from the parking to the buildings.

Paving: Cement concrete with accents of unit pavers will be utilized at all entries.

Planting: Canopy trees, minor trees, shrubs and groundcovers will be installed throughout. Herbaceous perennials will be planted in some locations. Soil will be amended as determined by soil tests.

Lighting: If steps or handrails are necessary to connect to buildings, these will be lit with low-level lighting. Minor low-voltage landscape lighting will be included as budget allows. Lights mounted to the exterior of the building will also be included.

Irrigation: A drip irrigation system will be required to maintain healthy plantings. Water supply should come from cisterns that hold roof run-off from adjacent buildings, using gravity flow, supported by pumps as required (Budget dependent).

3.0: Foundations:

Based on the existing building drawings, on-site soil conditions permit use of spread footings at a maximum bearing pressure of 2 tons per square foot. The new building will be founded on spread footings, with removal of all existing fill materials prior to placement of footings. Perimeter frost walls shall be at least 8" thick reinforced concrete walls (or more to match wall construction above), on continuous spread footings at a depth 3'-6" below grade.

Basement areas shall be defined by reinforced concrete basement or retaining walls on continuous footings, with exterior wall waterproofing as required based on subsurface water conditions.

4.0: Substructure:

Based on the existing building drawings, on-site soil conditions permit use of slabs on grade at the lowest level of the new building. New slabs on grade shall be 5" thick, reinforced with 6x6, W2.9xW2.9 welded wire fabric, and placed on a vapor retarder underlain with 8" of compacted granular fill.

5.0: Superstructure:

Supported floor structures shall consist of 3 1/2" lightweight concrete on a composite steel deck supported by composite steel beams and girders on wide flange or hollow structural columns.

Roof structures will be 1 1/2" deep, 20 gage galvanized roof deck supported by steel bar joists and wide flange girders. At snowdrift areas and rooftop equipment, replace bar joists with wide flange beams.

Lateral stability will be achieved using steel braced frames and/or moment frames.

6.0: Exterior Enclosure:

Height: Assume 14'-8" floor-to-floor dimension with penthouse to house mechanical services only.

Masonry: 50% of envelope clad with insulated cavity wall construction. 8" nominal reinforced CMU backup block with brick veneer cladding. 42" high parapets with cast stone copings.

Windows: 50% of envelope clad with double glazed curtain wall in painted aluminum frames by Wausau or equal. Entries of curtain wall with aluminum and glass doors.

Penthouse: 100% of penthouse clad in insulated metal panel system with aluminum louvers, Centria IW60 or equal.

Canopy: Glass and galvanized steel entry canopy at main entries.

7.0: Roofing:

Roof: 4 ply hot mopped built up roof over lightweight concrete topping slab.

8.0: Interior Construction:

New Partitions: New GWB on steel stud framing. Impact resistant GWB at all corridor or other high traffic locations.

Doors: Wood doors in hollow metal frames at occupied spaces. Hollow metal doors in hollow metal frames at unoccupied spaces.

Stairs: Concrete filled steel pan stairs with steel balustrades and handrails.

Typical finishes per space type:

SPACE(S): Entry Lobby
Floor: Polyacrilate Terrazzo
Base: Precast Terrazzo
Wall: Impact-resistant Gypsum Board with Imperial Plaster Coat
Ceiling: Painted Gypsum Board (20%), Wood Paneling (80%)

SPACE(S): Corridors
Floor: VCT
Base: Rubber
Wall: Impact-resistant Gypsum Board with 15% custom millwork display cases/benches.
Ceiling: Painted Gypsum Board at wall (20%) and Acoustic Ceiling Tile at center (80%)

SPACE(S): Classrooms
Floor: Carpet
Base: Rubber
Wall: Painted Gypsum Board.
Ceiling: Mix of Painted Gypsum Board (40%) and Acoustic Ceiling Tile (60%)

SPACE(S): Lecture Halls
Floor: Carpet
Base: Solid Wood
Wall: Perforated Wood Veneer Paneling
Ceiling: Mix of Painted Gypsum Board (40%) and Acoustic Ceiling Tile (60%)
Seating: Fixed lecture seating.

SPACE(S): Offices/Admin Spaces
Floor: Carpet
Base: Rubber
Wall: Gypsum Wall Board
Ceiling: Acoustic Ceiling Tile

SPACE(S): Lab Spaces
Floor: VCT
Base: Rubber
Wall: Gypsum Wall Board.
Ceiling: Acoustic Ceiling Tile
Benches: Lab Casework with Epoxy Tops

SPACES: Toilet Rooms
Floor: Ceramic Tile
Base: Ceramic Tile
Wall: Ceramic Tile
Ceiling: Painted Gypsum Board

SPACE(S): Stairs
Floor: Add rubber treads to existing treads and landings
Base: None
Wall: Paint Existing
Ceiling: Painted GWB
Railings: Replace with new railings and balustrades.

SPACE(S): MEP Rooms/Closets
Floor: Sealed Concrete
Base: None
Wall: Painted CMU
Ceiling: None

9.0 Mechanical:

HVAC: The following concepts pertain to both new and renovated spaces:

Cooling will be generated by Central Plant chillers.

Air distribution will be accomplished by a series of air handlers located in the penthouses routing air through a supply and return duct systems. The systems will control temperature in the spaces via a number of variable volume (VAV) control boxes each with a heating coil.

Heating will be generated by Central Plant boilers.

HVAC controls will consist of a building wide automation system integrating all aspects of the mechanical system.

The following concepts pertain to only the new building:

Technology Building # 1

- (4) 17,000 CFM air handlers, (2) serving each floor
- Each AHU size approximately 7' X 7' X 21'
- (4) 4' X 4' chases required to convey air to/from the first floor

Administration Building #2

- (2) 22,000 CFM air handlers, (1) serving each floor
- Each AHU size approximately 7' X 7' X 21'
- (2) 5' X 5' chase required to convey air to the first floor

Library Building #3

- (4) 23,000 CFM air handlers, (2) serving each floor
- Each AHU size approximately 7' X 7' X 21'
- (4) 6' X 6' chases required to convey air to/from the first floor

Food Service Building # 4

- (1) 23,000 CFM air handler, serving the space
- AHU size approximately 7' X 7' X 21'
- (1) 5,000 CFM Make up Air Unit for Kitchen hood exhaust

Theater Building #5

- (1) 23,000 CFM air handler, serving the space
- AHU size approximately 7' X 7' X 21'

The following concepts are common to both new and renovated spaces:

Exhaust Systems: Restrooms will be ventilated with code mandated air changes by roof-mounted fans. Lab fume hoods will be exhausted with penthouse- mounted fans conveying contaminated air through stainless steel ductwork.

Sprinkler: All areas of the building will be sprinklered with a wet pipe system rated for ordinary hazard. The incoming service will have an RPZ isolating the sprinklers from other potable sources. A fire pump may be required pending the results from a water flow test.

Plumbing: Plumbing will be a code compliant system providing the fixtures indicated by the architectural drawings. The water service will have an RPZ isolating the building from the exterior supply.

A 250-gallon, gas fired heater and storage tank will provide domestic hot water.

A separate non-potable hot and cold water supply system will serve the labs.

Laboratory gasses will be distributed to each student workstation.

A separate acid waste and neutralization system will serve the labs.

10.0 Electrical:

Utilities

Campus medium voltage utilities will be owned and maintained by Northeast Utilities; provide an allowance for utility fees to include three (3) pad mount transformers, pole riser(s), underground 15 kV cabling, and three (3) services at 480/277 volt. Provide allowance for ductbanks, handholes,

switchgear pads and transformer pads shown on drawings. Primary service: Three (3) 15 kV pole risers and underground radial feeders will originate from utility overhead poles on New London Turnpike. Assume underground primary service in concrete encased ductbank to the Maintenance & Central Plant Building (M&CP). Signal: Two (2) telecommunications ducts and one (1) cable television duct plus one (1) spare duct will parallel a medium voltage route as shown on the drawings and terminate at the Entrance Facility Room (EF).

Three (3) outdoor pad mount utility transformers, T1, T2, and T3 and located as shown on the drawings shall serve the entire campus of 300,000 +/- SF.

Services

Three (3) electric services are planned:

Service #1 rated 1200 amperes at 480/277 volts will serve Building 6 - Maintenance & Central Plant, to include the boilers, chillers, and heating & chiller water pumps. If a fire pump is required the prime mover will be a diesel engine.

Service #2 rated 2000 amperes at 480/277 volts will serve the existing Thames Buildings A, B, & C totaling 108,000 SF. The existing primary service and utility vault transformers for the Thames Buildings will be removed & upgraded to an outdoor pad mount transformer to accommodate the new lighting and air conditioning & ventilation equipment.

Service #3 rated 3000 amperes at 480/277 volts will serve Buildings 1, 2, 3, 4, & 5 totaling 196,000 +/- SF including the future expansion of approximately 30,000 +/- SF.

Distribution

Thames Building: Provide a 2000 ampere 208/120 volt switchboard located in the old boiler room/ Building C. Retain the existing circa 1962 1600 ampere 208/120 volt switchboard and distribution as is. Include a 2000 ampere 480/277 volt switchboard to serve new lighting and air conditioning/ ventilation equipment. Back feed the existing 1600 ampere switchboard and distribution from the 2000 ampere switchboard via a 300 kVA dry transformer located in the old boiler room. Provide ten (10) 150 ampere 480/277 volt panelboards, feeders and branch circuits to serve new air conditioning and lighting. Assumption: The building will not be occupied during renovation. The existing boiler room will remain in operation until the Maintenance & Central Plant Building is operational to pickup the Thames Building load. Provide allowance for phasing this work with completion of the new Maintenance & Central Plant to enable demolishing and modifying the existing boiler room and installing Service #2.

Thames Building Alternate: The entire forty-three year old, 1600 ampere, 208/120 volt service & transformer vault in the existing Thames Building will be removed and completely replaced with a 2000 ampere, 480/277 volt and 208/120 volt distribution system. The existing 208/120 volt electrical rooms will be enlarged to accommodate new panelboards, transformers and wiring. Assumption: The building will not be occupied during renovation. Phasing will remain the same as described previously.

Buildings 1,2,3,4,5: Electrical rooms for each building are shown on the drawings. In general, the electrical rooms are located to limit the length of 480/277 volt feeders and branch circuits to approximately 200 feet and 208/120 volt feeders and branch circuits to 100 feet. The electrical rooms are stacked in multi-story buildings for minimum wiring cost and simplified future renovation access. Allowances should include 150 ampere 480/277 volt lighting & power panelboards with 75 kVA dry transformers and 225 ampere main circuit breaker 208/120 volt branch circuit panelboards for receptacle and small appliance power.

Lighting – Interior

Classroom lighting shall consist of pendant mounted, direct/indirect fluorescent luminaires, equipped with a single T5 or T8 high output lamp, and linear fluorescent wall-washers at the front of the room. The fluorescent luminaires closest to the window wall shall have electronic dimming ballasts and the remaining row(s) shall be standard non-dimmable electronic ballasts. A strategically located light sensor shall control the dimming ballasts. In addition, there will be local wall switching to allow for A/V presentations and occupancy sensor control to turn-off all luminaires when room is unoccupied.

Laboratory Classrooms: Similar to classroom lighting except provide fluorescent electronic dimming ballasts and wallbox dimming controls for all fixtures. Include occupancy sensor control to turn-off all luminaires when room is unoccupied.

Corridor lighting in the classroom areas shall consist of wall mounted, direct/indirect fluorescent luminaires, equipped with a single T5 or T8 lamp, electronic ballast, open top, and bottom. Fixtures shall be intermittent, located on both sides of the corridor. At each classroom entrance door locate a compact fluorescent down-light.

Main lobby lighting shall consist of a series of semi-recessed fluorescent wall-washers, indirect metal-halide and fluorescent wall sconce luminaires.

Media Center: General lighting shall consist of direct/indirect fluorescent luminaires and fluorescent wall-washers in the stack and reading areas and indirect metal-halide in the entry area.

General Office Area: Lighting shall consist of recessed fluorescent lay-in troffers with 3" deep parabolic louvers, T8 lamping, and electronic ballasts in either 1' x 4', 2' x 2' or 2' x 4' housing sizes. Allow 64 SF per fixture.

Janitor Closet / General Storage: Lighting shall consist of recessed lay-in troffers with plastic lens panels.

Food Service/Cafeteria: Lighting shall be designated for a mixed-use space consisting of indirect fluorescent luminaires and fluorescent wall-washers for cafeteria use. Include electronic dimming ballasts individual control stations with pre-set scenes and a local dimming/relay panelboard. Allowance: 8 each 2.4 kW dimming modules/relays; Lutron Graphik Eye 4000 Series or equivalent by Electronic Theater Controls (ETC).

Auditorium: Provide allowance for theatrical stage, house and work lighting as specified by the Theater Consultant. In lieu of available consultant information, assume one ellipsoidal spotlight fixture for each dimmer circuit and incandescent down lights and decorative sconces for house lighting. Allow-

ance: 96 each 2.4kW dimming modules. Architectural lighting control shall consist of individual control stations with pre-set scenes and a local dimming/relay panelboard. Allowance: 24 each 2.4 kW dimming modules/relays; Lutron Graphik Eye 4000 Series or equivalent by Electronic Theater Controls (ETC).

Alternate: Lighting Control System - Provide a Digital Addressable Lighting Interface (DALI) for all buildings with electronic dimming ballasts for individual fixture and lamp control via the Building Automation System (BAS).

Exit and Egress Lighting: Provide an exit light at all exit doors, as well as all exits from cafeteria, media center, and gymnasium. Exit lights shall not be located more than 100'-0" on center. All exit lights shall be LED type. In addition provide a wall and/or ceiling mounted egress light (exterior location) at each exit door and connect to the generator system.

Lighting – Exterior

Shall consist of sharp/full cut-off metal-halide luminaires mounted on aluminum poles. Pole height shall vary between 25'-0" height at entrance drive and parking area and 10'-0" high poles at walkways adjacent to building. In addition, low-level bollards will be utilized at the entrance lobby.

Emergency Lighting

Provide a complete emergency lighting system, including all necessary panels and monitoring equipment to provide emergency, egress and exit lighting. Selected general lighting fixtures or lamps shall be used as emergency lights wired to the system via individual emergency transfer relays. The power for the system shall come from Generator #2. System shall be rated at 277 volt. Include allowance for a UL-listed automatic branch transfer system in the Auditorium as manufactured by Union Connector, Electronic Theater Controls (ETC) or Lutron. Note: Emergency lighting in the Maintenance & Central Plant Building shall be battery powered emergency fluorescent ballasts.

Low Voltage Cable Tray

Provide a center spline, center hung, partitioned cable tray system, typically 24 inches wide x 3 inches deep, throughout the new and renovated corridor ceilings. Cable tray system shall include provisions for all low voltage wiring including: voice, data and video, fire alarm, security, public address, and building management.

Fire Alarm

Provide a networked voice evacuation, fully addressable system consisting of Fire Alarm Control Panels, Annunciator panels, Printer, Battery Cabinets, Area or Rescue Central Control Panel, Manual Pull Stations, smoke and/or heat detectors, flow and tamper switch supervision, duct smoke detectors, magnetic door hold-open devices, and ADA approved audio visual devices.

Master Clock

Provide a new wireless master clock system using synchronous 3-wire, 12" diameter analog (hands) clocks. Include GPS time detection and time correction features to keep the clocks synchronized.

Interlock with the public address system to ensure that the time tone class change information is synchronized with the clocks. Provide clocks in all classrooms, offices, workrooms, cafeteria, media centers, auditorium, etc.

Public Address

Provide a complete paging and intercom system throughout, consisting of recessed ceiling speakers in all classrooms, offices, workrooms, corridors, etc. Classroom speakers shall be microphone/speaker combination type suitable for open communication. Speakers shall also sound program signals and paging. In addition to the school wide sound system, provide a separate local PA system complete with amplifier, microphones, and speakers with CD player for each in the cafeteria and auditorium. Provide surface speakers in the cafeteria and the auditorium. Systems shall operate independently and shall be networked for school-wide announcements.

Provide a wireless audio system with transmitter and receiver headsets for use as hearing aid to hearing impaired patrons in the cafeteria and auditorium.

Voice and Data

Provide a telecommunications service complete with cable and conduit from distribution equipment out to utility company pole on New London Turnpike. Locate the Entrance Facility (EF) in the new construction, as indicated on the drawings. A prominent central location for the EF, near the Library, is anticipated with glazing to allow public viewing of the extensive Information Technology (IT) equipment racks. Telecommunications Rooms (TR) are sized and located as shown on the drawings to provide three (3) cables to each work area and limit cable length to each outlet to code-required 295 feet.

Provide Category 6 horizontal balanced twisted pair cabling to every new and existing room, including fiber optic cable backbone from the equipment room to each telecommunications room. Include a conduit drop to each work area outlet from the low voltage cable tray system.

Provide a new telephone system with voicemail and automated attendant functionality. Include wall phones in the classrooms and desk phones elsewhere with a main central answering position to supplement the use of automated attendant and ancillary answering positions.

Wired data is desired throughout the campus. Wireless network connectivity is desired throughout the entire campus to provide support for traditional data connectivity as well as mobile administrative/teacher access to the student management database and specific mobile voice application.

Include allowance for remedial work in the existing Thames Building to include: conduit, cable and fiber links to the Entrance Facility (EF).

Video

Video distribution will occur throughout the school over the data network. Provide for a video outlet in each classroom, teaching area and assembly area. Provide for a wall-mounted television in each classroom. Traditional co-axial drops will be provided where the cable company is desired to originate video and audio programming such as the auditorium, media center, cafeteria, etc.

Science Labs need to be equipped with ceiling mounted demonstration cameras to project whatever is being shown on the demonstration table.

Centralized digital video control equipment will be required in the main equipment room (ER). Include capability for media retrieval and Video on Demand equipment.

Security

Provide a networked security system complete with door access control and corridor motion detection. Provide an interior and exterior closed circuit video security camera system, including fixed and pan-tilt-zoom cameras and monitors. Mount cameras on the parking area lighting poles. Locate monitors and digital video recorders in the Main Security Room.

Generators

Provide emergency power for life safety systems including lighting, fire alarm, and security. Include capacity for standby power to serve non-life safety systems including no-freeze heating, elevators and refrigerated food storage.

Provide two complete diesel generator systems as follows:

Generator #1 - Maintenance & Central Plant Building: Sized at 150 kW/225 amperes, 480/277 volts to provide power for approximately 12 hours of service for no-freeze heating boilers including pumps, controls and fuel transfer. Include provisions for an indoor generator with day tank, fuel transfer pumps, and automatic transfer switch located in the Maintenance & Central Plant Building.

Generator Load Allowances:

Boilers	25 kW
Pumps	100 kW
Misc	<u>25 kW</u>
Total Connected Load	150 kW
Generator #1 Size	150 kW/225A

Include one (1) automatic transfer switch and standby panelboard for the above loads.

Generator #2 - Buildings A,B,C & 1-5: Sized at 700 kW/1052 amperes, 480/277 volts to provide power for approximately 12 hours of service for life safety, no-freeze heating, lab exhaust hoods, non-simultaneous elevators, and kitchen refrigeration equipment.

Generator Load Allowances:

Life Safety		
Lighting	@ 1.0 w/sf	304 kW
Fire alarm & security		20 kW
Elevators - 2 each @ 30 hp		60 kW

Non-Life Safety	
No-Freeze Heating	150 kW
Lab Exhaust Fans	50 kW
Kitchen Refrigeration – 4 ea	40 kW
Misc	50 kW
 Total Connected Load	 674 kW
Generator #2 Size	700 kW/1053A

Include three (3) automatic transfer switches and panelboards for: life safety, elevators and non-life safety equipment. Provide a 400 A, 480/277V Life Safety automatic transfer switch (ATS) and panelboard for lighting, a 200 A, 480/277 ATS and panelboard for elevators and a 400A, 480/277V ATS and panelboard for Non-Life Safety located in the penthouse between Building C and Building 4. Include provisions for an outdoor walk-in sound-rated enclosure & generator with sub-base day tank, main fuel storage tank, fuel transfer pumps, and automatic transfer switches located outside the Thames Building boiler room.

Lightning Protection

Provide a lightning protection system including all necessary ground wire, copper air terminals, round rods, etc. Provide UL master label.

11.0 Special Construction:

New Elevators: 2 and 3 stop Holeless Hydraulic 3500 lb. Elevator by Schindler or equal. Stainless doors and custom cab.

II. New Maintenance/ Central Plant Building Construction Scope:

1.0: General:

New one story mechanical building housing maintenance offices, and repair shops with adjacent central plant housing boilers, chillers, pumps, switchgear, emergency generator and auxiliary equipment.

2.0: Site Work for Maintenance and Central Plant:

Water Service

Provide water service to building from existing 8" FP line at NE corner of existing TRCC building.

19 January 2005

Sanitary Sewer

Provide 8" sanitary sewer line from building to street. Assume 3 manholes, including one in New London Turnpike (NLT).

Gas Service

Provide gas line (if needed) from street to building.

Electric and Telephone/Data

Provide electrical and telephone service (from existing overhead or from building services).

Storm Drainage

Provide catch basins along the access drive to convey storm runoff toward the existing system in New London Turnpike.

3.0: Foundations:

Slab on Grade

4.0: Substructure:

New slab on grade shall be 5" thick, reinforced with 6x6, W2.9xW2.9 welded wire fabric, and placed on a vapor retarder underlain with 8" of compacted granular fill.

5.0: Superstructure:

Steel beams on wide flange or hollow structural columns with 1 1/2" deep, 20 gage galvanized roof deck supported by steel bar joists.

6.0: Exterior Enclosure:

Height: Assume a floor to roof height of 24'-0".

Exterior Enclosure: Assume a pre-engineered metal building system structure. 24GA fluted insulated wall panels.

7.0: Roofing:

Pre-engineered flush clear span roof system.

8.0: Interior Construction:

Assume 50% GWB demising wall construction and 50% CMU demising wall construction

9.0 Mechanical:

HVAC: (2) 300 ton and (1) 200 ton, water-cooled, centrifugal chillers located inside the building will generate cooling. Chilled water will be distributed to air handlers by a primary/secondary pumping system consisting of (2) 750 GPM, 10 HP primary pumps, (1) 500 GPM, 7 1/2 HP primary pump and (2) 1,250 GPM, 75 HP secondary pumps.

(2) 900 GPM, 25 HP and (1) 600 GPM, 15 HP cooling towers located in a fenced in yard outside the building will generate cooling water. Cooling water will be distributed by to the chillers by (2) 900 GPM, 20 HP and (1) 15 HP pumps.

(3) 4,500 MBH dual fueled heating water boilers located inside the building will generate heat. Heating water will be distributed to air handlers and VAV boxes by a primary/secondary pumping system consisting of (3) 450 GPM, 7 1/2 HP primary pumps and (2) 450 GPM, 60 HP secondary pumps.

HVAC controls will consist of a building wide automation system integrating all aspects of the mechanical system.

Exhaust Systems: roof-mounted fans will ventilate the building

Sprinkler: All areas of the building will be sprinklered with a wet pipe system rated for ordinary hazard. The incoming service will have and RPZ isolating the sprinklers from other potable sources. A fire pump may be required pending the results from a water flow test.

10.0 Electrical:

See Section 1 - Electrical

11.0 Special Construction:

None

III. Thames Building Renovation Scope:

1.0: General:

Please price each of these headings separately so that the college can understand which components should be funded from the overall construction budget and which can be funded through their maintenance budget.

New Ceiling:

Remove and dispose of all existing ceilings, lighting and ceiling mechanical services.

Install new 2' x2' ACT and grid throughout.

General Classroom Demolition/Reconstruction:

At various classrooms, existing walls are to be removed and rebuilt with GWB. See plans with locations of removed and rebuilt walls.

Exterior Entrance Doors:

All existing entry storefronts and doors to be replaced with new double glazed aluminum pressure wall assemblies and doors by Wausau or equal.

Renovate Chemistry/Tech Labs:

Convert existing labs 100 132, 117, 122, 201 and 203 into classroom use. See plans for locations and extent of demo/reconstruction.

Renovate Library:

Convert existing library into classrooms. See plans for locations and extent of demo/reconstruction.

Renovate Cafeteria:

Renovate existing cafeteria into childcare center. See plans for locations and extent of demo/reconstruction.

Renovate Gymnasium:

Renovate existing gymnasium into fitness center and multipurpose room. See plans for locations and extent of demo/reconstruction.

Remove and dispose of locker rooms and rebuild with new toilet rooms.

Renovate Toilet Rooms:

Renovate bathrooms and upgrade for ADA compliance. Demolish all fixtures, partitions and finishes and provide all new.

New Roof: Provide new 4-ply hot mopped built-up roof over new insulation.

9.0: Mechanical:

HVAC: Cooling will be generated by Central Plant chillers.

Air distribution will be accomplished by a series of air handlers located in the penthouses routing air through a supply and return duct systems. The systems will control temperature in the spaces via a number of variable volume (VAV) control boxes each with a heating coil.

Heating will be generated by Central Plant boilers.

HVAC controls will consist of a building wide automation system integrating all aspects of the mechanical system.

The following concepts pertain to only the renovated building:

Remove the existing boilers and associated auxiliary equipment. Provide piping from the new Central Utility Plant to tie into the existing piping at the demolished boiler room. Existing heating piping shall be reused for new two-pipe heating/cooling system. Re-insulate existing piping for use as two-pipe heating/cooling piping. Provide new heating/cooling heat exchanger. Replace old pneumatic control valves and controls with new electronic control valves and controls for the new fan coil units. Integrate the new controls with the new HVAC building automation system.

Air handler serving Building C is an exterior type mounted on a curb due to the structural constraints with the existing building.

Computer Labs/Classroom Building #A

- Replace existing fan coil units (FCU) for each room
- Tie new FCU's into existing water piping and outside air opening in exterior wall
- Provide new condensate drains for FCU's and tie into sanitary sewer

Computer Labs/Classroom Building #B

- Replace existing fan coil units (FCU) for each room
- Tie new FCU's into existing water piping and outside air opening in exterior wall
- Provide new condensate drains for FCU's and tie into sanitary sewer

Fitness/Multipurpose Building #C

- (1) 30,000 CFM air handler, serving the space
- AHU size approximately 9' X 9' X 27'

The following concepts are common to both new and renovated spaces:

Exhaust Systems: Restrooms will be ventilated with code mandated air changes by roof-mounted fans. Lab fume hoods will be exhausted with penthouse-mounted fans conveying contaminated air through stainless steel ductwork.

Sprinkler: All areas of the building will be sprinklered with a wet pipe system rated for ordinary hazard. The incoming service will have an RPZ isolating the

10.0 Electrical:

See Section I

11.0 Special Construction:

Demolish existing elevator and replace with new cab, equipment/controls.

31 January 2005

Appendix B: **Opinion of Probable Cost:**
Master Plan

John Noble Estimating
Cost Summary

Three Rivers CC Conceptual
Owner, Three Rivers Community College
Architect, Fletcher Thompson - Mitchell/Giurgola

05-03
311,100 SF

Description	Todays Cost	5% Contingency	% Escalate	Escalation	Total \$	Cost Per SF
02 Sitework Phase 1	\$4,528,975	\$226,449	7.5%	\$356,657	\$5,112,081	\$14.56
02A Sitework Phase 2	\$1,037,853	\$51,893	7.5%	\$81,731	\$1,171,477	\$3.34
03 New Construction Bldgs 1-4,6	\$40,157,121	\$2,007,856	7.5%	\$3,162,373	\$45,327,350	\$129.08
04 Demolition RVTS	\$680,000	\$34,000	7.5%	\$53,550	\$767,550	\$2.19
subtotal	\$46,403,949	\$2,320,197	10.5%	\$5,116,035	\$53,840,182	\$149.16
05 New Construction Bldg 5	\$4,639,069	\$231,953	10.5%	\$511,457	\$5,382,480	\$14.91
subtotal	\$51,043,018	\$2,552,151		\$5,627,493	\$59,222,662	\$164.07
06 Thames Renovation HVAC/FP/Clg	\$5,744,372	\$287,219	7.5%	\$452,369	\$6,483,959	\$18.46
Estimate Subtotal	\$56,787,390	\$2,839,369		\$6,079,862	\$65,706,621	\$182.54

John Noble Estimating
Cost Detail

Three Rivers CC Conceptual
Owner, Three Rivers Community College
Architect, Fletcher Thompson - Mitchell/Giurgola

05-03
311,100 SF

Description	Quantity	Unit	Total Price	Unit Price
02 Sitework Phase 1				
02100 Site Clearing/Erosion Ctl				
Site Clearing/Erosion Ctl	894,000	SF	\$89,400	\$0.10
Rem Conc Sidewalks	12,000	SF	\$30,000	\$2.50
Remove Bituminous Paving	316,000	SF	\$182,332	\$0.58
Site Clearing/Erosion Ctl			\$301,732	
02110 Topsoil				
Respread Topsoil	7,000	CY	\$61,906	\$8.84
Strip Topsoil	10,000	CY	\$33,400	\$3.34
Screen Stripped Topsoil	10,000	CY	\$43,333	\$4.33
Excess Topsoil	2,500	CY	\$7,192	\$2.88
Haul Away Topsoil Tailings	500	CY	\$3,763	\$7.53
Topsoil			\$149,594	
02200 Earthwork				
Mass Cut & Fill On Site	40,000	CY	\$344,500	\$8.61
Gravel under walks	3,000	CY	\$89,136	\$29.71
Rough Grading - Site	894,000	SF	\$75,096	\$0.08
Earthwork			\$508,732	
02400 Sanitary				
Sanitary to Building	1,200	LF	\$60,000	\$50.00
Sanitary Manholes	12	EA	\$26,400	\$2,200.00
Patch Road @ Sanitary	1	Loc	\$2,000	\$2,000.00
Remove Existing as Req'd	1	LS	\$6,738	\$6,738.00
Sanitary			\$95,138	
02500 Walks & Paving				
Process Aggregate	9,800	CY	\$233,363	\$23.81
Bituminous Paving Tonnage	11,000	TN	\$660,000	\$60.00
Gravel Base	9,800	CY	\$252,963	\$25.81
Surfaced Area Grade/Compact	46,800	SY	\$70,200	\$1.50
Line Striping	1	LS	\$4,000	\$4,000.00
H/C Line Striping	12	CAR	\$600	\$50.00
Concrete Walks	40,000	SF	\$220,000	\$5.50
Pavers	20,000	SF	\$200,000	\$10.00
Concrete Curbs	21,000	LF	\$420,000	\$20.00
Walks & Paving			\$2,061,126	
02600 Site Water System				
Site Hydrant	4	EA	\$8,400	\$2,100.00
Water Loop around Bldg	2,000	LF	\$120,000	\$60.00
Patch Road @ Water	1	LOC	\$2,000	\$2,000.00
Water Co Charges	1	LS	\$5,000	\$5,000.00
Site Water System			\$135,400	

John Noble Estimating
Cost Detail

Three Rivers CC Conceptual
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05-03
311,100 SF

Description	Quantity	Unit	Total Price	Unit Price
02650 Site Electrical				
Conc. Light Bases	130	EA	\$48,750	\$375.00
Site Lighting	130	EA	\$260,000	\$2,000.00
Elec Utility Co Charges	1	LS	\$10,000	\$10,000.00
Trench Site Liting	11,000	LF	\$78,916	\$7.17
Trench Elec Service	1,200	LF	\$8,896	\$7.41
Site Electrical			<u>\$406,562</u>	
02695 Rem Fuel Tanks				
Rem Fuel Tanks	1	LS	<u>\$25,000</u>	\$25,000.00
Rem Fuel Tanks			<u>\$25,000</u>	
02700 Storm Drainage				
Storm Drainage	894,000	SF	\$312,900	\$0.35
Remove Existing as Req'd	1	LS	\$11,320	\$11,320.00
Vortech Storm Treatment System	2	EA	<u>\$27,264</u>	\$13,632.00
Storm Drainage			<u>\$351,484</u>	
02800 Site Improvements/Misc				
Play Areas w/Fibar	7,000	SF	\$28,000	\$4.00
Playground Equipment	1	LOC	\$18,000	\$18,000.00
6'L Steel Site Bench	8	EA	<u>\$8,472</u>	\$1,059.00
Site Improvements/Misc			<u>\$54,472</u>	
02890 Irrigation				
Irrigation Courtyards	20,000	SF	\$10,000	\$0.50
Irrigate: Campus Landscaping	160,000	SF	<u>\$72,000</u>	\$0.45
Irrigation			<u>\$82,000</u>	
02900 Landscaping				
Planting Allowance	21	Acr	\$252,000	\$12,000.00
Wetland Landscaping	80,000	SF	\$32,000	\$0.40
Seeding/Mulch & Fine Grade	293,000	SF	<u>\$58,600</u>	\$0.20
Landscaping			<u>\$342,600</u>	
05500 Miscellaneous Metals				
6" Conc Filled Bollards	16	EA	<u>\$7,636</u>	\$477.25
Miscellaneous Metals			<u>\$7,636</u>	
10350 Flagpole				
Flagpole	2	EA	<u>\$7,500</u>	\$3,750.00
Flagpole			<u>\$7,500</u>	
Sitework Phase 1 Total			<u>\$4,528,976</u>	

John Noble Estimating
Cost Detail

Three Rivers CC Conceptual
Owner, Three Rivers Community College
Architect, Fletcher Thompson - Mitchell/Giurgola

05-03
311,100 SF

Description	Quantity	Unit	Total Price	Unit Price
02A Sitework Phase 2				
02100 Site Clearing/Erosion Ctl				
Site Clearing/Erosion Ctl	208,000	SF	\$20,800	\$0.10
Rem Conc Sidewalks	8,500	SF	\$21,250	\$2.50
Remove Bituminous Paving	56,000	SF	\$32,312	\$0.58
Site Clearing/Erosion Ctl			<u>\$74,362</u>	
02110 Topsoil				
Respread Topsoil	1,100	CY	\$9,728	\$8.84
Strip Topsoil	1,200	CY	\$4,008	\$3.34
Screen Stripped Topsoil	1,200	CY	\$5,200	\$4.33
Haul Away Topsoil Tailings	100	CY	\$753	\$7.53
Topsoil			<u>\$19,689</u>	
02200 Earthwork				
Mass Cut & Fill On Site	7,000	CY	\$60,288	\$8.61
Gravel under walks	1,000	CY	\$29,712	\$29.71
Rough Grading - Site	208,000	SF	\$17,472	\$0.08
Earthwork			<u>\$107,472</u>	
02500 Walks & Paving				
Process Aggregate	2,100	CY	\$50,006	\$23.81
Bituminous Paving Tonnage	2,300	TN	\$138,000	\$60.00
Gravel Base	2,100	CY	\$54,206	\$25.81
Surfaced Area Grade/Compact	10,000	SY	\$15,000	\$1.50
Line Striping	1	LS	\$2,000	\$2,000.00
H/C Line Striping	4	CAR	\$200	\$50.00
Concrete Walks	17,000	SF	\$93,500	\$5.50
Pavers	17,000	SF	\$170,000	\$10.00
Concrete Curbs	5,400	LF	\$108,000	\$20.00
Walks & Paving			<u>\$630,912</u>	
02650 Site Electrical				
Conc. Light Bases	20	EA	\$7,500	\$375.00
Site Lighting	20	EA	\$40,000	\$2,000.00
Trench Site Liting	1,600	LF	\$11,479	\$7.17
Site Electrical			<u>\$58,979</u>	
02700 Storm Drainage				
Storm Drainage	208,000	SF	\$72,800	\$0.35
Storm Drainage			<u>\$72,800</u>	
02900 Landscaping				
Planting Allowance	5	Acr	\$60,000	\$12,000.00
Seeding/Mulch & Fine Grade	68,200	SF	\$13,640	\$0.20
Landscaping			<u>\$73,640</u>	
Sitework Phase 2 Total			<u>\$1,037,854</u>	

John Noble Estimating
Cost Detail

Three Rivers CC Conceptual
Owner, Three Rivers Community College
Architect, Fletcher Thompson - Mitchell/Giurgola

05-03
311,100 SF

Description	Quantity	Unit	Total Price	Unit Price
03 New Construction Bldgs 1-4,6				
BLDG14 Buildings 1 - 4				
Demolition Bldgs 1-4	176,582	SF	\$441,455	\$2.50
Earthwork Bldgs 1-4	176,582	SF	\$353,164	\$2.00
Foundations Bldgs 1-4	176,582	SF	\$1,059,492	\$6.00
Slabs Bldgs 1-4	176,582	SF	\$882,910	\$5.00
Structure Bldgs 1-4	176,582	SF	\$4,414,550	\$25.00
Exterior Closure Bldgs 1-4	176,582	SF	\$4,414,550	\$25.00
Roofing Bldgs 1-4	176,582	SF	\$794,619	\$4.50
Interiors Bldgs 1-4	176,582	SF	\$8,829,100	\$50.00
Fire Protection Bldgs 1-4	176,582	SF	\$529,746	\$3.00
Plumbing Bldgs 1-4	176,582	SF	\$1,589,238	\$9.00
HVAC Bldgs 1-4	176,582	SF	\$5,500,000	\$31.15
Electric Bldgs 1-4	176,582	SF	\$2,350,600	\$13.31
Service Bldgs 1-4	1	LS	\$75,000	\$75,000.00
Telecommunications Bldgs 1-4	176,582	SF	\$1,765,820	\$10.00
GC General Cond-Insur-Fee	176,582	SF	\$3,531,640	\$20.00
Buildings 1 - 4			<u>\$36,531,884</u>	
BLDG6 Building 6				
Earthwork Bldgs 6	16,652	SF	\$33,304	\$2.00
Foundations Bldgs 6	16,652	SF	\$99,912	\$6.00
Slabs Bldgs 6	16,652	SF	\$99,912	\$6.00
Structure Bldg 6	16,652	SF	\$333,040	\$20.00
Exterior Closure Bldg 6	16,652	SF	\$266,432	\$16.00
Roofing Bldg 6	16,652	SF	\$149,868	\$9.00
Interiors Bldg 6	16,652	SF	\$166,520	\$10.00
Fire Protection Bldg 6	16,652	SF	\$45,793	\$2.75
Plumbing Bldg 6	16,652	SF	\$83,260	\$5.00
HVAC Bldg 6	16,652	SF	\$1,634,000	\$98.13
Electric Bldg 6	16,652	SF	\$355,178	\$21.33
GC General Cond-Ins-Fee	16,652	SF	\$358,018	\$21.50
Building 6			<u>\$3,625,237</u>	
New Construction Bldgs 1-4,6 Total			<u>\$40,157,121</u>	
04 Demolition RVTS				
02050 Demolition				
Demo & Remove Building	1	LS	\$680,000	\$680,000.00
Demolition			<u>\$680,000</u>	
Demolition RVTS Total			<u>\$680,000</u>	

John Noble Estimating
Cost Detail

Three Rivers CC Conceptual
Owner, Three Rivers Community College
Architect, Fletcher Thompson - Mitchell/Giurgola

05-03
311,100 SF

Description	Quantity	Unit	Total Price	Unit Price
05 New Construction Bldg 5				
BLDG5 Building 5				
Demolition Building 5	14,475 SF		\$36,188	\$2.50
Earthwork Building 5	14,475 SF		\$43,425	\$3.00
Foundations Building 5	14,475 SF		\$115,800	\$8.00
Slabs Building 5	14,475 SF		\$72,375	\$5.00
Structure Building 5	14,475 SF		\$434,250	\$30.00
Exterior Closure Building 5	14,475 SF		\$1,158,000	\$80.00
Roofing Building 5	14,475 SF		\$173,700	\$12.00
Interiors Building 5	14,475 SF		\$868,500	\$60.00
Fire Protection Building 5	14,475 SF		\$57,900	\$4.00
Plumbing Building 5	14,475 SF		\$130,275	\$9.00
HVAC Building 5	14,475 SF		\$434,250	\$30.00
Electric Building 5	14,475 SF		\$752,531	\$51.99
GC General Cond-Ins-Fee	14,475 SF		\$361,875	\$25.00
Building 5			<u>\$4,639,069</u>	
New Construction Bldg 5 Total			<u>\$4,639,069</u>	
06 Thames Renovation HVAC/FP/Clg				
THAMES Thames Renovation HVAC/FP/Clg				
ClgDemolition Thames Building	103,391 SF		\$206,782	\$2.00
Clg ReplaceThames Building	103,391 SF		\$310,173	\$3.00
Fire Protection Thames	103,391 SF		\$413,564	\$4.00
HVAC Thames	103,391 SF		\$1,737,000	\$16.80
Electric Thames	103,391 SF		\$2,326,853	\$22.51
GC General Cond-Ins-Fee	103,391 SF		\$750,000	\$7.25
Thames Renovation HVAC/FP/Clg			<u>\$5,744,372</u>	
Thames Renovation HVAC/FP/Clg Total			<u>\$5,744,372</u>	
Estimate Subtotal			<u>\$56,787,392</u>	\$182.54

THREE RIVERS C.C.
THAMES BLDG
CONCEPTUAL ESTIMATE
JANUARY 19, 2005

1/27/2005

HVAC SUMMARY		LABOR HRS	LABOR TOTAL	MATERIAL TOTAL	TOTAL L&M	
EQUIPMENT		1,097	\$71,321	\$983,813	\$1,055,135	
PIPING		1,042	\$67,704	\$63,525	\$131,229	
DEMOLITION		240	\$15,600	\$500	\$16,100	
TESTING		24	\$1,560	\$500	\$2,060	
TAGS & CHARTS		12	\$780	\$750	\$1,530	
WARRANTY		8	\$520	\$1,000	\$1,520	
PROJECT CLOSEOUT		8	\$520	\$200	\$720	
SLEEVES & PACKING		40	\$2,600	\$3,000	\$5,600	
TOTALS		2,471	\$160,605	\$1,053,288	\$1,213,894	\$1,213,894
SHEETMETAL						\$90,000
TEMPERATURE CONTROL						\$126,000
INSULATION						\$44,000
CRANE						\$3,000
AIR BALANCING						\$2,500
WATER BALANCING						\$1,000
SUBTOTAL						\$1,480,394
SUBCONTRACTORS O&P	15%					\$222,059
SUBTOTAL						\$1,702,453
PERMIT						
BOND	2%					\$34,049
						\$1,736,502
						\$1,737,000
					GROSS SQ.	108,000
					\$/GSF	\$16.08

THREE RIVERS C.C.
THAMES BLDG
CONCEPTUAL ESTIMATE
JANUARY 19, 2005

1/27/2005

HVAC EQUIPMENT	QUANT	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
REMOVE FAN COIL UNITS & PIPING	91	3.15	\$18,632	\$16	\$1,433	\$20,066
INSTALL NEW FAN COIL UNITS	91	6.30	\$37,265	\$1,155	\$105,105	\$142,370
REPAIR EXISTING EQUIPMENT	1	126	\$8,190	\$3,675	\$3,675	\$11,865
DESIGN CHANGES / SQ. FT	108000	0	\$0	\$8	\$850,500	\$850,500
CHANGEOVER PUMPS	2	16.80	\$2,184	\$3,150	\$6,300	\$8,484
ALIGN PUMPS	2	4.20	\$546	\$0	\$0	\$546
INERTIA BASES	2	6.30	\$819	\$788	\$1,575	\$2,394
VAR. FREQ. DRIVES	2	4.20	\$546	\$4,725	\$9,450	\$9,996
AIR SEPARATORS - 8" & 5"	1	12.60	\$819	\$1,050	\$1,050	\$1,869
EXPANSION TANKS	1	8.40	\$546	\$1,260	\$1,260	\$1,806
SUCTION DIFFUSERS	2	6.30	\$819	\$683	\$1,365	\$2,184
TRIPLE DUTY VALVES	2	7.35	\$956	\$1,050	\$2,100	\$3,056
TOTAL EQUIPMENT			\$71,321		\$983,813	\$1,055,135

HVAC PIPING	QUANT.	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
TRIM FAN COIL UNITS	91	5	\$31,054	\$315	\$28,665	\$59,719
FAN COIL UNIT DRAIN	91	3	\$18,632	\$210	\$19,110	\$37,742
PUMPS	2	21	\$2,730	\$1,680	\$3,360	\$6,090
CONVERTOR	1	25	\$1,638	\$1,890	\$1,890	\$3,528
CROSSOVER PIPING	1	84	\$5,460	\$5,250	\$5,250	\$10,710
REPAIR EXISTING PIPING	1	126	\$8,190	\$5,250	\$5,250	\$13,440
		0	\$0	\$0	\$0	\$0
		0	\$0	\$0	\$0	\$0
TOTAL PIPING			\$67,704		\$63,525	\$131,229

HVAC SHEETMETAL

SHEETMETAL		TOTAL #'S		\$/\$	
MISC DUC T REPAIRS		10,000		\$5.25	\$52,500
					\$0
SKETCHING		5	DAYS	\$550	\$2,750
	QUANT.	LABOR	TOT LAB.	MATERIAL	TOT MAT
R & R SOME RGD'S	30	\$68	\$2,048	\$79	\$2,363
FCU FRESH AIR CONNECTIONS	91	\$103	\$9,364	\$105	\$9,555
		\$0	\$0	\$0	\$0
		\$0	\$0	\$0	\$0
		\$0	\$0	\$0	\$0
		\$0	\$0	\$0	\$0
		\$0	\$0	\$0	\$0
		\$0	\$0	\$700	\$0
TOTAL SHEETMETAL		\$0			\$78,579
15% O & P					\$11,787
					\$90,366
CARRY					\$90,000

HVAC TEMPERATURE CONTROL

TEMPERATURE CONTROLS	QUANTITY	UNIT	
FAN COIL UNITS	91	\$1,250	\$113,750
HW / CH WTR SWITCH OVER	1	\$7,500	\$7,500
CONVERTOR	1	\$5,000	\$5,000
			\$0
			\$0
			\$0
			\$0
		\$500	\$0
			\$126,250
		CARRY	\$126,000

HVAC - INSULATION

	CONCEALED		SQ. FT.	\$/SF	
PATCH EXISTING DUCT			10,000	\$1.47	\$14,700
REMOVE EXISTING HW INUL	4,300	\$0.50			\$2,150
HOT WATER PIPING	4,300	\$6.00			\$25,800
CW WTR PUMPS	2	\$500			\$1,000
HEAT EXCHANGER	1	\$800			\$800
					\$0
TOTAL INSULATION					\$44,450

1/26/2005

RAK ESTIMATING SERVICE
203-239-6226

THREE RIVERS C.C.
NEW BUILDING
CONCEPTUAL ESTIMATE
JANUARY 19, 2005

1/26/2005

PLUMBING FIXTURES & PIPING	QUANT.	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
LAV - L-1&2	66	2.21	\$9,459	\$236	\$15,593	\$25,052
TRIPLE LAV - L-3	26	16.80	\$28,392	\$3,675	\$95,550	\$123,942
SENSOR OPER LAV FAUCET	92	1.58	\$9,419	\$184	\$16,905	\$26,324
WTR CLOSET & CARRIER	72	5.44	\$25,455	\$425	\$30,618	\$56,073
URINAL & CARRIER	18	5.44	\$6,364	\$394	\$7,088	\$13,451
ADD FOR SENSOR OPER. FLUSH VA	90	2.10	\$12,285	\$158	\$14,175	\$26,460
S/S SINK	19	3.36	\$4,150	\$263	\$4,988	\$9,137
SENSOR OPER. SINK FAUCETS	19	1.58	\$1,945	\$131	\$2,494	\$4,439
SOLIDS INTERCEPTOR	6	3.15	\$1,229	\$236	\$1,418	\$2,646
WATER COOLER	14	5.25	\$4,778	\$1,313	\$18,375	\$23,153
DRINKING FOUNTAINS	2	4.20	\$546	\$473	\$945	\$1,491
MOP SINK	2	3.90	\$506	\$315	\$630	\$1,136
EMER. EYEWASH & SHOWER	10	5.25	\$3,413	\$788	\$7,875	\$11,288
PIPING EMER EW & SHWR	10	6.30	\$4,095	\$315	\$3,150	\$7,245
SHOWER STALL	2	8.40	\$1,092	\$1,575	\$3,150	\$4,242
SHOWER PIPING	2	6.30	\$819	\$735	\$1,470	\$2,289
FLOOR DRAINS	44	1.66	\$4,745	\$289	\$12,705	\$17,450
TRAP PRIMER & PIPING	20	3.15	\$4,095	\$210	\$4,200	\$8,295
WALL CLEANOUTS	8	1.14	\$595	\$89	\$714	\$1,309
ROOF DRAIN		1.93	\$0	\$263	\$0	\$0
OVERFLOW DRAINS		1.93	\$0	\$221	\$0	\$0
FLOOR CLEANOUTS - CI	39	1.14	\$2,901	\$137	\$5,324	\$8,225
NON FREEZE WALL HYDRANTS	10	1.58	\$1,024	\$184	\$1,838	\$2,861
GREASE SEPARATOR	1	42.00	\$2,730	\$4,725	\$4,725	\$7,455
ACOD NEUTRALIZING TANKS	20	5.25	\$6,825	\$525	\$10,500	\$17,325
SANITARY U/G	1	0.00	\$0	\$0.00	\$0	\$0
SANITARY A/G	1	0.00	\$0	\$0.00	\$0	\$0
DOMESTIC WATER	1	0.00	\$0	\$0.00	\$0	\$0
STORM U/G	1	0.00	\$0	\$0.00	\$0	\$0
STORM A/G	1	0.00	\$0	\$0.00	\$0	\$0
GAS PIPING	1	0.00	\$0	\$0.00	\$0	\$0
KITCHEN PIPING - DW, SAN GAS	1	252.00	\$16,380	\$8,400.00	\$8,400	\$24,780
PIPING SEISMIC	1	168.00	\$10,920	\$5,250.00	\$5,250	\$16,170
SANITARY LIFT PUMP PIPING	1	16.80	\$1,092	\$525	\$525	\$1,617
FLEXIBLE CONNECTORS	6	4.20	\$1,638	\$630	\$3,780	\$5,418
PIPE GUIDES	6	4.20	\$1,638	\$315	\$1,890	\$3,528
SEWAGE EJECTOR PIPING	1	42.00	\$2,730	\$1,260	\$1,260	\$3,990
WATER HEATER PIPING	1	42.00	\$2,730	\$1,890	\$1,890	\$4,620
VENTS THRU ROOF	10	3.15	\$2,048	\$105	\$1,050	\$3,098
TOTAL PIPING & FIXTURES			\$176,035		\$288,472	\$464,507

THREE RIVERS C.C.
NEW BUILDING
CONCEPTUAL ESTIMATE
JANUARY 19, 2005

1/26/2005

PLUMBING EQUIPMENT	QUANT.	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
WATER HEATER - gas	2	0.00	\$0	\$0	\$0	\$0
BOOSTER WATER HEATER	1	0.00	\$0	\$0	\$0	\$0
DOMESTIC WATER CIRCULATORS	2	6.30	\$819	\$630	\$1,260	\$2,079
EXPANSION TANKS	2	4.20	\$546	\$525	\$1,050	\$1,596
TEMPERING VALVES - WTR HEATERS	1	6.30	\$410	\$1,313	\$1,313	\$1,722
TEMPERING VALVES - EMER, SHWRS	10	3.15	\$2,048	\$630	\$6,300	\$8,348
SHOCKTROLS - WHA	14	1.58	\$1,433	\$105	\$1,470	\$2,903
HOSE BIBS	10	1.05	\$683	\$47	\$473	\$1,155
MASTER GAS SOLENOID PANEL	10	5.25	\$3,413	\$473	\$4,725	\$8,138
4" WATER METER AND PIPING	1	16.80	\$1,092	\$1,838	\$1,838	\$2,930
BACK FLOW PREVENTERS & PIPING - 4	1	10.50	\$683	\$3,150	\$3,150	\$3,833
BACK FLOW PREVENTERS & PIPING - 3	1	8.40	\$546	\$2,625	\$2,625	\$3,171
BACK FLOW PREVENTERS & PIPING - 2	1	6.30	\$410	\$1,313	\$1,313	\$1,722
ELEVATOR SUMP PUMP	1	6.30	\$410	\$1,313	\$1,313	\$1,722
DUPLEX SEWAGE EJECTOR	1	33.60	\$2,184	\$21,000	\$21,000	\$23,184
TOTAL EQUIPMENT			\$14,674		\$47,828	\$62,501

HVAC SUMMARY		LABOR HRS	LABOR TOTAL	MATERIAL TOTAL	TOTAL L&M	
EQUIPMENT		1,929	\$125,375	\$686,123	\$811,498	
EQUIPMENT		569	\$37,005	\$34,356	\$71,361	
PIPING		8,742	\$568,250	\$187,074	\$755,324	
TESTING		120	\$7,800	\$1,000	\$8,800	
TAGS & CHARTS		40	\$2,600	\$2,500	\$5,100	
WARRANTY		80	\$5,200	\$3,500	\$8,700	
PROJECT CLOSEOUT		80	\$5,200	\$500	\$5,700	
SLEEVES & PACKING		80	\$5,200	\$5,000	\$10,200	
TOTALS		11,640	\$756,630	\$920,053	\$1,676,683	\$1,676,683
SHEETMETAL						\$1,860,000
TEMPERATURE CONTROL						\$458,000
INSULATION						\$183,000
CRANE						\$7,500
AIR BALANCING						\$20,000
WATER BALANCING						\$7,500
SUBTOTAL						\$4,212,683
SUBCONTRACTORS O&P	15%					\$631,902
SUBTOTAL						\$4,844,585
PERMIT						
BOND	2%					\$96,892
						\$4,941,477

\$4,941,000
GROSS SQ 191,057
\$/GSF \$25.86

THREE RIVERS C.C.
NEW BUILDING
CONCEPTUAL ESTIMATE
JANUARY 19, 2005

1/26/2005

HVAC EQUIPMENT	QUANT	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
INDOOR AIR UNITS - 250,000 CFM VAV	13	42.00	\$35,490	L/S	\$321,300	\$356,790
MISC STEEL	13	12.60	\$10,647	\$315	\$4,095	\$14,742
SEISMIC & VIB ISOL	13	8.40	\$7,098	\$1,575	\$20,475	\$27,573
VARIABLE FREQUENCY DRIVE	13	4.20	\$3,549	\$4,200	\$54,600	\$58,149
		0.00	\$0	\$0	\$0	\$0
RET AIR FANS 200,000 CFM	13	16.80	\$14,196	L/S	\$210,000	\$224,196
MISCELLANEOUS STEEL	13	8.40	\$7,098	\$315	\$4,095	\$11,193
VIBRATION ISOLATION	13	6.30	\$5,324	\$420	\$5,460	\$10,784
SEISMIC RESTRAINTS	13	8.40	\$7,098	\$788	\$10,238	\$17,336
ALIGN DRIVES	13	4.20	\$3,549	\$0	\$0	\$3,549
VARIABLE FREQ. DRIVES -	13	4.20	\$3,549	\$3,150	\$40,950	\$44,499
VAV BOX W/RHC 1/2 LABOR	250	1.58	\$25,594	SM	\$0	\$25,594
MISC STEEL	250	0.00	\$0	SM	\$0	\$0
DUCTLESS UNITS	4	6.30	\$1,638	\$3,675	\$14,700	\$16,338
MISC STEEL	4	2.10	\$546	\$53	\$210	\$756
		0.00	\$0	\$0	\$0	\$0
		0.00	\$0	\$0	\$0	\$0
TOTAL EQUIPMENT			\$125,375		\$686,123	\$811,498

HVAC EQUIPMENT	QUANT	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
RADIATION ELEMENT	460	0.53	\$15,698	\$11	\$4,830	\$20,528
RADIATION COVER SLOPE TOP	574	0.32	\$11,753	\$21	\$12,054	\$23,807
CABINET UNIT HEATERS - VERTICAL	8	6.30	\$3,276	\$735	\$5,880	\$9,156
CABINET UNIT HEATERS - HORIZ	8	6.30	\$3,276	\$893	\$7,140	\$10,416
MISC STEEL	8	1.05	\$546	\$53	\$420	\$966
VIB. ISOL. & SEISMIC	8	1.05	\$546	\$105	\$840	\$1,386
UNIT HEATERS	4	5.25	\$1,365	\$683	\$2,730	\$4,095
MISC STEEL	4	1.05	\$273	\$37	\$147	\$420
VIB. ISOL. & SEISMIC	4	1.05	\$273	\$79	\$315	\$588
TOTAL			\$37,005		\$34,356	\$71,361

HVAC PIPING	QUANT.	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
HOT WATER PIPING	1	2,670	\$173,560	\$38,913	\$38,913	\$212,473
CHILLED WATER PIPING	1	3,782	\$245,837	\$54,921	\$54,921	\$300,758
HOT WTR TO AHU	13	21	\$17,745	\$788	\$10,238	\$27,983
HOT WTR TO RHC, UH, FCU & CUH	290	5	\$98,963	\$184	\$53,288	\$152,250
CH WTR TO AHU	13	25	\$21,294	\$1,575	\$20,475	\$41,769
PIPE EXPANSION	1	126	\$8,190	\$7,875	\$7,875	\$16,065
DRAINS - AHU	13	3	\$2,662	\$105	\$1,365	\$4,027
		0	\$0	\$0	\$0	\$0
TOTAL PIPING			\$568,250		\$187,074	\$755,324

THREE RIVERS C.C.
NEW BUILDING
CONCEPTUAL ESTIMATE
JANUARY 19, 2005

1/26/2005

HVAC SHEETMETAL

SHEETMETAL	TOTAL #'S	\$/S	
SUPPLY DUCT MP -	59,600	\$7.35	\$438,060
LP SUPPLY	67,200	\$5.25	\$352,800
RETURN	26,500	\$4.99	\$132,169
FRESH AIR	5,000	\$5.25	\$26,250
EXHAUST DUCT	7,500	\$6.30	\$47,250
EXHAUST DUCT S/S - DISHWASHER	800	\$10.50	\$8,400
EXHAUST DUCT - BLACK IRON	1,500	\$7.88	\$11,813
LAB EXHAUST	7500	\$10.50	\$78,750
		\$0.00	\$0
			\$0
SKETCHING	88	DAYS	\$550
			\$48,290

	QUANT.	LABOR	TOT LAB.	MATERIAL	TOT MAT	
RGD	800	\$68	\$54,600	\$79	\$63,000	\$117,600
FLEXIBLE CONNECTORS	500	\$11	\$5,250	\$16	\$7,875	\$13,125
INLINE FANS	10	\$410	\$4,095	\$788	\$7,875	\$11,970
SOUND ABSORBERS	26	\$546	\$14,196	\$1,575	\$40,950	\$55,146
FIRE DAMPERS	150	\$102	\$15,356	\$131	\$19,688	\$35,044
SMOKE DAMPERS	52	\$273	\$14,196	\$525	\$27,300	\$41,496
VAV W/RHC - 1/2 labor	250	\$103	\$25,725	\$700	\$175,000	\$200,725
TOTAL SHEETMETAL		\$0				\$1,618,887
15% O & P						\$242,833
						\$1,861,720

CARRY **\$1,860,000**

HVAC TEMPERATURE CONTROL

TEMPERATURE CONTROLS	QUANTITY	UNIT	
AIR UNITS - VAV	13	\$15,000	\$195,000
RETURN AIR FAN	1	\$7,500	\$7,500
CO-2 SENSERS	30	\$1,000	\$30,000
VAV W RHC	250	\$750	\$187,500
RADIATION CIRCUITS	20	\$500	\$10,000
DUCTLESS UNITS	3	\$3,000	\$9,000
EMERGENCY GENERATOR	1	\$10,000	\$10,000
CABINET UNIT HEATERS	12	\$500	\$6,000
UNIT HEATERS	6	\$500	\$3,000
TOTAL TEMPERATURE CONTROL			\$458,000
CARRY			\$458,000

HVAC - INSULATION

DUCT INSUL AND LINING	CONCEALED	SQ. FT.	\$/SF	
HOOD EXHAUST INSULATION		60,000	\$1.47	\$88,200
		400	\$10.50	\$4,200
				\$0
PIPING	FT	\$/FT		\$0
CHILLED WATER PIPING	2,500	\$9.24		\$23,100
HOT WATER PIPING	4,000	\$5.20		\$20,790
MAKEUP WATER	200	\$3.47		\$693
EQUIPMENT	QUANT.	UNIT \$		
CHILLED WATER PUMPS		\$1,155		\$0
CH WATER EXP. TANK		\$866		\$0
FAN COIL UNITS		\$462		\$0
REHEAT COILS	140	\$231		\$32,340
AIR UNITS (LARGE)	9	\$1,500		\$13,500
TOTAL INSULATION				\$182,823

THREE RIVERS C.C.
BUILDINGS 1-4
CONCEPTUAL ESTIMATE
JANUARY 19, 2005

1/27/2005

HVAC SUMMARY		LABOR HRS	LABOR TOTAL	MATERIAL TOTAL	TOTAL L&M	
EQUIPMENT		1,929	\$125,375	\$686,123	\$811,498	
EQUIPMENT		569	\$37,005	\$34,356	\$71,361	
PIPING		8,742	\$568,250	\$187,074	\$755,324	
TESTING		120	\$7,800	\$1,000	\$8,800	
TAGS & CHARTS		40	\$2,600	\$2,500	\$5,100	
WARRANTY		80	\$5,200	\$3,500	\$8,700	
PROJECT CLOSEOUT		80	\$5,200	\$500	\$5,700	
SLEEVES & PACKING		80	\$5,200	\$5,000	\$10,200	
TOTALS		11,640	\$756,630	\$920,053	\$1,676,683	\$1,676,683
SHEETMETAL						\$1,860,000
TEMPERATURE CONTROL						\$458,000
INSULATION						\$183,000
CRANE						\$7,500
AIR BALANCING						\$20,000
WATER BALANCING						\$7,500
SUBTOTAL						\$4,212,683
SUBCONTRACTORS O&P	15%					\$631,902
SUBTOTAL						\$4,844,585
PERMIT						
BOND	2%					\$96,892
Contingency	10%					\$494,148
						\$5,435,624
				GROSS SQ.		176,582
				\$/GSF		\$30.78
				Say		\$5,500,000

THREE RIVERS C.C.
BUILDINGS 1-4
CONCEPTUAL ESTIMATE
JANUARY 19, 2005

1/27/2005

HVAC EQUIPMENT	QUANT	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
INDOOR AIR UNITS - 250,000 CFM VAV	13	42.00	\$35,490	L/S	\$321,300	\$356,790
MISC STEEL	13	12.60	\$10,647	\$315	\$4,095	\$14,742
SEISMIC & VIB ISOL	13	8.40	\$7,098	\$1,575	\$20,475	\$27,573
VARIABLE FREQUENCY DRIVE	13	4.20	\$3,549	\$4,200	\$54,600	\$58,149
		0.00	\$0	\$0	\$0	\$0
RET AIR FANS 200,000 CFM	13	16.80	\$14,196	L/S	\$210,000	\$224,196
MISCELLANEOUS STEEL	13	8.40	\$7,098	\$315	\$4,095	\$11,193
VIBRATION ISOLATION	13	6.30	\$5,324	\$420	\$5,460	\$10,784
SEISMIC RESTRAINTS	13	8.40	\$7,098	\$788	\$10,238	\$17,336
ALIGN DRIVES	13	4.20	\$3,549	\$0	\$0	\$3,549
VARIABLE FREQ. DRIVES -	13	4.20	\$3,549	\$3,150	\$40,950	\$44,499
VAV BOX W/RHC 1/2 LABOR	250	1.58	\$25,594	SM	\$0	\$25,594
MISC STEEL	250	0.00	\$0	SM	\$0	\$0
DUCTLESS UNITS	4	6.30	\$1,638	\$3,675	\$14,700	\$16,338
MISC STEEL	4	2.10	\$546	\$53	\$210	\$756
		0.00	\$0	\$0	\$0	\$0
		0.00	\$0	\$0	\$0	\$0
TOTAL EQUIPMENT			\$125,375		\$686,123	\$811,498

HVAC EQUIPMENT	QUANT	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
RADIATION ELEMENT	460	0.53	\$15,698	\$11	\$4,830	\$20,528
RADIATION COVER SLOPE TOP	574	0.32	\$11,753	\$21	\$12,054	\$23,807
CABINET UNIT HEATERS - VERTICAL	8	6.30	\$3,276	\$735	\$5,880	\$9,156
CABINET UNIT HEATERS - HORIZ	8	6.30	\$3,276	\$893	\$7,140	\$10,416
MISC STEEL	8	1.05	\$546	\$53	\$420	\$966
VIB. ISOL. & SEISMIC	8	1.05	\$546	\$105	\$840	\$1,386
UNIT HEATERS	4	5.25	\$1,365	\$683	\$2,730	\$4,095
MISC STEEL	4	1.05	\$273	\$37	\$147	\$420
VIB. ISOL. & SEISMIC	4	1.05	\$273	\$79	\$315	\$588
TOTAL			\$37,005		\$34,356	\$71,361

HVAC PIPING	QUANT.	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
HOT WATER PIPING	1	2,670	\$173,560	\$38,913	\$38,913	\$212,473
CHILLED WATER PIPING	1	3,782	\$245,837	\$54,921	\$54,921	\$300,758
HOT WTR TO AHU	13	21	\$17,745	\$788	\$10,238	\$27,983
HOT WTR TO RHC, UH, FCU & CUH	290	5	\$98,963	\$184	\$53,288	\$152,250
CH WTR TO AHU	13	25	\$21,294	\$1,575	\$20,475	\$41,769
PIPE EXPANSION	1	126	\$8,190	\$7,875	\$7,875	\$16,065
DRAINS - AHU	13	3	\$2,662	\$105	\$1,365	\$4,027
		0	\$0	\$0	\$0	\$0
TOTAL PIPING			\$568,250		\$187,074	\$755,324

THREE RIVERS C.C.
BUILDINGS 1-4
CONCEPTUAL ESTIMATE
JANUARY 19, 2005

1/27/2005

HVAC SHEETMETAL

SHEETMETAL	TOTAL #'S		\$/\$	
SUPPLY DUCT MP -	59,600		\$7.35	\$438,060
LP SUPPLY	67,200		\$5.25	\$352,800
RETURN	26,500		\$4.99	\$132,169
FRESH AIR	5,000		\$5.25	\$26,250
EXHAUST DUCT	7,500		\$6.30	\$47,250
EXHAUST DUCT S/S - DISHWASHER	800		\$10.50	\$8,400
EXHAUST DUCT - BLACK IRON	1,500		\$7.88	\$11,813
LAB EXHAUST	7500		\$10.50	\$78,750
			\$0.00	\$0
				\$0
SKETCHING	88	DAYS	\$550	\$48,290

	QUANT.	LABOR	TOT LAB.	MATERIAL	TOT MAT	
RGD	800	\$68	\$54,600	\$79	\$63,000	\$117,600
FLEXIBLE CONNECTORS	500	\$11	\$5,250	\$16	\$7,875	\$13,125
INLINE FANS	10	\$410	\$4,095	\$788	\$7,875	\$11,970
SOUND ABSORBERS	26	\$546	\$14,196	\$1,575	\$40,950	\$55,146
FIRE DAMPERS	150	\$102	\$15,356	\$131	\$19,688	\$35,044
SMOKE DAMPERS	52	\$273	\$14,196	\$525	\$27,300	\$41,496
VAV W/RHC - 1/2 labor	250	\$103	\$25,725	\$700	\$175,000	\$200,725
TOTAL SHEETMETAL		\$0				\$1,618,887
15% O & P						\$242,833
						\$1,861,720

CARRY **\$1,860,000**

HVAC TEMPERATURE CONTROL

TEMPERATURE CONTROLS	QUANTITY	UNIT	
AIR UNITS - VAV	13	\$15,000	\$195,000
RETURN AIR FAN	1	\$7,500	\$7,500
CO-2 SENSERS	30	\$1,000	\$30,000
VAV W RHC	250	\$750	\$187,500
RADIATION CIRCUITS	20	\$500	\$10,000
DUCTLESS UNITS	3	\$3,000	\$9,000
EMERGENCY GENERATOR	1	\$10,000	\$10,000
CABINET UNIT HEATERS	12	\$500	\$6,000
UNIT HEATERS	6	\$500	\$3,000
TOTAL TEMPERATURE CONTROL			\$458,000

CARRY

\$458,000

HVAC - INSULATION

DUCT INSUL AND LINING	CONCEALED	SQ. FT.	\$/SF	
		60,000	\$1.47	\$88,200
HOOD EXHAUST INSULATION		400	\$10.50	\$4,200
				\$0
PIPING	FT	\$/FT		\$0
CHILLED WATER PIPING	2,500	\$9.24		\$23,100
HOT WATER PIPING	4,000	\$5.20		\$20,790
MAKEUP WATER	200	\$3.47		\$693
EQUIPMENT	QUANT.	UNIT \$		
CHILLED WATER PUMPS		\$1,155		\$0
CH WATER EXP. TANK		\$866		\$0
FAN COIL UNITS		\$462		\$0
REHEAT COILS	140	\$231		\$32,340
AIR UNITS (LARGE)	9	\$1,500		\$13,500
TOTAL INSULATION				\$182,823

THREE RIVERS C.C.
POWER PLANT
CONCEPTUAL ESTIMATE
1/18/05

1/26/2005

PLUMBING SUMMARY		LABOR HRS	LABOR TOTAL	MATERIAL TOTAL	TOTAL L&M	
DRAINS, FIXTURES, PIPE & EQUIP.		482	\$25,045	\$32,298	\$57,343	
TESTING		16	832	\$100	\$932	
PROJECT CLOSEOUT		8	416	\$200	\$616	
TAGS & CHARTS		8	416	\$500	\$916	
SLEEVES & PACKING		8	416	\$750	\$1,166	
TOTALS		522	\$27,125	\$33,848	\$60,973	\$60,973
JOB EXPENSES	10%					\$2,713
PROJ MGR / SUPER	8%					\$2,170
INSULATE ROOF DRAIN BOWLS			\$100.00			\$0
INSULATION	HRWL	100	\$6.00			\$600
INSULATION	DOM W.	200	\$4.00			\$800
SUBTOTAL						\$67,256
SUBCONTRACTOR'S O & P	15.00%					\$10,088.33
						\$77,344
PERMIT						\$0
BOND	2%					\$1,547
						\$78,891
CARRY					\$80,000	
AREA					16,000	
\$/SQ. FT.					\$4.93	

THREE RIVERS C.C.
POWER PLANT
CONCEPTUAL ESTIMATE
1/18/05

1/26/2005

PLUMBING FIXTURES & PIPING	QUANT.	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
LAV	4	2.10	\$437	\$236	\$945	\$1,382
WTR CLOSET & CARRIER	4	5.44	\$1,131	\$425	\$1,701	\$2,832
URINAL & CARRIER	2	5.44	\$566	\$394	\$788	\$1,353
S/S SINK	1	3.36	\$175	\$263	\$263	\$437
WATER COOLER	1	5.25	\$273	\$1,313	\$1,313	\$1,586
EMER. EYEWASH & SHOWER	1	5.25	\$273	\$788	\$788	\$1,061
PIPING EMER EW & SHWR	1	6.30	\$328	\$315	\$315	\$643
FLOOR DRAINS	10	1.66	\$863	\$289	\$2,888	\$3,750
TRAP PRIMER & PIPING	10	3.15	\$1,638	\$210	\$2,100	\$3,738
ROOF DRAIN	6	1.93	\$603	\$263	\$1,575	\$2,178
OVERFLOW DRAINS	6	1.93	\$603	\$221	\$1,323	\$1,926
FLOOR CLEANOUTS - CI	6	1.14	\$357	\$137	\$819	\$1,176
NON FREEZE WALL HYDRANTS	4	1.58	\$328	\$184	\$735	\$1,063
SANITARY U/G	1	42.00	\$2,184	\$1,575.00	\$1,575	\$3,759
FIXTURE & VENT PIPING	12	8.40	\$5,242	\$525.00	\$6,300	\$11,542
DOMESTIC WATER	200	0.32	\$3,276	\$5.25	\$1,050	\$4,326
STORM & ROOF DRAIN PIPING	12	8.40	\$5,242	\$525.00	\$6,300	\$11,542
GAS PIPING	1	16.80	\$874	\$525.00	\$525	\$1,399
WATER HEATER PIPING	1	6.30	\$328	\$788	\$788	\$1,115
VENTS THRU ROOF	2	3.15	\$328	\$105	\$210	\$538
TOTAL PIPING & FIXTURES			\$25,045		\$32,298	\$57,343

THREE RIVERS C.C.
CONCEPTUAL ESTIMATE
BOILER PLANT
JANUARY 19, 2005

1/27/2005

HVAC SUMMARY		LABOR HRS	LABOR TOTAL	MATERIAL TOTAL	TOTAL L&M	
EQUIPMENT		2,619	\$170,249	\$721,303	\$891,552	
PIPING		2,008	\$130,494	\$83,055	\$213,549	
TESTING		120	\$7,800	\$1,000	\$8,800	
TAGS & CHARTS		40	\$2,600	\$2,500	\$5,100	
WARRANTY		80	\$5,200	\$3,500	\$8,700	
PROJECT CLOSEOUT		80	\$5,200	\$500	\$5,700	
SLEEVES & PACKING		80	\$5,200	\$5,000	\$10,200	
TOTALS		5,027	\$326,743	\$816,858	\$1,143,601	\$1,143,601
SHEETMETAL						\$46,000
TEMPERATURE CONTROL						\$164,000
INSULATION						\$26,000
CRANE						\$7,500
AIR BALANCING						\$2,000
WATER BALANCING						\$3,500
SUBTOTAL						\$1,392,601
SUBCONTRACTORS O&P	15%					\$208,890
SUBTOTAL						\$1,601,491
PERMIT						
BOND	2%					\$32,030
						\$1,633,521
						\$1,634,000
				GROSS SQ.		290,800
				\$/GSF		\$5.62

THREE RIVERS C.C.
CONCEPTUAL ESTIMATE
BOILER PLANT
JANUARY 19, 2005

1/27/2005

HVAC EQUIPMENT	QUANT	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
INDOOR AIR UNIT	1	25.20	\$1,638	\$10,500	\$10,500	\$12,138
MISC STEEL	1	8.40	\$546	\$315	\$315	\$861
SEISMIC & VIB ISOL	1	8.40	\$546	\$1,575	\$1,575	\$2,121
STARTERS	1	0.00	\$0	\$420	\$420	\$420
CHILLERS - 895 T	3	126.00	\$24,570	L/S	\$281,925	\$306,495
VIBRATION ISOLATION	3	16.80	\$3,276	\$2,625	\$7,875	\$11,151
TRIM CHLLERS	3	12.60	\$2,457	\$525	\$1,575	\$4,032
STARTUP CHILLERS	3	16.80	\$3,276	\$0	\$0	\$3,276
CLNG TWR - 895 TON	3	50.40	\$8,618	L/S	\$89,276	\$97,894
MISC. STEEL	3	25.20	\$4,309	\$1,575	\$4,725	\$9,034
VIBRATION ISOLATION	3	25.20	\$4,309	\$1,575	\$4,725	\$9,034
TRIM TOWER	3	8.40	\$1,436	\$788	\$2,363	\$3,799
STARTUP TOWER	3	8.40	\$1,436	\$0	\$0	\$1,436
H W PUMPS -	5	12.60	\$4,095	\$3,150	\$15,750	\$19,845
VARIABLE FREQUENCY DRIVES -	3	4.20	\$819	\$3,150	\$9,450	\$10,269
CH. WTR. PUMPS - CHW P -	5	16.80	\$5,460	\$3,675	\$18,375	\$23,835
VARIABLE FREQUENCY DRIVES -	3	4.20	\$819	\$3,675	\$11,025	\$11,844
CONDENSER WATER PUMPS	3	21.00	\$4,095	\$3,990	\$11,970	\$16,065
STARTERS	3	0.00	\$0	\$525	\$1,575	\$1,575
INERTIA BASES	13	6.30	\$5,324	\$788	\$10,238	\$15,561
ALIGN PUMPS	13	5.25	\$4,436	\$0	\$0	\$4,436
AIR SEPARATORS - 8" & 5"	2	12.60	\$1,638	\$1,050	\$2,100	\$3,738
EXPANSION TANKS	4	8.40	\$2,184	\$1,260	\$5,040	\$7,224
SUCTION DIFFUSERS	13	6.30	\$5,324	\$683	\$8,873	\$14,196
TRIPLE DUTY VALVES	13	7.35	\$6,211	\$1,050	\$13,650	\$19,861
20,000 GAL F/G (2) WALL OIL TANK	1	67.20	\$4,032	\$42,000	\$42,000	\$46,032
OIL GAUGE & LEAK DETECTION	1	33.60	\$2,016	\$15,750	\$15,750	\$17,766
UNDERGROUND OIL PIPE	1	51.45	\$3,087	\$2,100	\$2,100	\$5,187
		0.00	\$0	\$0	\$0	\$0
UNDERGROUND CHILLED WATER PIPE	300	1.05	\$20,475	\$63	\$18,900	\$39,375
		0.00	\$0	\$0	\$0	\$0
UNIT HEATERS	8	5.25	\$2,730	\$683	\$5,460	\$8,190
MISC STEEL	8	1.05	\$546	\$37	\$294	\$840
VIB. ISOL. & SEISMIC	8	1.05	\$546	\$79	\$630	\$1,176
CAST IRON BOILERS - DUAL FUELED	3	163.80	\$31,941	\$36,750	\$110,250	\$142,191
TRIM BOILERS	3	8.40	\$1,638	\$788	\$2,363	\$4,001
STARTUP	3	12.60	\$2,457	\$0	\$0	\$2,457
BOILER CIRCULATORS	3	6.30	\$1,229	\$788	\$2,363	\$3,591
CHEMICAL TREATMENT	1	42.00	\$2,730	\$7,875	\$7,875	\$10,605
TOTAL EQUIPMENT			\$170,249		\$721,303	\$891,552

HVAC PIPING	QUANT.	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
HOT WATER PIPING	1	252	\$16,380	\$4,200	\$4,200	\$20,580
CHILLED WATER PIPING	1	336	\$21,840	\$6,825	\$6,825	\$28,665
CONDENSER WATER MAINS	1	252	\$16,380	\$5,250	\$5,250	\$21,630
MAKEUP WATER	3	25	\$4,914	\$840	\$2,520	\$7,434
HOT WATER TO BOILERS	3	42	\$8,190	\$3,150	\$9,450	\$17,640
HOT WATER TO PUMPS	5	21	\$6,825	\$1,575	\$7,875	\$14,700

RAK ESTIMATING SERVICE
203-239-6226

THREE RIVERS C.C.
CONCEPTUAL ESTIMATE
BOILER PLANT
JANUARY 19, 2005

1/27/2005

CH WTR TO CH WTR PUMPS	5	21	\$6,825	\$1,575	\$7,875	\$14,700
CONDENSER WATER PUMPS	3	25	\$4,914	\$1,890	\$5,670	\$10,584
CH WTR TO CHILLERS	3	42	\$8,190	\$3,675	\$11,025	\$19,215
COND WATER TO CHILLERS	3	42	\$8,190	\$3,675	\$11,025	\$19,215
COOLING TOWER CONNECTION	3	34	\$6,552	\$1,890	\$5,670	\$12,222
OIL PIPING	1	126	\$8,190	\$1,575	\$1,575	\$9,765
GAS PIPING	1	126	\$8,190	\$1,575	\$1,575	\$9,765
DRAINS	24	3	\$4,914	\$105	\$2,520	\$7,434
		0	\$0	\$0	\$0	\$0

TOTAL PIPING

\$130,494

\$83,055 **\$213,549**

1/26/2005

PLUMBING SUMMARY		LABOR HRS	LABOR TOTAL	MATERIAL TOTAL	TOTAL L&M	
DRAINS, FIXTURES, PIPE & EQUIP.		0	\$0	\$310,173	\$310,173	
TESTING		16	832	\$100	\$932	
PROJECT CLOSEOUT		8	416	\$200	\$616	
TAGS & CHARTS		8	416	\$500	\$916	
SLEEVES & PACKING		8	416	\$750	\$1,166	
TOTALS		40	\$2,080	\$311,723	\$313,803	\$313,803
JOB EXPENSES	10%					\$208
PROJ MGR / SUPER	8%					\$166
INSULATE ROOF DRAIN BOWLS			\$100.00			\$0
INSULATION	HRWL		\$6.00			\$0
INSULATION	DOM W.	1000	\$4.00			\$4,000
SUBTOTAL						\$318,177
SUBCONTRACTOR'S O & P	15.00%					\$47,726.61
						\$365,904
PERMIT						\$0
BOND	2%					\$7,318
						\$373,222
CARRY					\$370,000	
AREA					103,391	
\$/SQ. FT.					\$3.61	

THREE RIVERS C.C.
 THAMES BUILDING
 CONCEPTUAL ESTIMATE
 1/18/05

1/26/2005

PLUMBING FIXTURES & PIPING	QUANT.	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
CODE UPDATE - SQ. FT.	103,391	0.00	\$0	\$3	\$310,173	\$310,173
		0.00	\$0	\$0	\$0	\$0
		0.00	\$0	\$0	\$0	\$0
		0.00	\$0	\$0	\$0	\$0
TOTAL PIPING & FIXTURES			\$0		\$310,173	\$310,173

THREE RIVERS C.C.
THAMES BLDG
CONCEPTUAL ESTIMATE
JANUARY 19, 2005

1/26/2005

PLUMBING EQUIPMENT	QUANT.	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
WATER HEATER - gas	2	0.00	\$0	\$0	\$0	\$0
BOOSTER WATER HEATER	1	0.00	\$0	\$0	\$0	\$0
DOMESTIC WATER CIRCULATORS	2	6.30	\$819	\$630	\$1,260	\$2,079
EXPANSION TANKS	2	4.20	\$546	\$525	\$1,050	\$1,596
TEMPERING VALVES - WTR HEATERS	1	6.30	\$410	\$1,313	\$1,313	\$1,722
TEMPERING VALVES - EMER, SHWRS	10	3.15	\$2,048	\$630	\$6,300	\$8,348
SHOCKTROLS - WHA	14	1.58	\$1,433	\$105	\$1,470	\$2,903
HOSE BIBS	10	1.05	\$683	\$47	\$473	\$1,155
MASTER GAS SOLENOID PANEL	10	5.25	\$3,413	\$473	\$4,725	\$8,138
4" WATER METER AND PIPING	1	16.80	\$1,092	\$1,838	\$1,838	\$2,930
BACK FLOW PREVENTERS & PIPING - 4	1	10.50	\$683	\$3,150	\$3,150	\$3,833
BACK FLOW PREVENTERS & PIPING - 3	1	8.40	\$546	\$2,625	\$2,625	\$3,171
BACK FLOW PREVENTERS & PIPING - 2	1	6.30	\$410	\$1,313	\$1,313	\$1,722
ELEVATOR SUMP PUMP	1	6.30	\$410	\$1,313	\$1,313	\$1,722
DUPLEX SEWAGE EJECTOR	1	33.60	\$2,184	\$21,000	\$21,000	\$23,184
TOTAL EQUIPMENT			\$14,674		\$47,828	\$62,501

HVAC SUMMARY		LABOR HRS	LABOR TOTAL	MATERIAL TOTAL	TOTAL L&M	
EQUIPMENT		1,929	\$125,375	\$686,123	\$811,498	
EQUIPMENT		569	\$37,005	\$34,356	\$71,361	
PIPING		8,742	\$568,250	\$187,074	\$755,324	
TESTING		120	\$7,800	\$1,000	\$8,800	
TAGS & CHARTS		40	\$2,600	\$2,500	\$5,100	
WARRANTY		80	\$5,200	\$3,500	\$8,700	
PROJECT CLOSEOUT		80	\$5,200	\$500	\$5,700	
SLEEVES & PACKING		80	\$5,200	\$5,000	\$10,200	
TOTALS		11,640	\$756,630	\$920,053	\$1,676,683	\$1,676,683
SHEETMETAL						\$1,860,000
TEMPERATURE CONTROL						\$458,000
INSULATION						\$183,000
CRANE						\$7,500
AIR BALANCING						\$20,000
WATER BALANCING						\$7,500
SUBTOTAL						\$4,212,683
SUBCONTRACTORS O&P	15%					\$631,902
SUBTOTAL						\$4,844,585
PERMIT						
BOND	2%					\$96,892
						\$4,941,477

\$4,941,000
GROSS SQ 191,057
\$/GSF \$25.86

THREE RIVERS C.C.
THAMES BLDG
CONCEPTUAL ESTIMATE
JANUARY 19, 2005

1/26/2005

HVAC EQUIPMENT	QUANT	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
INDOOR AIR UNITS - 250,000 CFM VAV	13	42.00	\$35,490	L/S	\$321,300	\$356,790
MISC STEEL	13	12.60	\$10,647	\$315	\$4,095	\$14,742
SEISMIC & VIB ISOL	13	8.40	\$7,098	\$1,575	\$20,475	\$27,573
VARIABLE FREQUENCY DRIVE	13	4.20	\$3,549	\$4,200	\$54,600	\$58,149
		0.00	\$0	\$0	\$0	\$0
RET AIR FANS 200,000 CFM	13	16.80	\$14,196	L/S	\$210,000	\$224,196
MISCELLANEOUS STEEL	13	8.40	\$7,098	\$315	\$4,095	\$11,193
VIBRATION ISOLATION	13	6.30	\$5,324	\$420	\$5,460	\$10,784
SEISMIC RESTRAINTS	13	8.40	\$7,098	\$788	\$10,238	\$17,336
ALIGN DRIVES	13	4.20	\$3,549	\$0	\$0	\$3,549
VARIABLE FREQ. DRIVES -	13	4.20	\$3,549	\$3,150	\$40,950	\$44,499
VAV BOX W/RHC 1/2 LABOR	250	1.58	\$25,594	SM	\$0	\$25,594
MISC STEEL	250	0.00	\$0	SM	\$0	\$0
DUCTLESS UNITS	4	6.30	\$1,638	\$3,675	\$14,700	\$16,338
MISC STEEL	4	2.10	\$546	\$53	\$210	\$756
		0.00	\$0	\$0	\$0	\$0
		0.00	\$0	\$0	\$0	\$0
TOTAL EQUIPMENT			\$125,375		\$686,123	\$811,498

HVAC EQUIPMENT	QUANT	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
RADIATION ELEMENT	460	0.53	\$15,698	\$11	\$4,830	\$20,528
RADIATION COVER SLOPE TOP	574	0.32	\$11,753	\$21	\$12,054	\$23,807
CABINET UNIT HEATERS - VERTICAL	8	6.30	\$3,276	\$735	\$5,880	\$9,156
CABINET UNIT HEATERS - HORIZ	8	6.30	\$3,276	\$893	\$7,140	\$10,416
MISC STEEL	8	1.05	\$546	\$53	\$420	\$966
VIB. ISOL. & SEISMIC	8	1.05	\$546	\$105	\$840	\$1,386
UNIT HEATERS	4	5.25	\$1,365	\$683	\$2,730	\$4,095
MISC STEEL	4	1.05	\$273	\$37	\$147	\$420
VIB. ISOL. & SEISMIC	4	1.05	\$273	\$79	\$315	\$588
TOTAL			\$37,005		\$34,356	\$71,361

HVAC PIPING	QUANT.	LABOR HRS	LABOR TOTAL	MATERIAL	MATERIAL TOTAL	TOTAL L&M
HOT WATER PIPING	1	2,670	\$173,560	\$38,913	\$38,913	\$212,473
CHILLED WATER PIPING	1	3,782	\$245,837	\$54,921	\$54,921	\$300,758
HOT WTR TO AHU	13	21	\$17,745	\$788	\$10,238	\$27,983
HOT WTR TO RHC, UH, FCU & CUH	290	5	\$98,963	\$184	\$53,288	\$152,250
CH WTR TO AHU	13	25	\$21,294	\$1,575	\$20,475	\$41,769
PIPE EXPANSION	1	126	\$8,190	\$7,875	\$7,875	\$16,065
DRAINS - AHU	13	3	\$2,662	\$105	\$1,365	\$4,027
		0	\$0	\$0	\$0	\$0
TOTAL PIPING			\$568,250		\$187,074	\$755,324

HVAC SHEETMETAL

SHEETMETAL	TOTAL #'S	\$/\$	
SUPPLY DUCT MP -	59,600	\$7.35	\$438,060
LP SUPPLY	67,200	\$5.25	\$352,800
RETURN	26,500	\$4.99	\$132,169
FRESH AIR	5,000	\$5.25	\$26,250
EXHAUST DUCT	7,500	\$6.30	\$47,250
EXHAUST DUCT S/S - DISHWASHER	800	\$10.50	\$8,400
EXHAUST DUCT - BLACK IRON	1,500	\$7.88	\$11,813
LAB EXHAUST	7500	\$10.50	\$78,750
		\$0.00	\$0
			\$0
SKETCHING	88	DAYS	\$550
			\$48,290

	QUANT.	LABOR	TOT LAB.	MATERIAL	TOT MAT	
RGD	800	\$68	\$54,600	\$79	\$63,000	\$117,600
FLEXIBLE CONNECTORS	500	\$11	\$5,250	\$16	\$7,875	\$13,125
INLINE FANS	10	\$410	\$4,095	\$788	\$7,875	\$11,970
SOUND ABSORBERS	26	\$546	\$14,196	\$1,575	\$40,950	\$55,146
FIRE DAMPERS	150	\$102	\$15,356	\$131	\$19,688	\$35,044
SMOKE DAMPERS	52	\$273	\$14,196	\$525	\$27,300	\$41,496
VAV W/RHC - 1/2 labor	250	\$103	\$25,725	\$700	\$175,000	\$200,725
TOTAL SHEETMETAL		\$0				\$1,618,887
15% O & P						\$242,833
						\$1,861,720

CARRY **\$1,860,000**

HVAC TEMPERATURE CONTROL

TEMPERATURE CONTROLS	QUANTITY	UNIT	
AIR UNITS - VAV	13	\$15,000	\$195,000
RETURN AIR FAN	1	\$7,500	\$7,500
CO-2 SENSERS	30	\$1,000	\$30,000
VAV W RHC	250	\$750	\$187,500
RADIATION CIRCUITS	20	\$500	\$10,000
DUCTLESS UNITS	3	\$3,000	\$9,000
EMERGENCY GENERATOR	1	\$10,000	\$10,000
CABINET UNIT HEATERS	12	\$500	\$6,000
UNIT HEATERS	6	\$500	\$3,000
TOTAL TEMPERATURE CONTROL			\$458,000

CARRY **\$458,000**

HVAC - INSULATION

DUCT INSUL AND LINING	CONCEALED	SQ. FT.	\$/SF	
HOOD EXHAUST INSULATION		60,000	\$1.47	\$88,200
		400	\$10.50	\$4,200
PIPING	FT			\$0
CHILLED WATER PIPING	2,500	\$9.24		\$23,100
HOT WATER PIPING	4,000	\$5.20		\$20,790
MAKEUP WATER	200	\$3.47		\$693
EQUIPMENT	QUANT.	UNIT	\$	
CHILLED WATER PUMPS		\$1,155		\$0
CH WATER EXP. TANK		\$866		\$0
FAN COIL UNITS		\$462		\$0
REHEAT COILS	140	\$231		\$32,340
AIR UNITS (LARGE)	9	\$1,500		\$13,500
TOTAL INSULATION				\$182,823

Item Description	Quant	Unit	Mtl Cost	Mtl ttl	Lbr ea	Lbr ttl	Lbr Cost	Ttl	Unit Cost
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Three Rivers Comm College
Thames Building
Fletcher Thompson
Conceptual 1/19/05

Underground Services (Elect & Tel)

HV (2) 4' PVC x 1000 ea	2000	lf	3	6000	0.07	140	10500	16500	8.25
HV Cable	3000'	lf	4	12000	0.05	150	11250	23250	
Xfmer pads	2	ea	2000	4000	5	10	750	4750	2375
Grounding	2	ea	1200	2400	10	20	1500	3900	1950
Tel/Com Conds, (2) 4' PVC	2000	lf	3	6000	0.07	140	10500	16500	8.25
				30400		460	34500	64900	

Contractors OHP @ .15%

w/OHP **74,635**

Maintenance Building (#6)

Secondary Svs, 1200A , Sw/CT/Swbd/Mtr	1	ls	10,000	10000	100	100	7500	17500	17500
(4) 4/500/4" Gal	300	lf	20	6000	0.36	108	8100	14100	47
	1000	lf	4	4000	0.07	70	5250	9250	9.25
Generator #1, 150KW,	1	ls	50000	50000	100	100	7500	57500	57500
400A ATS	2	ls	5000	10000	10	20	1500	11500	5750
Feeder Ties	1	ls	8000	8000	100	100	7500	15500	15500
Boilers/Chillers/Pumps	1	ls	20000	20000	1500	1500	112500	132500	132500
Ltg & Misc Power	1	ls	10000	10000	250	250	18750	28750	28750
Bldg Ltg	1	ls	5000	5000	50	50	3750	8750	8750
Tel/Comm	1	ls	6000	6000	100	100	7500	13500	13500

129000

2398 179850 308,850

w/OHP x 1.15%

w/OHP **355,178**

Thames Bldg Renovations, A,B,C
Distribution:

2000A Sw/CT/Swbd/Mtr		1 ls	20000	20000	150	150	11250	31250	31250
Grounding		1 ls	2000	2000	50	50	3750	5750	5750
300KVA Xfmers		2 ea	10,000	20000	50	100	7500	27500	13750
Existing 1600A Swbd Rev's		1 ls	5000	5000	50	50	3750	8750	8750
Swbd Fdr, (5) 4/500/4" EMT	C	2200 lf	10	22000	0.25	550	41250	63250	28.75
	W	7000 lf	5	35000	0.03	210	15750	50750	7.25
Sec From Util Xfmer: (6) 4" Gal	C	300 lf	20	6000	0.66	198	14850	20850	69.5
(5) 4/500		2000 lf	5	10000	0.05	100	7500	17500	8.75
TVSS Allowances		1 ls	25,000	25000	50	50	3750	28750	28750
75 KVA Xfmers		10 ea	2500	25000	20	200	15000	40000	4000
480V Panel Fdrs		3000 lf	5	15000	0.2	600	45000	60000	20
480 & 208 Panels		20 ea	700	14000	10	200	15000	29000	1450
Temporary Light & Power/Demo		1 ls	60,000	60000	500	500	37500	97500	97500
Lighting Allowance for 103 KSF		1 ls	800,000	800000	3000	3000	225000	1025000	1025000
Misc Power		1 ls	75,000	75000	1500	1500	112500	187500	187500
PA/FA/Sec/Tel		1 ls	240,000	240000	1200	1200	90000	330000	330000

1374000

8658 649350 2023350

OHP X 1.15

w/OHP 2,326,853

Phase I, Bldgs 1,2,3,4

Distribution:

480V & 208V Panels	20 ea	700	14000	10	200	15000	29000	1450
75 KVA Xfmers	10 ea	2500	25000	20	200	15000	40000	4000
480V Panel Fdrs	4000 lf	5	20000	0.2	800	60000	80000	20
Penthouse Electricals	3 ea	15000	45000	200	600	45000	90000	30000
Ltg, 156 KSF	1 ls	1,000,000	1000000	3000	3000	225000	1225000	1225000
Misc Power	1 ls	100,000	100000	2000	2000	150000	250000	250000
PA/FA/Sec/Tel	1 ls	240,000	240000	1200	1200	90000	330000	330000

1444000

8000 600000 2044000

OHP X 1.15

w/OHP 2,350,600

Phase II, Auditorium (Bldg #5)

1200A 480V Swbd		1 ea	5000	5000	60	60	4500	9500	9500
(5) 4/500/4"	C	2500 lf	10	25000	0.3	750	56250	81250	32.5
	W	11,000 lf	5	55000	0.03	330	24750	79750	7.25
MER		1 ls	20,000	20000	300	300	22500	42500	42500
Ltg 14 KSF		1 ls	125,000	125000	250	250	18750	143750	143750
Dimming Equip		1 ls	150,000	150000	200	200	15000	165000	165000
Stage Ltg		1 ls	75,000	75000	200	200	15000	90000	90000
300 KVA Xfmer		1 ea	10,000	10000	100	100	7500	17500	17500
Misc Power		1 ls	2,000	2000	50	50	3750	5750	5750
Tel/Comm/FA/Sec		1 ls	10,000	10000	125	125	9375	19375	19375

477000

2365

177375

654375

OHP * 1.15%

w/OHP

752,531

Appendix C:

Project Schedule

1/31/05

[illegible]

31 January 2005

Appendix D:

Project Team

Three Rivers

COMMUNITY COLLEGE

19 January 2005

PROJECT TEAM

ARCHITECTS / ENGINEERS

Fletcher Thompson, Inc.
Three Corporate Drive
Shelton, CT 06484-6244

Phone: (203) 225-6500
Fax: (203) 225-6703

ASSOCIATE ARCHITECTS

Mitchell / Giurgola Architects
170 West 97th Street, Floor 2
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Phone: (212) 663-4000
Fax: (212) 866-5006

LANDSCAPE ARCHITECT

Dirtworks, PC
200 Park Avenue
New York, NY 10003

Phone: (212) 529-2263
Fax: (212) 505-0904

CIVIL ENGINEER / SURVEY

Purcell Associates
90 National Drive
Glastonbury, CT 06033

Phone: (860) 633-8341
Fax: (860) 633-1068

EDUCATIONAL CONSULTANT

Rickes Associates
One Westinghouse Plaza, Suite 304
Boston, MA 02136-2059

Phone: (617) 364-4444
Fax: (617) 364-4845

FOOD SERVICE CONSULTANT

Food Service Design Associates, Inc.
595 River Street
Windsor, CT 06095

Phone: (860) 528-7101
Fax: (860) 528-8839

A/V CONSULTANT

DataComm Services
290 Founders Road
Glastonbury, CT 06033

Phone: (860) 978-4410
Fax: (860) 633-5120

Appendix E: Permitting Requirements

Department of Environmental Protection Water Resources permitting anticipated for this project:

Water Management – General Permits

1. General Permit Registration for the Discharge of Domestic Sewage
2. General Permit Registration for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities

Inland Water Resources – Individual Permits

1. Inland Wetlands and Watercourses Permit
2. Flood Management Certification

Alternate IIIA: Second Floor Plan

