Henry Ford Community College
Technology Investment Fund
Project Funding Request

This application form with original signatures must be received by the Vice President/Controller's office by 4:00 p.m. on either **the first Friday after Labor Day** (Fall semester) **or the third Friday in January** (Winter semester) in order to be eligible for funding. Applications will only be accepted on this form. Applications must include an Executive Summary which will be shared with the Campus Community. ***(Attach additional sheets for any section needed.)***

Date of Application: January 21, 2011	**Project Type: [ ] New**	**[X] Upgrade/Expansion**
Project Director: Chad Richert **Department/Division:** **Architecture/Construction Department** **Technology Division**	**How many students will *directly* benefit from the project?** **All ACT students plus Interior Design and Energy Tech students (600+/- annually)**	**Total TIF Funds Requested:** **$281,788.00**

Problem Statement	
Define the problem/idea. *(What do you want to do? Why?)*	The Architecture/Construction Technology profession has been in transition over the past two decades from traditional manual drafting to computer-aided drafting (CAD). During the transition, we have maintained traditional methods as a base of instruction with the sanction of our advisory committee. However, as of this past fall, with the support, encouragement and direction from that same committee, the time has come to switch completely to digital visual communication except for freehand sketching. Making this transition to meet the educational goals of students and their employability needs requires an upgrade of our existing traditional drafting lab to a fully functional digital visual communications studio. Additionally, the Architecture/Construction industry is branching into multi-functional software to effectively communicate design and construction using digital media in both 2D and 3D formats. This transcends the basic use of computer drafting (2D) to the level of 3D Building Information Modeling for design and construction communication. The upgraded studio would allow our curriculum to further develop in this area to support student preparedness for employment opportunities. Instruction would be greatly enhanced by the use of large true color/high resolution LCD monitor displays along with cameras to allow projection of large format drawings and for recording student presentations for inclusion in a digital resume'. Additionally, with the incorporation of digital three-dimensional modeling, students will be able to develop digitally produced physical models of their design communication projects. This studio is essential to permit the ACT program to develop curriculum to meet the needs of students as well as expose them to the skills necessary to be successful and competitive in the workplace of today and tomorrow.

Evidence for Project Validity *(What is the current situation?)*	
What resources do you have/use now?	The ACT Department currently has a total of three labs; one used for traditional drafting and two used as computer labs. Revising the curriculum with a focus on digital communications will require full use of all three labs to support instruction.
Why can't you use your existing resources to do this project?	Upon curriculum revision, the two current CAD labs will not be adequate to support use by the entire program. It is essential to transform the traditional drafting lab to accommodate these changes.

What evidence do you have that this project will be successful? *(Cite specific information.)* • **Current research** • **Examples from other schools or teachers** • **Letters of support from experts in the field** • **Your own past experience.**	• Countless trade publications cite the extensive use of digital visual communications within the profession. Virtually no mention is made of the antiquated traditional drafting methods in current or future professional trends. • Local universities to which students would likely transfer (Lawrence Tech, U of M, etc.) use digital visual communication regularly, however they do not necessarily teach how to use the software. Students without previous training are at a disadvantage. HFCC students would receive training in the use of these software programs and output devices to prepare them for either the workplace or for transfer to a university. • The following is an excerpt from our Fall 2010 Advisory Committee meeting minutes regarding this topic: "ACT program changes and curriculum were discussed. The main topics of discussion included the continuation of hand drafting, and current industry software trends. In general, the committee agreed that, while sad, the use of hand drafting and hand rendering were becoming obsolete in industry. Based on the pressing demands of industry, students would be better served by exposure to more advanced digital techniques and methods. Although formal drafting and rendering should be reduced or eliminated, the need for sketching as a means of visual communication is as important to the industry as it has ever been." • As members of our faculty have been and continue to be practicing architects, we have a strong sense of the trends within the industry. It is our firm belief that moving in this direction will allow students to become successful in their educational and professional pursuits.

Relevance to Technology Investment Committee Guidelines

(Address only those that apply.)

INNOVATION: **Is the proposal innovative to the field of Instructional Technology?**	Most document cameras are only useful for letter-sized documents. The use of high resolution document cameras for large format documents is not widely used. We would also incorporate A/V equipment to record student presentations they could include as part of a digital portfolio incorporated into their resume'. The inclusion of digital three-dimensional modeling would also be innovative to the college and could potentially be available to other programs such as Interior Design.
Is the proposal innovative to HFCC?	Yes. Based on our understanding, once completed, the transformed studio would go beyond the traditional use of data projectors and projection screens with their inaccurate color rendition and resolution, to a large multi-screen LCD display system linked directly to the computer. This would provide greatly enhanced color representation and clarity which is essential to visual communication in our field. Also, the inclusion of a digital 3D modeler would be an entirely new innovation at HFCC.
Is the proposal innovative to the specific discipline?	This proposal would bring us up to par with what the architectural profession is doing, allowing us to utilize the innovative techniques currently in use in a growing percentage of firms and institutions. The entire profession has not transformed completely at this time, but all recognize the direction visual communication is heading. We need to be a resource assisting them in re-training as well as preparing entry level students for work in the profession.
NEED: **Is the proposal essential for the instructional design?**	The proposal is essential to allow us to develop in areas necessary to properly prepare students for the professional environment. Basic knowledge of the new tools will give students a distinct advantage over others competing for employment in this market. The changes in curriculum have the full support of the ACT Advisory Committee.

Does it create new programs or courses with the potential for increased student enrollment?	Approximately 30% of our current courses should be upgraded to incorporate use of expanded digital tools. This studio is essential to allow that curriculum development to take place. That would include the possibility of new courses and/or certificates in the future as need develops.
Is it necessary to remain competitive with post-secondary institutions?	Yes. Other post-secondary institutions either are or will be incorporating these tools. If we provide them at HFCC, with our lower cost structure, we would expect students could gain those skills here instead of at other more costly institutions. Additionally, skills necessary for current employees or for workers seeking employment or re-training could be more affordably accessed at HFCC.
Does it provide skills that are transferable to the workplace?	Based on recommendations from our advisory committee and anecdotal evidence through personal conversations with other practitioners, the expanded skills should be directly transferrable to the workplace.
Does it prepare students for transfer to upper-level curriculum?	It has that potential. Most universities to which our students would transfer currently incorporate digital visual communications. In addition, U of M currently uses 3D printing and modeling in their Architecture and Design programs. Experience with these tools and associated software may help to enhance our current agreements and potentially assist in forging new agreements.

Relevance to Technology Investment Committee Guidelines (continued) *(Address only those that apply.)*	
Does it keep the course or program current in the related technology?	As previously stated, the entire proposal is tied to an effort to keep the program current with professional needs and trends.
NATURE OF PROPOSAL: **Is the proposal a component of curricular revision?**	They are inextricably linked. The transition from traditional drafting requires updated technology and equipment.
Is it the next logical step in the evolution of the course/curriculum?	Yes, based on advisory committee feedback, the program needs to move in this direction. This transformation will serve students and help to make them more competitive.

Will it help attract students to HFCC?	Being current with the profession and forward-looking is always a marketable feature that can be used to attract both traditional and non-traditional students. Holding on to dated curricular components (such as traditional drafting), on the other hand, can actually have a negative impact on student interest.
Will it support HFCC community outreach/public relations activities?	The ACT program has worked with non-profit groups in the past (i.e., Miracle League of Michigan) to develop promotional materials for fund-raising efforts. Having the proposed studio capabilities could open the door to create similar communication tools for others, as well.
Will it support student retention activities at HFCC?	We believe current curriculum and excellent facilities along with outstanding practical instruction will help to keep students engaged to complete their educational goals. Additionally, building high technology skills that transfer to the workplace and institutions of higher education motivates students to be successful.
Will it become an integral part of the course, program or curriculum?	Since this is a programmatic change, all changes are integral to all ACT students and will benefit Interior Design and Energy Tech students as well.

Resources	
Where will the project hardware be installed?	At the Dearborn Heights Center in Room D-173 and associated support areas in the building.
Who will do the job? • **List the personnel** • **List their duties**	It is expected that all work will be accomplished by contracted trades and vendors for the various specialties with oversight by Buildings & Grounds, Data & Voice, Instructional Technology and Architecture/Construction staff.
Who will use the hardware?	All ACT students and faculty along with Interior Design and Energy Technology students (or others involved in ACT coursework) where appropriate.
Who will conduct any necessary project-hardware training?	It is anticipated that any hardware training will be accomplished through individual vendors with support from Buildings & Grounds, Data & Voice and Instructional Technology.
Who will handle any spring and summer semester duties related to hardware installation	It is expected that all work will be accomplished by contracted trades and vendors for the various specialties with oversight by Buildings & Grounds, Data & Voice, Instructional Technology and Architecture/Construction staff.

Do you have commitment from your administration for personnel support? *(Be specific, include documentation.)*	Requests have been made for Perkins CAP funding to support curriculum development. We have been informed this commitment is contingent upon the approval of this proposal.	
Is release time required to complete this project? **If yes, has it been approved at this time by your Associate Dean?**	**[X] Yes [ ] No** **[X] Yes [ ] No** conditionally	*TIF does not fund release time. If you are requesting release time, it must be approved by the appropriate administrators prior to proposal submission.*

Evaluation *(How will you know if it worked?)*	
How will you demonstrate to the college that this was an effective use of funds? *(How will you evaluate the goals listed as Expected Outcomes?)*	Students learning and succeeding with updated curriculum along with the support of the technology and infrastructure involved in this proposal will demonstrate effective use of funds.
How will you determine the success or shortcomings of the project?	Student success = Project success. If we are successful in implementing these curricular changes through the expanded use of digital visual communication tools, the project will be a success. If not, analysis of shortcomings would be conducted to refine the approach. This is part of a normal curricular review process.

Budget (You must also include an itemized budget statement.)	
What do you need to complete this project? *(Be specific about equipment, software, and training.)*	See attached Equipment/Software Cost Analysis. All Infrastructure, workstations and equipment are necessary to complete this transformation. Listed software costs are for the purchase of additional licenses for the suite of design software currently in use. Hardware training would be accomplished through vendors and/or HFCC staff. Ideally, all components would be ready for implementation by the Fall 2011 semester.
What is the TOTAL COST? *(You must attach an itemized cost analysis with this proposal.)*	$281,788.00 See attached Equipment/Software Cost Analysis Note: Copies of individual budget proposals are available upon request.
How recent is your quote?	Within the past 60 days (budget quotes from multiple sources)
Are changes to the college infrastructure necessary to support this project?	**[X] Yes [ ] No** *If "yes" provide an explanation from the Directors of Data & Voice and Buildings & Grounds, and from the Administrator in charge of the affected room(s).* See attached comments from Data & Voice, Buildings & Grounds and the Associate Dean.
What other monetary commitments exist? *(Department/Division/ External) Please be specific; include documentation wherever possible.*	We have submitted for Perkins funding for a portion of the costs. We are awaiting final notification. We have also been in discussions with the HFCC Foundation to inqure if any benefactors might be interested in assisting in the funding for this proposal.
If other sources of funding are not available, why? • **Doesn't have the support?** • **Not viewed as feasible?** • **Not a priority?** • **Other?**	

Strategic Plan

Include with your application a document that indicates the ways in which your project addresses the goals and objectives of the Henry Ford Community College Strategic Plan. Also, indicate how your project addresses your Division or Department plan. Be as specific as possible. (See Attached Strategic Planning Document)

If your proposal is Non-Instructional (Library Services, Learning Lab, Counseling, Placement Services), please skip this section and complete the information in the Non-Instructional section.

Instructional Proposals

Complete this section if this is an Instructional Proposal, directly impacting student teaching and learning.

Expected Outcomes *(Project Objectives)*	
What is your current teaching method? How will this project fit into your current plan?	Current teaching methods used in the manual drafting lab (room 173) include; instructor demonstrations using student drafting tables, this method is problematic in terms of limited sight distance and requires observation by several small groups which limits the instructor's ability to interact and help students one-on-one. Instructors also use an Elmo to display construction documents with limited success because of the large document size and the small surface area of the Elmo. The development and transformation of the drafting lab into a digital presentation studio will enable several curriculum and pedagogical changes to occur. First, the curriculum will be changed to eliminate traditional board drafting and incorporate digital graphics, enabling the students to visualize and develop architectural concepts more efficiently. These designs can then be output as 3D models reinforcing the student's ability to visualize and share design ideas with other students. Second, the students will be able to utilize the digital equipment in the classroom to enhance and record their presentations for their portfolios. From a teaching perspective, the digital studio will enable instructors to present full construction documents using the ceiling camera and to present true color representations of architectural renderings using the LCD panels. In addition, presentations can be recorded for use with on-line instruction.
How will this improve student learning? *(List specific goals.)*	*As a result of this project students will:* • Utilize graphic software to develop design ideas and improve their visualization of architectural concepts, increasing their overall understanding of the design-build relationship. • Create 3D building models to reinforce new design concepts and share design ideas with other students thereby increasing group learning and group interaction. • Create industry quality documents using graphic software and various output devices, enhancing their future employability. • Create and record their design presentations utilizing the digital studio equipment available in the classroom. This information can be used for their portfolio and provide useful feedback for improved student success.

Instructional Proposals (continued)

State how the project addresses the Seven Principles of Good Practice in Undergraduate Education. *(Address only the relevant criteria.)*	
Supports student-faculty contact	A digital studio allows students and faculty to work integrally together on presentations and graphic communication. Working together on a large presentation panel will bring students away from their desks, and create an environment in which an entire class can dynamically participate in the creative process.
Supports cooperation among students	The ability of students to interact on projects will be increased with the use of graphic software and digital 3D modeling. Developing and using digital and physical models for discussion is invaluable for quality interaction and design development.
Supports active learning	The proposed technology improvements support and encourage an active learning curriculum. Students will interact with building forms and building models instead of just drawing lines on paper. Discovering the connections between the building form and printed drawings will be strengthened with a solid visual understanding of the design process.
Supports prompt feedback	This technology provides instructors with the capability to display and critique student work instantly, decreasing evaluation time and improving student success. The ability to create 3D models enables the student to self-evaluate the merits of their designs without taking weeks to actually build a physical model by hand.
Supports time on task	Based on the technology and proposed curriculum changes, the students will not spend time perfecting antiquated drafting skills. The students will spend their time working with 3D software to develop architectural designs and drawings. Our experience is that students find new technology motivating, interesting and challenging and there is an observed increase in the productive use of student's time.
Supports high expectations	High expectations are now and always will be the cornerstone of the ACT curriculum. The proposed technology and curriculum changes will only enhance student work by creating professional quality output that students will be proud to include in their portfolios. Part of any career based curriculum is to provide students with an industry level experience to prepare them for future employment.
Supports diverse talents and ways of learning	Students learn in different ways. Using a multimedia approach toward teaching and learning the complex concepts of building design and documentation should increase student success. Architecture and construction are visual industries and require extensive visual communication. Many of our students struggle with traditional paper and pencil drafting techniques, unable to visualize the connection between lines on paper and the build environment. The technology and curriculum changes we are proposing should bridge the gap for many students and enable them to use the technology to enhance their learning style and ultimately increase their success.

SIGNATURES:

1/21/11	1-21-2011	1/21/11			
**Project Director	Date	*Associate Dean/Department Head	Date	*Vice President	Date
1/21/11	1.21.2011				
**Director of Building & Grounds	Date	**Director of Data & Voice	Date		

* For notification purposes only

* * For project feasibility

Non-Instructional Proposals

Complete this section if this is a Non-Instructional Proposal, related to college areas that serve and support student instructional progress. *(Non-Instructional areas include Library Services, the Learning Lab, Counseling, and Placement Services.)*

Expected Outcomes *(Project Objectives)*	
What will this project accomplish that you can't accomplish now?	
How does the project enrich or support the learning, teaching, or communication technology needs of students? *(List specific examples.)*	*As a result of this project, service to students will be improved through:*

SIGNATURES:

**Project Director	Date	*Associate Dean/Department Head	Date	*Vice President	Date
**Director of Building & Grounds	Date	**Director of Data & Voice	Date		

* For notification purposes only
* * For project feasibility

Henry Ford Community College

Technology Investment Fund
Project Funding Request

Executive Summary

DATE OF APPLICATION	PROJECT TYPE
January 21, 2011	☐ New ■ Upgrade/Expansion
NAME OF PROJECT DIRECTOR OR PRESENTER	**DEPARTMENT/DIVISION**
Chad Richert	Architecture/Construction – Technology Division
COST OF PROPOSED PROJECT	**NUMBER OF STUDENTS SERVED ANNUALLY**
$281,788.00	Approximately 600

SUMMARY

The Architecture/Construction Technology profession has been in transition over the past two decades from traditional manual drafting to computer-aided drafting (CAD). During the transition, we have maintained traditional methods as a base of instruction with the sanction of our advisory committee. However, as of this past fall, with the support, encouragement and direction from that same committee, the time has come to switch completely to digital visual communication except for freehand sketching. Making this transition to meet the educational goals of students and their employability needs requires an upgrade of our existing traditional drafting lab to a fully functional digital visual communications studio. Additionally, the Architecture/Construction industry is branching into multi-functional software to effectively communicate design and construction using digital media in both 2D and 3D formats. This transcends the basic use of computer drafting (2D) to the level of 3D Building Information Modeling for design and construction communication. The upgraded studio would allow our curriculum to further develop in this area to support student preparedness for employment opportunities. Instruction would be greatly enhanced by the use of large true color/high resolution LCD monitor displays along with cameras to allow projection of large format drawings and for recording student presentations for inclusion in a digital resume'. Additionally, with the incorporation of digital three-dimensional modeling, students will be able to develop digitally produced physical models of their design communication projects. This studio is essential to permit the ACT program to develop curriculum to meet the needs of students as well as expose them to the skills necessary to be successful and competitive in the workplace of today and tomorrow.

HFCC/Architecture/Construction Technology

Technology Investment Fund Proposal

Winter 2011

Equipment/Software Cost Analysis

Item	Quantity	Description	Budget	Total per Line	Budget Prepared by
1	18	Computer Workstations incl. cpu, monitor, keyboard & mouse	$2,300.00	$41,400.00	Canton Computers
2	1	Large format plotter/scanner	$16,000.00	$16,000.00	Sehi
3	1	Color LaserJet Printer - Tabloid	$1,500.00	$1,500.00	Sehi
4	1	Color LaserJet Printer - Letter	$500.00	$500.00	Sehi
5	1	Digital 3D Modeler	$20,000.00	$20,000.00	Teaching Systems, Inc.
6	1	Dry-Mount Press	$2,000.00	$2,000.00	Bienfang Supplier Web Site
7	1	Video Links System	$8,000.00	$8,000.00	Applied Computer Systems
8	1	Software costs for additional seats (Autodesk plus SketchUP)	$6,000.00	$6,000.00	Studica (for Autodesk licenses)
9	1	Custom Workstation Furniture and Associated Storage	$17,000.00	$17,000.00	HLF Furniture
10	19	Workstations Chairs	$350.00	$6,650.00	Lincoln Office Solutions
11	1	Set of 6 Powered Ceiling Speakers	$1,200.00	$1,200.00	Troxell
12	22	Network drops	$200.00	$4,400.00	HFCC Data & Voice
13	18	Computer Security Lockdowns	$260.00	$4,680.00	HFCC Data & Voice
14	2	Network Switches with Security Lockdowns	$4,962.00	$9,924.00	HFCC Data & Voice
15	1	Large LCD digital video displays/camera system including installation	$42,000.00	$42,000.00	Bluewater Technologies
16	1	New Display Boards throughout Room	$4,500.00	$4,500.00	HFCC Buildings & Grounds
17	1	Architectural Infrastructure	$29,665.00	$29,665.00	HFCC Buildings & Grounds
18	1	Mechanical Infrastructure	$12,500.00	$12,500.00	HFCC Buildings & Grounds
19	1	Electrical Infrastructure	$36,775.00	$36,775.00	HFCC Buildings & Grounds
20	1	Contingencies and Professional Fees	$17,094.00	$17,094.00	HFCC Buildings & Grounds
		Total Budget Proposal		**$281,788.00**	

Strategic Planning Document

ACT Department - Project specific strategic planning goals.

In the divisional operational plan, the ACT department has identified, as initiative statement 1, a high priority to provide students with access to cutting edge hardware, software, online support and curriculum.

New Curriculum Development

Initiative 1a provides an opportunity to maintain the highest standard of curriculum possible. In the past, the practices of architecture and construction remained fairly stable and unchanging. Thanks to advances in technology and communication, the industry is now moving very quickly. In order to prepare our students for placement in a competitive workplace, curriculum must be on track with current industry standards. Not only do we desire to prepare students for today's workplace, but also for tomorrow's. Initiative 1a, curriculum development, is designed to specifically meet strategic goals 2a, 2b, 3a, 4a, 5a, 5f, and 7a.

New Computers

As previously mentioned, advances in technology and communication are changing the landscape of the architecture/construction industry. The days of laboring over a drafting board are leaving us very quickly. Professionals in both today and tomorrow's workplace will be required to communicate electronically. While we appreciate the nostalgia of a good hand drawn floor plan, we must move our students forward using the technology they will encounter in the workplace. The purchase of new computers (Initiative 1c) will meet strategic goals 2a, 3a, 6b, 6c, and 6e.

New Student Workstations

Initiative statement 1d addresses the need to provide students with a unique and customized work space. Work stations found in architectural firms and construction companies are unlike traditional office work spaces. The tasks accomplished by professionals in these industries are very diverse, ranging from referencing large format documents, sketching and computer graphics. It is not unusual for a company to require customized furniture. In fact several local architectural firms require new employees to construct their own desk. New workstations will meet strategic goals 4a, 4g, 5a, and 6e.

2D and 3D Output Devices, Dry mount press

Initiative item 1e addresses the department's need to maintain cutting edge plotting and reproduction equipment. This initiative is directly intended to meet strategic goals 2a, 3a, 6b, 6c, and 6e.

Architects and builders often rely on 2 dimensional construction documents printed on standard and oversized paper. Providing students the ability to produce their work on equipment used in industry is of critical importance to their education. The ability to print and present digital work for both clients and public information is critical to our profession. Presentation boards (using a dry mount press) are typically left with clients for review or display.

One of the greatest challenges in the field of architecture and construction is 3-dimensional visualization. Students spend years rationalizing the relationship between 2-dimensional construction documents and 3-dimensional materials and buildings. Progressive technology, in the form of digitally-produced 3-dimensional physical models, is becoming an incredibly valuable tool for practicing industry professionals. It allows

architects and builders to communicate far more effectively with clients and other industry professionals. This technology is also critical in the educational development of students. In an effort to more properly prepare students for the workplace and give them a first rate education, leading universities are beginning to introduce this technology into their lab environment.

Lab Conversion

The previously mentioned curriculum and technology changes cannot be realized without making some changes to the facility. Initiative 1f addresses the need to convert the antiquated drafting lab into a cutting edge digital graphic and presentation studio. The technology required for our students will require modifications to both the infrastructure and the educational space. This activity will meet strategic goals 4a, 4g, 5a, and 6e.

HFCC/Architecture/Construction Technology

Technology Investment Fund Proposal

Winter 2011

Infrastructure comments from:

Sandro Silvestri – Data & Voice

"New cabling and new switching are required."

Allen Gigliotti – Buildings and Grounds

"I'd suggest "See attached", then include Terry Biernat's budget."*

David Wiltshire – Associate Dean/Technology Division

"I support Data and Voice, and Building and Grounds, comments made earlier regarding infrastructure considerations."

***Note**: The Budget Estimate referenced in Allen Gigliotti's comments is attached.

CAD CLASSROOM D-173
DEARBORN HEIGHTS CAMPUS - HFCC

T. BIERNAT
1/6/2010
(REV.. 1/7/2011)

SUMMARY - BUDGET ESTIMATE

ARCHITECTURAL	
GENERAL CONDITIONS	
DEMOLITION	
MASONRY PATCHING	
CARPENTRY	
DRYWALL FINISH	
PAINTING	
PROJECTOR MOUNTING	
DOORS & HARDWARE	
DOOR INSTALLATION	
DISPLAY BOARDS INSTALLATION	
NEW CEILING TILES	$29,665
MECHANICAL	
FIRE DAMPERS	
SUPPLEMENTAL COOLING (SPLIT SYSTEM)	
ROOFING	
ENERGY MANAGEMENT ALLOWANCE	$12,500
ELECTRICAL	
16 INDIRECT PENDANT FIXTURES	
LED DN LIGHTS	
TRACK LIGHTING - HALOGEN	
LIGHTING CONTROL	
POWER FEEDER	
NEW PANEL	
SURGE PROTECTION	
20 CKTS	$36,775
SUB-TOTAL	**$78,940**
10% CONTINGENCY	$7,894
CONSTRUCTION COSTS (EST.) (BASE CONTRACT)	**$86,834**
FEES	
ARCHITECTURAL	
M/E ENGINEERING	
STATE PLAN REVIEW	
TOTAL FEES	$9,200
TOTAL BUDGET ESTIMATE - CONSTRUCTION & FEES	**$96,034**
OWNER PURCHASED ITEMS	
TACKBOARDS (CLAIRIDGE)	**$4,500**

NOTES:

1. FOR LED TRACK LIGHITNG ADD	$9,625
2. FOR ROOF TOP IN LIEU OF SUPPLEMENTAL UNIT ADD	$7,000
3. FOR ROOF TOP UNIT ENERGY MGMT. ADD	$6,000
4. FOR ROOF TOP ROOFING & STEEL ADD	$3,500

5. BLINDS NOT COVERED
6. **FIRE ALARMS NOT COVERED**
   IF FIRE STROBE/HORN IS REQUIRED THE EXIST. BLDG. FIRE ALARM SYSTEM WIIL NEED TO BE UPGRADED TO A SYNCHRONIZED SYSTEM.
   FIRE ALARM SYSTEM - $1.50/S.F.