

# **COST CONTAINMENT GUIDELINES**

**FOR THE**

**STATE UNIVERSITY SYSTEM OF FLORIDA**

**Prepared by:**

**Office of Capital Programs  
January 1996**

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Topics based upon Construction Specifications Institute's Masterformat

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**1996  
COST CONTAINMENT GUIDELINES  
FOR THE  
STATE UNIVERSITY SYSTEM**

These Cost Containment Guidelines have been prepared to assist architects and engineers and are based on past State University System history and the requirement for quality facilities. These guidelines will evolve annually and should be distributed by the University's Facilities Planning Office and Physical Plant Office to all Architect/Engineers and Construction Managers under contract. Objectives of the guidelines are to:

1. To facilitate communication between the Owner and the Architect/Engineer.
2. To enhance the design quality, value and building longevity.
3. To assist the Architect/Engineer in completion of the Architect/Engineer's assignment in a timely, cost efficient and technically proficient way.
4. To establish a level of building quality consistent with University System interest in long term ownership.
5. To promote consistent quality and durability from project to project.
6. To reduce unnecessary building maintenance and repair problems through quality and design control, as well as Owner input.
7. To set performance standards for the university, the Architect/Engineer, the Construction Manager and the Contractor.
8. To maintain flexibility in space and systems design to accommodate future functional changes.
9. To allow predictable maintenance and operating activities to be done efficiently and effectively.
10. Assist the Construction Manager, when one is under contract.

## HOW TO USE THE COST CONTAINMENT GUIDELINES

This set of Guidelines is not intended to place undue creative restrictions upon the Architect/Engineer. Rather, the intent is to raise issues and considerations that might otherwise be overlooked, and to convey to the Architect/Engineer the knowledge and experience gathered by the Owner in the course of owning and operating university buildings. The Guidelines should not be followed blindly. The Architect/Engineer is encouraged to recommend alternatives to the Owner when the Architect/Engineer feels that a better alternative solution is available for individual items. The Architect/Engineer is also encouraged to help keep these Guidelines current by bringing to the Owner's attention innovations in technology, materials, and construction systems.

The Owner does not intend for the standards to conflict with current building, handicapped, and life safety codes, and has attempted to avoid creating such conflicts. If a conflict is discovered in the course of using the standards, it is the Architect/Engineer's responsibility to immediately bring this conflict to the Owner's attention along with recommendations for resolving the conflict.

The checklist format organizes and streamlines the use of the Guidelines and the review process. Where these Guidelines provide information for the benefit of the Contractor, the Architect/Engineer shall pass the instructions along to the Contractor through the bidding documents. By checking a "yes" box, the Architect/Engineer acknowledges to the Owner that requirements of a particular item have been met. When checking a "no" box, the Architect/Engineer shall provide appropriate written justification for overriding the item, and proposals for alternatives or revisions can be the basis for periodically updating these Guidelines. This will assure future Architect/Engineers that the Guidelines are up to date, respond to changing technology, and provide proven cost-effective, as well as, state-of-the-art construction processes and products. Only those pages with a "NO" comment response, need to be submitted. Exhibit 6, "Estimate Summary and Budget Comparison" (attached) from the Professional Service Guide has also been revised to allow for a consultant to sign and submit this form indicating compliance with the Cost Containment Guidelines, in lieu of submitting a fully completed Cost Containment Guideline document.

These standards are intended as guidelines for the design of all new and renovated facilities, and to enhance the coordination effort between the Architect/Engineer and the Owner. Though not intended to limit the creative judgment of the Architect/Engineer, any proposed variations from these guidelines must be thoroughly discussed with and approved by the Owner before incorporation in the project.

These Guidelines serve as a supplement to the State University System Professional Services Guide. They are intended to ensure that university facilities will be developed with



high aesthetic and quality standards.

A detailed interpretation of acceptable standards for a number of typical design elements including signage, lighting, parking, landscaping, utilities, site planning and construction is set forth herein. These standards establish minimum criteria to ensure proper and appropriate development of each new facility, renovation or site improvement to the university.

Although the Owner may permit certain exceptions to these standards, the Owner does not intend to grant exceptions to the design standards that violate the Standard Building Code, the Life Safety Code and other pertinent codes.

These standards are intended to equal or exceed those enforced by the State University System. However, regulations are revised periodically and care should be taken to verify compliance with other applicable governmental standards. Approval by the Owner does not constitute approval by other governmental/regulatory agencies. The Board of Regents is the code enforcing agency for building codes. Their approval is interpreted as state approved. Other state approving agencies include the State Fire Marshal, Department of Health and Rehabilitative Services and Department of Environmental Regulation.

All references to Codes shall mean the latest editions adopted through legislation for use in State owned/leased buildings.

These Guidelines should in no way prevent each university from using its own supplemental guidelines and standards in order to maintain quality and value relating to issues special or unique to that campus.

These standards are not intended to be a complete specification for any section addressed. Compliance shall in no way constitute a waiver of the Architect/Engineer's liability.

## **GENERAL COMMENTS**

The following general comments address major policies currently mandated for utilization in the design and construction of all university facilities.

### **DO:**

1. Adhere to the specific requirements of the Agreement and the Professional Services Guide for each submittal.
2. Ensure that Project Site is coordinated with Master Plan criteria.
3. Ensure that all proposed and expanded services and distribution systems and infrastructure are coordinated with the University's Utilities Master Plan.
4. Ensure that Geotechnical Engineer's analysis and site investigation data is evaluated by structural engineer and coordinated with the structural engineer's design criteria.
5. Comply with flood plain management criteria.
6. Determine the impact that the proposed facility has on the current drainage system and plan accordingly.
7. Follow 6A-2 for space requirements and ask for written interpretation for unique spaces not shown.
8. Endeavor to incorporate a design concept which will facilitate possible future changes, expansion, or renovation.
9. Comply with applicable codes, regulations and orders as listed in the "Professional Services Guide".
10. Comply with fire safety requirements including required plan review by the State Fire Marshal's Office and establish early reviews with the State Fire Marshal during preliminary design phases.
11. Comply with requirements for the physically disabled and follow the ADA Requirements, and Fair Housing Act where required.
12. Coordinate with the Physical Plant Department and the Department of Environmental Health and Safety where toxic/hazardous materials are involved in a project and incorporate Environmental Health and Safety

specific requirements in Specifications.

13. Prepare Energy Life Cycle Cost Analysis in accordance with Board of Regents Guidelines.
14. Provide low maintenance and no maintenance materials and equipment both interior and exterior.
15. Coordinate between Architectural, Structural, Plumbing, Mechanical and Electrical Sections concerning compliance and consistency with applicable codes.
16. Coordinate with Physical Plant and other Users through the University Project Manager all items that must be compatible with existing maintenance procedures and systems, e.g., plumbing and electrical fixtures and accessories, hardware and keying, data communications, alarm and energy systems. University to issue Guide Specifications for special system/data requirements.
17. Address parking by including parking requirements as part of facility design and cost as well as restoration of displaced and disrupted parking.
18. Include adequate parking facilities and access for service vehicles, in addition to the loading docks.
19. Provide at least one loading zone to accommodate frequent moving of portable equipment to and from the building and to allow maintenance vans and personnel to have ready access to the building, if no service drive and dock are in the program.
20. Require tests to catch ponding problems at roofs, parking lots, plazas, entries, sidewalks and other such areas before the relevant subcontractors have left the job.
21. Ensure that guarantees and warranties of existing systems or components, e.g., roofing, are not voided by design of new work.
22. Follow the SUS Standard Practice for Roofing Systems.
23. Ensure that exterior flashing details are designed and detailed in a workable and time-proven fashion.

**DO:**

24. Provide acoustical privacy from space-to-space; partitions to underside of structure above and/or acoustic blankets above ceiling each side of partition,

carpeting, solid core doors, sound seals around doors, etc.

25. Provide floor drains in all toilet-rooms, janitor rooms, and mechanical rooms.
26. Provide access and working clearances for valves, plumbing, electrical and HVAC equipment.
27. Provide lightning protection on all buildings.
28. Furnish visual blind systems which exclude light in exterior classrooms.
29. Use vending rooms in lieu of hall space.
30. Include Board of Regents Close-out Procedures Requirements in Contract Documents.
31. Provide Post-Occupancy Services as required.
32. Make all contact through the University Project Manager as the "single point of contact" and coordinator for all University Departments and Offices.
33. Special attention must be paid to the location and design of Parking Structures, conformity to the Master Plan, ingress and egress, traffic control, vehicular and pedestrian circulation, utilities and services, safety and security systems, code conformance, provisions for the handicapped, signage, lighting, and protection. Special attention must also be paid to the selection of the structural system and materials, the design and location of control and expansion joints, sealants, treatment of parking surface, finishes, and underside of structure, slopes (minimum of 1/4" per foot), location and design of drains, gutters, waterproofing systems and membranes to avoid water penetration and material deterioration, and maintenance and operation programs.

**DON'T:**

1. Don't be pressured into certifying substantial completion when the Project isn't truly substantially complete or the State Fire Marshal hasn't approved the Work.
2. Don't use exterior wall assemblies using metal studs.
3. Don't use exterior wall assemblies that have not been tested for 20 years such as EIFS (Exterior Insulated Finish Systems).
4. Don't rely on sealants to prevent water infiltration.
5. Don't locate glass in areas that are inaccessible.
6. Don't use galvanized metal for flashing.
7. Don't penetrate the roof membrane without Owner's written approval.
8. Don't provide rooftop A/C units or exposed ductwork.
9. Don't locate light fixtures without considering how they will be serviced.
10. Don't use products containing asbestos.
11. Don't use lead based paint.

DIVISION 1 - GENERAL CONDITIONS

**01010 - General Requirements**

- .01 Conditions of the Contract including the Standard State of Florida General and Special Conditions of the contract provide the basis for structuring the responsibilities for all contractual parties. Bidding Documents include the invitation to bid and various instructions for the bidders, as well as proposal forms and requests for submittal of certificates confirming the Contractors compliance with Contract Documents. Has the Architect/Engineer confirmed that no changes have been made to the General or Special Conditions without written approval from the Owner?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .02 The Owner may be providing insurance on the project through the Owner Provided Insurance Program. Has the consultant checked with the universities to determine which insurance coverages are to be provided, and which of the Owner's supplements to the Project Manual should be included?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .03 Has a general description of all elements of the project, including exterior work and any other related work, been provided? This description, though brief, should be complete enough to indicate the full scope of work in each contract so that prospective bidders can decide whether or not they wish to bid on the project. The use for which the project is being built should be explained. Some parts of this description can be copied from the Building Program.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

Work on Other Projects

- .04 Is other work, outside the scope of contracts for this project, being performed simultaneously with the work on this project. If so, is there an explanation of how contractors must cooperate with outside contractors and with the university in order to avoid interference with each other's work?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Items Furnished by the Owner

- .05 Is the Owner furnishing items to be installed by the Contractor; are the items listed indicating the work required? Do not give detailed installation instructions; save details for the applicable section of the specifications.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Future Work

- .06 Is specific guidance for a project given with provisions for future work such as an addition, installations of special equipment, or other such task and are provisions made for fire safety, circulation, and accessibility? Are requirements of this contract described that are critical to future work such as structural provision, utilities, areas of the site to be kept clear, or site preparation? Are areas of work identified such as piping, ductwork and conduit that may be extended in future work without necessitating a system shutdown later?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Scheduling the Work

- .07 Are all job conditions which will affect phasing and scheduling of the work described? Particular attention must be given to scheduling remodeling work in buildings which will remain in operation during remodeling. Examples of some problems encountered are:

- .07-1 Providing and Maintaining Means of Ingress and Egress: Do temporary entrances and exits meet code requirements?

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07-2 Maintaining Security: Are areas being operated by the user secured from the construction area?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07-3 Use of Docking Facilities: Are these facilities being shared between the user and the Contractor?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07-4 Storing of Construction Materials: Are adequate areas being provided for delivery (if not, will schedules will be affected)?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07-5 Scheduling for Moves by the User: If remodeled spaces must be ready for use by certain dates, are the spaces and dates identified?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07-6 Maintaining Services: Are requirements for maintaining services detailed in the section entitled TEMPORARY FACILITIES AND CONTROLS?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07-7 Dust Control and Noise Control: Are temporary partitions required for control of dust and noise shown on the drawings?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07-8 Are construction of TEMPORARY FACILITIES AND CONTROLS being provided?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

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**Comments to "No" Responses:**

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**01030 - Alternates**

Purpose of Alternates

A limited number of alternates may be used as a means of ensuring base bids within the available construction funds. The Architect/Engineer shall consult the Owner regarding priority of alternates. Only additive alternates shall be used. Proposals should be clearly defined, listed in priority of need and held to not more than 7% of construction cost. Have alternates been discussed with the University Project Manager? See SUS Instructions to Bidders in the SUS Project Manual.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**01045 - Cutting and Patching**

.01 Is cutting and patching identified in detail? This includes incidental cutting, fitting, and patching required to complete the work or to make several parts fit together properly.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 Is there a safety procedure in place for "Hot Work" areas such as in areas where volatile gases and fuels are in use (for example medical, laboratory, and garage spaces)?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 Is there a safety procedure in place for maintaining critical services, such as medical gases, before shutting off supplies for welding and cutting?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**01090 - Codes and Standards**

Are the "BOR approved" codes of the Standard Building Code with all revisions including all related specialty codes referenced therein identified? Statewide codes include National Fire Protection Association (Life Safety Code), American National Standard Safety Code (including handicapped requirements), Department of Education

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

Criteria Codes, Sheet Metal and Air Conditioning National Association and other specific codes relating to the conformance of materials within the structure and legislation affecting the compliance and applicability of the construction with local, state and national laws. Barrier free design will be implemented to permit accessibility for the physically disabled. The Florida Accessibility Requirements and the ADA requirements will be followed. Fair Housing Act Requirements will be followed when required. Refer to Professional Services Guide Supplement for additional Codes, Standards and requirements.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **01300 - Submittals**

The Owner is very specific about the selection of materials and equipment included in a new building. It is the responsibility of the Architect/Engineer to request and receive approval of a submittal if it is other than specified in these guidelines. Are **all** materials and equipment included as specified in these guidelines?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **01310 - Progress Schedules**

Have the specifications required the Contractor to prepare a network analysis system using the Critical Path Method, as outlined in the Associated General Contractors of America (AGC) publication "The Use of CPM in Construction - A Manual for General Contractors"? (An alternate type of schedule will be considered based on the project complexity and size.)

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **01400 - Quality Control**

- .01 Quality control shall be of major importance in each university construction project. Are requirements for compliance (rather than simply referencing standards) included? Has the Architect/Engineer provided an up-to-date copy of his/her respective firm's in-house quality control manual?

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Do products or workmanship specified by association, trade, or federal standards, comply with requirements of the standard (except when more rigid requirements are specified or required by applicable codes)? (Beware that dating of specified standards may be at variance with applicable building codes which may have referenced standards with established dates.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Are any areas specified that require evidence and examples of required expertise from the contractor in conjunction with specified items, such as, system components, design element or special treatment?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**01500 - Construction Facilities and Temporary Controls**

- .01 Has the Architect/Engineer specified that the Contractor adequately protect the Work, adjacent property, the public, and the Owner's property from injury or loss arising in connection with the construction contract? In addition has the A/E specified that the Contractor shall be responsible for any damage or injury due to the Contractor's act or neglect? Adequate barricades, night lights and flashers must be used to protect the public.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Utilities**

- .02 Has the Architect/Engineer specified modifications regarding payment for water, fuel, chilled water and power consumed? Contractor's utilities are required for the progress of the work. Specifications shall be written to stress this point. The general contractor shall make arrangements with the Department of Physical Plant for installation of temporary lines (through the University Project Manager).

**Note: All "no" responses require a written response from the A/E Consultant.**

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .03 Has the Architect/Engineer provided information to avoid damage to existing underground lines? Drawings indicating the approximate location of all known lines will be furnished by the Owner. Bidders may examine these drawings and the successful bidder will be supplied a single copy at no cost.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .04 Do the specifications indicate that no excavation, including drilling, exploratory work, fence posts, etc., will be permitted until the drawings of existing lines are reviewed in the field by university representatives, Contractors, Subcontractors, Architect/Engineer, and the Owner's representatives? (Any damage to these known lines during construction will be repaired immediately in a manner acceptable to the Owner and the appropriate utility company at no cost to the Owner.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Utility Company Installations**

- .05 Have plans for reviewing temporary lines running through university property been identified in the specifications? (To be done in conference with the Owner Representative.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Connections to Existing Utilities**

- .06 If connections to university utilities are permitted, **do the specifications contain instructions to the Contractor to make requests for utilities service through the University Project Manager?** Contractor shall make all necessary arrangements for the service, including the point of tie-in, times permitted for utility work, shutdown scheduling, traffic control, amount of lead time notification, etc., with the Department of Physical Plant (through the University

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

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Project Manager). The Architect/Engineer shall obtain drawings of existing utilities and shall consult university personnel regarding services available and points of connections to services. All services shall be metered through meters furnished by the Contractor, and the Owner shall be reimbursed for utilities.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

- .07 **Cost:** Costs for providing temporary services shall be borne by the Contractor. **Do the specifications clearly identify the Contractor's responsibility for the installation of service lines and payment for services, whether services are furnished by the utility company or by the university?** Billing for utilities will be made by the university in accordance with the current Rate Schedule of the university. Advance arrangements must be made with the department of Physical Plant before the Contractor begins work at the site (through the University Project Manager).

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

- .07-1 Has it been specified that the Contractor shall pay for water, chilled water, steam, fuel for heat, electric power, and any other utility consumed?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

- .07-2 Has it been specified that the Contractor shall install and maintain water supply lines and make changes in lines as necessitated by conditions at the site.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

- .07-3 Has it been specified that the Contractor shall install and maintain HVAC and electrical systems and make changes as required?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

**Note: All "no" responses require a written response from the A/E Consultant.**

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

Duration of Services

- .08 Do the specifications clearly identify Contractor's responsibility for providing continuous utility services until date of Substantial Completion, or Beneficial Occupancy, (whichever comes first) including operation of permanent equipment and services? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Temporary Heating, Cooling and Ventilation

- .09 Does the specification specify that the Contractor must provide, at the Contractor's expense, all heating and cooling necessary to protect the work from dampness and cold, as well as, to dry out the building, especially prior to millwork doors, paint and acoustical tile installation? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Temporary Water

- .10 Water necessary for construction, drinking, and testing of plumbing and mechanical systems may be obtained from the department of Physical Plant through the University Project Manager. The connection point must be verified by the Physical Plant Department. The line size must be adequate for all demands. Does the Architect/Engineer specify that the Contractor make necessary connections and install a meter, and that the Contractor be responsible for installation of all pipe from the meter, and removal of temporary lines upon job completion? All costs, including use and connection fees, shall be paid by the Contractor at current rates. All temporary water lines will have backflow preventers. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Temporary Sanitary Facilities

- .11 Do the specifications call for the Contractor to provide and maintain in a neat and sanitary condition such accommodations for the use of the Contractor's employees as may be necessary to comply with the regulations of the State Board of Health and the county and municipality where the project is located? The point of tie-in to

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**Comments to "No" Responses:**

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sewage systems, if utilized, shall be designated by the University's Project Manager; otherwise, the Contractor shall provide adequate chemical portable sanitary facilities for Contractor's forces. Chemical toilets will not be emptied in the university sewage system. Pit toilets are prohibited.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **Temporary Fire Protection**

- .12 Do the specifications call for temporary, as well as permanent, fire protection facilities including fire hydrants? During construction, fire hydrants shall be installed within the specified distance of a building according to the occupancy classification to meet the NFPA requirements that pertain thereto. (See DIVISION 15, Section 15400, Plumbing; Fire Safety Systems).

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **Hoists and Elevators**

- .13 Do the specifications call for new elevators to be used for transportation of materials or Contractor's workers?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

- .14 Do the specifications call for the existing elevators to be used during construction. Has permission been obtained from the University Project Manager? Refer to Division 14 for conditions governing this use.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **Barriers and Enclosures**

- .15 Do the specifications call for the Contractor to provide rigid barricades (especially for open trenches and excavations,) shielding, and/or warning signs including audible warning devices for the sight impaired, to protect all University employees, students, and the general public from hazards outside the required construction site fence? This includes but is not limited to: open trenches, falling objects, and the

**Note: All "no" responses require a written response from the A/E Consultant.**

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

lighting and posting of warning signs about physical hazards during darkness to comply with all OSHA requirements.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **Construction Fence**

.16 Is the Construction Fence location shown on drawings with the following specifications?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

.16-1 A six-foot high fence with gates shall be erected around the project site.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

.16-2 A heavy woven steel wire fence on steel posts (where appearance is a consideration, a privacy type fence might be required).

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

.16-3 Has any reference to barbed wire on any part of the fence been deleted?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

.16-4 "No trespassing" signs to meet OSHA requirements shall be specified.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

.16-5 The Owner should be held harmless if improper or inadequate fencing is installed by the Contractor and injury or damage results.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **01540 - Security**

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

.01 Do the specifications require that no persons, other than employees of the Contractor, Architect/Engineer, Department of Physical Plant, Facilities Planning, or the Office of Capital Programs enter the construction work site without specific prior approval of one of those parties? Warning signs may be posted to assist in the enforcement of this requirement.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 Do the specifications call for the Contractor and its employees, while working on the premises, to comply with the Safety Orders issued by OSHA, the University Director of Environmental Health and Safety and any other safety, health or environmental regulations of the State of Florida having jurisdictional authority?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Ladders and Roof Access

.03 Do the specifications call for ladders, ramps, guard rails, stair rails, stair runways and protection of floor, roof and wall openings in accordance with "CONSTRUCTION SAFETY ORDERS OF OSHA?"  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Building Security

.04 Do the specifications call for one exterior door of any enclosed structure to be provided with a lockset with a university security cylinder during construction?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Fence Gates

.05 Do the specifications call for the Contractor to keep gates locked at all times except during working hours?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.06 Do the specifications call for the Contractor to furnish the University Project Manager two keys for each lock or two masters for all gate

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

locks? These keys will be turned over to the University Police Department for emergency access to the construction site.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **01541 - Safety**

.01 For some projects, the Owner may implement an Owner Provided Insurance Program (OPIP). Have the guidelines in Section 01010 Division 1 - General Requirements been referenced?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

.02 Do the specifications call for the Contractor to be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **Safety of Persons and Property**

.03 The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:

.03-1 All university faculty, staff, students.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

.03-2 All other persons who may be affected thereby.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

.03-3 All the work and all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the Contractor or any Subcontractors or Sub-subcontractors.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- .03-4 Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .04 Do the specifications require the Contractor to give all notices and comply with all applicable laws, ordinances, rules, regulations and lawful orders of the Owner or other public authority bearing on the safety of persons or property or their protection from damage, injury or loss?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .05 Has it been specified that the Contractor shall erect and maintain, as required by existing conditions and progress of the work, all reasonable safeguards for safety and protection? This will include posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent utilities.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .06 When the use or storage of explosives or other hazardous materials on campus is necessary for the execution of the Work, has it been specified that the Contractor shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel? Notification of such activities shall be provided to the University Project Manager and the University Environmental Health and Safety Department prior to their being brought and/or used on campus.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07 Has it been specified that the Contractor shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents? This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in

**Note: All "no" responses require a written response from the A/E Consultant.**

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

writing to the University's Environmental Health and Safety Department and the University Project Manager.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

- .08 Has it been specified that the Contractor shall not load or permit any part of the Work to be loaded so as to endanger its safety?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **Emergencies**

- .09 Has it been specified that in any emergency affecting the safety of persons or property, the Contractor shall act, at his discretion, to prevent threatened damage, injury or loss? Notification of such occurrences must be made to the University Police Department as soon as practical.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **01550 - Access Roads and Parking Areas**

This section shall be addressed specifically in the bid documents.

Have specific requirements for temporary access roads and parking areas for the Contractor been specified? This section shall be used for all bid documents. Include reference to university's traffic and parking rules.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **01560 - Temporary Controls****Noise and Dust Control**

- .01 In occupied buildings, has the Architect/Engineer indicated areas for which noise and dust control must be provided and specified methods of control? If details of installations are involved, specify these in the applicable sections of the technical specifications. The Contractor shall be required to install barriers indicated by the Architect/Engineer

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

and shall provide other dust control barriers as required by construction operations.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **Drainage**

- .02 Has it been specified that the Contractor shall be required to provide temporary drainage trenches, drains, sumps, pumps, or other items required to afford satisfactory working conditions for the execution, completion, and protection of the Work? Water shall be diverted to or shall be pumped into existing sewage systems and shall not be allowed to run onto ground surface area unless otherwise authorized.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **Storm Water Run-Off**

- .03 Does the temporary drainage plan include the pumping of tunnels, elevator pits, and other structures which collect storm water and waste water run-off from construction operation?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **Clean-up Enforcement**

- .04 Do the specifications contain provisions that the Contractor must remove mud and spillage from public and university streets without delay? Failure to clean streets promptly could result in streets being cleaned by the Owner at the Contractor's expense.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

- .05 Has it been specified that all catch basins and storm drain lines in the vicinity of the site shall be protected at all times from the entry of mortar, concrete spoil, and other construction debris? The residue from the cleaning of concrete trucks, wheelbarrows, concrete buggies, etc., must be prevented from entering the drainage system. If cleaning is done, it must be contained and the Contractor must

**Note: All "no" responses require a written response from the A/E Consultant.**

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

remove the residue from the campus with other construction refuse.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **Repairs of Damages to Facilities**

- .06 Do the specifications contain provisions that damage to roads or other facilities on the grounds, resulting from Contractor's hauling, storage of materials, or other activities in connection with the Work, shall be repaired or replaced, at no expense to the Owner? Repairs or replacements shall be made to the Owner's satisfaction. Clean-up of areas shall occur on a weekly basis. Contractor shall not overload vehicles with material causing spillage and possible future damage.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **01570 - Traffic Regulation****Parking**

- .01 Has it been specified that parking at campus is subject to regulations established by the University Security/Parking Services at the particular campus? Temporary fencing and parking and storage areas shall be specified by Architect/Engineer. Employees of the Contractor and subcontractors must secure parking permits from the university and must park cars in areas assigned to them. Parking on streets or in restricted areas is prohibited. At the beginning of the Work, the Contractor shall report to the university the approximate number of parking permits which will be required for all employees, including employees of Subcontractors.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **Access to Construction Area**

- .02 If existing streets and roads on campus must be used, has a detailed plan of the routes to be used been approved in cooperation with University Project Manager?

**Note: All "no" responses require a written response from the A/E Consultant.**

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

(Specific drawing sheet #/specification page # \_\_\_\_\_.)     
Planning for Temporary Control

- .03 Has it been specified that the University Security/Parking Services must be notified at least 1 week in advance of any anticipated Work affecting traffic flow? To ensure maintenance of flow and to safeguard all parties involved in planning temporary routing, a field inspection should be made jointly by the Architect/Engineer, the Owner, and Contractor prior to performing any Work which would interrupt normal traffic patterns. Rerouting of traffic shall be planned, as to route and direction, in cooperation with the Police Department.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Contractor's Responsibilities

- .04 Has it been specified that the Contractor's Work requires interruption of traffic, the Contractor shall be required to post signs in all affected areas, in sufficient numbers and with appropriate messages to warn motorists entering the construction zone and to alleviate conflicts and confusion among motorists or pedestrians at intersections, crossings, turns, and other obstructions to normal traffic flow? Temporary signs shall be as shown in the FLORIDA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, Florida Department of Transportation (current edition).

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .05 Has it been specified that temporary lanes shall be well marked, and obstructions, barriers, lane changes, or detours shall be indicated by appropriate signage at each point of potential confusion, as well as at each change in direction of a temporary route? The University Police Department shall be notified in advance of the anticipated time of return to normal traffic patterns. Upon completion of construction affecting streets or traffic flow, but before temporary control devices and lane markings are removed, the area shall be restored to receive traffic in the normal pattern. The Police Department shall be notified of the actual

**Note: All "no" responses require a written response from the A/E Consultant.**

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

time of completion of restoration.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **01580 - Project Identification and Signs**

- .01 Have the requirements for temporary project identification and informational signs required during construction, and removal at completion of Work been specified? Refer to the SUS Professional Service Guide.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  Project Identification

- .02 The requirement in the General Conditions that a project sign be furnished might be waived if the project is small or is a remodeling project. The University Project Manager will determine the need for the sign. If a sign is required, the location shall be approved by the Owner and shall be shown on the drawings, together with details of the sign. Has it been specified that the Contractor provide the sign and require a shop drawing showing layout of the text? Submit one print of the shop drawing to the University Project Manager. The Architect/Engineer, accompanied by a representative of the Owner must inspect and approve the finished sign before erection at the site.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **01590 - Field Offices and Sheds**

- .01 Has it been specified that the Contractor shall provide and maintain a clean, weather-tight office at the site suitable for the Contractor's own use, and for use of the Subcontractors? All expenses including the installation cost, and the use of telephone, heat, light, water, and janitor service shall be borne by the Contractor.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  

- .02 Has it been specified that the Contractor's office shall be of size suitable for the use of the Contractor, Subcontractors, and the Architect/Engineer's representative? Office shall be heated, lighted, and provided with doors with locks, and private line telephone service. One lockable space in the

**Note: All "no" responses require a written response from the A/E Consultant.****Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

office shall be provided for use of the Architect/Engineer's representative; space shall be equipped with plan table, desk, suitable chairs or stools, plan rack, filing cabinet, and telephone. The Contractor or an authorized agent shall be present at the office or shall arrange to be called readily, at all times while the Work is in progress.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **01600 - Materials and Equipment****Salvage on Demolition and Renovation Projects**

- .01 On all projects involving demolition and/or renovation, the Architect/Engineer should review with the University Project Manager (for inclusion in the bid documents) the possibility of salvage of materials and equipment, either for use in the remodeling project, or by the Department of Physical Plant. The University Project Manager, upon notification by the Architect/Engineer of salvage not needed in the remodeling, will notify the Architect/Engineer of materials and equipment to be removed by the Owner or to be turned over to the Owner by the Contractor. Non-reusable materials including toxic and/or hazardous waste will be removed from campus by the Contractor. Has the Architect/Engineer specified in the "Project Summary" accompanying the Invitation to Bid and in the contract specifications, that the university reserves the right to remove salvage prior to start of construction, or in certain instances the Contractor is to turn over certain items of salvage to the Owner?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **Storage and Protection**

- .02 Has it been specified that the Contractor and all Subcontractors shall provide suitable weather-tight storage sheds of sufficient size to hold materials required on the site at one time for storage of materials which might be damaged by the weather? Outdoor storage of materials shall be confined to the areas within the construction fence. Temporary

**Note: All "no" responses require a written response from the A/E Consultant.**

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

structures shall be painted with one coat of paint; color shall be approved by the University Project Manager. No signs except small identification signs are permitted on sheds. Indoor storage shall be confined to unused spaces in the building; corridors, stairs, and other public spaces shall not be used for storage.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Storage of University Equipment

.03 Has it been specified that after substantial completion, large rooms, at or near grade level, shall be made available to the Owner for the storage of equipment? Details shall be arranged with representatives of the university through the Project Manager.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**01650 - Starting of Systems**

Have the requirements regarding building system start up, and systems demonstration, described to permit direct reference from individual product specification sections been provided?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**01700 - Contract Closeout**

.01 Has additional information been provided beyond that contained in the SUS Professional Services Guide regarding, final cleaning, adjusting, project record documents, close out procedures, etc., been provided?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Final Cleaning

.02 Has the Architect/Engineer reviewed Paragraph 3.15 (Cleaning Up) of the General Conditions to determine whether or not this subject is adequately covered? Some amplification might be required.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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Project Record Documents

- .03 Has it been specified that the Contractor shall maintain on site one set of the following record documents to record actual revisions to the Work:  
Contract Drawings  
Specifications  
Addenda  
State Fire Marshal Approved Documents  
Change Orders and other Modifications to the contract  
Approved Shop Drawings, product data, and samples  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .04 Has it been specified that record documents shall be stored separately from documents used for construction and kept concurrent with construction progress? The Architect/Engineer should monitor and verify progress prior to approval of Contractor's monthly Applications for Payment.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

"Record Drawings" and Specifications

- .05 Has it been specified that the Architect/Engineer requires submission of record drawings reflecting "record set" conditions? The principal purpose of this "record set" is to provide the Owner with a permanent record of actual construction to facilitate trouble-shooting and for use in future building alterations.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .06 Has Subparagraph 3.11.1 of the General Conditions been included? This section requires the Contractor to record all changes to drawings and specifications as they occur and to deliver them to the Architect/Engineer upon completion of the Work. This information is the Architect/Engineer's principal source of information in revising drawings and specifications. In addition, shop drawings, field notes, change orders, correspondence and the Architect/Engineer's own set of drawings will provide auxiliary information.

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07 Has it been specified by the Architect/Engineer that the Contractor shall furnish the Architect/Engineer's office with a set of final record drawings and specifications prior to Substantial Completion? The Architect/Engineer will update the original tracings, and/or update the CADD diskettes, and then furnish the Owner one set of final record drawings on mylar and one set of final record specifications. If the Architect/Engineer agreement requires Computer Aided Design and Drafting (CADD), the Architect/Engineer shall furnish one set each of final records listed above and a copy of the CADD drawings on floppy disk(s) dated so to indicate they are "record set" drawings and specifications.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08 Has it been specified that the following information must be shown on drawings:
- .08-1 Identification of addenda items issued during bidding period.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-2 Identification of alternates, both accepted and not accepted.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-3 Numbers of bulletins and change orders which effected changes.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-4 All field changes made during construction. The Architect/Engineer is responsible for the accuracy of information placed on the tracings; making only the changes which might be marked on the Contractor's drawings is not sufficient.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-5 Date on which corrections were made.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-6 Tracings shall be identified with the label "RECORD SET". This identification may be hand lettered or rubber stamped on the tracing.

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **01730 - Operation and Maintenance Data**

- .01 This section contains the general requirements for operating and maintenance manuals to be submitted, reviewed and approved well in advance of Owner occupancy. The manuals and other supporting material listed herein must contain accurate "record set" data, drawings, changes, etc. on each operating system to permit the university maintenance personnel to take over maintenance with written instructions sufficient to ensure operations and maintenance in accordance with manufacturer's specifications. It is the responsibility of the Architect/Engineer to incorporate these standards into the specifications or other contract documents, and to secure compliance of the Contractor with the standards, including changes in design and specifications during construction incorporated into "record set" conditions. Has it been clearly specified?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **Description of Systems**

- .02 In the specifications or as a preface to the manuals has the Architect/Engineer described the design intent of the building systems (HVAC, electrical, fire alarm and miscellaneous) and the principles of their operation in a manner to permit prompt initial understanding of the systems by qualified university maintenance personnel? Do the descriptions include flow-charts, riser diagrams, zone control layouts, and other visual aids showing the components, and their relationship to the entire system?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

  **Manuals of Systems Components to be Specified by Architect/ Engineer**

**Note: All "no" responses require a written response from the A/E Consultant.**

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

.03 Has the Architect/Engineer specified, as applicable to the particular designed system, the components of information required:

.03-1 Manufacturer's printed installation and operating instructions. This shall be the technical specifications and instructions, not "sales" brochures and promotional matter. Instructions shall include all modes of operation in sufficient detail to be readily understood by university maintenance personnel.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03-2 Complete identification in the manuals of the actual equipment installed as described in the manufacturers' instructions, including dimensional drawings, model, type, size, performance parameters such as curves, efficiencies, power requirements, operating ranges, etc.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Note: In cases of multiple installation of identical equipment, only one manual submitted for the identical equipment is necessary, but model and serial numbers of the several pieces of equipment shall be listed.

.03-3 Names, addresses, telephone numbers, contact person (if known) of Subcontractors and/or Sub-subcontractors, their suppliers, manufacturers' representatives, available service facilities and normal channels of supply.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03-4 Technical data related to items provided in construction. Unrelated technical data shall be purged by supplier of Manual prior to submission by Contractor to Architect.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03-5 Detailed parts list showing manufacturer's parts numbers and such other identification as necessary to facilitate procurement of spare or renewal parts and Owner-Manufacturer communications.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

.03-6 Manufacturers' maintenance instructions including schedules showing proper time intervals for lubrication, adjustment, calibration or checking. Contractor shall consolidate manufacturers' schedules with a single master schedule of required maintenance. This requirement is for the Contractors' as well as the Owner's protection to ensure proper early maintenance during the warranty period.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Submission of Operating and Maintenance Manuals

.04 Has it been specified that the Contractor shall submit to Architect/Engineer, no later than the 75% completion date of the HVAC systems, four sets of manuals (or if deemed prudent, a draft set of manuals) for review? Architect/Engineer shall review and require such changes or additions as necessary to meet these standards and when Architect/Engineer approves the manuals, the Architect/Engineer shall forward a set to the Owner. The Owner will review and comment and will advise the Architect/Engineer, who will then secure the required corrections and transmit three completed sets to the Owner before a Certificate of Substantial Completion is issued.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Operation and Maintenance Data

.05 Have detailed requirements been stipulated in the appropriate sections of the specifications. The following check lists should be modified to suit project requirements:

**ITEMS WHERE DATE IS REQUIRED**

General Construction:

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

.05-1 Roofing Manufacturers maintenance data.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.05-2 Elevators and hoists as per specifications.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Plumbing:

.05-3 Piping systems (printed diagrams, valve tag, etc).  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Heating#, Ventilating, and Air Conditioning:

.05-4 Control systems (printed diagrams, operating instructions, etc).  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Electrical:

.05-5 Communications (point-to-point wiring diagrams and instruction  
manuals, if installed by the Contractor).  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.05-6 Fire protection systems (as per specifications).  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.05-7 Motor control (overload heater charts).  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.05-8 Equipment (operating instructions)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Final Inspection

.06 Have procedures as outlined in Paragraph 9.10, "Final Completion and Final Payment," in the General Conditions and SUS Professional Services Guide been provided? Has a representative of the

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

University Planning office been included in the arrangements for joint final inspections?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Project Turnover Procedures**

- .07 Do the General Conditions of the contract for construction contain instructions and requirements of the Contractor, Architect/Engineer and Owner for acceptance of the project? The Architect/Engineer is responsible for including in the Specifications the obligations for the Contractor, for an orderly acceptance and turnover. Included in such obligations are: punch lists, "record set" plans and specifications, operating and maintenance manuals, and indoctrination of the university personnel. Include written notification for insurance purposes. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

**01740 - Warranties and Bonds****Affidavits, Bonds and Guarantees**

- .01 In addition to the standard forms required by the contract documents, the following are required. When statements applying to these products are provided, have the following requirements also been specified?

.01-1 Resilient flooring, carpet and padding (affidavits, bonds & guarantees from manufacturer and installer).

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.01-2 Asbestos and leadfree design and materials (affidavits, bonds & guarantees from Architect/Engineer and Contractor).

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- |  |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|
| .01-3 Termite Protection (5-year guarantee).<br>(Specific drawing sheet #/specification page # _____.)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| .01-4 Roofing (20-year warranty bond).<br>(Specific drawing sheet #/specification page # _____.)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| .01-5 Membrane waterproofing (5-year maintenance bond).<br>(Specific drawing sheet #/specification page # _____.)  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| .01-6 Postal specialties (surety bond).<br>(Specific drawing sheet #/specification page # _____.)  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| .01-7 Caulking and sealants (5-year guarantee).<br>(Specific drawing sheet #/specification page # _____.)  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| .01-8 Metal windows (2-year guarantee for windows and 5-year<br>guarantee for weatherstripping).<br>(Specific drawing sheet #/specification page # _____.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| .01-9 Wood and laminated plastic faced doors (lifetime guarantee).<br>(Specific drawing sheet #/specification page # _____.)                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| .01-10 Tinted and insulated glass (5-year guarantee).<br>(Specific drawing sheet #/specification page # _____.)  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| .01-11 Chalkboards (20-year guarantee).<br>(Specific drawing sheet #/specification page # _____.)  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| .01-12 Water chillers and air cooled condensers (5-year guarantee).<br>(Specific drawing sheet #/specification page # _____.)                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Note: The above list is not intended to be all-inclusive. The Architect/Engineer shall include other related specified materials and systems as required.

In addition "Extra Stock" requirements shall be reviewed with the University Project Manager and specified as required (i.e. ceiling tile,

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

paint, etc.)

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Initial Approval

Date

Date Revised

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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DIVISION 2 - SITE WORK

**02010 - Subsurface Exploration**

.01 Architect/Engineer Responsibilities

Has the Architect/Engineer furnished a subsurface investigation report as described in the SUS Professional Services Guide? Has the Architect/Engineer provided plans showing required test boring locations and provided a letter to the University Project Manager or any other information required for the testing laboratory?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 Preparation of Plans for Borings

Has the Architect/Engineer studied plans of existing underground utilities and located borings to avoid these utilities? ( The Owner will make available maps showing underground installations.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 Information to be included in Contract Documents

Do the boring locations and sections through borings show all soil conditions?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.04 Do the specifications contain information to the Contractor acknowledging that the Owner shall in no way be held responsible for the accuracy of the information?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**02100 - Site Preparation**

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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## COST CONTAINMENT GUIDELINES

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.01 Structure Removal

Is the structure removal included in the demolition package?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 Clearing the Site

Are instructions included in the Construction Documents that indicate debris resulting from stripping and demolition operations shall be removed from university property at frequent intervals so as to prevent this material from accumulating on the site?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 Grubbing

Removal of trees and shrubs shall include the removal of stumps and roots to the extent that no root greater than three inches in diameter remains within five feet of an underground structure or utility line or under footings or paved areas. Grubbing in open areas shall include removal of stumps and three-inch roots to two feet below finish grade elevations.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.04 Tree Relocation

Are instructions included in the Construction Documents for relocation of existing trees or other major landscaping and ground coverings?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.05 Tree Location

Has a survey of existing trees been done to save trees greater than

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**Comments to "No" Responses:**

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?' diameter and ?' from the new construction? Have these trees been identified in the landscaping and provisions been made to keep damage and stress from occurring to the trees due to construction activity.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**02120 - Structure Removal**

.01 In open areas, foundations of structures shall be removed to a minimum of three feet below finish grade elevation. Where new structures will replace existing structures, indicate extent of foundation removal on the drawings. No existing slabs will remain under fill for new structures. Hazardous material removal shall be conducted prior to structural removal as required by federal, state and local requirements.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 Disposal of existing buildings and structures, trees, dismantled equipment, etc., is the responsibility of the Contractor.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**02200 - Earthwork**

.01 This area should address excavation, filling and grading for the new structure as required to suit site appurtenances. Grading and filling will be performed to lines and grades required by civil engineering. These grade lines will be integrated with the new paving and surfacing as well as landscaped areas. Removal of the unsatisfactory or deleterious materials from the premises will be done as required for the work. Disposal of debris and waste material, temporary protection of work, barricades, rerouting requirement, signage, etc. will also be included. Storm water drainage will be controlled during construction of the project and will also be included.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

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**Comments to "No" Responses:**

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## COST CONTAINMENT GUIDELINES

N/A Y N

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- .02 Earthwork includes, but is not necessarily limited to the following:
- .02-1 Excavating, filling, backfilling, grading and compaction.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .02-2 Dewatering of excavations and work areas, as required.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .02-3 Shoring and bracing, as required.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .02-4 Disposal of excess and unsuitable excavated materials.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .02-5 Preparation of sub-grade for building slabs, walks, decks and pavements.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .02-6 Backfilling of trenches within contract limit lines.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .02-7 Excavation and backfill required in conjunction with underground mechanical and electrical utilities, and buried mechanical and electrical appurtenances is included as work of this section.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .02-8 "Excavation" consists of removal of all material encountered to subgrade elevations indicated and subsequent disposal of materials removed.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

### **02201 - Earthwork for Buildings**

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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## COST CONTAINMENT GUIDELINES

N/A Y N

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The site for the new building will be stripped and the area around the existing buildings graded to suit the architectural requirements. Excavation and removal of materials from the premises will be done as required for the building and structures. This will include disposal of debris and waste material, foundation drainage, backfill, compaction, shoring, sheathing, temporary protection and barricades. Storm water drainage will be controlled during construction of the project. Fill as required for rough grading elevation. Site preparation for building according to Geotechnical Engineer's recommendations.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

### **02211 - Rough Grading**

Slopes shall not be greater than one vertical to six horizontal in grassed areas. Steeper slopes will be considered in unique circumstances and will be reviewed and approved by the Owner.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

### **02218 - Landscape Grading**

.01 Acceptable fill materials shall be in accordance with Geotechnical Engineer's Report and recommendations.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

#### Topsoil

.02 Existing stockpile topsoil shall be free from sticks, stones, roots, clods and any extraneous material.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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## COST CONTAINMENT GUIDELINES

N/A Y N

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- .03 Imported topsoil shall be a fertile, friable, natural topsoil of loamy character obtained from a well-drained, arable site free from sticks, stones, roots, clods and extraneous matter. Topsoil shall be a black loam, indigenous to general area in which the project is located and shall be suitable for planting and seeding.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .04 Specify a six-inch depth of topsoil for seeded areas and 12-inch depth for planting areas.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

### **02222 - Excavating**

- .01 The excavation and backfilling of trenches, etc., for piping, manholes, pull boxes, etc., in the mechanical trades is considered better placed under those divisions than under this general division but the Architect/Engineer should ensure that the compaction of backfill in trenches is covered and that the soil type is the same and that restoration has occurred.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Under no circumstances shall topsoil and other excavated soils be removed from the campus. If such materials are not required for the project, the Contractor should consult with the University Project Manager who will advise the Contractor regarding a disposal location.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Where topsoil is removed and grading is accomplished on the site, or where the existing ground surface is otherwise disturbed, care shall be taken to prevent soil erosion. If soil is needed, specify that the Contractor will have to obtain it from private sources at the Contractor's expense.

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .04 When necessary to hold large piles of excavated earth on the job site, the Contractor should be required to provide cover or adequate means of water sprinkling to keep the sand particles wet and prevent them from being wind-blown about the campus.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**02223 - Backfilling**

Backfilling is required at building perimeter and site structures up to subgrade elevation. Fill under interior and exterior slabs-on-grade or pavement, and fill under landscaped areas shall meet applicable ANSI/ASTM standards.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**02225 - Trenching**

When excavating and backfilling for the mechanical and electrical trades is covered in this portion of the specifications, make certain that the compaction of back-fill is properly specified and meets applicable ANSI/ASTM standards and the requirements of Section 553.60, F.S., the Trench Safety Act.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**02251 - Termite Control**

- .01 Termite treatment is required for every building. The Subcontractor, for soil poisoning, must furnish a service agreement stating the work performed will be guaranteed for a period of 5 years from the date of substantial completion. In addition the agreement must state that the

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## COST CONTAINMENT GUIDELINES

N/A Y N

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structure will be inspected yearly for infestation and treatment provided as necessary. The Subcontractor shall offer an optional renewal of the service on the same terms. The type of chemical treatment must be specified, including the amount of application per unit area. The service agreement shall state that in the event of damage during the guarantee period, the Contractor shall make repairs to structurally damaged surfaces to a dollar value based on the size of the building. An independent testing laboratory shall certify that the treatment meets the requirements of the Specifications.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .02 If treatment is provided prior to substantial completion, the Architect/Engineer should specify modification of service and guarantee so that the university is not billed prior to acceptance of the building.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .03 Chemicals and application shall conform to EPA's Federal Insecticide, Fungicide and Rodenticide Acts.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

### **02490 - Trees, Plants, and Ground Cover**

Trees, plants and ground cover work includes planting, backfill, guying, watering, pruning, as well as, replacements and guarantees.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

### **02500 - Paving and Surfacing**

#### **02513 - Asphaltic Concrete Paving**

Provide materials and installation to comply with requirements of the Florida Department of Transportation and as determined by the civil

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**Comments to "No" Responses:**

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## COST CONTAINMENT GUIDELINES

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engineer. Minimum installation shall consist of 1" plant mixed type S-1 asphaltic concrete surface course over 6" compact base over 10" stabilized soil, unless civil engineers determine otherwise.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

### **02514 - Concrete Paving**

.01 Provide Class A concrete with a minimum compressive strength of 3000 psi in 28 days. All products, materials, and execution shall comply with applicable ANSI and ASTM Standards.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

#### Expansion Joints

.02 Provide premolded type ½" thick, full depth of concrete, maximum 30'-0" o.c. and at junctions with vertical surfaces.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 Are expansion joints specified and shown on the drawings?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

#### Control Joints

.04 Are control joints saw-cut to squared relief, e.g., 6'0" wide sidewalk, 6'0" space between? Do they line up so that new stress points do not occur and cause more cracking of the concrete surface?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

#### Finish

.05 Are the finishes floated, troweled, and medium broom finished?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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Utility Cuts

- .06 Are utilities cuts required to cross existing paved areas? (Saw-cutting finished surfaces should be used only as a last resort. The university recommends boring as the standard procedure for crossing streets/roads. Concrete walks shall be cut and replaced from joint to joint, doveled to the remaining slab. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Walks

- .07 Are concrete sidewalks required and shown at a minimum of 6 inches thick with 6 x 6 #10 wire mesh reinforcement, and edge thickness increased a minimum of 2 inches? All sidewalks may be subjected to heavy vehicular traffic, additionally, ground freezing should not be discounted. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Pedestrian walks

- .08 Are walks used as vehicular drives shown at a minimum of 6" thick with edges increased to a minimum of 2 additional inches thick and 10'-0" wide, steel reinforced? Secondary sidewalk width should be a minimum of 6 feet, and should match surrounding walk patterns. Care must be taken to prevent slick finishes, and to avoid the possibility of marking or vandalism while the concrete is curing. Expansion joints must be properly designed and indicated on contract drawings. Medium broom finish on all sidewalk Work is required. Do the

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

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specifications call for the Contractor to protect concrete from defacement by fencing or providing appropriate personnel to maintain and secure the area until the concrete has properly cured?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**02660 - Water Distribution System**

Water main materials: ductile iron pressure water pipe and PVC pressure pipe, joints are optional. Provide gate valves at all new branches, fire hydrants, backflow prevention devices and meters. Discuss valve location and installation details such as valve boxes, direct burial, and ground level access to valve operator with the university. Water lines will be disinfected according to AWWA Standard C-601. All pipes will be tested for leakage. Detectable plastic marking tape shall be installed underground above buried utility lines, as required, to facilitate the location of the lines before damage to the lines can occur during required excavation.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**02720 - Storm Drainage System**

Are catch basin or inlets precast, or cast-in-place concrete? (Grates and frames are to be cast iron or galvanized steel. Drainage pipe to be concrete, corrugated metal pipe or helicoidal metal pipe (bituminous coated or aluminum.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**02730 - Sanitary Sewer System**

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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## COST CONTAINMENT GUIDELINES

N/A Y N

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Are sanitary sewers: vitrified clay pipe with gasketed push joints or PVC pipe with joints as recommended by pipe manufacturer? Are sanitary manholes: precast concrete or cast-in-place concrete? Are cover and frames: cast iron or galvanized steel? Are cleanouts: commercially manufactured wye branches?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

### **02800 - Site Improvements**

#### **02811 - Landscape Irrigation**

.01 Are all landscaped and sodded areas irrigated? The irrigation system shall be designed so as to eliminate water spray on pedestrian walkways and buildings.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 Are sprinkler heads "Rain Bird" products or approved equal specified?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 Are all landscaped areas adequately irrigated based on the following criteria:

.03-1 An automatic sprinkler irrigation system for all landscaped areas. All sprinkler lines shall be self-draining.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.032 An irrigation system designed and operated to prevent or minimize runoff of irrigation water onto roadways, driveways, walks, etc.

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

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(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**02842 - Bike Racks**

Are bike racks of a design similar to Bike Stanchions from the Bike Security Racks Company or The Ribbon Rack by Brandir, and are they acceptable to the university?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**02938 - Sodding**

.01 Are all areas not otherwise landscaped sodded with sod appropriate to the local area? (Refer to ASPA (American Sod Producers Association) - Guideline Specifications to Sodding.)

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 Is it specified, where appropriate, to scarify subsoil to a depth of six inches where topsoil is to be placed? Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted subsoil.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Placing Topsoil

.03 Is topsoil specified at a minimum of two inches over area to be sodded?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**02950 - Landscaping Plant Materials**

Trees, Plants, and Ground Cover

.01 Are trees, plants and ground cover in a schedule contained in the

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**Comments to "No" Responses:**

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drawings? The schedule should include plant name in botanical identification, nominal size of trunk or spread of branches, height or other identifiable criteria. These plants shall be specified as "Florida Grade" and selected for the climatic conditions of the specific university location.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 Has the Architect/Engineer reviewed these requirements with the University Project Manager to ensure appropriate coordination and incorporation in the contract and future grounds maintenance?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

\_\_\_\_\_  
Initial Approval

Date

Date Revised

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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DIVISION 3 - CONCRETE

**03001 - Concrete**

Are tests performed as specified in appropriate articles of the SUS Professional Services Guide? For quality control, all material products and execution shall conform to ACI 301 and applicable ANSI/ASTM Standards tests.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**03200 - Concrete Reinforcement**

.01 Is proper coverage of reinforcement ensured (particular care should be exercised in preparation of specifications and during inspection)? Reinforcing bar supports frequently are exposed to the weather on soffits and other surfaces, and corrode. Plastic supports are desirable.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Miscellaneous

Admixtures

.02 Has the Architect/Engineer clearly justified the use of admixtures? (In general, admixtures are not desired.)

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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Cold Weather Concreting

- .03 Are specifications provided for cold weather concreting to be done in accordance with ACI 604?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- 

Pipe Shafts

- .04 Are proper seals specified where pipes pass through floors, to be made tight around the piping to prevent passage of vermin, rodents and fire? If expansion space is needed, is proper filler specified?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- 

Bush Hammer Finish

- .05 Are precast units as a facing specified instead of Bush Hammer Finish?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- 

Exposed Vertical Concrete Wall Finishes

- .06 Is "plyform" specified on all form work for exposed vertical surfaces?  
(Existing conditions on campus indicate that several types of forming material have been used thereby creating numerous types of finish surface appearances.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
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**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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Snap-Tie-Cone-Holes

- .07 Have snap-ties, when specified, been coordinated with the University Project Manager to determine the project standard to be used?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Sidewalks and Ramps

- .08 Has a method to ensure straight expansion-joint-filler appearance been specified?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Stairs

- .09 Have poured in place concrete stairs or structural step stairs with pan filled treads been specified?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .10 All ramps, stairs, landings and exterior walks should have an integral non-slip finish; has this been specified?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Initial Approval

Date

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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Date Revised

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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DIVISION 4 - MASONRY

**04100 - Mortar**

- .01 Mortar without a color admixture is preferred. Is ASTM C-27073, Type "S", specified for above grade use and Type "M" for below grade? If the building to be restored is historic, have provisions been made to use matching grout? (This may be revised for structural consideration and to conform to code requirements.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Admixtures

- .02 Plasticizers, accelerators, retardants, water repellent agents, or other admixtures are not recommended for mortar unless specifically required. Has prior approval of the Owner been given?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**04200 - Unit Masonry**

- .01 Have ANSI/ASTM Standards been specified?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Tolerances

- .02 Tops of all masonry walls, exterior and interior, where applicable, should be built tightly against the floor construction above for stability, fire and sound protection, except where provision must be made for expansion, requiring alternative means for ensuring stability, etc. Have masonry and other anchors sizes and spacing been stated?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Mock-up

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES** N/A Y N

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- .03 Have specifications required a composite masonry mock-up? Erect a 4 x 4 foot minimum panel size, include specified mortar and accessories. The panel shall show color range and texture of masonry units, bond mortar joints and demonstrate minimum standard for the work. Completed masonry work in the building shall be equal to that shown in the approved panel. The panel shall not be removed until masonry work is completed or until removal is authorized.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Concrete Unit Masonry

- .04 Have concrete block units been used wherever feasible for interior wall finish? All units shall comply with all structural codes and shall be properly protected at the job site to insure placing in the wall without excessive moisture content.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .05 Are the walls exposed on both sides 6" thick (minimum)?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .06 Have all exposed external concrete block corners which extend to the floor (or to top of base) been bullnosed? Rub out all casting irregularities (so as to result in smooth transitions from flat face to rounded corner) before any finish treatment is applied.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Weeps and Vents

- .07 Have treated wick in weep holes been indicated?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Cavity Wall

- .08 Has a cavity been provided where concrete blocks are veneer faced

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**Comments to "No" Responses:**

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with brick or precast units? Do not use units directly against the concrete block without employing a proven form of waterproofing. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Joint Reinforcement and Split Coursing

.09 Has split coursing been checked at the head of any type of opening? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

**04210 - Veneer Masonry System**

.01 Has all brick proposed, and their range of color, been approved by the Owner, and does it conform to the Secretary of Interiors Standards for color, texture, pattern, bond, and size for historic brick work? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Mock-up (Sample Panel)

.02 Has a mock-up been specified for review and approval? Mock-ups shall be erected in 4 X 4 feet panels, including specified mortar and any accessories. When accepted, the mock-up will demonstrate minimum standards for the Work. (Color and blend of face brick shall generally match brick-work in a specific adjacent building or that typical on campus). (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Size

.03 Has it been specified that all face brick shall be standard size (8" long x 2-1/2" high x 3-3/4" wide) with net cross-sectional area not less than 75% of the gross area in the same plane, and with core holes not less than

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Comments to "No" Responses:**

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3/4" from any edge and must conform to appropriate ASTM Standards?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Coursing

.04 Has it been indicated that all brick shall be laid with modular coursing, three courses to 8", unless otherwise required to match existing coursing or to accentuate an architectural feature or pattern. ASTM standard shall be complied with for all face brick, Grade SW, Type FBS. In addition, manufacturer's certification will be required stating that the rating for effervescence is not more than "slightly effervesced" in accordance with ASTM.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Existing Face Brick Description

.05 (Has the university inserted its face brick requirements with as much specificity as possible?)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**04270 - Glass Unit Masonry**

Is there any non load bearing glass unit masonry for either interior or exterior construction? If so, do the horizontal joint reinforcement and uniform joint treatment interface with adjacent wall systems? Are strict structural and code compliance being met?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**04500 - Masonry Cleaning**

.01 Has the Southern Brick and Tile Manufacturing Association been referred to for bulletins covering cleaning. (Cleaning should be done sufficiently early for the walls to dry thoroughly; at least four weeks prior to application of silicone or other recommended waterproofing. Sandblasting is not recommended for bricks, terracota, or ceramic

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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finished material. Specify that brickwork especially historic brick or stone work must be inspected prior to application of waterproofing.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Cleaning Materials

.02 Have cleaning agents of detergent or solvent been specified?  
(Acid solution is not recommended and must be approved by the Owner.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Exterior Waterproofing

.03 Is any exterior waterproofing being applied to masonry or stone walls?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

\_\_\_\_\_  
Initial Approval

Date

Date Revised

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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DIVISION 5 - METALS

**05010 - General Requirements**

Shop Painting

Has it been specified that all iron and steel items must have additional coats applied at the job?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**05120 - Structural Metal**

Does all structural steel work comply with AISC "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings" and applicable ASTM Standards?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**05500 - Metal Fabrications**

.01 Has it been specified that at least three mils of paint on all steel lintel surfaces in interior walls be used if not galvanized? Use galvanized steel angles in all exterior masonry, stone or precast concrete walls and in all interior walls where used in conjunction with stone.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 All metal components shall conform to applicable ASTM requirements and shall include gratings, castings, supports for ceiling hung equipment and framed partitions, construction inserts and fastening devices, expansion joint inserts and covers, stair nosing and access doors for both ceiling and wall applications, vertical ladder for elevator pit; welded steel ladder (to meet OSHA). Elevator pit sump gratings; corner guard angles; steel angles, channels and clips; pipe sleeves for mechanical and electrical trades; trench drain gratings and frames; galvanized steel corner guards and, miscellaneous structural shapes.

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Comments to "No" Responses:**

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(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**05520 - Handrails and Railings**

Handrails should not end in 90 degree angles where there are circulation paths nor should they extend 3 inches past the circulation areas.

.01 Are all rails: 1-1/4" standard steel pipe?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 Are all posts: 2 X 2-1/2 standard steel pipe size?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 Does the design comply with all applicable codes, including handicap requirements and ADA?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**05530 - Tree Grates**

Are the tree grates of dimensions as required with concentric patterns having gray iron frame sections and gray iron grate bolted to the frame?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**05800 - Expansion Control**

Is the system complete and of compatible materials to produce water-proof expansion joint seals including matching wall, deck and wall, wall

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Comments to "No" Responses:**

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and roof and wall intersection systems?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)           

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Initial Approval

Date

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Date Revised

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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DIVISION 6 - WOOD & PLASTICS

**06114 - Wood Blocking and Curbing**

Pressure Treated Lumber

Is pressure treated material used for all lumber in contact with concrete, masonry or steel? Wolmanizing process is considered best of the treatments for lumber in buildings; Boliden salts are excellent and treatment is equivalent to Wolmanizing if pressure treatment of 100/150 psi is used.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**06200 - Finish Carpentry**

Laminated Plastic

.01 Is plastic laminate used? Is a backing sheet of manufacturer's recommendation used and specified? (This material shall meet flamespread rating requirements of NFPA 101 for interior finish consistent with the occupancy classification.)

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Back-Painting

.02 Is wood to be back-painted before setting specifically called for under Division 9 so there is no room for question on the part of the Contractor?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

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Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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Millwork

.03 Are any door sections used to make up closet walls? Are the edges concealed where possible since the veneers exposed to view present an unsightly appearance?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.04 Are floor-to-ceiling door openings being coordinated (door and transom)? Have the location of the ducts and pipes been coordinated with engineers?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Wood Railings

.05 Do wood handrails return to walls and newel-posts? The use of these handrails should be minimized because of the difficulty of maintaining an acceptable finish.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Initial Approval

Date

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES** N/A Y N

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Date Revised

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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DIVISION 7 - THERMAL & MOISTURE PROTECTION

**07115 - Elastomeric Sheet Waterproofing**

.01 Is water-proofing product (sheet butyl, PVC, EPDM, CPE, CSPE, neoprene, hypalon, or composite laminated membrane) functioning as principal moisture stop in arresting water predominantly in a horizontal application; adhesive bonded, self-adhered, loose laid, or mechanically secured installation?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Slabs on Grade

.02 Is there a requirement for design of slabs on grade to prevent damage to membranes during construction. Are there any special areas and where damp-proofing is considered necessary for any slab on grade? If so, a double slab system is preferred in order to reduce chances of a punctured membrane. A product equal to "Bituthane" by W. R. Grace should be considered under the wear slab. For a basement water-proofing condition, a water bar is essential at walls and columns.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 Is a Radon Barrier required? If so, special consideration shall be given to design.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Vertical Surfaces

.04 Is there a through-wall damp-proofing membrane to prevent moisture in the soil from extending up the wall by capillary action? Material can be as light as 2 oz. copper-backed sisal paper if properly lapped and

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Comments to "No" Responses:**

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sealed at joints.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.05 Have the basement walls been damp-proofed or waterproofed on the soil side? The type of material to be used depends upon the condition; a brushed-on coat of bituminous paint might be adequate for dampness but sheet membrane waterproofing or "Bentonite" or equal should be considered where hydro static pressure is suspected. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Shower Room Floors

.06 Has special consideration been given to preventing leakage in shower and drying room areas? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.07 Has a depressed floor been used for toilet areas where ceramic tile is used since they allow space for the waterproofing pan and they avoid a step at the entry door? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.08 If floor is not depressed, have the details of stopping the water at the entry door where the membrane stops been shown? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

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Comments to "No" Responses:**

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.09 Is a 24-hour water test required prior to placement of the finish flooring? If leaks occur, another test is required after repairs are made.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**07180 - Water Repellent Materials**

Are clear elastomeric water repellent coatings specified for various surfaces? Clear elastomeric coatings are preferred to water or solvent based materials.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**07190 - Vapor Barriers and Retarders**

Is a method used to continue a seal formed by a vapor and air barrier for each building enclosure construction, and to seal gaps between adjacent materials forming wall and roof opening?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**07270 - Fire Stopping**

Are firestop openings created when site conditions require forming or cutting walls, partitions, or floors? Is fire stop material used to close openings and continue a fire resistance rating uninterrupted?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**07536 - Roofing - "Special Treatment"**

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Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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Have the Architect/Engineers adhered to the latest State University System Standard Practice for Roofing?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**07620 - Sheet Metal Flashing and Trim**

Has it been indicated that all sheet metal flashing and trim shall be in accordance with the Architectural Sheet Metal Manual by the Sheet Metal and Air Conditioning Contractors National Association (SMACNA)?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**07631 - Gutters and Downspouts**

Are gutters and downspouts, hangers, straps and shoes completely detailed and/or described? Gutters and downspouts should be held 1" from the building wall to allow air to circulate between gutter/downspout and wall surface.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**07820 - Skylight Structures**

.01 The Owner does not recommend the use of skylights. Have clerestory structures been specified in lieu of skylights?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 If skylights are used in the building design, the Owner cannot stress enough the quality of the skylight and the care of its installation and

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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related moisture protection. During preparation of the specifications, have the performance requirements been made as stringent as possible?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**07900 - Sealants, Caulking and Seals**

.01 Has this work been specified to be done by experienced mechanics? Has the highest quality of sealants been used for each individual application? There is no substitute for life-cycle costs in a sealant product.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 In addition to caulking for water tightness, has caulking been specified for finished appearance, i.e., at cracks between the juncture of different materials or of horizontal with vertical surfaces?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 Caulking is not to be used as permanent construction. Has caulking been specified for uses other than as a supplement to properly designed and detailed joints?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**07910 - Scuppers**

Have overflow scuppers been provided in parapet walls to prevent water building up even though drains are required or specified?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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**07920 - Gravel Stops**

Where no gutter occurs but gravel stops are used over exterior entrances or decorative panels, have high gravel stops, to prevent water from spilling over with resulting stain effect from the metal, been specified?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Initial Approval

Date

Date Revised

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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DIVISION 8 - DOORS & WINDOWS

**08110 - Steel Doors and Frames**

- .01 Where hollow metal doors and frames are used, is the reinforcing of frames for hardware completely described? A light angle is desirable. Where two doors swing from the same mullion the metal should be of heavier material and reinforced.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Are all frames specified made of 14 gauge metal?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Do all doors used as means of egress (including those in corridors) that require vision panels have wire or other approved glass panels installed to meet NFPA 80 requirements?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .04 If fume hoods or other large equipment occurs in a room, are the doors adequate width to provide clearance for moving the items in or out provided? If size is questionable, use larger size opening.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .05 Are all exterior doors insulated metal doors with adequate weather stripping utilized to conserve energy? If glass is used, is the glass thermal/safety glass, and non-reflective?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .06 Do all operable items on exterior doors have an integral finish -- not applied, painted, baked on, etc.?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07 At least one main entry door shall be accessible from adjacent sidewalks by wheelchair and shall display the proper handicapped

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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signage. All other entry doors shall have proper signage to direct wheelchair handicapped persons. In addition, the ANSI standards shall apply as to raised letter signage for the blind. Automatic door opening for the handicapped is preferred. Does at least one door conform to required Accessibility Codes and ADA?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.08 Exterior doors shall be of "monumental" quality unless determined otherwise. Is each leaf 3'-0" wide x 7'-0" high for 32 inches clear opening?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**08210 - Wood Doors**

.01 Are all corridor doors and doors to closets 1-3/4" solid core to meet requirements of NFPA 80 and 101, and are they able to use standard locksets? Where cutouts for closers are required, the head rail should be not less than 6 inches. If hardwood edges are desired, they should be completely specified with the thickness given. Has it been specified that wood doors shall meet the Standards of The National Woodwork Manufacturers Association?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 Do all doors used as means of egress (to include corridors) that require vision panels have wire or other approved glass panels installed to meet NFPA 80 requirements?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 Are 7-foot high doors used as a standard rather than 6'8"?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.04 Is wood door quality should clearly specified as well as manufacturer's name noted? For example, the term "equal to Mengel" is not sufficient.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

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**Comments to "No" Responses:**

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- .05 To prevent the flexing and breaking of the wall along the door frames, has a nest of studs been provided around each door installation to accommodate the weight of the door and the shock caused by the closing of the door? Does the finished wall extend into the door frame throat opening a minimum of 1-½ inches for wrap-around frames?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .06 Are interior doors 3'-0" x 7'-0" solid or solid core? Do classroom doors have wired glass view panels set in steel framing or stops according to code?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07 Are all doorways numbered? Do not place number on door, but to the open side with raised numbering at a height of five feet. Has the room numbering schedule been reviewed by the University Project Manager Planning Office at 50% Construction Documents? Is all signage in accordance with ADA requirements?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08 Does view panel in any fire door conform to NFPA Life Safety Code specifications and requirements?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**08213 - Plastic Faced Wood Doors**

Facing and Adhesives

Does plastic laminate conform to NEMA LD-3? Do adhesives for both exterior and interior conform to ANSI/NWMA-I.S.1?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**08500 - Metal Windows**

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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General

- .01 Has consideration been given to the provision of operable windows as a means of ventilation in the event that air-conditioning equipment is not in operation? Consideration should also be given to the use of double panes (thermopane) with outer shield of solar glass, especially if windows area exceeds 3% of wall area. Glass should be installed so it can be cleaned from the inside of the building. Are operable windows provided with positive locking devices?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Has consideration been given to all metal windows having dual pane glass and thermal break-insulation filled frames?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Have all classroom windows, unless otherwise advised by the University Project Manager, been equipped with audiovisual blinds or acceptable window coverings?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .04 Have guardrails at all full height glass panels been specified in accordance with applicable codes?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .05 Have hurricane shelter considerations been used in the design of windows and materials used?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**08700 - Finish Hardware**

General

- .01 Is the hardware schedule included in the specification? (This is to

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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avoid change orders and delay in taking bids. A completely itemized schedule is preferred, i.e., not a group listing.) A cash allowance for finish hardware shall not be used unless otherwise authorized.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Locksets

.02 Has the university provided the consultant with their standard locking and keying system?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Butts

.03 Provide only five-knuckle, stainless steel. Have ball bearing butts for doors equipped with closers (heavy duty, with 4 ball bearing for exterior doors and interior doors over 3 feet wide, standard weight butts with 2 ball bearing for interior doors up to 3 feet wide) been specified? Have non-ball bearing for all doors without closers been specified? Have stainless steel butts been used on exterior doors, except as otherwise noted?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.04 Have extra-heavy adjustable pivots been specified at exterior doors that have a high frequency of use?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.05 At exterior service doors: have stainless steel ball-bearing butts (2 or 4 as required with non removable pin) been specified?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Exit Devices

.06 Has Von Duprin type 99 or comparable, in finish compatible with door

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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been specified? Have aluminum or steel removable mullion at all lockable pairs of doors, interior and exterior been provided? At exterior pairs of aluminum doors, have Kawneer Panic Guard, or comparable, entrances been specified?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .07 Do all building entrance/exit doors contain exit devices with concealed vertical rod? Surface vertical rod for exit devices are not acceptable due to handicapped interference.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Closers

- .08 At exterior doors is surface applied, similar to Russwin 2820 series or LCN 4040 series (Corbin 110 series at dormitories)?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .09 At interior doors is surface applied, similar to Russwin 2820 series or LCN 4040 series, (Corbin 100 series at dormitories) on room side of doors so as not to be visible from corridors, lobbies, and other public spaces?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Stops

- .10 Are wall mounted convex rubber bumpers, with concealed fasteners specified? (At drywall partitions, solid blocking must be provided within the stud space. Use floor stops only where absolutely necessary.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Kickplates

- .11 At locations where severe usage is anticipated, is stainless steel

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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specified?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Provisions for Noise Control

- .12 On machine room doors and other doors where excessive noise is anticipated, is weatherstripping at heads and jams, and are surface applied automatic door bottoms specified?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Hardware for Metal Entrance Doors

- .13 Is all hardware for such doors furnished under this section (unless otherwise noted)? Has it been specified that the hardware supplier furnish to the door manufacturer templates or the actual hardware?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Prohibited Materials and Installations

- .14 Have the following conditions been avoided: thresholds raised above floor levels at doors to trash and receiving rooms and at all doors intended for use by handicapped persons?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Finish (unless otherwise noted)

- .15 Are USP finishes specified for butts on exterior hollow metal doors which are not exposed to public view? Closers shall be finished to suit room decor. Is the typical finish specified as stainless steel US 32D? Are all hardware finishes typical? (Other finishes may be used only where necessary to match materials to which hardware is applied.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Standards and Approved Equals

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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.16 For each item, has one manufacturer been specified and scheduled as the standard and, whenever possible, two other manufacturers whose products are PROVEN EQUAL? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.17 Has a complete list of items proposed as the standards, together with manufacturers' names and with the names of manufacturers whose products are proposed as equals, been included in the hardware schedule? This schedule must be approved by the Owner at 50% Construction Documents. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Keys and Keying

.18 Is each lock cylinder compatible with specified hardware and with existing university hardware and keying systems? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.19 Are lock cylinder parts brass, bronze, stainless steel or nickel silver as approved by the University Project Manager? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.20 Is each lock cylinder operated by one of the following keying system:  
.20-1 New Master Key established for this project (if applicable). (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.20-2 Existing Grand Master Key. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.20-3 Existing Great Grand Master Key. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**  
**Comments to "No" Responses:**

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.21 Has it been specified that key bows shall be large bow type "S" stamped on one side "PROPERTY OF UNIVERSITY - DO NOT DUPLICATE", (if space does not permit DO NOT COPY may be substituted) and on the other side with change bitting? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.22 Has it been specified that mechanical, telephone, and janitor rooms shall be operated only by the Great Grand Master Key and by the Change Keys established for those respective areas as follows:

.22-1 Mechanical: GGM 1. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.22-2 Telephone: GGM 2. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.22-3 Janitor: GGM 3. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.23 Has it been specified that paper storage areas (toilet paper, paper towels, etc.) shall be operated only by the Great Grand Master Key and by special key (SKD1)? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.24 Has the final keying been reviewed with the university prior to issuance to the Contractor? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.25 Have the keys been provided as follows (verify for each project):

.25-1 No Grand Master Keys. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.25-2 Ten (10) Master Keys. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant. Comments to "No" Responses:**

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.25-3 Ten (10) keys for each Submaster established.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.25-4 Four (4) Change Keys per lock.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.25-5 Three hundred (300) Change key blanks ("S" bow, stamped).  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.25-6 Twelve (12) Construction Master Keys "CMK".  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

26. Has it been specified that each project shall be a Construction Master Key project? All locks shall be shipped to the job site operated only by the Construction Master Key. Permanent keys, together with the Key Bitting Record, shall be sent via registered mail direct from the factory to: University Project Manager (Insert University Address)

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**08720 - Schedules**

Hardware Schedule

.01 Locksets should be related to the Architect/Engineer's space number when preparing the hardware schedule, i.e., Door No. \_\_\_\_\_ Space \_\_\_\_ . Has the university provided room numbers with comments during the design development review (do not list by group)?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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Keying Schedule

- .02 Has the keying schedule been prepared by the university locksmith?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**08800 - Glazing**

- .01 Are the types of glass and location indicated on the drawings or in the specifications as follows:
- .01-1 A "type number" to each type of glass being used on the job.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .01-2 Location of each by the simple note, "glass type 1", "glass type 2," etc. (Avoid lengthy descriptions of the glass on the drawings.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .01-3 Each glass type precisely defined in the specifications.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .01-4 Use of obscure glass in toilet and bathroom windows.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Is all window glass replaceable from inside the building wherever feasible?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Have hurricane considerations been made in regard to the type of materials and processes used on the glass?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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Future replacement of glass

- .04 Has it been specified that windows should be glazed in the closed position and left closed for several weeks? (This applies particularly to awning or projected types.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .05 Has safety glass been specified in all hazardous locations to comply with Life Safety Code, ADA Requirements, etc?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Initial Approval

Date

Date Revised

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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DIVISION 9 - FINISHES

General Material and Finish Guidelines

- .01 Has the selection of materials been assessed for long range, life-cycle cost analysis?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Has the Architect/Engineer coordinated all color and material color selections with the University Project Manager?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02-1 Have color schedules been reviewed by the university with the check set of working drawings?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02-2 Have schedules and samples been provided for interior finishes, such as paint, vinyl, baseboards, carpet, tile, bathroom partitions, etc., as well as exterior finishes, such as paint, roof shingles, glazing, and so on?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02-3 Have colors been presented in the form of a non-returnable "color board", which demonstrates all color selections in the form of an over-all project color palette?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Have samples of all finishes and finishing material been submitted to the Owner for approval? In case of special concrete finishes or stucco work, a sample at least 4'-0" square shall be submitted.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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**09200 - Lath and Plaster**

- .01 Has galvanized steel metal lath in conjunction with acoustic plaster to eliminate rust stains been specified?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Where highest corrosion resistance is considered desirable, has it been specified that lathing accessories such as corner and casing beads be made of zinc alloy; otherwise call for galvanized steel?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Have ample control joints in stucco, particularly in overhangs, been provided? Two No. 60 expansion type casing beads butted together offer a means of control.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**09300 - Tile**

General

- .01 Has the Architect/Engineer determined preferences for finishes from conferences with the University Project Manager?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Quarry Tile

- .02 Because of its enduring quality, ease of maintenance and fire resistance, quarry tile is a desirable material for stairways, corridors, kitchens and for many other areas both interior and exterior. Has this material been considered anywhere in the project?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Is quarry tile being considered for stairs? (Quarry tile treads are preferred for main stairs and should have an integral abrasive

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**Comments to "No" Responses:**

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- of approximately 65% aluminum oxide, ceramically bonded at high temperature.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .04 Are quarry tile treads replaceable?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .05 Is quarry tile specified for exterior slab finishes? (If so, quarry tile must also have integral abrasive.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Ceramic Tile

- .06 Is the current edition of "The Handbook for Ceramic Tile Installation," published by the Tile Council of America, listed as a reference guide for selecting design details and specification wording? (List the current edition.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07 Ceramic tile is desirable for floors and walls or wainscots in toilets as well as in some laboratories and utility rooms. Has any been specified? (Toilet floors should have dark sealed grout.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Shower Room Floors

- .08 Has this area been addressed specifically in the drawings and specifications to eliminate maintenance problems?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .09 Has a 24-hour water test been required prior to placement of the finish flooring? (If leaks occur, another test should be required after repairs are made.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

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Comments to "No" Responses:**

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Shower Room Walls

- .10 Ceramic tile on a masonry wall is insufficient to prevent water from permeating a shower room wall. Has parging or painting the back of the wall and providing a through-wall flashing near the base been specified as a means of conducting the water back to the shower room floor? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

**09511 - Suspended Acoustical Ceilings**

- .01 Extreme care must be taken to choose the correct acoustic units. Do not specify exotic patterns, etc. Have only standard patterns been specified that will be available for many years in the future? (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Has it been specified that the Contractor cannot accept discontinued acoustic units, since matching replacements is impossible? (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Has it been specified that all acoustical ceiling materials shall meet flame-spread rating requirements of NFPA 101 and the Standard Building Code for interior finish according to occupancy classification? (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .04 To avoid misunderstandings, have acoustical ceilings been specified, not only by noise reduction coefficient, but also by tile thickness? (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .05 Has a thickness of 3/4" been specified for mechanical systems? (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .06 Has a mechanical suspension been specified? (Poor results have been experienced for the newly developed "wonder" adhesives.) (Specific drawing sheet #/specification page # \_\_\_\_\_.)

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**Comments to "No" Responses:**

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- .07 Is a ceiling system other than acoustical tile been specified in dormitories? (Acoustic tile is a poor material to use in dormitories because of vandalism and is not approved for use.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .08 Where exposed grid systems are specified, a reflected ceiling plan is required on the drawings. Has proper provision been specified for construction tolerances regarding plumbness, dimensions and locations, particularly where exposed masonry and concrete is used?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .09 Has it been specified that the buildings must be dried by heat or other means prior to installation to control humidity?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**09650 - Resilient Flooring**

Has it been specified that no product shall contain asbestos?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**09680 - Carpeting**

- .01 Is carpeting in compliance with university standards?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .02 Has carpet grain direction, seaming, and scribing been carefully addressed in drawings and specifications?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .03 Has it been specified that carpets may be subject to testing by an independent laboratory to determine that the minimum specifications have been met if the Architect/Engineer thinks testing is desirable? Cost of testing shall be borne by the Owner if the carpet meets the specifications; if not, the cost is to be borne by the Contractor.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

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**Comments to "No" Responses:**

**COST CONTAINMENT GUIDELINES**

N/A Y N

- .04 Has it been specified that the carpet supplier must furnish carpet care and maintenance instructions bound in a substantial looseleaf binder? (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .05 Has it been specified that carpet with carpet pad is preferred except in high use traffic areas; integral sponge rubber backed carpet is acceptable, foam rubber backing is not acceptable. Consideration will be given for direct glue down carpet where appropriate. (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .06 These specifications are for a medium quality carpet for general use; has a higher quality been specified for heavy use areas and for special services? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Carpet Edge Taper

- .07 Has a product similar to Mercer Imperial Reducer been specified to comply with ANSI requirements for wheelchair traffic? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Carpet Specifications

- .08 Have the following manufacturer and related specifications been followed as a minimum for new construction? The Architect/Engineer need not use it verbatim but may prepare his/her own specification after consultation approval from with the University Project Manager.

Is the carpet similar to:

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- .08-1 MFG. Bigelow (Campus, or approved equivalent as described in specifications and drawings)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-2 Type: (Velvet woven through back)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-3 Pitch: (216)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-4 Rows per inch: (7.0)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-5 Face Yarn: (100% Antron B.C.F., static controlled and soil resistant)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-6 Yarn Ply: (8 ply equivalent)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-7 Yarn Weight: (shall be specified)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-8 Total Weight: (shall be specified)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-9 Backing Materials: (Wrap - Synthetic; Stuffer - Synthetic; Filler - Synthetic)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-10 Dye Method: (Yarn)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-11 Flammability: (Doc-FF1.70)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

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**Comments to "No" Responses:**

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- .08-12 ASTM-E-84-81A TUNNEL TEST  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-13 Smoke Density: (NBS Smoke Density Chamber,  
NFPA-258-450 or less)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-14 Static Test: (AATCC Test Method 134-1979 Under 3500 Volts)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08-15 Direct Glue Down  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .09 Is carpet better than recommended guidelines?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .10 Has it been specified that one (1) lineal ft. of sample carpet shall be  
provided for the purpose of testing?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Instructional and General Office Buildings

Rooms and Corridors

- .11 Has it been specified that class "A" or "B" carpets and underpadding  
shall be used in all areas of instructional and general office buildings?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Stairways

- .12 It is preferred that stairways shall not be carpeted. However, if they  
are, is Class "A" carpet and underpadding used?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Installation

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**Comments to "No" Responses:**

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- .13 Are the following requirements specified?
  - .13-1 A minimum of three copies of a printed installation manual written by the carpet manufacturer's Technical Service Department to be delivered to the Owner's Representative to be turned over to the University.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .13-2 The Contractor shall inspect floor construction and surfaces to receive carpeting. This inspection must cover and identify all defects in the floor which affect this Work.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .13-3 The Contractor shall be held responsible for the accuracy of measurement and fit of this Work. The Contractor shall also be held responsible for preparing existing hard floor for carpet.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .13-4 The Work shall be done by skilled workers fully experienced in this type of Work.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .13-5 Floor areas to receive carpet shall be smooth, broom clean, and dry prior to installation of carpeting.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .13-6 Tackless carpet gripper shall be installed in accordance with manufacturer's recommended procedures. Carpet cushion shall be installed waffle side up and trimmed neatly to carpet grippers.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .13-7 Stretch cushion and butt all seams to obtain wrinkle-free underlayment. Secure cushion to floor with paste at the seams and at such other areas as necessary to insure that

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Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- underlay is flat.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .13-8 Carpet to be directly glued-down is to be done in accordance with the manufacturer's recommended methods and adhesives. Where a carpet manufacturer does not have a recommended adhesive, the adhesive manufacturer is to provide written instructions to the Architect/Engineer.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .13-9 Carpet shall be installed, wall to wall, using continuous lengths and widths as broad as possible, minimizing the placement of seams in traffic lanes. Cut edges shall be trued and appropriately treated to form invisible and non-raveling joints where exposed.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .13-10 Carpet shall be installed in accordance with manufacturer's recommendations for seaming technique and for proper amount of stretch in width and length.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .13-11 Metal binder shall be installed at all areas where floor covering material changes, or at carpet edges that do not abut a vertical surface.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .13-12 Installed carpet shall be free of spots, dirt or soil, and shall be without tears, frayed or pulled tufts.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .13-13 The Contractor shall apply appropriate covering over carpeted areas until acceptance. Upon acceptance, the Contractor shall

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**Comments to "No" Responses:**

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remove all debris and the protective covering.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Replacement, Remnants and Maintenance

.14 Replacement carpet, remnants and usable scrap and overage in carpeting shall be packaged in appropriate wrapping, labeled and left on premises at job site for the Owner.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.15 Requested number of copies of a printed maintenance manual written by the carpet manufacturer's Technical Service Department shall be delivered to the Owner.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**09900 - Painting**

General

- .01 Have the following recommendations been considered in the specifications to assist in obtaining the quality desired:
  - .01-1 Has it been specified to require undercoats to have slightly different tints, and to be inspected and approved by the Architect/Engineer prior to application of the next coat?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .01-2 Has it been specified that the total thickness of paint by "dry mil" or "wet mil" thickness (according to which is recommended by the paint manufacturer), and verify the thickness on the job by use of special low-cost gages.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .01-3 Has the university issued information to assist the Architect/

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**Comments to "No" Responses:**

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Engineer in specifying the quality of paint required? This information shall contain acceptable vendor products as well as paint specifications for specific types of paint and their application, and may be included in the Project Manual. Paints with the highest proportion of titanium dioxide should be used for dirt shedding properties.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.01-4 Have substrate preparation requirements been clearly described?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.01-5 Have door frames in masonry walls been specified to be back-painted prior to installation?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Ferrous Metal

.01-6 Has paint on steel and iron items been specified on the basis of mil thickness rather than number of coats? For items exposed to the weather a total of six mils is considered necessary; for Work exposed inside a building, four or five mils is desirable. (Dry film measurement). This includes structural steel and miscellaneous iron and steel items.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

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Comments to "No" Responses:**

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Exterior Waterproofing

- .01-7 Has this section been correlated with Section 04500 -  
Masonry Cleaning/Exterior Waterproofing?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .01-8 Has the use of a clear silicone waterproofing or approved  
alternative been specified on the exterior of all brick buildings  
Including the stone? A 3% silicone is considered adequate;  
for limestone a 5% silicone is desirable. Products which have  
been used and found acceptable are: Florida Laboratories  
Chemclear 30 and Sonneborn-Hydrocide S-X.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Suggested Specification

- .01-9 Has a clear silicone solution containing a minimum of 3-5%  
silicone resin solids in a hydrocarbon solvent conforming  
to formulation and performance standard of Federal  
Specifications SS-W-OO11O (G.S.A.) been specified?  
Container label shall certify that it meets above requirements.  
Where an interior paint is used on masonry or concrete  
surfaces, no silicone waterproofing is desired.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Millwork

- .01-10 Has a paint finish been specified to be used on closets made  
up of standard solid core doors if exposed edges show? A  
stained and varnish finish doesn't have a good appearance  
because of putty used to fill nail holes and imperfections.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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Initial Approval

Date

Date Revised

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Comments to "No" Responses:**

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DIVISION 10 - SPECIALTIES

**10100 - Chalkboards and Tackboards**

.01 Has the Architect/Engineer scheduled the sizes and locations of chalkboards and tackboards with the university project manager during planning meetings?  
 (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Chalkboards

.02 Glass chalkboards are not acceptable because of breakage. Slate chalkboards are preferred but steel is acceptable. Dark green or dark brown chalkboards are preferred. Light colored chalkboards are unacceptable, even if they are considered as projection screens. Have the appropriate chalkboards been specified?  
 (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 Where chalkboards are combined with projections screens, have complete details been provided?  
 (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.04 On fixed chalkboards, provide at least four map hooks per eight feet of length. Have the tops of the chalkboards been specified at seven feet above the floor for normal adult use?  
 (Specific drawing sheet #/specification page # \_\_\_\_\_.)

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**Comments to "No" Responses:**

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**10150 - Compartments**

- .01 Has it been specified that toilet partitions should be 1" solid plastic, although consideration will be given to other types where appropriate? Partitions should be wall and floor mounted (avoid ceiling mounted systems wherever possible). Full length attachment brackets should be used. Manufacturer: Santana or equal.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .02 Do toilet compartments for the handicapped comply with all requirements of ANSI A117.1, Florida Accessibility, and ADA requirements?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**10200 - Louvers and Vents**

- .01 Are all wall louvers extruded aluminum, stormproof, and do they include bird screens? Has it been specified that all louver perimeters will be sealed to provide full perimeter integrity?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .02 Have hurricane considerations been made?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**10260 - Wall and Corner Guards**

Has it been specified that high impact vinyl and stainless steel may be used with approval of the University Project Manager? (Light gauge aluminum is unsatisfactory; 3/16" or a heavier gauge pvc or aluminum is necessary to prevent warping.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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**10400 - Identifying Devices**

- .01 Has the university assigned room numbers to all spaces during the review of the Design Development Phase?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Are these numbers on the construction bid documents and used under doors, hardware, electrical panel schedules, etc.?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Has this section been used to include building directories, door signs, address signs, and similar directional material, and is it generally used when more than one of those items will be required? A narrow scope section dealing with the particular item is common when only one item (such as "building directory") is required.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .04 Are identification systems, especially for piping, in Section 01080 or in an appropriate section of Division 15?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .05 Are project signs specified along with other temporary facilities in Division 1?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .06 Is pavement marking, including graphics, in Division 2?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07 Is the text on all permanent room signs easily changeable?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

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Comments to "No" Responses:**

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Signs

- .08 Is all signage in accordance with ADA requirements?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .09 In buildings of four or more stories in height, has a sign been provided at each floor level landing in accordance with NFPA 101 (Life Safety Code), Chapter 5? The sign shall indicate the floor level, the terminus of the top and bottom of the stair enclosure, and the identification of the stair. The sign shall also state the floor level of the direction to exit discharge. The sign shall be located approximately 5 ft. (152 cm) above the floor landing in a position that is readily visible when the door is in the open or closed position.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .10 Has the Architect/Engineer included directional signs for direction of the public through corridors to destination together with identification of specific functions of rooms such as, MEN, WOMEN, CUSTODIAL CLOSET, MECHANICAL ROOM, DEPARTMENTAL NAMES, HIGH VOLTAGE, etc.? Observe requirements of the Handicapped Codes and ADA. Particular attention should be given placement of exit signs to ensure compliance with applicable codes and occupancy limit at designation on signs at specific areas . Design, placement, and other details will be in accordance with the Fire Marshal's requirements.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .11 Are all room signs easily changeable?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

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Comments to "No" Responses:**

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**10420 - Letters and Plaques**

The Owner requires a plaque on each major building, which is discussed in the Special Conditions. Have additional details been provided by the University's Project Manager?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**10522 - Fire Extinguishers, Cabinets, and Accessories**

.01 Have UL approved fire extinguishers been provided as per NFPA 10 for all buildings and located by the University Director of Environmental Health and Safety in cooperation with the University Project Manager unless otherwise specified? (Recessed type in Exit Corridors)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 Have 10# ABC extinguishers been provided in all corridors?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 Have 10# CO2 extinguishers been provided in all mechanical spaces?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.04 Have 10# Halon 1211 extinguishers or a suitable substitute been provided in all computer areas and laboratories? The use of Halon extinguishers shall be verified by the State Fire Marshal and applicable Codes and Regulations.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**10800 - Toilet and Bath Accessories**

.01 Have the following accessories been verified with the University Project Manager? (Careful placement of accessories are required to protect sight lines.) Where applicable, are these items required to be lockable on a Physical Plant standard key?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

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Comments to "No" Responses:**

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Feminine Napkin Disposal

- .02 Partition mounted Bobrick B-354 (or American #47) to serve two adjacent toilet compartments; recessed unit B-353 (or American #39) elsewhere. Provide at each water closet in Women's toilet room. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Feminine Napkin-Tampon Vendor

- .03 Combination dispenser, 10" x 30¼" x 5½", white enamel, wall mounted, with 25 cent locked coin box. Provide at each Women's toilet room. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Mirror

- .04 Stainless steel framed without shelf, Bobrick Series B-290 (or American series 500) minimum 16" x 24". Mirror for handicapped usage shall have the bottom mounted at 40" above the floor or shall be a fixed tilt unit, Bobrick B-293 (or American #573). Provide above each lavatory. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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Soap Dispenser

- .05 Basin-mounted push-down valve liquid unit with 2½" long spout and polyethylene container, Bobrick B-829 (or American #29 Likwidurn), mounted in hot water hole where no hot water is required at the lavatory. At counter installation where hot water is provided to the lavatory use Bobrick B-8295 (or American #29L Likwidurn) mounted in the countertop adjacent to the lavatory.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Toilet Tissue Dispenser

- .06 Surface mounted unit for two rolls of standard toilet tissue, brushed chrome. Provide at each water closet.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Towel Dispenser

- .07 Wall mounted brushed chrome, crank action. For handicapped usage, install with center of crank 48" above floor. Provide at each toilet room.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Waste Receptacle

- .08 Stainless steel semi-recessed, Bobrick B-3644 (or American #840). Provide at each toilet room.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Coat Hooks

- .09 Provide one coat hook on the back of each toilet stall door.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Shelf

**Note: All "no" responses require a written response from the A/E Consultant.**  
**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- .10 Bobrick B-296 (or American #638) x 24", stainless steel. Provide in each student-used toilet compartment (for books, purse, etc.), mounted on the side wall, rear corner.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Grab Bars

Note: All items shall be securely installed. Use solid wood blocking at drywall locations.

Note: All accessories to be in accordance with the requirements of the ADA.

\_\_\_\_\_  
Initial Approval

Date

Date Revised

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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**DIVISION 11 - EQUIPMENT**

**11160 - Loading Dock Equipment**

- .01 This section again is one of the broad scope type, used for specifying a complete system of loading dock equipment. CSI's Masterformat lists several narrow scope section numbers and titles for use when only individual items of equipment are required.
  - .01-1 Dock levelers.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .01-2 Adjustable dock ramps.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .01-3 Portable ramps, bridges, and platforms.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .01-4 Seals and shelters.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  - .01-5 Dock bumpers.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Are improved loading dock seals specified rather than wood dock bumpers?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**11600 - Fume Hood and Exhaust Systems Installations**

OSHA regulates and sets standards for ventilation and exhaust systems under Sub-part G - Occupational Health and Environmental Control. 1910.93 Air Contaminants. Employees' exposure to materials listed in these standards shall be limited as specified. The

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Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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university is responsible for establishing and enforcing administrative and engineering controls as needed to achieve OSHA compliance.

- .01 A significant amount of technical information must be prepared and submitted to the Owner during Conceptual Schematics, Advanced Schematics, and Design Development. Has the Professionals Services Guide Supplement 1 (latest version) been provided to the consultant?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .02 The design and installation of exhaust systems (including hoods, ducts, air mover, and discharge outlet) shall comply with the American National Standard Institute (ANSI) Z9.2-1971 Fundamentals Governing the Design and Operation of Local Exhaust Systems, the manual, Industrial Ventilation, published by the American Conference of Governmental Industrial Hygienists 1970; NFPA-91, Blower and Exhaust Systems; NFPA-45, Laboratory Systems; and the latest American Society of Heating, Refrigerating and Air Conditioning Engineers' (ASHRAE) Handbooks. Has the airflow and pressure loss data provided by the manufacturer of any air cleaning device been included in the design calculations?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .03 Has the "Fire Protection Handbook" current edition as used by the State Fire Marshal's Office as regulating the design and installation of blower and exhaust systems, been referenced?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**.04 Perchloric Acid Fume Hood Criteria**

Are hoods used for perchloric acid specified to have identifying signage on the face of the hood by either the manufacturer's label and/or an appropriate warning sign indicating: FOR PERCHLORIC ACID ONLY? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

**11860 - Waste Handling Equipment**

Trash Disposal

.01 Has it been specified that the Contractor is to obtain the Architect/ Engineer's and the University Project Manager's agreement on trash disposal? (Most universities use steel trash collection boxes (dumpsters) for trash disposal.) (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 Have buildings three or more stories high been designed with a trash receiving room large enough to place a 10 cu. yd. (8' wide X 7' deep X 8' high) steel trash collection box directly below a vertical chute? (A roll-up door is suggested, not less than 10' X 10'. ) (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 Have recycling bins and areas been provided? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

\_\_\_\_\_  
Initial Approval

Date

Date Revised

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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DIVISION 12 - FURNISHINGS

**12100 - General**

- .01 Fixed equipment covered in Division 11 should be included in the general construction contract insofar as is possible. Fixed items are identified as those items which are secured in place by fastening devices or by rigid piping including conduit.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Offices and classroom furniture and loose equipment such as desks, chairs, filing cabinets, etc., are generally provided from Owner's furniture and equipment funds. A sum is stated in the project budget from which the university will normally purchase additional items. The Architect/Engineer should not consider the budgeted sum a part of the funds for which the Architect/Engineer has responsibility.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Has consideration been given to PRIDE of Florida to provide layouts and estimates for all moveable furniture and furnishings?  
Call (813) 535-4900 for more information.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**12300 - Laboratory Casework**

General

- .01 Has the Architect/Engineer received review/sign-off from the university personnel?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

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Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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Approved Manufacturers

- .02 Has the Architect/Engineer obtained the Owner's agreement by signature as to acceptable casework construction materials and manufacturers? (Quality should be of the highest.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Countertops

- .03 Have working surfaces been selected for the intended use? Laminated plastic tops are satisfactory for many labs but epoxy countertops must be specified where top is exposed to heavy usage, strong chemicals, heat, etc.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

\_\_\_\_\_  
Initial Approval

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date Revised

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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DIVISION 13 - SPECIAL CONSTRUCTION

13000 - General

.01 In the event that special environmental rooms, diagnostic labs, coolers, sound proof rooms and other specialty construction is involved, has the Department of Facilities Planning arranged conferences with the appropriate staff members so the Architect/Engineer can obtain full information directly from the technician responsible?  
 (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Miscellaneous

.02 Are clocks on a master clock system?  
 (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 Are telephone conduits for pay phones kept totally separate from all other telephone conduits?  
 (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.04 Elevator Emergency Telephone Compartment: Are the doors equipped with an opening device in full compliance with ANSI A117.1 and ADA Handicapped requirements? Is there an intercommunication panel tied in to the University Police Department, to be used in case of emergency?  
 (Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.  
 Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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Telephones

.05 Is it specified that phones and wiring to wall plugs will be provided by the university (unless otherwise agreed in writing)?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

\_\_\_\_\_  
Initial Approval

Date

Date Revised

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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DIVISION 14 - CONVEYING SYSTEMS

**14200 - Elevators**

Code

- .01 The Architect/Engineer must thoroughly set forth the code requirements, including provisions for handicapped. Do the specifications establish the requirements? (The Architect/Engineer must not depend on the elevator Subcontractor or the Contractor to meet code conditions.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Do all elevators, dumbwaiters, escalators, and moving walks meet the requirements of ANSI A117.1 and the ADA and the State of Florida?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Do all buildings three or more stories in height have "fire control elevators" and emergency power?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Diagrams, etc.

- .04 Is it specified that wiring diagrams and inspection certificate are to be furnished and placed under glass on wall-mounted frame, and that the cost of all elevator inspections and certificates are to be paid for by the Contractor? Certificate shall be dated to begin on date of Substantial Completion or acceptance, whichever is later. Copy of all certificates shall be provided to the Owner.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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Finishes

- .05 Are stainless steel cab interiors, doors and door frames specified? Formica or other plastic laminate will be considered for cab interiors on a limited budget.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Special Features Generally Desirable

- .06 Is it specified that all exposed screws are to be tamper-proof?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07 Is it specified that top and side emergency exits shall have contacts which will stop the car and ring a bell? Side emergency exits shall be key locked from inside the car and openable from outside the car.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08 Is it specified that the emergency stop switch shall have an alarm bell connected to it which shall include a bell mounted under the platform and a bell located at the main floor lobby or some other designated place?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .09 Is it specified that the car operating panel shall include no buttons other than the emergency stop, alarm, open door, close door and floor buttons? Any other switches required for operation of the elevator shall be either key operated or contained in a separate cabinet having a locked door, including light and fan switches.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- .10 Is it specified that all buttons shall be stainless steel. Markings and placement must be in accordance with provisions for handicapped. (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .11 Is it specified that, in addition to the load weighing device, provision shall be made to ring a bell and a light if the car is overloaded beyond 120% of normal capacity? (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .12 Is it specified that safety edges furnished in connection with the car doors shall be either metal or extruded vinyl plastic? (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .13 Is it specified that floor numerals should be neatly placed and in accordance with provisions for handicapped? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Warranty & Service

- .14 Is it specified that the period of free maintenance (24 hour call-back service) by the installer must be one year or equal to the warranty period? Warranty period to the university should start at the time of Substantial Completion or time of acceptance of the elevator installation -- whichever is the later date. (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .15 Is it specified that elevator pits shall be waterproofed or designed to provide a dry pit area? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- .16 Is it specified that where a sump pump is provided in the pit, the pump shall be set into the sump and a metal cover shall be provided to cover the entire sump?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .17 Is it specified that conduit or plastic pipe shall not be installed in pit, hoistway or machine room? Only metal sump pump discharge lines are allowed in pits and hoistways.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .18 Is it indicated that a pit 4'-0" deep or more shall be provided with a metal ladder, permanently installed, extending at least 30" above the access floor and have a rung at the top for a hand grip?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .19 Is it indicated that moisture proof type light shall be provided in each pit and the light switch located as to be accessible from pit entrance and adjacent to pit stop switch; 24" to 30" above first floor sill for switch height?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .20 Is it indicated that beams, floor slabs or other building construction shall not project more than 2" inside the general line of the hoistway unless the top side of projection is beveled at an angle of not less than 75 degrees?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- .21 Is it indicated that hoistways of elevators serving more than three floors shall be vented to outside air to prevent accumulation of smoke or gases? The area of the vents shall be not less than three and one-half (3-½%) percent of the area of the hoistway nor less than three (3) square feet for each elevator, whichever is greater. Vents and frames shall be of noncombustible material. All vent openings shall reject a ball two (2) inches in diameter and may be covered with a screen. (Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .22 Is it indicated that all door frames, headers, etc., shall be grouted solid to maintain fire ratings? (Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .23 Is it indicated that machine room doors shall be not less than one and one-half (1-½) hours fire rating B label, not less than 3' 4" in width and not less than 6' in height, self-closing and locking? Is it indicated that doors shall be provided with a spring type lock arranged for opening from the inside without a key? (However, a key is required to open the door from the outside.) (Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .24 Is it indicated that all voids, holes, slots, etc., in the hoistway shall be grouted or pointed up to obtain fire rating? Is it indicated that all nails, snap-ties, form straps and wood shall be removed from hoistway, machine room walls and ceiling? (Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .25 Is it indicated that machine room floors shall be smooth and level? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- .26 Is it indicated that machine rooms shall have a head room of not less than 7' 0"? (Head room is determined by measuring from the floor to overhead items such as wire duct, beams, lights, etc.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .27 Has it been indicated that duplex receptacles of the grounded type shall be provided in machine rooms and pits?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .28 Has it been indicated that adequate lighting shall be installed in pits and machine rooms to provide not less than ten (10) footcandles at the floor level? Machine rooms shall have not less than two lights provided with the light switch located on the lock-jamb side of the access door. It is suggested that fluorescent lights be installed in machine rooms.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .29 Has it been indicated that only elevator equipment shall be installed in machine rooms? No piping, drain or vent pipes, smoke stacks, laundry vents, television or other items not related to operation of the elevator are allowed in machine rooms.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .30 Has it been indicated that main line switches for elevators shall be of the fused type and shall provide means of locking the switch in the open position?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- .31 Has it been indicated that fuses in the main line disconnect switch shall be "Class K5" or "Class R"? Fuses shall be properly sized for the load and rating of the disconnect switch.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .32 Has it been indicated that main line feeder wires must be phase identified in the main line switch and also at terminals of controllers?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .33 Has it been indicated that stairways for access to elevator machine rooms shall be of metal and shall conform to the following:
  - .33-1 Maximum angle of sixty (60) degrees from the horizontal.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
  - .33-2 Stair treads shall not be less than 28" in length.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
  - .33-3 Stair treads shall be level and not less than 6" in width with slip-resistive surface.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
  - .33-4 The rise shall not be less than 8" or more than 10".  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
  - .33-5 The headroom from the top any tread shall be not less than 7' vertical clearance, measured in line with the face of the riser.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
  - .33-6 There shall be no more than 14' in an unbroken vertical rise.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
  - .33-7 Stairway floor opening shall be guarded by a metal railing

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- 42" in height with intermediate rail and toe board.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .33-8 Open side of stairs shall be protected with a metal handrail not more than 34" in height from the upper surface of top rail to surface of tread in line with face of riser at forward edge of tread, and with intermediate rail.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .34 Has it been indicated that for access across roof: steps or ramps with metal railing shall be built over pipes or other obstructions?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .35 Has it been indicated that all construction sites shall have removable barricades with toe boards to protect hoistway or other open areas?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .36 Has it been indicated that buildings having emergency power generators shall have generators operable at the time of initial inspection by State Elevator Inspector? (Elevator performance on emergency power shall be checked during inspections and tests as required.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .37 Has it been indicated that all carpets used for elevator cab floor shall have flame-spread rating of not more than Class B, 25 to 75, with negligible fuel contribution factor? ASTM-E-84 (Tunnel Test).  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .38 Has it been indicated that elevator machinery rooms shall be no larger than necessary to house, maintain and repair the machinery?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

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Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- .39 Has it been indicated that elevator machinery rooms are not to be used for storage of any kind?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .40 Has it been indicated that gratings shall be provided in shafts to permit safe lubrication of sheaves and equipment?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .41 Has it been indicated that all elevator equipment shall be specified to include solid state power control systems, not motor control systems?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

\_\_\_\_\_  
Initial Approval

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date Revised

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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DIVISION 15 - MECHANICAL EQUIPMENT

**15001 - Design Information**

- .01 Does the Conceptual Schematic submittal contain technical narrative discussing options, advantages, disadvantages, relative costs and recommendations?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Does the Advanced Schematic submittal technical narrative provide greater detail of the concept selected?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Have all major technical decisions been made before end of Design Development; are these decisions recorded in the Design Development submittal, and do they form the basis for the Design Development cost estimate?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .04 Does Division 15 work comply with the Professional Services Guide Supplement 1 (latest version)? Attention is drawn to the specific requirements for 100% outside air systems, fume hood exhaust systems, clean room systems and other unusual or complex mechanical systems enumerated in this Supplement.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

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Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- .05 Have ASHRAE Standard 62-1989 outside air quantities (typically 20 cfm per person for offices; 15 cfm per person in housing units and other occupancies) been specified? Has positive means for measuring and controlling outside air quantities into VAV air handling units, such as outside air fans or outside air VAV box, been provided? (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .06 Has it been specified that mechanical ventilation shall be provided per the Standard Mechanical Code; latest BOR approved edition? (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07 Has it been specified that combustion air shall be provided for all fuel-burning equipment in strict accordance with the Standard Mechanical Code and Standard Plumbing Code? (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08 Has it been specified to utilize the campus chilled water system for cooling when available? (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .09 Has it been specified to utilize the campus steam system or hot water system for comfort heating, hot water heating (through building heat exchangers) and AHU reheat when available? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Energy Savings Design and Required Life-Cycle Cost Analysis

- .10 The Owner is most interested in the Architect/Engineer providing creative thinking to provide designs which will decrease annual operating costs. Many of these opportunities will be in MEP systems. The Owner requires discussion and consideration of these opportunities in a life-cycle cost analysis study which compares energy-saving options during Advanced Schematics. Does the life

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**Comments to "No" Responses:**

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cycle cost analysis computer program and procedure comply with BOR requirements? Items found to be cost-effective shall be incorporated into the design in compliance with Section 255.251, F.S. (Note: FLEET computer program and FLEET input forms are no longer used in the State University System.) (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Interconnection with the Central Chilled Water Utility

.11 The central chilled water system is designed as a variable flow system to achieve maximum energy economics. Is the design of the building established to operate over a varying pressure range with variable flow and relatively constant temperature rise? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.12 Does the building design provide 15° F temperature rise across all air handling unit coils, and properly interface with the chilled water system to assure the needed temperature rise is achieved while satisfying the building design criteria? The interface will also insure that the building pump(s) and the distribution pump(s) will be completely decoupled. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.13 The CUP is designed to provide not higher than 45° F chilled water leaving the plant. Has the Architect/Engineer verified the project's design temperature, as some universities require lower temperatures (e.g., 42° F)? Have the air handling units been designed for not less than 46° F entering chilled water temperature, to allow for distribution system temperature rise? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.14 Has the mechanical system been designed to provide not less than 40-45% ASHRAE Standard 52-76 Dust Spot filtration in all major air handling units with 30% "throwaway" prefilters? (Discuss with the

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- Department of Physical Plant.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .15 Has the application of fan coil units been approved by the Owner, including the Office of Capital Programs? Fan coil units where approved shall not be installed above the ceilings unless University Project Manager also approves in writing.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .16 Do the construction contract specifications require training/ orientation of University Maintenance and Engineering personnel on all installed equipment and systems?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .17 Has BOR approval been given for factory-prefabricated insulated chilled water piping for underground use? (It may be used with university and BOR approval.) It is the responsibility of the Architect/Engineer to investigate to assure approved vendors are limited to those with proven acceptable service at other locations for not less than two years, and to document this investigation in a formal project submittal.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .18 Has it been indicated that all utilities are to be metered for each building, including electricity, water, steam, and chilled water?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .19 Has it been specified that all utility metering must be coordinated with the University Project Manager both during design and with the Contractor prior to construction? All metering devices should have a pulse and 4-20 ma output for remote connection to a computer.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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- .20 Has appropriate separation been provided (using both distance and material) of mechanical equipment and other noisy areas from academic and office areas?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**15010 - Heating, Ventilating, and Air Conditioning Equipment General Requirements**

General Considerations:

- .01 Has Utility Work been coordinated through the University Project Manager? Utility Work and connections to university utility systems must be properly planned to prevent disruption of classes and/or research efforts.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Has care been taken in placement of all outdoor air inlets to assure that odors and other pollutants (automobile exhaust; toilet/fume hood exhaust, etc.) do not reenter the building?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Site Utilities

- .03 Has the Architect/Engineer discussed with the university the various utility's demands created by the Project and documented that sufficient capacity exists to serve the demands?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .04 Has the Architect/Engineer investigated and determined the actual location of all underground utilities or obstructions at the building site before beginning design? This involves surveyor work, supplemented by further site investigation as needed.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- .05 Has it been specified that electrical, water, sewer and chilled water utilities during construction shall be paid for by the Contractor on a monthly basis as arranged through the university?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .06 Has it been specified that heat, air conditioning, humidity control and any other environmental factors shall be the responsibility of the Contractor throughout the construction period?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Training

- .07 Has the Architect/Engineer discussed training needs with the Department of Physical Plant and specified the required training in the Construction Documents?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08 Has it been specified that training sessions should be videotaped and tapes given to the university?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .09 Has the following minimum amount of training been specified for new mechanical systems:
  - .09-1 HVAC Control Systems - 32 hours divided into four sessions.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- .09-2 VAV Boxes - 16 hours divided into four sessions.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .09-3 Variable Speed Drives - 16 hours divided into four sessions.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .09-4 Boiler and Associated Controls - 24 hours divided into four sessions.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .09-5 HVAC Air Handling Units, Fans, Other Mechanical - 16 hours divided into two sessions.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .09-6 Fire Sprinkler Systems - 16 hours divided into two sessions.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Mechanical Rooms

- .10 Do the mechanical rooms have adequate openings to facilitate the removal and replacement of major pieces of equipment? (Provide double 3'-0" doors which swing outward or larger, if necessary.  
  
Consider roll-up doors for rooms opening to outside with large equipment.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .11 Is there adequate space in mechanical rooms to provide ample access space around all equipment for routine maintenance items and procedures, such as filter replacement, lubrication, and so on?

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .12 Are lighting and utility receptacles provided for equipment servicing?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .13 Access to electrical rooms, mechanical rooms, telephone closets, elevator machine rooms, fan rooms, pump rooms, etc. shall not be through other rooms. Has access to these spaces been achieved from a main corridor and/or exterior space? (Doors to these spaces shall comply with NFPA Fire Safety Codes. Vertical ladders shall not be used for this access ("ship's ladders", which are actually steep stairs, may be used with Department of Physical Plant approval).)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .14 Are mechanical rooms and similar spaces separated from storage areas?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .15 Are all power disconnects to equipment located as to be easily accessed?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .16 Are telephone system "backboards" installed in separate telephone equipment rooms?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08 Has it been indicated to install drip traps before all thermostatic temperature regulating valves and pressure reducing valves?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**15015 - Toxic/Hazardous Materials--General Guidelines**

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- .01 Has the Architect/Engineer, Contractor and other related personnel contacted the university's Department of Environmental Health and Safety concerning instructions on all toxic/hazardous materials involved in a project?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .02 Where toxic/hazardous materials are involved, has all construction, maintenance, and/or investigative Work been coordinated with the Physical Plant Department and the Department of Environmental Health and Safety?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .03 Has asbestos been removed from all products in this building?  
(Asbestos, or any building material containing asbestos shall not be specified or used in any building project. This requirement includes roofing materials, paint and related projects among others.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .04 Has it been specified that all electrical transformers, switches, or other electrical equipment which contains polychlorinated biphenyls (PCB) or other equipment which has come in contact with PCB is to be returned to the university? Absolutely under no circumstances is the Contractor, Subcontractor or other related personnel allowed to dispose of such equipment off the site. The Architect/Engineer shall contact the university's Physical Plant Department and the Department of Environmental Health and Safety regarding handling procedures of this equipment.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .05 Has it been specified that any hazardous or toxic material, such as asbestos or PCB, which is discovered during the course of a project should be reported immediately to the university's Project Manager?

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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All Work involving suspected asbestos, hazardous, or toxic materials should halt immediately and not resume until notice to resume Work has been given by the Project Manager.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.06 Has the Architect/Engineer contacted the university's Department of Environmental Health and Safety prior to the commencement of a renovation project in order to determine the extent of asbestos or other hazardous contamination in a particular building?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.07 Has only lead-free paint been specified?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**15060 - Pipes, Valves, Pumps and Pipe Fittings**

.01 Has it been specified that all HVAC air handling unit condensate lines shall be of insulated type "L" copper?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 Has it been specified that all hot and chilled water taps shall be made without system interruption and each juncture shall be provided with a shut-off valve and valve box for easy access? Maximum acceptable "weldolet" size is six inches; use welding saddles or encirclement for greater than six inches diameter branch piping.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 Has it been specified that all HVAC water coils shall have air eliminators installed (both hot and cold if separate)? All coils shall have both inlet and outlet pressure and temperature gauges.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.04 Has it been specified to provide flow measuring element at all major air

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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handling unit chilled water supply lines? Discuss with Department of Physical Plant for their standard. Venturi-type are preferred.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .05 Has it been specified that all piping will be identified in accordance with ASA A13.1, the American Standard Scheme for the identification of Piping Systems?. Identification shall include color coding, labeling of piping contents, and flow arrows. Purchased preprinted labels are preferred.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .06 Has it been specified that chilled water pumps will usually be required to circulate chilled water throughout the building? A fine mesh monel or stainless steel strainer shall be installed in the chilled water supply line of each building to prevent contamination of the building chilled water system. All chilled water strainers should have a pressure gauge installed across the strainer so as to quickly determine when strainers are dirty. The pressure gauge should also have a 4-20 ma output for remote computer monitoring. Design of the interface between the building and central utilities systems shall be coordinated with the University Project Manager.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Steam and Hot Water Piping

- .07 Has it been specified that all flange studs, bolts and nuts shall be hex configuration and course threaded, and be of ASTM A-193, Grade B7 alloy steel such as USS Supertanium alloy, or equivalent? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .08 Has it been specified that all high pressure and low pressure steam piping shall be Grade A ASTM A-106, schedule 40 seamless piping, and condensate return lines shall be schedule 80 seamless pipe? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

- 09 Has it been specified that valves installed above grade as part of the high pressure steam system, and valves installed below grade shall

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**Comments to "No" Responses:**

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- be 300 lb. valves? Valves that are 2-½" and larger shall be flanged, and all valves less than 2-½" shall be screwed unless otherwise agreed with the University Project Manager.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .10 Has it been specified that all piping that is 2-½" and larger shall be welded and flanged, not screwed? All underground fittings shall be welded by a certified welder.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .11 Has it been specified that steam piping with operating pressures greater than 50 PSIG shall use butt welded fittings with backing rings? Fittings that are 1-½" and smaller shall be forged steel screwed or socket weld fittings. Unions that are 2" in size shall be 300 lb. screwed; cast iron or forged steel. All high pressure steam nipples shall be schedule 80.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .12 Has it been specified that steam piping with operating pressures 50 PSIG or less that are 2" and larger shall be schedule 40 butt welded fittings with backing rings, and flanges shall be slip-on or weld neck flanges? Steam fittings that are 1-½" and smaller shall be 150 lb. cast iron using 300 lb. cast iron unions and schedule 40 nipples.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .13 Has it been specified that condensate lines that are 2-½" and larger shall be schedule 80 butt weld fittings with backing rings and steel weld neck or slip-on flanges that are the same pressure class as the valves? Condensate lines that are less than 2-½" shall be forged steel or socket weld using 300 lb. screwed unions and schedule 80 nipples.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .14 Has it been specified that condensate return, when used, shall use above floor pumps?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .15 Has it been specified that all condensate receiver unit vents shall be

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- run full size from unit to atmosphere through the building roof?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .16 Has it been specified that all steam condensate lines underground shall have properly sized expansion loops and shall be properly anchored?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**15250 - Mechanical Insulation**

- .01 Is underground chilled water piping insulation foamglass with Owner approved outside wrap?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Is chilled water piping above grade insulation foamglass covered with a .016 inch thick aluminum weatherproof jacket that has a factory applied integral vapor barrier?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Has it been specified that the foamglass should be glued to the piping and fasten with aluminum bands located not more than 12" apart?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .04 Has it been specified that if condensation occurs on any cold surface at any time during the warranty period, or before substantial completion after systems are activated, the Contractor shall be required to rework the insulation until satisfactory, at no additional expense to the Owner?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .05 Has it been specified that if condensation occurs on the outside of insulated ducts, HVAC equipment, VAV boxes, flex ducts, etc. during the construction period, the Project Team shall take immediate action

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**Comments to "No" Responses:**

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- to determine the reasons, determine whether due to Architect/Engineer error or Contractor error, and initiate corrective action? Substantial Completion shall not be approved until corrections are agreed to in writing, including responsibility for cost. (It is preferred to stop Work or delay completion, if necessary, rather than to delay resolution and correction.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .06 Has it been specified that all building hot and cold water piping shall be insulated? All cold AHU condensate piping shall be insulated.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07 Has the pipe insulation thickness been discussed and approved by the Owner during the early design process?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08 Has it been specified that insulation for high and low pressure steam and condensate lines above grade shall consist of calcium silicate? Below grade steam lines shall have a calcium silicate inner layer and a foamglass outer layer wrapped with glass fabric cloth and with proper mastics applied.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .09 Do condensate lines below grade have foamglass insulation wrapped with glass fabric cloth and with proper mastics applied?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .10 Are the attachments for the insulation below grade; stainless steel wiring, bands, or 16 gauge copper wire, on 9" centers?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .11 Has it been specified that below grade steam fittings are to be

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- insulated with mitered segments of calcium silicate wired in place and that below grade steam flanges, unions, and valves are to be insulated with oversized pipe insulation?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .12 Has it been specified that below grade, all domestic hot and cold water piping shall be standard schedule 40 galvanized iron pipe or type "K" copper?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .13 Has it been specified that the hot water lines should be coated, insulated with foamglass, and wrapped with glass fabric cloth?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**15400 - Plumbing Systems & Toilet Rooms**

- .01 Has it been specified that water meters, meter boxes and taps shall be furnished by the Contractor? On sizes above 2", provide by-pass line and gate valve of the same size as the main line, if possible. These meters may be obtained from the local municipal authority with university approval.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Has it been specified to put access panels for all cutoff valves installed for each floor level behind all showers and other fixtures that must be maintained, or provide access panels into pipe spaces from which the fixtures can be maintained?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Has it been specified that all wye strainers shall be equipped with valves for blowdown cleaning?

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .04 Has it been specified that drains for water systems shall consist of gate valves and hose nipples, rather than hose bibs?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .05 Has it been specified that hose bibs shall be provided in toilet rooms, machinery rooms, and at 100 foot intervals in exterior areas for maintenance use? All exterior and machinery space hose bibs shall be key operated.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .06 Has it been specified that all water supply pipe shall be type "L" copper? Plastic piping is not acceptable for potable water service inside buildings. All solder used in potable water systems shall be non-lead bearing in accordance with Code.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07 Has it been specified that floor drains with trap primers or deep seal traps, as agreed with the university, shall be provided in all toilet rooms, janitorial closets and rooms, and mechanical equipment rooms?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08 Has it been specified that Clean-out plugs in piping shall be set with Teflon sealer or other approved lubricant?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .09 Has it been specified that metal access doors shall be provided in walls and ceilings for all valves, regulators, and clean-out? (A piping chase is desired.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .10 Has it been specified that all exterior valves shall be fitted with a complete one-piece valve box unit having an attached hinge cover and set in concrete?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Fire Safety Systems

- .11 Has it been specified that all fire safety systems shall comply with current State Fire Marshal Rules, including the NFPA Codes? This includes, but is not limited to underground site firewater piping/valves, building entry valves/fittings/test piping, extinguishers, sprinkler systems, and standpipes.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .12 Has it been specified that certification of the NFPA Code is required on all fire safety systems and pressure testing shall be provided on NFPA forms to the university?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .13 Has it been specified that connections for fire fighting equipment (location, thread standards) shall be approved by both the university and the local fire fighting authority; and shall conform to NFPA requirements?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Toilet Rooms

- .14 Has it been specified that toilet rooms for men and women must be supplied on each floor? All restrooms are to be sized and equipped for the handicapped in accordance with ANSI and ADA standards.

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .15 Has it been specified to provide valves at each floor level on hot and cold water, steam, condensate and gas lines?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .16 Are all lavatories acid resisting enameled cast iron?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .17 Are all urinals of the flooded open throat type to avoid stoppages and odor problems?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .18 Are all floor drains provided in the proper location at the lowest point in the room into which all areas will drain?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .19 Are all fixtures and partitions wall or ceiling hung to keep floors clear for cleaning? Fastening is to be by means of toggle bolts and through bolts into studding, stringers, or joists to prevent attaching to the wall only.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .20 Are all floors ceramic tile with dark sealed grout?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .21 Are all lavatory faucets the type that will not flow over 1/2 GPM?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .22 Do all stall walls (1-inch solid plastic) have a graffiti-resistant finish?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .23 Is a wall mounted, key operated hose bib provided in each toilet

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- room two feet above the floor?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .24 Is a ventilation fan with the minimum CFM required for the space (typically not less than 2 cfm per square foot) operated in conjunction with the lights provided?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .25 Toilet rooms should not be over-lighted. However, lighting should be adequate to encourage cleanliness and discourage graffiti. Is the average lighting at 40 footcandles with no dark corners? Lighting should use overhead troffers with acrylic lenses.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .26 Does the standard type wash basin have strainer type drain, lever handles equipped for handicapped use, cold water faucets, no hot water faucets (except in dormitories and service buildings) and soap dispensers?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Custodial Closets

- .27 Are the faucets single delivery mixing type with threaded spout equipped with a 3 foot hose and backflow preventor?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .28 Are faucets 30" - 36" above sink rim?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .29 Is this space separate from the building mechanical, plumbing, electrical, and telephone equipment and entered directly from a

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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corridor and is not a passageway to any other room?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**15500 - Heating, Ventilating & Air Conditioning**

.01 Has it been specified that HVAC ductwork shall be fabricated from metal? Duct board is not acceptable. (Outside insulation on metal ductwork is preferred.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 Has it been specified that fume hood exhaust systems require special care? Has Section 15001 of these Guidelines been reviewed and approved by the Owner?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 Has it been specified that laboratory systems including fume hood exhaust systems shall comply with State Fire Marshal's requirements, including NFPA-45? (Fire dampers are not permitted in fume hood exhaust systems.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.04 As far as possible, control systems should allow for unoccupied set-back of both temperature and humidity; i.e., HVAC systems should stay off during unoccupied times unless either temperature or humidity levels reach pre-determined limits, or unless special building requirements require continuous operation. Has the Architect/Engineer discussed this subject in formal submittals before Design Development is completed, and documented the discussion in the Design Development submittal?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- .05 Has it been specified to provide air and water test and balance with written report before beginning remodeling or renovation work?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .06 Has a field evaluation been made to determine if a hot or chilled water booster pump is required for the building HVAC system? Have the results of this evaluation been furnished to the University Project Manager?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .07 Has it been specified that all fans shall be stenciled, indicating "exhaust" or "supply" and area(s) served?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .08 Have all HVAC and thermostat control systems been discussed with and approved by the Owner to determine whether pneumatic, DDC or other systems shall be designed? In addition, has the latest lightning surge protection developed by the central control system manufacturer been provided?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .09 Have all major air handling unit coils been designed for not less than 15 degree Fahrenheit temperature rise, and provided with 2 way chilled water control valves, for energy conservation?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .10 Have all water valves that are 2-1/2" and larger been flanged 125 psi valves? Are all pressure gauges 4-1/2" face, bottom connection? Are all OS&Y (outside screw and yoke) valves 3" or larger (preferred)?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .11 Are all temperature gauges mounted in wells?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

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Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- .12 Have all permanent metering devices been approved by the University Project Manager and Physical Plant Division?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .13 Are all condensate pumping units above grade unless otherwise approved by the university? Are they duplex pumps with cast iron receivers and ceramic seals. The pumps shall be equipped with balanced mechanical seals (packing not allowed).  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .14 Are all hot water and chilled water pumps equipped with balanced mechanical seals?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**15950/15960 - Mechanical Controls, Instrumentation & Energy Management Systems**

Remote Control/Monitoring of HVAC and other Building Equipment:

- .01 All construction is to be connected to the university's central energy management computer system with complete remote monitoring and control capability. The computer system should be hard wired to the remote Data Gathering Panels by a twisted pair of at least 16 AWG unless otherwise approved by the university. Are all sensors, transducers, and actuators that are connected to the Data Gathering Panels compatible with the university's energy management computer system?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 The Physical Plant Department is responsible for the maintenance, operation, and modification of the entire system. Have all modifications of the system, including the addition of new applications, been approved by the Director of Physical Plant?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Is this building connected to the control system and equipped with

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**Comments to "No" Responses:**

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data gathering panels, sensors, and activators so that major energy consuming equipment can be monitored and controlled by the system? Fire, radiological, and intrusion alarms are to also be installed and connected to the system wherever the application of such alarms is appropriate.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

General

.04 Is all hardware and software added to existing and new construction physically, mechanically, and electronically, compatible with the university's energy management computer system?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.05 Are data gathering panels and system sensors of the digital transmission type not requiring the addition of analog to digital converters within the panel? (Analog to digital converters are acceptable within lease line data gathering panels.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.06 Has it been specified that all point addresses, diagrams, graphics (color slides) shall be updated to include any additions made to the system?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.07 Has it been specified to provide: data gathering panels, controls, sensors, wiring, all materials, and labor to acquire and transmit data (temperatures, pressures, alarms, etc.)? In addition has it been specified to provide address and command (start/stop, data and night switch, etc.) data from the central control monitor (existing)?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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.08 Has it been specified that modification of the system's (including additions and/or deletions) service area, applications, functions, equipment, transmission network segments, and software or any other action that affects the operation of the system must be approved by the University's Director of Physical Plant before commitments for the modifications or other action are made?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.09 Has it been specified to provide an Input/Output Summary of all data points?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Transmission Lines

.11 Has it been specified that trunk signal cables inside the building must be installed as continuous runs from remote panel to remote panel, without splices or intermediate junction boxes, and all conductors must be terminated on the terminal strips?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.12 Has it been specified that transmission links between the central control monitor and the individual data gathering panels must not exceed length limitations specified by manufacturer? (Should it be necessary to exceed these transmission lengths, then repeaters must be utilized at appropriate locations in accordance the manufacturer's specifications.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.13 Has it been specified that maximum wiring runs between the data gathering panels and the remote sensors must not exceed 1,000 feet (except that when the manufacturer of special sensing instruments requires longer runs, then the manufacturers specifications will apply)?

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .14 Has it been specified that transmission line runs external to buildings will utilize campus underground communication duct networks and manholes wherever possible? Transmission line runs within buildings should be through conduits. Existing power conduits must not be used for transmission line runs.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .15 Has it been specified that transmission line runs external to the buildings should take advantage of the existing transmission line network? Extension runs should be routed from the building to the nearest accessible communication manhole containing a triaxial cable connected to the central control monitor.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .16 Has it been specified that each wire from a sensor to a data gathering panel and to intermediate points is to be identified on each end with a number? A numbered tag or tape may be used as long as it does not physically interfere with equipment as is permanently affixed.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Data Gathering Panels

- .17 Have the manufacturers approved for inclusion in the Architect/Engineer's specifications all information pertaining to data gathering panels utilized in the system been approved by the Owner?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .18 Has it been specified that data gathering panels are to be supplied from the factory prewired for the intended functions?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .19 Has it been specified that data gathering panels are to be of a solid

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- state, plug-in circuit card construction with no reed relays? (Reed relays are acceptable on intercom cards only.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .20 Has it been specified that data gathering panels shall be of all steel construction, 14 gauge with full front, hinged doors?"  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .21 Has it been specified that each data gathering panel will be supplied with a separately fused 115 volt, 60HZ, 15 Amp service?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .22 Have data gathering panels been installed in secure areas that discourage tampering by unauthorized personnel? Does the location selected provide a clean environment and moderate temperature and humidity conditions?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .23 Is each data gathering panel provided with its own internal power supply constructed so that sufficient power is available to supply all the cards when the data gathering panel is used to its full capacity?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .24 Has it been specified that for initial checkout (prior to connection to the central control monitor) and future servicing, data gathering panels shall have the ability to accept a data center simulator for complete diagnostic checkout of all sensors, panel inputs, outputs and electronics, including any necessary analog signal converters?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .25 Has it been specified that It should be possible to completely isolate any remote panel from the trunk wiring system? (It shall also be possible to connect or disconnect function cards individually as a checkout or trouble shooting aid.)  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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Lightning Protection

- .26 Are the most effective lightning protection devices currently available installed on each triaxial cable entering and leaving the building?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .27 Are Lightning protection devices installed to protect each data gathering panel's power supply? (An effective grounding system must be provided for each lightning protection device and data gathering panel.) Ground connections to steam, chilled water or softwater lines are not permitted.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Intercommunication System

- .28 Has it been specified to Provide a solid state two-way intercommunication system with the ability to originate calls from remote stations and for multi-station paging from the central control monitor?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .29 Is the intercom system separate from transmission of data or command function operations?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .30 Is the intercom trunk cable two-wire twisted shielded wire size number 16 AWG?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Sensors

- .31 Are the temperature sensors installed in a manner that prevents condensation from making direct contact with the sensor's electronic components?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**  
**Comments to "No" Responses:**

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.32 Has it been specified that chilled water temperature sensors shall read within plus or minus one-half (1/2) degree F?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Start/Stop Function

.33 Is a remote stop/start capability with status and alarm provided for the following types of units:

.33-1 All air handling units in excess of two horsepower.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.33-2 Chillers, water pumps and condenser water pumps.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.33-3 Hot water pumps used for building heat.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.33-4 Existing building chillers, chilled water and condenser water pumps that will be used as standby units.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.34 Has it been specified that Start/Stop function cards must be such that if power interruption occurs at the data gathering panel due to either a power failure or a damaged power supply, the equipment controlled by the card will not change status?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.35 Has it been specified that Manual/Off/Auto switches must be installed on all equipment equipped with a remote start/stop capability?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.36 Has it been specified that In cases where a building is not connected to the central chilled water distribution system, the chillers must be interlocked with condenser water pumps and chilled water pumps?

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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(These actions shall be accomplished by the independent building control system.)

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Temperature Data

.37 Has it been specified that a temperature data collection function with high/low alarms must be provided for each of the following:

.37-1 Building chilled water supply entering building.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.37-2 Building chilled water return temperature (leaving building).

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.37-3 Condenser water supply temperature.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.37-4 Condenser water return temperature.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.37-5 Supply air temperatures for air handling units.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.37-6 Return air temperatures for air handling units.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.37-7 Hot deck temperatures where appropriate for air handling units.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.37-8 Cold deck temperatures where appropriate for air handling units.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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.37-9 Hot water supply and return temperatures for hot water heating systems.  
 (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Environmentally Sensitive Areas

.38 Has it been specified that environmentally sensitive areas in buildings must be monitored for all critical conditions including temperatures, humidity, and any other factors such as radioactivity as may be appropriate?  
 (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.39 Has it been specified that data supplied by the sensors in these area will provide quantitative readouts of levels as well as high/low alarms as appropriate?  
 (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Alarms

.40 Have critical alarm monitoring been provided in all of the following cases:

.40-1 Steam low pressure alarms connected on the low side of the steam pressure reducing valve.  
 (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.40-2 Pneumatic air used specifically as control air within buildings equipped with a digital alarm on the high pressure side.  
 (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.40-3 Fans that provide essential ventilation to areas equipped with off-status alarms.  
 (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.40-4 Building chillers that are used either as primary or backup units and that are in excess of 40 tons. They must be

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- equipped with at least 3 critical alarms of the digital type. The type of chiller involved (absorption, centrifugal, or reciprocating) will determine which of the following alarms will be selected. (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .40-4-1 Low temperature cut-out (chilled water). (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .40-4-2 Low temperature cut-out (refrigerant). (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .40-4-3 Oil pressure cut-out. (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .40-4-4 High head pressure. (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .40-4-5 Condenser pressure. (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .40-4-6 Sewage and sump pumps equipped with high level alarms. (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .40-4-7 Buildings which utilize boilers equipped with low boiler cut-out safety alarms. (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .40-4-8 Chilled water coils located at air handling units provided with freeze alarms. (Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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.41 Have alarm printout and annunciation lock outs been specified to prevent nuisance alarms when associated equipment is turned off? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

The following are examples of such situations:

.41-1 When a chilled water pump is off through programmed start/stop operation (specific chilled water supply and return temperature alarm should be inhibited). (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.41-2 When a hot water pump is off through programmed start/stop operation, (specific hot water temperature alarm should be inhibited). (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.41-3 When an air handling unit is off through programmed start/stop operation, (specific return air temperature and discharge air temperature alarm should be inhibited). (Specific drawing sheet #/specification page # \_\_\_\_\_.)

Optimum Start Time Selection

.42 Has an optimum start time selection capability for the building's heating, ventilating, and cooling systems been specified? (Specific drawing sheet #/specification page # \_\_\_\_\_.)

.43 Has the primary indoor temperature zones been identified? Have temperature sensors, (a minimum of one per floor), with inter-connecting wire back to the data gathering panel been specified. (Typically, one sensor should be installed on each floor of the

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**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- building in a location that accurately represents the temperature conditions of that floor?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .44 Has it been specified to provide and install the necessary logic cards in the data gathering panel to provide for the optimum start time selection function?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .45 Has it been specified to provide for the reassembly of the existing program to accommodate the building and the new points?  
(As part of the reassembly process, the Owner will provide information relative to occupancy hours, air handling units to be energized, and channel numbers).  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Testing

- .46 Has it been specified that prior to connection to the transmission line and the central control monitor, each data gathering panel must be fully tested utilizing a data center simulator to check out all sensors, panel inputs, outputs and electronics, including necessary analog converter signals?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .47 Has it been specified that upon the satisfactory completion of these tests, the data gathering panel will be connected to the transmission lines and another test will be initiated from the central control monitor to ensure that all command functions operate as intended?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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.48 Has it been specified that each alarm condition shall be tested at the central control monitor to ensure that the alarm registers properly? Each temperature, humidity, and other types of quantitative sensors shall be checked in the field and at the central control monitor simultaneously to ensure that readouts at the central control monitor are accurate.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.49 Has it been specified that all tests shall be witnessed by a representative of the Owner?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Operating and Maintenance Literature

.50 Has it been specified that the Contractor shall assemble and bind all manufacturer's operation and maintenance literature pertinent to the system? This material should be bound in a looseleaf type binder. Maintenance literature shall include wiring diagrams showing point-to-point identification. Engineering layout drawings must accurately reflect wiring and numbers used in the field installation. Wiring runs from digital sensors to the data gathering panels should be identified by even numbers. Wiring runs from analog sensors to data gathering panels should be identified by odd numbers.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.51 Has it been specified that the Contractor shall provide a complete set of updated and/or additional graphics (slides) for use at the central control monitor?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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Flow Measurement

- .52 Has it been specified that for buildings served by the central chilled water system, provide a calibrated flow measuring device in the primary chilled water return from each building? A delta pressure transducer should be provided and wired to a data gathering panel with a flow measuring electronic function card at each building. Flow rate data should be transmitted to the central control monitor for display/printout as and when required.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .53 Has it been specified to provide chilled water instantaneous (gallons per minute) and instantaneous ton-hours with building identification on the CRT of the central control monitor? Provide the central control monitor with the ability to accumulate ton-hours for a selectable 24 hour period, the totalized value for the period to be printed out at the end of the 24 hour period. The intent of this is to enable the university to accurately measure and accumulate billing information on chilled water usage.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

Other Instrumentation

- .54 Has it been specified to provide local instrument displaying HVAC filter pressure drop with alarm?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .55 Has it been specified to provide temperature wells at the building chilled water inlet and outlet piping?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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.56 Has it been specified to provide "air monitor" type air-flow measuring device with local readout in all central fume hood exhaust system, to readout the total system air-flow?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

\_\_\_\_\_  
Initial Approval

Date

Date Revised

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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DIVISION 16 - ELECTRICAL EQUIPMENT

**16010 - GENERAL ELECTRICAL PROVISIONS**

- .01 Does the electrical design comply with the National Electric Code, latest Board of Regents approved edition; IES Lighting Standards, and State Fire Marshal requirements including NFPA codes?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Does the telecommunications design comply with the university's standards?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Has it been specified that all conductors, bus bars, pull wires, etc. shall be of copper? Conductors 600 volts and below shall have THHN insulation.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .04 Has it been specified that all electrical panels shall have easy access? All panels shall have exterior identification and all breakers shall be numbered and identified as to area served by a plastic covered index. Circuit breaker panels shall be lockable, specification grade with full size copper busses braced for maximum available fault current, bolt-on breakers, ground bar and isolated ground bar.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .05 Has a watt hour meter been provided for each building?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .06 Has it been specified that the connected electrical load in any building shall be corrected to 95 percent power factor or above, using automatically controlled capacitors, where required?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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.07 Has it been specified that the electrical feed will be from a campus 12,470 volt circuit? (Provide an SF6 gas sectionalizing switch to which the campus circuit is brought).  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.08 Has it been specified to provide an automatic starting diesel fueled generator to pick up the building emergency panel through an automatic transfer switch in the event of power failure? The generator should have an hour meter and an automatic "exerciser" in its control system. The electrical capacity shall be sufficient to operate at least one elevator. Building emergency generators must be connected to all building data gathering panels used for HVAC control through a computer.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.09 Has it been specified that from the campus underground communications duct and manhole system, will provide conduits into the buildings for telephone, clocks and bells, instructional television, fire alarm, and HVAC control and monitoring?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.10 Has it been specified to provide reduced voltage starters for all motors that are 15 horsepower and larger?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.11 Has it been specified that high efficiency and high power factor motors shall be used in all cases where available for a particular application? Variable speed drives shall be considered during  
  
design for all motors over 10 horsepower, for energy savings; and if found to be cost effective, shall be installed.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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- .12 Has it been indicated that vending areas shall be supplied with electrical outlets at 4'-0" intervals along walls against which vending machines will be located?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .13 Have hallway areas been supplied with electrical outlets a minimum of every 50 feet to accommodate building maintenance equipment?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .14 Has the building fire alarm and HVAC systems been tied into the campus control center?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .15 Do electrical design drawings and specifications clearly define the responsibilities for interconnections of elevator fire and smoke detectors into the building fire alarm system?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .16 Are outside utility outlets required around the building to support outside maintenance efforts?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Electrical and Communication Manholes**

**General**

- .01 Are the inside dimensions of electrical manhole walls 7'-0" x 7'-0" or 8'-0" octagonal?

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**

N/A Y N

- (Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .02 Are the inside dimensions of telephone manhole walls 7'-0" x 7'-0" or 8'-0" octagonal?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .03 Are manhole duct entrances indented at least 4" and provided with carbon bell ends? (This will also apply when galvanized steel conduit is indicated).  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .04 Are grounds provided in accordance with the code requirements?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .05 Is the minimum clearance from the centerline of the lowest duct entrance to the floor of the manhole 2'-0" ?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .06 Is the thickness of the concrete walls 8" for the top and bottom of the manhole, and 6" for the sump walls from manholes?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07 Are 3" cast iron pipes connecting sumps of adjacent telephone and electrical manholes provided to facilitate pumping water from manholes?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08 Is the flat entrance/exit duct face on the inside of the manhole at each corner a minimum of 1'-6" wide?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .09 Are the cable racks used for electrical circuits heavy duty galvanized racks?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- .10 Are the hooks used for communication circuits 12" lengths or approved substitutes?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .11 Do the rack backs in telephone manholes extend from ceiling down 4'-0" ?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .12 Is the manhole hardware compatible in each manhole?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .13 Is the hardware type provided equal to existing? (If not, replace with new hardware plus new quantities as scheduled).  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .14 Has it been specified that each manhole shall contain pulling irons located in the walls not less than 6" above or below and opposite the conduits entering the manhole? Irons shall be fabricated from bent steel bars and shall be hot-dip zinc-coated after fabrication.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .15 Has a building master clock and bell system been provided? The system shall contain the ability to be programmed readily by university staff.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .16 Has it been specified that switches and controls for lights, heat, ventilation, windows, draperies, fire alarm boxes and all other essentials shall be located at 48" above finished floor? In addition, they should also meet the latest ANSI and ADA standards for the

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**Comments to "No" Responses:**

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- handicapped.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .17 Has it been specified that convenience electrical outlets shall be specification grade, rated for 20 amps and provided as specified in the N.E.C. and mounted 16" above finished floor, unless otherwise specified? In addition, quadruplex outlets shall be provided for each telephone and television equipment backboard provided.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .18 Has it been specified where floor service, electrical, telephone or similar outlets are used? All should be of a flush mounted type with flush carpet plates.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .19 Has it been specified that all thermostats shall have tamper-proof covers and shall be mounted on steel mounting boxes which are securely attached to the internal wall structure?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .20 Has it been specified that all dry type transformers shall have 220 degree C insulation or better and shall have guaranteed sound levels of: 0-9 KVA - 40 Db; 10-50 KVA - 45 Db; 51-150 KVA - 50 Db; 151-300 KVA - 55 Db; 301-500 KVA - 60 Db?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .21 Has it been specified that both the 277/480V and 120/208V electrical mains shall have surge protection provided by a surge protector?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .22 Has it been specified that direct burial electrical wiring for exterior

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Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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lighting, and the like, shall not be used unless University Project Manager approves in writing? Underground electrical wiring shall be installed in approved PVC conduit with conduit encased in concrete. A plastic "tell-tale" marking tape shall be installed 12" above all direct buried electric cable.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.23 Has it been specified that all conduit used to connect secondary electrical service to outbuildings and/or building sections shall be rigid metal (no plastic) and shall be bonded to the building entrance ground system?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.24 Has it been specified that each building electrical main shall be provided with a qualified ground rod(s)? Ground rods shall be driven with a power driver as required. Additional rods shall be added if required to achieve a 25 OHM reading using the threepoint test method (150 foot depth require maximum). Multiple rods shall be used as necessary to obtain 25 OHMs. In addition, all manhole ground rods shall be connected by approved exothermic welding. Each rod shall be tested in the presence of the university's representative. A written record of the test results shall be prepared and signed by the Contractor's and university's representatives and submitted to the Architect/Engineer.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.25 Has it been specified that all large spaces wired for TV cable shall have conduit and outlet at the "front" of the space? (Verify locations with the university's Project Manager).

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.26 Has it been specified that all empty conduits shall contain a

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**Comments to "No" Responses:**

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polyolefin pull line-JET LINE #232 or approved equal, with engraved metal tag at each end indicating conduit designation?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.27 Has it been specified that oil-type transformers (PCB free) installed within buildings or pad mounted outside are preferred? If dry-type are used, they shall be kept away from mechanical rooms, steam pipes, hot water pipes, and the like. All transformers, switches, and other electrical equipment are to be PCB free and labelled as such.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**16500 - GENERAL LIGHTING CONSIDERATIONS**

.01 Has it been specified that fluorescent fixtures shall include electronic ballasts and be lamped with low energy consumption tubes such as T8? Alternate designs (full spectrum "T10; daylighting with dimming ballasts; lighting controls) should be considered with the life-cycle cost analysis computer program input. See notes in Division 15001.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 Has it been specified that light fixtures in stairways should be above the landings and not above the steps?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 Has it been specified that emergency lighting shall be provided at all exits and in all stairways, hallways, mechanical rooms, elevators, etc. in accordance with the State Fire Marshal's requirements?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.04 Has it been specified that security lighting and parking lot lighting shall be included in the building design?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.05 Has it been specified that no lights are to be used that require

**Note: All "no" responses require a written response from the A/E Consultant.**  
**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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- scaffolding for relamping?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .06 Has it been specified that when emergency lighting is required in an interior classroom, a bypass will be provided to permit darkening of the room when visual aids are being used?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .07 Has it been specified that exterior walkway and security lighting shall be provided and controlled by both a 7-day time clock and a photo-electric switch connected in series?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .08 Has it been specified that the electrical system shall be 277/480 V, 3 phase, 4 wire, with a 120/208 V, 3 phase, 4 wire subfeeder? All mains and feeders shall be protected by circuit breakers rated for the bolted fault short circuit current calculations and data for the building shall be provided to the Physical Plant Director.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .09 Has it been specified that quantity and quality of lighting shall be provided in compliance with the IES (Illuminating Engineers Society) standard?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
- .10 Has it been specified that outdoor lighting shall be high pressure sodium, pericline square type fixtures, pole mounted where possible?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**16700 - GENERAL TELEPHONE & COMPUTER SYSTEMS GUIDELINES**

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**DIVISION**

**16-9JANUARY 1996**

**COST CONTAINMENT GUIDELINES**N/A Y N

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Note: It is recognized that telecommunications/data system technology is rapidly changing. The intent of the following Guidelines is to provide early identification of the needs; promote discussion and agreement early in the design process; and to assure the Project budget contains sufficient budget for these needs. The following represents the minimum. Universities are encouraged to develop their own telecommunications standards. In any event, the discussions, decisions and budget must be provided early in the design process.

.01 Prior to final approval of drawings, have the Architect/Engineer and the university reviewed electrical and telephone layouts with the applicable telephone representative?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.02 Has the Architect/Engineer reviewed electrical, telephone, fiber optic and computer systems requirements with University Facilities Planning and the university telecommunications representative? Guidelines will be agreed for the Project. These Guidelines shall include the following items as well as conduit sizes/locations and telecommunications wiring specifications. The Architect/Engineer's Advanced Schematic development submittal shall include a full discussion of the agreed Guidelines, conduits and wiring specifications.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03 For all new and renovated building projects, has it been specified to provide at least the following in the Construction Contract Base Bid:  
  
.03-1 Two conduits, minimum 4 inch diameter each, encased in concrete, from existing telecommunications manhole to the basement or first floor telecommunications room?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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.03-2 One dedicated telecommunications room per floor; with 3/4" marine plywood terminal backboard. Provide at least one double 110 volt electrical outlet (four receptacles) in each telephone room. These rooms will normally be "stacked" one above the other for ease of wiring. Provide minimum of two conduits, minimum 4 inch diameter each, penetrating the floor slabs, for wiring between rooms. Have all telecommunications rooms been interconnected?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03-3 A one inch home run conduit from each phone outlet to the nearest telecommunications room, terminating at the plywood terminal backboard?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03-4 Installed telephone, computer and data wiring. Normally, the telephone, computer and data wiring will be "all-in-one" cable. If specific requirements dictate, the separate conduit and wiring are to be provided?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.03-5 Telephone and computer/data conduits and outlets shall be provided to all potential spaces and areas. Normally, One 2 gang box, with 4 jack capability, shall be provided for every 100 square feet of usable floor space?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.04 Are all telephone equipment areas located at least 3 feet from any electrical power panels?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.05 Are elevators equipped with a recessed steel mounted telephone box?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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**16720 - FIRE ALARM SYSTEMS**

- .01 Has it been specified that the Contractor shall furnish all labor and equipment for the complete installation of a fire alarm system?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .02 Has it been specified that the fire alarm equipment shall be manufactured by Simplex, Cerebrus/Pyrotronics or approved equal?  
(The equipment shall be approved by Underwriters Inc., and the system shall comply with codes and regulations; primarily NFPA 72, NFPA 101 and State Fire Marshal Rules).  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .03 Has it been specified that the Contractor shall submit a list of all material items giving manufacturer's names and catalog numbers?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .04 Has approval of the list been obtained from the Architect/Engineer?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .05 Is maintenance service available within a reasonable distance **b**  
the university and shall stock the manufacturer's standard parts?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)
  
- .06 Has it been specified that the system shall be a low voltage zoned, non-coded, supervised, and annunciated fire alarm system and that fire alarm pull stations, heat detectors, smoke detectors, door holders and water flow switches shall be connected to electrically supervised zone circuits?

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.07 Has it been specified that the fire alarm system and zones shall be tied in with the central fire alarm system? (Contractor shall verify operation of alarm signals between the central plant and local annunciator).  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.08 Has it been specified that the Contractor shall fully instruct representatives of the university in operation and maintenance of the fire alarm system? (The manufacturer of the equipment shall provide the services of a qualified engineer who shall check the installation and function of the system to insure its proper operation).  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.09 Has it been specified that each device shall be tested to insure all functions are operational? Each device and its applicable functions (alarm, annunciation, proper central system indication, fan shutdown, fire damper closings, etc.) shall be separately listed and documentation provided showing all checkouts have been performed.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.10 Has it been specified that the Contractor shall assemble and bind manufacturer's operating and maintenance literature for inclusion in the Maintenance Manual? Maintenance literature shall include wiring diagrams showing point-to-point identification. They are to indicate a wiring labels and physical location of each device on a zone-by-zone basis, including end-of-line resistors. All externally operated equipment shall also be shown, such as fan shutdown equipment and automatic smoke dampers.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.11 Has it been specified that the Contractor will provide as-built drawings

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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of existing fire alarm systems as modified?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .12 Has it been specified that the fire alarm system may be connected to the nearest local fire station? Has the University Project Manager pre-approved the request in writing. Both the power cable and signal cable of the fire alarm system shall be protected with lightning surge

arresters. Visual as well as audible alarms shall be provided in visible locations in all corridors and toilet rooms.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .13 Has it been specified that any smoke detectors of the photoelectric type used in the HVAC system or the building alarm system shall have LED (light emitting diode) light source? HVAC smoke detectors and elevator lobby (for elevator recall) shall be wired into the fire alarm system. Fire alarm wiring shall be 19 strands maximum.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

**DESCRIPTION OF OPERATIONS**

- .14 Has it been indicated that actuation of any manual pull station, heat detector, smoke detector, or water flow switch shall initiate a local evacuation alarm within the building, light a zone indicating lamp on the annunciator panel, and transmit a signal over the campus security system indicating the building and zone within that building from which the fire alarm was initiated? Manual pull stations shall be zoned separately for each floor. Water flow switches shall be zoned separately for each switch. The area of the building that each zone covers shall be indicated at the annunciator panel or on a schedule adjacent to the panel. In addition to performing the above function,

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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**COST CONTAINMENT GUIDELINES**N/A Y N

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each air handling unit smoke detector shall shut down its associated fan motor.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .15 Has it been provided that the alarm shall continue to sound until the initiating device is reset or silenced by the operation of a switch on the control assembly which will light the trouble light and cause the

zone indicator light to remain lit? (The switch should be under lock and key).

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .16 Has it been specified that the system shall be totally supervised on the initiating and the indicating circuits for each zone? Trouble on an initiating zone circuit will sound a distinctive tone trouble signal at the control panel assembly and send a signal by the base loop, reporting the alarm or trouble condition and the zone in which it is located to the central alarm receiving facility.

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .17 Has it been indicated that systems containing automatic extinguishing features (Halon, etc.) should be cross-zoned so that at least two devices must detect fire before discharging the extinguishing agent?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .18 Is all wiring #14 AWG stranded copper in dedicated conduit?

(Specific drawing sheet #/specification page # \_\_\_\_\_.)

- .19 Has it been indicated that the Contractor is to provide code gauge size terminal cabinets with terminal blocks at all junction points? Do not splice conductors using pressure type connectors. All wiring is to be terminated with spade-type crimp lugs. All wiring will be plainly

**Note: All "no" responses require a written response from the A/E Consultant.**

**Comments to "No" Responses:**

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marked to match as-built drawings. All cabinets will be stenciled "Fire Alarm System".  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.20 Has it been indicated that each zone circuit must be megger checked to conduit ground prior to final checkout? The readings must be no less than 10 meg. ohms.  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

.21 Has it been indicated that all external equipment, such as fan shutdown systems and automatic smoke dampers, are to be wired at the control panel so that they can be left in normal operating configuration during system testing and maintenance?  
(Specific drawing sheet #/specification page # \_\_\_\_\_.)

\_\_\_\_\_  
Initial Approval

\_\_\_\_\_  
Date

**Note: All "no" responses require a written response from the A/E Consultant.  
Comments to "No" Responses:**

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\_\_\_\_\_  
\_\_\_\_\_



# Appendix 1

## Design Guidelines for Handling Unwanted Water Intrusion

Based upon recent experience of the impact of the growth of mold during the construction phase for a major project, the following information is being provided to prevent issues due to mold growth in renovation and new construction projects. The specifications should indicate that the contractor shall do the following:

1. Prevent water intrusion into the building (including dew point/condensation conditions) during construction, whether it be new construction and/or renovation. If water intrusion does occur, the contractor should take steps to immediately remove water, including dehumidification of the atmosphere as required to dry out building. Prevent entrapment of moisture with construction materials and components of construction. Dry out may require ventilation only, however, it is imperative that the contractor should take the special measures in the even of water intrusion, including dehumidification.
2. If dehumidification is to be accomplished through the use of building HVAC systems, adequate filters are required to be installed to prevent distribution of construction dust, etc., in air handling and duct systems which can lead to operational problems as well as provide an environment for future mold growth.
3. If porous materials are damaged due to water/moisture, removal prior to growth of mold will avoid potential risks and costly mitigation techniques if the material remains and mold develops. Otherwise, treatment of non-porous areas exposed to moisture should be considered to prevent mold growth.
4. If water intrusion occurs, the material remains, and building dry out occurs, inspections should be made on a continual basis to ensure no mold growth or conditions for mold growth exists, including wall cavities or concealed areas affected by moisture. If mold is observed, the contractor shall be responsible to utilize consultant services to address the process and procedure for removing mold by treatment and/or material removal. Treatment of mold can include application of an agent, encapsulation and/or removal of material, suspect or damaged. It is important the contractor utilize appropriate procedures for remediation since some microbial agents may be infectious and/or toxic and could pose a health risk.
5. It is important for the contractor to respond immediately to issues that would provide a suitable environment for the growth of mold in order to prevent potential impacts on project budget and timetable as well as risk to personnel during construction and/or occupancy.

The issue of mold, and its potential impact on construction and occupancy, is an evolving subject that the University system will address in a proactive manner in the design and construction process.

**Appendix 2**

**DESIGN CRITERIA  
FOR  
HURRICAN SHELTER AREAS  
FOR  
THE STATE UNIVERSITY SYSTEM  
EDUCATIONAL FACILITIES**

**REPORT  
FEBRUARY 14, 1995**

**PREPARED FOR THE  
STATE UNIVERSITY SYSTEM  
OFFICE OF CAPITAL PROGRAMS**

**BY THOMAS T. COOPER, A.I.A., A.U.A.  
CAMPUS ARCHITECT - FLORIDA INTERNATIONAL UNIVERSITY**

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# EXECUTIVE SUMMARY

The State of Florida now requires that all new educational facilities constructed after July 1, 1994, contain public shelters. The State University System, in its desire to meet this mandate, initiates the following guidelines.

The criteria described in the report is only for the Hurricane Shelter Areas (HSAs) located on the campuses of the State University System. HSAs must meet the standards in this report and all other applicable codes. The criteria provides for the protection of people for 72 hours in a hurricane resistant facility. This time period occurs before, during, and immediately after a potential category four hurricane (a storm with winds up to 150 miles per hour). The remaining facilities on university campuses may be designed in accordance with all other existing codes, standards, and laws. The following criteria can be used for both new and retrofitted existing buildings to achieve the desired security of the HSAs.

# INTRODUCTION

The State University System (SUS) of Florida has ten universities with designated housing for residential students and also has obligations for providing emergency shelter for several thousand citizens in the state. The above factors stress the importance of providing secure facilities located on SUS property.

In August 1992, Hurricane Andrew emphasized the destructive power of these tropical storms. Properly designed buildings could have saved billions of dollars and many lives. The design criteria in this report will provide the minimum standards for both new facilities and the retrofit of existing facilities into secure hurricane shelter areas (HSAs).

These HSAs will provide protection during a storm for campus residents, shelter commitments by various universities with local organizations (American Red Cross), plus additional occupants estimated at approximately two percent of the total university population (student, faculty, and staff). The additional occupant requirements may vary with the university, site, community needs, proximity to the coast, flood plain, and other factors. Consultation with the Office of Capital Programs will determine acceptable adjustments in each university's total shelter population. Investigative studies should be performed on all existing dormitory facilities for cost benefit analysis for conversion to HSAs. Rehabilitation of a few dormitories might be more cost effective than the construction of new facilities.

The standards in this report are for a hurricane with winds speeds up to 150 miles per hour. Design standards for a category five hurricane, wind speeds up to 200 miles per hour were determined to be excessive as the occurrence for this magnitude is rare. The structural wind loading conditions cited in this report are a combination of three most recent revisions to 1) Standard for Minimum Design Loads for Building and Other Structures ASCE 7-93, 2) The Department of Education Report on Hurricane Shelters, 3) The South Florida Building Code 4th Edition and Dade County Special Protocol for Material Testing. All of these design standards have been revised with respect to new knowledge obtained studying the effects of hurricanes and, in particular, Hurricane Andrew.

## ARCHITECTURAL GUIDELINES

The following criteria should be used in the design of new Hurricane Shelter Areas (HSAs) site selection and remodeling of existing SUS buildings into HSAs. In situations where strict compliance with these guidelines is not possible, a request for waiver should be obtained by the university from the Office of Capital Programs.

## SITE AND LOCATION

### HSAs:

- Shall not be located in category 4 storm surge inundation zones. The National Weather Service provides mathematical models for sea, lake, and overland surges from hurricanes (SLUSH) and a special program to list amplitudes of surges from hurricanes (SPLASH).

- Shall not be located in areas that may be isolated by flood conditions.
- Shall be located outside the 100 year flood plain.
- Shall not be located in areas likely to be isolated by riverine inundation (flood insurance rate maps - FIRMS)
- Shall not be located down grade or stream from dams or reservoirs.
- Emergency access routes shall be above the 100 year flood plain.

Emergency adequate pedestrian and vehicular access and egress to and from shelter for emergency vehicles.

## **GENERAL CONDITIONS**

- Do not use large open areas with long span roof systems (gymnasiums, auditoriums, field houses, and convocation and convention area spaces). Long span members, unless specifically designed, are too flexible for hurricane gusts.
- Avoid use of spaces that contain dangerous or hazardous materials (store, shop rooms, and laboratories)
- Do not use mechanical, electrical, storage, computer, and science rooms, laboratories, open corridors, kitchens, offices, or library stack areas for habitable space in HSAs. These areas contain either valuable or hazardous equipment and/or supplies.
- Only structural building systems of poured concrete, or reinforced masonry shall be used for HSAs. Other systems may be considered if a structural engineer certifies the entire building meets the structural requirements of these guidelines. In addition, certification to the standards in this report by a structural engineer is required for all designated HSAs, new or retrofitted.
- Consider only buildings in compliance with applicable building and fire codes.
- Consider only buildings in compliance with ADA.
- Ensure building exits can accommodate occupancy requirement of 40 NSF/person of shelter space.

# SPACE ALLOCATION

Storage space for emergency items, e.g. canned foods, drinking water, batteries, flashlights, bedding supplies, first aid and basic medical supplies, formula, baby food, diapers, and sanitation supplies shall be allocated separately at 10 s.f. per 500 shelter occupants.

The space allocated for each shelter occupant will be thirty (30) net square feet of habitable space. This area will include acceptable rooms, corridors, and restrooms. The projected length of stay will be seventy-two (72) hours. The time period represents twelve (12) hours before the storm and sixty (60) hours during and after the storm.

# STRUCTURAL

- Wind Loads: The basic design wind speed is to be 150 mph. Provide assemblies capable of withstanding pressures calculated in accordance with the procedures of ASCE 7-93 (or latest edition) except that the importance factor given in ASCE 7-93 shall not apply.
- Large Missile Impact Testing: For building envelope assemblies to be utilized in locations of up to and including 30 feet above grade, test in accordance with section 2315.2 of the South Florida Building Code and Dade County Protocol PA 201-94 (see Appendix B & C) with the following modifications:
  - a. Weight of the large missile 15 lbs.
  - b. Speed of the large missile shall be 73 ft/sec. (+/-50 mph)
- Small Missile Impact Testing: For assemblies to be utilized in in locations greater than 30 feet above grade, test in accordance with section 2315.3 of the South Florida Building Code and Dade County Protocol PA 201-94 with the following modifications:
  - a. Weight of the small missile 2 grams.
  - b. Speed of the small missile shall be 130 ft/sec. (+/-89 mph)
- Cyclic Wind Pressure Loading: For all assemblies, test cyclic wind loading in accordance with section 2314.5 of the South Florida Building Code and Dade County Protocol PA 203-94. The design load shall comply with loading as determined above.

# ROOFS

- Roof decks will be poured reinforced concrete.

- Preferably, skylights on roofs shall be avoided. However, if provided, such skylights shall be designed to meet the structural requirements of this Standard, including the impact requirements.
- Roofs shall have adequate drainage system with overflow scuppers (where applicable) capable of safely disposing of a 2 in/hour (50.8 mm/hr) rainstorm for six hours.
- Parapets and equipment mounted on and/or above roofs shall be designed to meet the structural requirements of this Standard.
- Roofing membrane and Insulation: Ensure mechanical fastening of membrane to roof deck.
  - a. For new HSAs, the roof membrane and other protective coatings and insulation must resist the specified design wind loads of this Standard.

For retrofit, if the existing roofing system does not need immediate replacement. It could be left alone if it meets the applicable building code design criteria, and when replacement is needed afterwards, the roofing system must be upgraded to meet the requirements of this Standard

## **WINDOWS, DOORS AND EXTERIOR ENVELOPE**

### **Windows**

All window assemblies or their shutters and anchoring systems shall meet the wind and impact requirements listed above and;

- System Performance Requirements: Shall comply with structural performance, air infiltration, water penetration and impact resistance requirements indicated, as demonstrated by testing assemblies according to test methods indicated.
- Thermal Movement: Provide for expansion and contraction resulting from an ambient temperature range of 100 degrees F without buckling, joint seal failure, undue stress on structural elements, damaging loads on fasteners, reduction performance or stress on glass. Doors shall function normally over specified range.
- Structural Performance: Test in accordance with ASTM E 330 and Dade County Protocol PA 202-94. There shall be no permanent damage to fasteners, anchors, hardware or actuating mechanisms or permanent deformation of framing members in excess of 0.2 percent of their clear span.
- Deflection Normal to the Plane of the Wall: Test pressure shall be 1.5 times wind pressure as determined above. Deflection shall not exceed 1/175 of clear span, when subjected to uniform load

deflection test.

- Deflection Parallel to the Plane of the Wall: Test pressure shall be 1.5 times the wind pressure as determined above. Deflection of members carrying full dead load shall not exceed amount that will reduce glass bite.

Windows that do not meet the above requirements shall be protected by a permanent protective system (shutters) over the window assembly and shall meet wind and impact requirements listed above under the structural section.

## **Doors**

Exterior doors, frames, anchoring devices, and vision panels, or shutters shall resist the wind loads and missile impact criteria specified under the structural section. Permanent protective systems and their anchoring devices over exterior doors shall resist the wind load and missile impact criteria listed under the structural section.

## **Exterior Envelope**

Exterior envelope, and louvers over fresh air intake or vents, of shelters shall resist the wind loads and missile impact criteria specified under the structural section of this report. All louvers must either be operable or have the ability to be protected during a hurricane.

# **MECHANICAL/PLUMBING**

- Emergency shelters will have wither the ventilation system or air handlers on emergency generator system. These systems will provide a minimum five (5) cubic feet per minute per person of fresh air to the facility.
- Emergency toilet facilities shall be provided at a rate of no less than 1 toilet for 40 occupants of HSA.
- Systems for emergency toilets, e.g. portable toilets, water storage tanks or generator supplied power for pumps shall be adequate for water supply and waste storage, for the designed capacity of HSAs for up to 60 hours. This is the projected time both during and after the storm. Water supply shall be estimated at 2 gal./day sanitary and .0.5 gal/day drinking per person.
- Plumbing and valve systems of some normal toilets within HSAs may be designated for conversion to emergency operation to meet the demand stated above.



# **ELECTRICAL**

## **Emergency Power Generator(s)**

- Emergency power generator(s) shall be provided for operation of elevators, air handlers, ventilation fans, emergency lights, fire alarm systems, fire sprinkler, potable water and emergency toilet system, and minimum refrigeration/cooking equipment for 60 hours, of the HSAs operation.
- The emergency power system shall have an outlet for coupling of a second portable generator at the exterior of the HSA. This will allow local emergency teams to provide portable back-up generators to the HSA after the storm.
- Generators shall be air cooled or self-contained. Exhaust systems shall be muffled and vented to the exterior.
- Generators shall be installed in an enclosed building for protection from design winds, missile-impact, and rain. This space may be part of the HSA or a separate structure.
- Fuel tanks adequate for 60 hours use shall also meet the wind loads and missile impact criteria of the structural section, if located separate from the generator.
- Air intake and exhaust in the enclosed building shall be designed to resist the wind load and missile criteria of the structural section.

## **Emergency Lights**

Emergency lights shall provide 10 f.c. in the HSAs areas and restrooms. These emergency lights shall also have battery back-up.

Lights in generator rooms shall be on the emergency circuit, and have battery back-up.

## **Emergency Circuits**

Necessary elevators, ventilation fans, refrigerators, cooking equipment, potable water and emergency toilet water systems, fire alarms, fire suppression systems, intercom systems, emergency telephones and emergency lights in HSAs shall be connected to emergency circuits per NFPA 70, article 702 (optional standby circuits).

## **Emergency Outlets**

A minimum of four emergency outlets, on emergency circuits, shall be provided in the HSAs manager's office. Others may be located throughout the shelter area as needed. The manager's office shall be located within the HSAs, and shall have provisions for emergency communications on an emergency outlet, i.e. VHF radio base station, antenna, etc.



# COMMENTS ON THE CRITERIA

This report on HSA standards was provided and reviewed by hurricane experienced professionals.

The criteria contained in this report was compiled through research from the following areas:

- Observation of hurricanes
  
- Compilation of data from,
  - National Oceanographic and Atmospheric Association (NOAA)
  - Department of Community Affairs
  - The American Red Cross
  - Department of Education
  - Dade County Building and Zoning Department (DCBZ)
  - DCBZ - Product Approval Section
  
- Interviews and Consultation with,
  - Various architects, engineers and planners with hurricane related experience
  - Product manufacturers
  - Building Contractors
  - University Administrators and Staff
  - Testing Facilities
  
- Attendance of and participation in,
  - Several Hurricane preparedness conferences
  - Central Association of Physical Plant Administrators (CAPPA) - Hurricane Andrew - "How FIU Recovered"