THE
UNIVERSITY
OF RHODE ISLAND
DIVISION OF
ADMINISTRATION
AND FINANCE

PURCHASING DEPARTMENT
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THINK BIG WE DO™

DATE: 5/9/2014

ADDENDUM # 1

BID NO. : 100001
OPENING: 5/22/2014 3:00 PM
COMMODITY: Residence Hall Door and Lock Replacement - Group 3

Attached please find additional specifications and information which make up addendum 1 of this bid.

Additionally, the sign in sheet for the mandatory pre-bid conference is attached.

Tracey A. Angell
Assitant Director, Purchasing Department
University of Rhode Island

The University of Rhode Island is an equal opportunity employer committed to the principles of affirmative action.

ADDENDUM NO. 1 – April 29, 2014

From: Tecton Architects, PC

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To: Prospective Bidders

This Addendum forms part of the Contract Documents and modifies the Construction Documents dated February 18, 2014, with amendments and additions noted below, for the University of Rhode Island **Hillside, Fayerweather, Gorham, Heathman, Gateway** Resident Hall Door and Lock Replacement.

Acknowledge receipt of this Addendum in the space provided in the Bid Form. Failure to do so may disqualify the Bidder.

This Addendum consists of 2 Pages and the following documents:

DRAWINGS

None

SPECIFICATIONS

MANUAL FOR CONSTRUCTION PROJECT SAFETY PROCEDURES 2010
281300-CARD KEY ACCESS CONTROL ENTRY SYSTEM

OTHER DOCUMENTS

BID FORM, Door and Lock Replacement Package 3

CHANGES TO DRAWINGS

1. **FA-A2.100, FA-A2.101, FA-A2.102, GO-A2.100, GO-A2.101, GO-A2.102, GO-A2.103, GO-A2.104, HE-A2.100, HE-A2.101, HE-A2.102, HE-A2.103, HI-A2.100, HI-A2.101, HI-A2.102, GA2-A2.100, GA4-A2.100, GA6-A2.100, GA8-A2.100**: Delete Note 5, Note 6, & Note 7 from General Notes – Construction.

2. **HE-A2.100, HE-A2.101, HE-A2.102, HE-A2.103, HI-A2.100, HI-A2.101, HI-A2.102:** Add General Note 7, which shall read, "*Add Alternate No.1: Include all work at Hillside and Heathman Halls. For base bid, exclude work at Hillside and Heathman Halls.*"

CHANGES TO PROJECT MANUAL

3. **007100-SUPPLEMENTAL GENERAL CONDITIONS**: Article 2 – Time of Completion, Section 2.01; revise first sentence to read, "*Deadline for Substantial Completion shall be January 16, 2015*."

4. **007300-MANUAL FOR CONSTRUCTION PROJECT SAFETY PROCEDURES**: Add 96-page document titled "Manual for Construction Project Safety Procedures 2010" after page one of section.

5. **011000-SUMMARY**: Section 1.01(B), add item 2 to read, "*2. Add Alternate No.1: Include all work at Hillside and Heathman Halls. For base bid, exclude work at Hillside and Heathman Halls."*

6. **012010-PRICE AND PAYMENT PROCEDURES – Attachment A**: Section D, revise item 1 to read, "*1. Add Alternate No.1: Include all work at Hillside and Heathman Halls. For base bid, exclude work at Hillside and Heathman Halls."*

7. **281300- CARD KEY ACCESS CONTROL ENTRY SYSTEMS:** Reissue specification section to delete references to Traka Key Management System and clarify software license and warranty requirements.

END OF ADDENDUM #1

MANUAL

for

CONSTRUCTION PROJECT SAFETY PROCEDURES

Office of Capital Projects
Paul M. DePace, P. E. – Director

University of Rhode Island

2010

Updated 10/29/10- Hot Work Section

01. INTRODUCTION

A. Management Commitment

The University of Rhode Island is committed to providing a jobsite that is free of all recognizable hazards. Safety and health issues will be addressed on site by continuous evaluation of contractor/subcontractor work methods, equipment and work areas.

The information in this manual constitutes written policies and descriptions explaining systematic methods/procedures and assigning responsibilities for reducing the risk of personal injury, death or property damage. While the University of Rhode Island cannot anticipate every jobsite hazard, this manual is expected to guide the conduct of all employees in order to promote uninterrupted production and employment, and to protect life, health, and property.

The provisions of this safety program are well within requirements set forth by local, state and federal regulations, as well as standard industrial practices. The elements of the program are intended to increase the level of employees' awareness concerning potential workplace hazards and encourage safe work practices. These elements will be implemented uniformly and no safety violations will be tolerated. **Compliance with the provisions of this manual does not relieve any contractor of their contractual or other regulatory obligations**.

This program will be updated periodically to ensure compliance with all applicable regulations and continuous protection of all personnel on site.

B. Contractor Employee Involvement

All contractor employees are expected to perform their duties safely and comply with all applicable laws and regulations (local, state and federal).

Employees are encouraged to freely discuss their safety concerns with their immediate supervisors or the University of Rhode Island's Safety Representative.

All employees are charged with personal responsibility for safe behavior. Unsafe acts will not be tolerated.

C. Training

Safety training is an integral part of this safety program. Contractors are expected to educate their employees on the basic elements of this manual as well as other applicable regulatory requirements.

D. Injury Management/Early Return-to-Work

All contractors/subcontractors are expected to return any injured employee to a productive environment as soon as possible after an injury. Contractors must evaluate each lost-time injury and review the restrictions placed on each injured employee by his/her medical provider. If modified work can be found within the assigned restrictions on site, contractors/subcontractors must provide employment within those restrictions. The University of Rhode Island's Claims Representatives will work closely with each injured employee's treating physician and rehabilitation specialist, which in return will enable a program of this nature to be successful.

02. SAFETY ORIENTATION

A. General Requirements

All contractors shall ensure that their employees receive safety orientation prior to starting work on this project.

Each contractor shall maintain, and make available for inspection, records of such safety orientation and training.

The orientation shall consist of the written format specified on the attachment on the next page in addition to any job specific information.

All contractors shall ensure that each employee receives a copy of this orientation and signs the acknowledgement page at the end.

B. Safety Orientation

It is our intention to provide and maintain a totally safe site. **Your commitment to safety is a condition for continuous employment on this project**.

After you have reviewed these guidelines, sign the last page where indicated and return that page to your superintendent or foreman.

1. **Evacuation:** In the event of a fire or any time project evacuation is required, all personnel onsite will be informed via a radio signal, or other method as designated by the Owner or the owner's designated representative.

YOU SHALL IMMEDIATELY:

- Cease all work and shut off all electrical equipment, including welding machines, air compressors, etc.
- Close valves on gas cylinders.
- Walk! (*DO NOT RUN OR JUMP FROM ELEVATED POSITIONS*) to the designated assembly points. Remain at the assembly point until the all-clear signal is sounded. Be prepared to follow the directions from your supervisor.

2. **First Aid:** All injuries are to be reported to the general contractor's representative immediately.

DO NOT LEAVE THE SITE WITHOUT REPORTING AN INJURY, REGARDLESS HOW MINOR YOU MAY THINK IT IS.

- Injuries requiring a doctor's care will require a drug screen and a medical authorization form from your supervisor.
- If we have an employee injured on our job we want the best medical care possible. However, if we have an injury that we suspect is fraudulent we will spare no expense investigating and prosecuting.

3. Protective Equipment:

Head Protection: Hardhat must be worn at all times (with the bill to the front) once entering the work area. Areas of exception are offices, equipment with fully enclosed cabs, lunch and break periods provided no work is going on in the immediate area.

Eye And Face Protection: Appropriate eye protection (ANSI Z87) with side shields is required to be worn by all personnel on the construction site at all times. Prescription glasses must be approved safety glasses, approved glasses and frames, or approved eye protection.

- When grinding or buffing, a face shield with approved safety glasses will be required.
- When cutting or burning, goggles will be required.
- When welding, a welding hood and lens with an appropriate number filter.
- Chemical goggles are required to be worn when working with corrosive or toxic material.

Respiratory And Hearing Protection: Respiratory and/or hearing protection is required in designated areas and or when performing specific tasks.

- Employees must be clean-shaven prior to using a respirator.

4. Barricades:

- Barricade tape is not to be used in lieu of physical barricades for floor, hole, wall openings or when permanent handrails have been removed.
- Yellow barricade tape indicates to use caution when approaching or entering the area.
- Red barricade tape requires authorization to enter area. Anyone entering area without authorization is subject to disciplinary action.

5. Fall Protection/Tie-Off:

- A 100% tie-off policy is in effect anytime you are exposed to a potential of fall in more than 6 feet to a lower level.

  An approved fall arrest system will be worn when working from unprotected elevations greater then 6 feet and when working in powered man-lifts.

- Approved fall arrest system consists of a full body harness, two shock absorbing lanyards, each with double action or positive locking snap hooks**.**
- Any lifeline, safety harness, or lanyard actually subjected to fall loading shall be removed from service.

6. Lockout/Tagout: Lockout/Tagout the power source prior to making adjustments or repairs to any equipment. *DO NOT DEPEND* on the control switch on drills, grinders etc. ***UNPLUG THEM.***

7. Electrical Tools, Cords:

- Tools are to be visually inspected by the employee prior to use. Take out of service any tool or cord found to be defective immediately.
- Use approved ground fault circuit interrupters, for all temporary wiring, that are not part of the permanent wiring of the building or structure.
- When using existing building power that is not protected by ground fault circuit interrupters, the Contractor shall supply and utilize in-line (pigtail) ground fault circuit interrupters.
- Use an Assured Grounding Conductor Program in tandem with all ground fault circuit interrupters.
- Check the RPM rating of grinding wheels or discs. The RPM rating must be greater than that of the driver.
- Do not alter tools and guards.
- maintain electrical cords and welding leads at a 7-foot level, avoiding pinch points and creating trip hazards.
- Do not tie electric cords to metal rods or nails.

8. <u>Ladders</u>:

- Ladders must be free from defects.
- Place the ladder so that its base is out 1/4 the distance of the height.
- Tie ladders at the top or secure at the base.
- Do not extend extension ladder its full length; overlap at least 3 rungs.
- Do not use stepladders as extension ladders.
- Fully extend stepladders and lock in position.
- Only one employee, at a time, shall work off a stepladder.
- Do not stand or sit on the top or top two rungs of a stepladder.

9. <u>Scaffolds</u>:

- Completely deck all scaffolds, platforms, and staging, with decking secured, and built with standard handrails and toe boards on open sides and ends.
- The footing for scaffolds shall be sound and capable of carrying the maximum intended load.
- Do not erect, move, dismantle or alter any scaffold except under the supervision of a competent person.

10. <u>Explosive Actuated Tools</u>: Employees must be trained/certified before they may use these tools.

11. <u>Clothing</u>:

- Employees will work fully clothed.
- Sleeve-less shirts, tank tops, half shirts <u>are not</u> permitted.

- All employees shall wear sturdy work-boots while on the project. Some tasks may require additional foot protection.

12. **Jewelry:** Use good judgment as to what type of jewelry will not constitute hazard. For instance, earrings or chains that could get caught in machinery are not allowed.

13. **Compressed Gas Cylinders:**

- Cap, tie-off, or otherwise properly store compressed gas cylinders when not in use.
- Cylinders must remain in the upright position at all times.
- Keep protective caps in place.
- Do not use oil or grease on valves or gauges.
- Separate oxygen cylinders in storage from fuel-gas cylinders by at least 20 feet, or by a 5-foot wall with a 30-minute fire rating.

14. **Lift Carefully:** Like everything else, the right way to lift is easier and safer. If the load is too heavy, ***GET HELP.*** Do not lift with your back, bend your knees.

15. **Lifting And/Or Swinging Loads:**

- Do not walk under a suspended load or permit others to do so.
- Barricade the lift area to control access into the area.
- Never pick up a load in excess of the capacity of the equipment
- Only one person at a time will give hand signals to operator.
- Use tag lines to control loads.
- Never leave a suspended load unattended.
- Never ride on a load, crane hook, headache ball, or forks of a lift truck.

16. **Rigging:**

- Never use hands or feet to guide cable or line onto a drum or hoist. Use a bar as a guide.
- When it is necessary to stretch cables or lines across roads or walks, block the road or walk if the cable or line is lower then 14 feet above roads or less than 7 feet above walks.
- Seat chain links into a hook by hand pressure only. Never hammer a chain link onto a hook.
- Use approved method to fasten hoisting equipment together.
- Follow the manufacturer's recommendations in determining the safe working loads of hooks. Test all hooks for which no applicable manufacturer's recommendations are available to twice the intended safe working load before they are initially put into use.

17. **Chain Blocks:**

- When using chain blocks, inspect and check for proper operation using a test load before making a critical lift.

- Know how much you are lifting and the chain block limitations.
- No more then one person at a time shall pull on the chain of a block.
- Never use a load chain as a sling for lifting.
- Do not use chains for rigging purposes, with the exception of chain falls with the capacity plate intact.
- Straighten chains and make every link seat before lifting. Never jerk or put any strain on a kinked chain.
- Use appropriate or rated material to suspend or anchor chain blocks.

18. Equipment Operations:

- Operators must be trained for the type of equipment being operated. The Contractor shall provide proof of competency for all individuals operating heavy equipment.
- Passengers are not allowed to ride on equipment with operators.

19. Access: Climbing, sliding down columns or diagonal bracing is not permitted. Walking elevated beams and pipe without being tied off is not permitted.

20. Permits: There are various permits required on the project. The general contractor will issue appropriate permits and maintain records. Commonly used permits include:

- Hot Work: Any work, tool, or equipment (welding, burning, grinding, vehicles, portable welders, etc.) which might provide a source of ignition in areas where combustibles are present.
- Confined Space: The authorization required to enter any vessel, pipe, confined space, excavation etc., for any reason.
- Lock And Tag: Prevents operation of a valve, switch or piece of equipment when injury or property damage could result from the operation.
- Excavation: Authorization to excavate anywhere on campus. An excavation permit shall not be issued until a Dig-Safe number is issued and active.
- Scaffold: Permission to use a scaffold that has been erected. A scaffold permit shall be secured by each new Contractor or Subcontractor that seeks to use a scaffold, following a review of their proposed operation.
- **Failure to follow instructions on a tag or permit will constitute grounds for removing the employee from the site. If you see a tag that you do not understand, ask your supervisor**.

21. Hazard Communication: Handling and storage are the two most common causes of accidents with chemicals. There are several ways that the information is relayed to the employee, these being:

- Container labeling - labels give you information about immediate hazards associated with the chemical.
- Material Safety Data Sheets (MSDS) give you detailed information about the chemical - physical and health hazards, First Aid, fire fighting, protective equipment, etc.

- Know what you are handling, read the label, and if there is any doubt, consult the Material Safety Data Sheet.

22. <u>Parking And Motor Vehicles</u>:

- Employees shall park personal vehicles in designated areas only.
- Posted regulations governing the use of the parking lot shall be followed.
- All vehicles on the University of Rhode Island's premises will be at the risk of the vehicle owner and the University accepts no responsibility for damage to or theft of or from such vehicles.

23. <u>General</u>:

- Drink water only from approved drinking water containers or dispensers.
- Proper housekeeping is essential and will be part of every job.
- Clean up all spills or leaks promptly. The Contractor is responsible for containing and cleaning up all spills caused by its workforce.
- Obey all posted speed limit signs.
- Pedestrians will have the right-of-way.
- Yield right-of-way to emergency vehicles.
- Smoking is permitted in designated areas only.
- No firearms or weapons are allowed on the job site.
- Riding on any equipment that is not designed for personnel transport is prohibited.
- Ride in vehicles with seats firmly attached.
- Employees must obey all danger and caution signs.
- Correct all unsafe conditions when possible. Report all unsafe conditions to your immediate supervisor or safety personnel.
- No running is permitted on the job site.
- All material raised and lowered from any height must be done by rope (No dropping or throwing).
- No horseplay will be tolerated.
- No fighting. All involved will be subject to being removed from the site.

24. <u>Drug Screening/Substance Abuse Policy</u>:

- Drugs, alcohol, and any form of non-prescription medications shall be prohibited, as well as reporting to work under their influence. Those involved in distributing or accepting any form of illegal drugs or alcohol on the job site will be terminated.
- An employee on any type of prescription medication must notify his/her supervisor before starting work for the day.
- All employees on the jobsite are subject to drug testing for reasonable suspicion, as determined by the Contractor or the University of Rhode Island. The Contractor is responsible for administering drug tests. Employees testing positive in a drug test will be dismissed from the site.

· Refusal by any employee to submit for reasonable suspicion testing will be interpreted as a positive test result. The employee will be dismissed from this site.

25. <u>Acknowledgement</u>:

- This is to acknowledge that I have received and read the University of Rhode Island's General Requirements and Safety Orientation Guidelines. The requirements and guidelines in this section of the Manual are not intended to cover all possible situations.
- I understand that I shall not engage in any activity that could create a safety hazard.
- I agree to abide by the general Requirements and Safety Orientation Guidelines including the drug screening procedures.
- I further understand that any violation of the general Requirements and Safety Orientation Guidelines may be grounds for dismissal from the project.

Print full name:_____

Signed:_____

Date:_____

Craft :_____

Company :_____

Please return this page to your supervisor.

03. CONTRACTOR RESPONSIBILITIES

All Contractors working on the University of Rhode Island's property shall have in effect a safety plan and shall designate a person responsible for safety, whether as a full-time position, or in addition to other duties.

A. General

1. **Authorization to Start Work:** Contractors shall not start work until all necessary insurance coverage paperwork has been submitted and approved by the University of Rhode Island. All contractor employees must receive a safety orientation prior to starting work.

2. **Job Hazard Analysis:** Prior to the start of work activities, each Trade Contractor shall submit to the University of Rhode Island's Safety Representative, in writing, a detailed Job Hazard Analysis of every task to be performed for each construction work activity. This analysis shall be ongoing and shall be submitted for new tasks prior to the start of work activity.

3. **Safety Coordinator:** Each Contractor or Subcontractor shall designate an on-site Site Safety Coordinator, who shall be responsible for supervising safety activities on the site. This individual may be the superintendent or other party located full-time on the site. Site Safety Coordinators are required to attend or to provide proof of completion of an OSHA 10 Hour Hazard Recognition Course, or approved equivalent.

4. **HAZCOM Library:** Each Contractor and Subcontractor shall submit Hazard Communication Plans and Material Safety Data Sheets to the General Contractor, who shall maintain a library of Hazard Communications for all employees at the site.

5. **Contractor's Equipment:** All equipment (owned, leased or rented) brought onto The University of Rhode Island's property by Contractors must be in safe operating condition. The University of Rhode Island's personnel shall have the right but not an obligation at any time to inspect contractors' equipment. Such inspections or failure to inspect shall not relieve contractors of their responsibilities for the safe condition of their equipment.

6. **Emergency:** Contractor shall instruct employees to report emergencies to their immediate supervisors and to the general contractor's superintendent, or, if not **available, by calling 911. Contractor employees are not to go to the scene of the** emergency. Contractor employees are to report to the designated assembly area, do manpower accounting, and remain on standby.

7. **Smoking:** Smoking is prohibited, except at locations approved by the University.

8. **Hot Work:**

- "Hot Work" is defined as any work requiring the use of burning or welding equipment, brazing equipment, explosives, open fires, portable grinders, explosion-activated tools, or any other flame or spark producing equipment.
- Contractors shall not use open fires or spark-producing equipment or do any "Hot Work" when there are combustibles in the area without the knowledge and consent of the

General Contractor.

9. **Connecting into Existing Pipelines, Sewers, or Equipment: C**ontractor shall not open or tie its work into the University of Rhode Island's existing pipelines or equipment without a written permit from the University. After a tie-in has been made to the University's existing lines or equipment, the whole piping or equipment system involved shall be considered the same as the University's existing lines and equipment; a written approval must be obtained from the University before additional work can be done on any of these lines or equipment, unless a blind, approved by the University, has been installed separating the lines and equipment being worked on from the remainder of the system. This permit to open or blind does not constitute a permit to do "Hot Work" on the lines or equipment. Permission must be obtained from the University prior to the use of site utilities; such as, but not limited to, water, steam, and air systems, and fire hydrants. Connections to fire hydrants must have the University's approval before connections are made.

10. **Work on, Adjacent to, or Connecting into Existing Electrical Power Circuits and Work on Electrically Operated Equipment:** Under no circumstances shall contractors work on or connect into The University of Rhode Island's electrical system or work on the University's electrically operated equipment without securing prior written permission from the University. Contractors must have in place approved "Electrical Tag/Lockout Procedure". The procedure shall be administered and supervised by the General Contractor.

11. **Entering Pits, Excavations, and Tanks:**

. Contractors shall not enter any closed container, as defined below, without a confined space entry permit. The general contractor shall issue the permit, and it is valid for only the times and dates specified on the application.

. The spaces referred to above include excavations, open top containers and sewers where the head of a person working therein is below the top of the vessel, excavation or sewer.

12. **Working in the Vicinity of Electric Lines:** When it is necessary for a Contractor to operate cranes or derricks, or perform other work within 20 feet of electric lines (vertically or horizontally), Contractor shall consult The University of Rhode Island to determine whether the electric lines can be de-energized.

13. **Excavations:** All excavations made by the Contractor shall meet OSHA Standards. No excavation work shall be performed without a permit listing an active Dig-Safe number. The Dig-Safe number shall be requested by the contractor and reported in writing to the University's Assistant Director of Facilities Services for Lands & Grounds.

14. **Moving Suspended Loads:** Contractor shall not move loads suspended from mobile equipment without load being secured to prevent swinging. All chains, cables, ropes, etc., suspended from mobile equipment shall be properly fastened. Use tag lines for all loads handled by lifting equipment.

15. **Damage to The University of Rhode Island's Property:** If Contractor damages any of the University of Rhode Island's property, or property of any other Contractor or Subcontractor, the damage shall immediately be reported to the University of Rhode Island and accident report is to be completed.

16. **Warning and Caution Signs:** Contractors shall obey all safety warning signs posted by the University and shall require and monitor that safety equipment required by signs is used.

17. **Fire Extinguishers:** Welding machines, burning rigs and tar pots shall have either a 10BC rated CO_2 or a 20 BC rated dry chemical fire extinguisher in proper working condition located adjacent to the equipment. An extinguisher supplied by the Contractor shall be located at each point where "Hot Work" is being performed.

18. **Compressed Gas Cylinders: Transportation, Storage and Use:**

- Compressed gas cylinders, empty or full, shall be adequately secured in an upright, vertical position when in transportation, storage, or use. Do not store cylinders under pipe or power lines.
- Protective caps must be kept in place.
- Use holders, chains, or keepers to prevent overturning.
- Secure cylinders in a vertical position with a suitable keeper while connected to equipment.
- Do not allow oxygen to come in contact with hydrocarbon in any form.
- Avoid any rough-type handling.
- Contractor shall not use oxygen or acetylene for testing purposes.
- Contractor shall not take any cylinders inside a vessel.
- Contractor must label its gas cylinders with the company name so that they can be identified.

19. **Guarding:**

- Contractor shall guard or place appropriate barricades around temporary openings in floors, handrails, etc., to prevent accidents. Contractor shall replace permanent handrails and guardrails immediately after need for opening has ended. Guards on moving machinery shall be in place or other protection provided before such machinery is operated.
- Contractor shall guard or protect any area into which materials or tools are to be stored.

20. **Electrical Tools and Equipment:**

- Contractor shall ground portable electrical tools, metal buildings and equipment.
- Use explosion-proof, approved portable lights (Underwriters Laboratory or Bureau of Mines Approved) "Hot Work" is not authorized.
- Inspect all lighting equipment before use, especially mercury vapor lights, to insure covers are not broken or missing.
- Only 12-volt or less electrical systems can be used during entry situations.

- Contractor must conform to established Control of Hazardous Energy requirements.

21. <u>Welding and Burning</u>:

- Contractor shall not leave welding and/or burning torches unattended at any time on the University of Rhode Island's premises.
- Whenever there are combustible materials present, sparks from welding must be contained to welding area and there must be a standby person, properly trained and equipped.
- Contractor shall not weld from a personnel cage without an insulated link between the bail and hook.
- Contractor must use flash back prevention in the gas-supplied torches on both oxygen and fuel lines.
- Contractor shall not weld on oil or gas lines or equipment in service unless there is an internal cooling agent to remove heat, such as flowing liquid or gas, and/or unless there is sufficient metal, as approved by a qualified party, to prevent a burn-through.

22. <u>Compressed Air</u>: Contractor shall not use compressed air for cleaning purposes unless the airflow is regulated to 30 psi or less. Compressed air may not be used on personnel for cleaning purposes.

23. <u>Refueling Vehicles and Equipment</u>: Whenever possible, gasoline and fuel shall be dispensed through a pump and hose from an approved fueling tank. If not possible, approved Underwriter or Factor Mutual safety cans with flexible spout may be used. Transfer of fuel in non-approved cans, open containers and glass containers is prohibited. Vehicles and equipment engines must be turned off during refueling. Do not transport gas cans in truck beds with bed liners.

24. <u>Clothing and Grooming Rules</u>:

- Long pants or coveralls are required.
- A well-constructed boot/shoe that provides ankle protection, with a substantial flexible sole, must be worn. Exposure to hazard dictates whether a protective toe guard will be required. Sandals, tennis shoes, or any other street type shoes will not be permitted.
- Wear clothing that covers and protects the body when working or visiting in areas where the probability of exposure to hot liquids, flash fires, or skin irritants exists. This includes some type of arm covering.
- Do not wear loose clothing, such as loose sleeves, neckties, or gloves where there is a probability of it getting caught in moving machinery.
- Hard hats meeting specifications contained in the most current edition of ANSI Z89.1 and/or Z89.2 are required for all personnel requiring access to the job site. "Bump caps" are prohibited.
- Facial hair is not allowed for employees whose work requires the use of respiratory protection devices.
- Wear ear plugs and/or earmuffs while working in areas posted with noise warning signs,

or while working with or near tools or equipment which generate sufficient noise to make normal conversation difficult.

- All employees must meet the requirements of the "Material Safety Data Sheets" for use and wearing of additional protective equipment when working on or with chemicals.

25. **Reporting Requirements:** Contractor must report to The University of Rhode Island:

- All safety-related actions by local, state, or federal government. These include but are not limited to OSHA, EPA, etc. (Contractor shall advise the University of Rhode Island of any planned inspections by any of these agencies. Contractor shall provide copy of all correspondence with any government agencies to the University.).
- Any safety-related complaints to government agencies by employees, union or third parties.
- Any injury or near-miss injury, or any equipment damage or near miss equipment damage in the workplace. Submit reports within 24 hours.

26. **OSHA Records:** Each Contractor or subcontractor must have available OSHA Forms 200 at the site or have this information readily available for inspection by The University of Rhode Island.

27. **Safety Rule Violations:** Safety rule violations by contractor employees noted by the University of Rhode Island's supervisors or employees shall be addressed immediately. Unsafe operations that represent an immediate safety hazard or endanger the safety of site employees shall be stopped immediately and brought to the attention of the University. At the discretion of either the University or the Contractor, employees violating safety rules may be dismissed from the site.

28. **Safety Inspections:** Safety inspections shall be conducted by the General Contractor's Safety Coordinator to ensure Contractors and subcontractors are performing assigned activities in a safe manner. Any problems found shall be brought to the attention of the University of Rhode Island.

29. **Housekeeping:** At all times, keep the job site clean and free from debris, trash, and rubbish. Contractor shall store all materials in a neat and orderly fashion. Dismantled or surplus materials, trash, and debris (including earth, clay, lumber, concrete, metal, insulation, paper, etc.) that falls from Contractor's vehicles shall be promptly cleaned up by Contractor.

30. **Breathing Air:** All air used for breathing purposes must be bottled, compressed breathing air meeting the Grade D breathing air as described in the Compressed Gas Association Commodity Specification G-7.1966.

31. **Ladders:** Ladders that are defective in any way shall be taken out of service. The following requirements pertain to serviceable ladders:

- Straight or extension ladders require non-skid safety feet.
- Secure all ladders at the top whenever they are in use.
- Employees working around energized lines shall use wooden ladders.

- Metal ladders are not allowed.

32. **Scaffolds:** Construct scaffolds to meet OSHA Standards. All scaffolds must meet the following requirements:

- Ladders must be provided for safe access.
- All scaffold planking shall be free of knots and cracks (Class A Scaffold Lumber) and shall completely cover the work platform. Only planking that has been inspected and has had its ends color-coded "green" is permissible for use as scaffold plank. Un-inspected or damaged planking shall be color-coded "red" and cannot be used for scaffold work platforms.
- Scaffolds over 4 feet in height, having a minimum horizontal direction of less than 45 inches, shall have standard guardrails installed on all open sides and ends of the platform. If standard guardrails are not feasible, then personal fall arrest systems (harness/lanyard/anchor) shall be provided by the Contractor and used for fall protection.
- The use of "stilts" is prohibited on this project.
- Maintain an approved scaffold inspection and tagging system.

33. **Safety Harness:**

- A safety harness is required for anyone working in areas exposed to a potential fall of more than 6 feet.
- Secure lanyards whenever handrails or a complete deck does not protect the employee.
- Provide a lifeline, if the employee has nothing with which to secure him/her.
  - The lifeline shall be in compliance with the minimum requirements of OSHA regulations.
  - Check lifelines periodically.
  - Remove from service any lifeline, safety harness, or lanyard actually subjected to fall loading.

34. **Supervisory Responsibility:**

- ***Set a Good Example:*** Contractor supervisory personnel shall at all times set a good example for Contractor employees in order to encourage compliance with these safety rules and regulations.
- ***Provide Adequate Instruction:*** Contractor Supervisory personnel shall provide adequate instruction in and require compliance with:
  - Accident prevention aspects of each job;
  - Use or application of appropriate protective equipment and devices;
  - Use or application of tools and equipment

35. **Cooperate with The University of Rhode Island's Designated Representative:** Contractor Supervisory personnel shall cooperate with The University's designated representatives where the safety aspects of a job require coordination.

36. Site Protection Regulations:

- **Parking Locations:** The University of Rhode Island will designate parking locations for Contractor. All vehicles on the University's premises will be at the risk of the vehicle owner; the University accepts no responsibility for damage to or theft of or from such vehicles.
- **Entrance Gate:** The University may designate a gate for the use of the Contractor and for the delivery of its material and supplies. The Contractor and vehicles serving the Contractor shall use only the designated gate for entrance and exit to and from the job site. The Contractor will make arrangements so that vehicle drivers will know which gate to enter and the appropriate job site location.
- **Use of Subcontractors:** The Contractor shall give the names of subcontractors in writing to the University prior to starting work.
- **Gambling:** All forms of gambling are prohibited on the University's property.
- **Ambulance Service:** Contractor, when working on site, shall coordinate with the General Contractor to make any necessary arrangements for ambulance service. See Section 04. of this Manual.
- **Liquor, Drugs, Firearms:**
  - Any person possessing intoxicating liquors or drugs, or who is under the influence of such, will not be permitted to enter the site or loiter on the site premises.
  - Firearms, alcoholic beverages, or narcotics will not be permitted on the University's property or on the job.
- **Visiting and Loitering:** Visiting and loitering by the Contractors' employees at or around entrance gates or other places on the University's property will not be permitted. Contractor must stay in assigned work areas.

37. Traffic Regulations:

- **Motor Vehicles:** All motor vehicles on site must be in safe operating condition. When entering the site, all motor vehicles must display a valid state inspection sticker on the windshield.
- **Driver's License:** Motor vehicle drivers shall be qualified in accordance with driver's license regulations of any state in the US.
- **Warning Flags:** Use red flags on any load that extends beyond the front, side, or rear of any vehicle.
- **Traffic Signs:** Obey all traffic signs and signals, whether fixed or portable, and cooperate with representatives appointed to direct traffic.
- **Speed Limit:** Operate all vehicles within the site's posted speed limits.

04. EMERGENCY MANAGEMENT

A. Reporting an Emergency During Normal Working Hours

Immediately report any emergency condition the University of Rhode Island Project Manager, or if he cannot be reached, the Office of Capital Projects at (401) 874-2725.

B. Reporting an Emergency During Off Hours

Dial 911 for immediate assistance or emergency response. Attempt to contact Owner's representatives, and inform them as soon as possible of the incident.

C. Off-Hours Emergency Phone List

To be developed when work commences on site.

D. Emergency Access to the Site

To be developed when work commences on site.

05. FIRE PREVENTION/PROTECTION

Contractors and subcontractor shall ensure that their employees comply with all Fire Safety rules and regulations established on this project. Review the applicable OSHA standards under Subpart F—Fire Protection and Prevention; 1926.150, 151, 152, 153, 154, 155.

This section of the Manual pertains to those fire prevention and protection regulations that all construction organizations, contractors, subcontractors, vendors, and others shall observe while working on the project. All contractors'/subcontractors' supervisors and their employees must practice the highest level of fire prevention and protection at all times, but in no case less than required by the OSHA Standards and the specific guidelines that follow.

A. General Requirements

1. The employer is responsible for the development of a fire protection program to be followed throughout all phases of the construction and demolition work, and shall provide for the fire fighting equipment as specified in this subpart. As fire hazards occur, there shall be no delay in providing the necessary equipment.

2. Conspicuously locate all fire fighting equipment and make clearly accessible.

3. Inspect all fire fighting equipment periodically and maintain in operating condition.

4. Make available a temporary or permanent water supply as soon as combustible materials accumulate.

5. Conspicuously mark tanks and containers with the name of the product they contain, and "**FLAMMABLE - KEEP FIRE AWAY**."

B. Fire Extinguishers

1. Travel distance to any fire extinguisher will not exceed 100 feet.

2. Provide a fire extinguisher rated not less than 2A for each 3,000 square feet of building area.

3. Locate one or more fire extinguishers rated not less than 2A on each floor of a multi-story building.

4. Locate at least one fire extinguisher rated not less than 2A adjacent to each stairway in a multi-story building.

5. Extinguishers must be clearly accessible, conspicuously located and be periodically inspected and maintained in operating condition.

6. Provide fire extinguishers rated not less than 10B no less than 50 feet from any area in which more than 5 gallons of flammable or combustible liquids or 5 pounds of a flammable gas are being used or stored.

7. Substitutions for 2A Fire Extinguishers - The following may be substituted for each required 2A extinguisher:

- One water hose of not less than ½" diameter, of not more than 100 feet in length and with a discharge capacity of at least 5 gallons per minute. Hose must have sufficient length and stream range to reach all areas of coverage.

C. <u>Ignition Hazards</u>:

1. Install electrical wiring and components in compliance with OSHA subpart K, to prevent fire hazards.

2. Keep exhaust from engines away from combustible materials.

3. Smoking will be prohibited in the vicinity of operations that are likely fire hazards; post "No Smoking" signs.

4. Use only "approved for use in" lighting equipment in flammable or hazardous locations.

D. Temporary Buildings

1. Do not block any exits with a temporary building.

2. Temporary buildings, when located inside of another structure must be made of either noncombustible material or have a minimum one-hour flame resistance.

3. Keep 10 feet of access around sides of temporary building.

NOTE: This includes change shanties inside of a building.

E. Open Yard Storage

1. Keep the entire storage site clean of combustible debris, and also maintain an access way of at least 15 feet width.

2. Store materials in an orderly fashion, in no case higher than 20 feet, and not within 10 feet of any building or structure.

3. Protect tanks and dispensing units against collision damage.

4. Provide a fire extinguisher of at least 2A rating 25 feet and no more than 75 feet from any storage area.

F. Indoor Storage (combustible materials)

1. Storage shall not obstruct exits.

2. Separate non-compatible materials by a one-hour fire rated barrier.

3. Keep materials piled neatly and with regard to the possibility of fire, maintain an open access way for fire fighting.

4. Maintain at least 36 inches clearance between materials and sprinkler heads. Keep materials at least 36 inches away from fire doors.

G. Flammable and Combustible Liquids

1. Use only approved containers and portable tanks for storage and handling of flammable and combustible liquids. Use only approved metal safety cans for the handling and use of flammable liquids. Do not store flammable and combustible liquids in areas of exits, stairways, or other areas used for the safe passage of people.

2. Do not store more than 25 gallons of flammable and combustible liquids in a room outside of an approved storage locker. Store no more than 60 gallons in a single approved storage cabinet. *Note: See specific OSHA standards 1926. 152 (b) for details concerning approved storage lock/cabinet for flammable and combustible liquids.*

H. Flammable and Combustible Liquids Storage (outside)

1. Post danger/hazard signage (No Smoking or Ignition)

2. Do not exceed 1,100 gallons of individual containers of not more than 60 gallons each in any pile or group, and keep them separated from each other by at least 5 feet. Keep containers at least 20 feet from any building.

3. Grade or dike storage areas to divert spills away from buildings.

4. Separate individual portable tanks exceeding 1,100 gallons from each other by at least feet. Keep tanks at least 20 feet from any building. Vent all tanks per NFPA codes.

5. Maintain all areas of outside storage free of debris, excessive weeds, and other combustibles, and provide a 12-foot access way for fire personnel within 200 feet of storage area.

6. Locate a fire extinguisher rated of not less than 20B not less than 25 feet and not more than 75 feet from the storage area.

I. Dispensing Flammable Liquids

1. Dispense flammable liquids through a closed system.

2. Transfer liquids from one container to another only if containers are bonded.

3. Post "no smoking" signs in area.

4. Use only approved safety cans for minor equipment refueling. Mark can contents such as gasoline, diesel, kerosene, etc.

5. Dispose of flammable and combustible liquids in accordance with governing EPA requirements.

06. CONFINED SPACES

This procedure outlines the requirements for working in Confined Spaces. The purpose is to establish procedures and controls for employees who enter confined spaces that may contain hazardous atmospheres. No contractor or subcontractor employee will be permitted to enter any confined space until the appropriate entry procedures are complete.

A. Responsibilities

The General Contractor shall ensure compliance with this procedure and administer all necessary permitting requirements.

B. Identification of Confined Space Workers

1. Qualified Person: An employee who by virtue of training and/or experience is capable of authorizing Confined Space entry, determining atmospheric conditions, and validating an entry permit. Authorization is delegated by site management and must include the authority to cancel or terminate entry at his / her discretion if hazardous conditions arise or are suspected.

2. Confined Space Attendant (also referred to as "standby personnel"): An employee trained in basic rescue techniques, hazard recognition, communication methods, and control of Confined Space entrants.

3. Confined Space Worker/Entrant: An employee authorized to work in a Confined Space who has received appropriate training to perform his / her assigned duties under the entry permit program.

4. Rescue Team: A team of rescue personnel, either onsite or members of an outside organization, with the responsibility to respond to Confined Space emergencies and perform advanced rescue if and when required.

C. Confined Spaces

1. A confined space is one by which by design, construction, or configuration, has limited means of access and egress, has inadequate natural ventilation, contains or could produce dangerous air contaminants, and which is not designed for continuous occupancy.

2. Each contractor is responsible for determining if the places they work will fall under the confined space requirements.

D. Confined Space Types/Classes

1. **Class "A"** - Presents a situation which is immediately dangerous to life or health (IDLH). These include, but are not limited to, oxygen deficient, explosive or flammable atmospheres, and/or concentrations of toxic substances.

2. **Class "B"** - Has the potential for causing injury and/or illness if preventative measures are not used, but is not considered immediately dangerous to life and health.

3. **Class "C"** - Has had the hazards or potential hazards eliminated or controlled through the use of preventative measures. A Class "C" is considered safe but may be entered only after the Contractor has met the following requirements:

a. Report to the confined space location.

1) Test the confined space for the presence or absence of hydrogen sulfide gas, oxygen, and carbon monoxide.

2) Approve entry based on testing results.

3) Issue an approved confined space entry permit for each confined space entered.

b. Provide standby person for emergency purposes.

c. Have emergency retrieval equipment at the location. e.g. tripod, full body harness, retrieval line, etc.

d. Provide continuous forced air ventilation during the time work is being performed and at least 30 minutes prior to confined space entry.

E. Training and Responsibilities of Designated Employees

1. Qualified Person:

a. Persons to authorize or be in charge of entry will be trained in and perform assigned duties as follows:

1) Ensure that required procedures, practices, and equipment for safe entry are in effect before allowing entry.

2) Conduct appropriate atmospheric evaluation of the Confined Space via the use of testing equipment on which he or she has been trained to operate.

3) Determine that all requirements of the entry permit have been met before allowing entry.

4) Ensure that operations remain consistent with the terms of the entry permit at all times.

5) Cancel entry authorization at any time conditions are inconsistent with the guidelines of this procedure.

6) Terminate entry authorization upon completion of the work.

7) Prohibit unauthorized personnel from entry at all times.

b. Specific training/instruction for Qualified Persons will include:

1) Use of Monitoring Equipment.

2) Hazard Communication.

3) Respiratory Protection.

4) Permit Authorization and Termination

5) Hazard Recognition

6) Contacting Advanced Rescue Personnel

2. Confined Space Attendant

a. Persons authorized as attendants will be trained in and perform assigned duties as follows:

1) Remain stationed outside the Confined Space at all times during entry operations.

2) Maintain an accurate count of all persons inside Confined Spaces.

3) Ensure that permits specifically required by certain projects will be used as required.

4) Recognize potential hazards and monitor conditions to ensure that a safe atmosphere remains.

5) Maintain continuous communication with authorized entrants.

6) Authorize evacuation of Confined Spaces when hazardous conditions or permit violations exist.

7) Prevent entry of unauthorized personnel.

8) Contact advanced rescue personnel if required.

b. Specific training/instruction for Confined Space Attendants will include:

1) Hazard Communication

2) Respiratory Protection

3) Hazard Recognition

4) Communication Techniques

5) Basic Rescue

6) Evacuation Authority

3. Authorized Entrants

a. Employees who work as authorized entrants will be trained in and perform assigned duties as follows:

1) Be aware of Confined Space hazards that may be encountered.

2) Recognize hazard exposure symptoms.

3) Understand exposure hazards and their results.

4) Maintain contact with the attendant.

5) Recognize the need and initiate self-evacuation when necessary or when they perceive that danger is present.

6) Hazard Recognition:

- Communication Techniques
- Use of Personal Protection Equipment
- Self-rescue
- Hazard Communication

F. Permit Requirements

1. The General Contractor will be responsible for issuing permits and ensure compliance with the requirements of this program.

2. Contractor and subcontractor employees will be required to work within the provisions outlined in Confined Space Entry Permit Form CS1. The Qualified Person will complete all portions of the permit. The completed permit will be posted at the Confined Space entrance and will then become the responsibility of the attendant. Upon completion of the shift or the work (whichever is the first to occur), the attendant will sign the permit to indicate that all entrants have safely exited the Confined Space and return the permit to the Qualified Person for retention.

3. Upon placement of the permit, the attendant is responsible for control of the work area and has full authority to cease operations or terminate entry at any time. These actions will be reported to the Qualified Person immediately following their occurrence.

4. A blanket Confined Space Entry Permit may be requested for spaces opened for extended periods of time and in which permanent or temporary/portable ventilation equipment is utilized. Ventilation equipment should be capable of maintaining suitable atmosphere in the space when utilized.

G. Rescue Operations

1. No employee is allowed to make an entry into a confined space for rescue purposes unless properly trained and equipped to do so. If no personnel are authorized for rescue entry, the contractor and/or subcontractor shall secure outside assistance for rescue operations prior to entry into a confined space.

CONFINED SPACE ENTRY PERMIT

Date and Time Issued: _____

Job Site/Space I.D.:_____

Equipment to be worked on:_____

Date and Time Expires:

Job Supervisor:_____

Work to be performed_____

Stand-by Personnel:_____

1. Atmospheric Checks: Time: _____

Oxygen: _____%

Explosive: _____% LFL

Toxic: _____ PPM

2. Tester's Signature_____

3. Source Isolation (No Entry): N/A YES NO

Pumps or lines blinded ( ) ( ) ( )
disconnected, or blocked ( ) ( ) ( )

4. Ventilation Modification N/A YES NO

Mechanical ( ) ( ) ( )
Natural Ventilation Only ( ) ( ) ( )

5. Atmospheric Check after isolation and ventilation:

Oxygen _____% 19.5 %

Explosive _____% LFL 10 %

Toxic _____ PPM 10 PPM H2S

Time _____

Testers Signature _____

6. Communication Procedures: _____

_____

_____

7. Rescue procedures: _____

_____

8. Entry, standby, and back up persons: YES NO

successfully completed required training? ( ) ( )
Is it current? ( ) ( )

9. Equipment: N/A YES NO

Direct reading gas monitor tested ( ) ( ) ( )

Safety harness and lifelines for
entry and standby persons: ( ) ( ) ( )

Hoisting Equipment: ( ) ( ) ( )

Communication line established: ( ) ( ) ( )
SCBA for entry, standby persons: ( ) ( ) ( )
Protective Clothing: ( ) ( ) ( )
All Electric equipment listed
Class I Division I, Group D and
non-sparking tools: ( ) ( ) ( )

10.Periodic atmospheric tests:

Oxygen _____% Time_____ Oxygen _____% Time_____

Oxygen _____% Time_____Oxygen _____% Time_____

Explosive _____% Time_____Explosive ____% Time_____

Explosive _____% Time_____ Explosive ____% Time_____

Toxic _____% Time_____Toxic _____% Time_____

Toxic _____% Time_____ Toxic _____% Time_____

We have reviewed the work authorized by this permit and the information contained here-in. Written instructions and safety procedures have been received and are understood. Entry cannot be approved

if any squares are marked in the "no" column. This permit is not valid unless all appropriate items are completed.

Permit Prepared By PRINT NAME_____ SIGNATURE_____

Approved By: PRINT NAME_____ SIGNATURE_____

Reviewed By: PRINT NAME_____ SIGNATURE_____

THIS PERMIT IS TO BE KEPT POSTED AT THE JOB SITE. RETURN COPY TO SAFETY OFFICE FOLLOWING JOB COMPLETION.

07. COMPRESSED GAS CYLINDERS

The purpose of this procedure is to prevent injury to personnel and damage to property caused by the mishandling of compressed gas cylinders. This procedure applies to all employees, contractors, and visitors who handle compressed gas cylinders.

A. Responsibility:

All contractors will ensure that their affected employees are trained in the proper use and inspection of gas cylinders.

B. General Requirements

1. Secure all cylinders upright and store in assigned places.

2. Never drop cylinders or permit them to strike each other.

3. Replace the valve caps on cylinders when regulators are removed. Do not transport cylinders without valve caps in place.

4. Do not use cylinders for rollers, supports, or any purpose other than to contain gas.

5. Keep sparks and flame away from cylinders. Never place or store cylinders near furnaces, boilers, or other high-temp sources.

6. Identify all compressed gas cylinders by a legibly marked label. Do not accept for use any cylinder that is not identified by a legible label and notify shipping personnel to retrieve the cylinder.

7. Open cylinder valves slowly. Stand to one side of the glass-covered gauge faces when opening cylinder valves. Close cylinder valves when stopping work, moving cylinders, or when cylinders are empty.

8. Mark empty cylinders "**EMPTY**" or "**MT**". Ensure all valves are closed and caps installed.

9. Never tamper with safety devices on valves or cylinders.

10. Cylinders must be equipped with the proper regulators. Inspect all connections and seating surfaces when applying regulators.

11. Contractors are responsible for ensuring that all pressure regulators are inspected/tested.

12. Contractors shall maintain inspection/test records onsite.

13. Contractors will ensure the integrity of each cylinder.

14. Cylinders must not be taken inside tanks or vessels where work is to be performed.

C. Special Rules For Oxygen Cylinders

1. Keep oxygen cylinders clean. Prevent oil or grease from contacting valves, regulators, gauges, fittings, hose lines, pipelines, blowpipes, and any connections.

2. Open the cylinder valve fully when cylinder is in use.

3. Never use oxygen as a pressure medium to blow out obstructed pipelines.

4. Hoses must be equipped with backflow controls and flame arrestors.

5. Oxygen cylinders in storage must be separated from fuel-gas cylinders by a minimum distance of 20 feet or by a 5-foot barrier having a fire rating of at least 30 minutes.

D. Special Rules For Acetylene Cylinders

1. Do not ever use Acetylene at a pressure exceeding 15 pounds per square inch.

2. Do not open an acetylene cylinder valve more than one full turn; then, in case of fire, the valve can be closed immediately.

3. Move acetylene cylinders to open air away from possible sources of ignition if leak occurs that cannot be stopped.

4. Never test for acetylene leaks with an open flame. Use leak detector or soapy water.

08. DRILLING AND BLASTING OPERATIONS

In order to minimize the risk of injury to employees or anyone on this site, the following conditions will set forth the requirements for drilling and blasting operations.

A. Scope

These requirements apply to all activities involving drilling, blasting and hauling of debris on this project.

B. Responsibilities

1. **All Contractors** shall be responsible for implementing the requirements of this plan and directing the activities of their employees and other sub- contractors to ensure compliance. **NOTE: Use of Personal Protective Equipment, i.e. hard hats, safety glasses and safety shoes, are required in all drilling and blasting areas.**

C. Drilling

1. A competent person shall inspect all drilling and associated equipment prior to each use. Correct equipment defects affecting safety before the equipment is used.

2. Inspect the drilling area for hazards before starting the drilling operation.

3. Do not allow employees on a drill mast while the drill bit is in operation or the drill machine is being moved.

4. When a drill machine is being moved from one drilling area to another, secure drill steel, tools, and other equipment, and place the mast in a safe position.

5. Do not drill blasting holes through blasted rock (muck) or water.

D. Haulage of Debris

1. A competent person shall inspect haulage equipment before each shift.

2. Correct equipment defects affecting safety and health before using the equipment.

3. Safely remove debris from all surrounding areas immediately after each blast.

E. Blasting - Use of Explosives

1. Only authorized and qualified persons will be allowed to handle and use explosives on this project.

2. Smoking, firearms, matches, open flame lamps, and other fires, flame or heat producing devices and sparks shall be prohibited in or near explosive magazines or while explosives are being handled, transported or used.

3. No person shall be allowed to handle or use explosives while under the influence of intoxicating liquors, narcotics, or other dangerous drugs.

4. Account for all explosives at all times. Keep explosives not being used in a locked magazine, unavailable to persons not authorized to handle them. Keep an inventory and record of all explosives used onsite at all times. **Notify the University of Rhode Island upon discovery of any loss, theft, or unauthorized entry into a magazine**.

5. Do not abandon explosives or blasting agents.

6. Do not fight any fire where the fire is in imminent danger of contact with explosives. Remove all employees to a safe area and guard the fire area against intruders.

7. Use only original containers, or magazines, for taking detonators and other explosives from storage magazines to the blasting area.

8. When blasting is done in congested areas or in proximity to a structure or highway, or any other installation that may be damaged, the blaster shall take special precautions in the loading, delaying, initiation, and confinement of each blast with mats or other methods so as to control the throw of fragments, and thus prevent bodily injury to employees.

9. Employees authorized to prepare explosive charges or conduct blasting operations shall use every reasonable precaution including, but not limited to, visual and audible warning signals, flags, or barricades, to ensure employee safety.

10. Insofar as possible, conduct blasting operations above ground between sunrise and sundown.

11. Empty boxes and paper and fiber packing materials, which have previously contained high explosives, shall not be used again for any purpose, but shall be destroyed by burning at an approved location.

12. Do not use explosives, blasting agents, and blasting supplies that are obviously deteriorated or damaged.

13. Delivery and issue of explosives shall only be made by and to authorized persons and into authorized magazines or approved temporary storage or handling areas.

14. Do not carry on blasting operations in the proximity of overhead power lines, communication lines, utility services, or other services and structures until the operators and/or owners have been notified and measures for safe control have been taken.

15. The use of black powder on this project is prohibited.

16. Direct and supervise all loading and firing by competent persons thoroughly experienced in this field.

F. Transportation of explosives

1. Transportation of explosives shall meet the provisions of Department of Transportation regulations contained in 49 CFR Parts 171-179, Highways and Railways; and 49 CFR Parts 390-397, Motor Carriers.

2. Motor vehicles or conveyances transporting explosives shall only be driven by, and be in the charge of, a licensed driver who is physically fit. He/she shall be familiar with the local, State, and Federal regulation governing the transportation of explosives.

3. No person shall smoke, or carry matches or any other flame-producing device, nor shall firearms or loaded cartridges be carried while in or near a motor vehicle or conveyance transporting explosives.

4. Do not transport explosives, blasting agents, and blasting supplies with other materials or cargoes. Do not transport blasting caps (including electric) in the same vehicle with other explosives.

5. Vehicles used for transporting explosives shall be strong enough to carry the load without difficulty, and shall be in good mechanical condition.

6. When a vehicle with an open body transports explosives, secure the original manufacturer's container to the bed to contain the cargo.

7. All vehicles used for the transportation of explosives shall have tight floors and any exposed spark-producing metal on the inside of the body shall be covered with wood, or other nonsparking material, to prevent contact with containers of explosives.

8. Every motor vehicle or conveyance used for transporting explosives shall be marked or placarded on both sides, the front, and the rear with the word "Explosives" in red letters, not less than 4 inches in height, on white background. In addition to marking or placarding, the vehicle or conveyance may display, in a manner that will be readily visible from all directions, a red flag 18 inches by 30 inches, with the word "Explosives" painted, stamped, or sewed thereon, in white letters, at least 6 inches in height.

9. Equip each vehicle used for transportation of explosives with a fully charged fire extinguisher, in good condition. An Underwriters Laboratory-approved extinguisher of not less than 10-ABC rating will meet the minimum requirement. Train the driver in the use of the extinguisher on his vehicle.

10. Do not allow vehicles or conveyances carrying explosives, blasting agents, or blasting supplies, inside a building for repairs or servicing.

11. Every motor vehicle transporting explosives shall be **attended to at all times**.
NOTE: **Attended** means the driver or authorized person is physically on the vehicle or can see the vehicle and reach it quickly without any kind of interference.

G. Storage of explosives and blasting agents.

1. Store explosives and related materials in approved facilities required under the applicable provisions of the Bureau of Alcohol, Tobacco and Firearms regulations contained in 27 CFR part 55; State and Local regulations.

2. Do not store blasting caps, detonating primers and primed cartridges in the same magazine with other explosives or blasting agents.

3. Do not permit smoking and open flames within 50 feet of explosives and detonator storage magazine.

4. Slope ground around magazines away for drainage. Keep the land surrounding magazines clear of brush, dried grass, leaves, and other materials for a distance of at least 25 feet.

5. Explosives and blasting agents storage area must be secured and inaccessible to unauthorized persons.

H. Blaster Qualifications

1. A blaster shall be able to understand and give written and oral orders.

2. A blaster shall be in good physical condition and not be addicted to narcotics, intoxicants, or similar types of drugs.

3. A blaster shall be qualified, by reason of training, knowledge, or experience, in the field of transporting, storing, handling, and use of explosives, and have a working knowledge of State and local laws and regulations which pertain to explosives.

4. Blasters shall be required to furnish satisfactory evidence of competency in handling explosives and performing in a safe manner the type of blasting that will be required.

5. The blaster shall be knowledgeable and competent in the use of each type of blasting method used.

I. Loading of explosives or blasting agents

1. Establish procedures that permit safe and efficient loading before loading is started.

2. All drill holes shall be sufficiently large to admit freely the insertion of the cartridges of explosives.

3. Tamping shall be done only with wood rods or plastic tamping poles without exposed metal parts, but nonsparking metal connectors may be used for jointed poles. Avoid violent tamping. Do not tamp primer.

4. No holes shall be loaded except those to be fired in the next round of blasting. After loading, immediately return all remaining explosives and detonators to an authorized magazine.

5. Do not start drilling until all remaining butts of old holes are examined for unexploded charges. Refire any that are found before work proceeds.

6. No person shall be allowed to deepen drill holes, which have contained explosives or blasting agents.

7. Do not leave explosives or blasting agents unattended at the blast site.

8. Remove machines, and all tools not used for loading explosives into borehole, from the immediate location of holes before explosives are delivered. **Do not operate equipment within 50 feet of loaded holes**.

9. Do not permit activity of any nature other than that which is required for loading holes with explosives in a blast area.

10. Check holes prior to loading to determine depth and conditions. Do not perform drilling within 50 feet of a hole that has been loaded with explosives and the explosives have failed to detonate.

11. When loading a long line of holes with more than one loading crew, separate the crews by practical distance consistent with efficient operation and supervision of crews.

12. Do not load or use explosives underground in the presence of combustible gases or combustible dusts.

13. Stem all blast holes in open work to the collar or to a point, which will confine the charge.

14. Maintain warning signs, indicating a blast area, at all approaches to the blast area. Use minimum 4 inches high warning sign lettering on a contrasting background.

15. Never spring a borehole when it is adjacent to or near a hole that is loaded. Do not use flashlight batteries for springing holes.

16. Allow drill holes to cool, which have been sprung or chambered, and which are not water-filled, before explosives are loaded.

17. Do not leave loaded holes unattended or unprotected.

18. The blaster shall keep an accurate, up-to-date record of explosives, blasting agents, and blasting supplies used in a blast and shall keep an accurate running inventory of all explosives and blasting agents stored on the operation.

J. Inspection after Blasting

1. Immediately after the blast has been fired, disconnect the firing line from the blasting machine.

2. Allow sufficient time, not less than 15 minutes in tunnels, for the smoke and fumes to leave the blasted area before returning to the shot. Have the blaster perform an inspection of the area and the surrounding rubble to determine if all charges have been exploded before employees are allowed to return to the operation, and in tunnels, after the muck pile has been wetted down.

K. Misfires

1. If a misfire is found, the blaster shall provide proper safeguards for excluding all employees from the danger zone.

2. No other work shall be done except that necessary to remove the hazard of the misfire and only those employees necessary to do the work shall remain in the danger zone.

3. Do not attempt to extract explosives from any charged or misfired hole; put in a new primer and reblast the hole. If refiring of the misfired hole presents a hazard, the explosives may be removed by washing out with water or, where the misfire is under water, blown out with air.

4. If there are any misfires while using cap and fuse, keep all employees away from the charge for at least 1 hour. Handle misfires under the direction of the person in charge of the blasting. Carefully trace all wires and search for unexploded charges.

5. Do not permit drilling, digging, or picking until all missed holes have been detonated or the authorized representative has approved that work can proceed.

09. EXCAVATIONS

Every contractor performing excavation work on site must have a properly trained and designated competent person. Contractors shall maintain on site all required excavation documentation in accordance with the provisions of 29 CFR 1926 Subpart P. All such records shall be available for inspection upon request.

A. General Requirements

1. Utility companies and owners shall be contacted, advised of the proposed work, and asked to establish the location of the utility underground installations prior to the start of actual excavation

2. Do not permit employees underneath loads handled by lifting or digging equipment.

3. Employees shall be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials

B. Protection/Barricade

1. Excavations must be barricaded to alert pedestrians and vehicle traffic.

2. Spoil dirt may be used to barricade one side of an excavation.

3. The spoil pile must be at least three (3) feet high and also must be piled at least three (3) feet from the edge of the excavation.

C. Access/Egress

1. Provide access and egress for all excavations. Provide ladders at intervals no greater than 25 feet. Ladders must extend at least three (3) feet above the top of the excavation and must be secured at top and bottom.

D. Fall Protection

1. Provide walkways where employees or equipment are required or permitted to cross over excavations. Provide guardrails, which comply with 1926.502(b), where walkways are 6 feet (1.8 m) or more above lower levels.

2. Provide adequate barrier physical protection at all remote excavations. Barricade or cover all wells, pits, shafts, etc.

3. Upon completion of tasks, excavation must be back-filled.

E. Sloping/Shoring

1. Excavations must be sloped or shored when deeper than five (5) feet.

2. A competent person must check all sloping prior to anyone entering the excavation. See Table (1) for slope requirements.

3. Sloping or benching for excavations greater than 20 feet shall be designed by a registered professional engineer. The approved contract drawing must be kept on site.

F. Inspections

1. The competent person shall conduct an inspection prior to the start of work and as needed throughout the shift.

2. Daily inspections of excavations, the adjacent areas, and protective systems shall be made by a competent person for evidence of a situation that could result in possible cave-ins, failure of protective systems, hazardous atmospheres, or other hazardous conditions.

3. Conduct inspections after every rainstorm or other hazard-increasing occurrence. These inspections are only required when employee exposure can be reasonably anticipated.

4. Where the competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, remove exposed employees from the hazardous area until the necessary precautions have been taken to ensure their safety.

G. Water Accumulation

1. Employees shall not work in excavations in which there is accumulated water, or in excavations in which water is accumulating, unless adequate precautions have been taken to protect employees against the hazards posed by water accumulation.

2. If water is controlled or prevented from accumulating by the use of water removal equipment, a competent person shall monitor the water removal equipment and operations to ensure proper operation

TABLE 1.

Maximum Allowable Slopes

Soil or Rock Type	Maximum Allowable Slopes (H : V)* For Excavations Less Than 20 Feet Deep**
Stable Rock	Vertical (90 Degrees)
Type A ***	3/4:1 (53 Degrees)
Type B	1:1 (45 Degrees)
Type C	1 1/2:1 (34 Degrees)

Notes:

* Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.

****** Sloping or benching for excavations greater than 20 feet shall be designed by a registered professional engineer.

******* A short-term maximum allowable slope of 1/2H:1V (63 degrees) is allowed in excavations in type A soil that are 12 feet (3.67 m) or less in depth. Short-term maximum allowable slopes for excavations greater than 12 feet (3.67 m) in depth shall be 3/4H:1V (53 degrees).

10. CRANE OPERATIONS

All cranes must be inspected by qualified persons prior to being used on this jobsite. Affected contractors shall maintain a copy of annual inspection records of such cranes on the jobsite all the time.

A. Set Up

1. <u>Ground/Crane Condition</u>

a. Do not set cranes on unstable ground, backfill or buried pipes.

b. Do not set up cranes where the crane cannot be made level.

2. <u>Overloading</u>

a. Do not use crane to lift more than the rated capacity.

b. Do not ignore or misinterpret load chart.

c. If load computer is used, correctly program the computer.

B. Responsibilities for Crane Operations

1. <u>Affected Contractors/Subcontractors shall ensure that</u>:

a. Personnel involved in maintaining, repairing, transporting, preparing, and assembling the equipment are well trained.

b. Employees clearly understand their responsibilities and the authority necessary to operate cranes safely.

c. Maintenance and inspection program is established and maintained through a written program or ensure that the crane owner has the program in place.

d. Ensure that site supervisors are aware of their responsibilities.

e. Crane and associated equipment are in accordance with the manufacturer's requirements.

2. <u>Crane Operators</u> are responsible for:

a. Knowing the machine functions and limitations

b. Being familiar with crane operating manual

c. Understanding the crane's load chart

d. Inspecting and maintaining the crane regularly

e Informing supervisor of problems, needed maintenance, or necessary repairs (**in writing**)

f. Completing inspections in accordance with the manufacturer's requirements

g. Being aware of site conditions that could affect crane operations

h. Finding out the weight of the load and where the load is to be placed

i. Ensuring adequate rigging

j. Considering all factors that may reduce cranes capacity

k. Knowing basic load rigging procedures

l. Shutting down and securing the machine when leaving unattended.

3. Contractor site supervisor is responsible for:

a. Supervising all work involving the crane, including planning meetings in advance of critical lifts

b. Determining the correct load weight and radius

c. Ensuring the rigging crew is experienced and competent

d. Ensuring the load is properly rigged

e. Ensuring the signalmen are competent and capable of directing the crane

f. Designating signalmen and identifying them to the operator

g. Keeping the public and non-essential personnel clear of working radius

h. Ensuring that all safety precautions are taken when working in the vicinity of power lines.

i. Ensuring all personnel involved in the operation understand their job responsibilities and safety related aspects

C. Pre-Job Planning Requirement

1. Operator – All crane operators shall be properly licensed to operate in the State of Rhode Island. Certification records shall be maintained on the job site by the Contractor and made available to the University of Rhode Island on request.

2. Load charts – Provide and attach a legible load chart in a location accessible to the operator while at the control.

D. Inspections

1. The crane operator shall perform inspections on each crane, in accordance with the requirements of its manufacturer.

2. A thorough, annual inspection of hoisting machinery (cranes and derricks) shall be made by a Government or private agency recognized by the U.S. Department of Labor or the University of Rhode Island. The Contractor must post the most current inspection certificates in the cab or operator's station of the hoisting machinery and provide the University, upon request, a copy of the inspection certificate results.

3. A qualified person shall inspect Cranes not in regular use.

E. Wire Rope: Out of Service Criteria – Take cranes out of service with wire ropes that meet the following criteria:

1. In running ropes – six randomly distributed broken wires in one lay or three broken wires in one stand, in one lay

2. One outer wire broken at the point of contact with the core of the rope which has worked its way out of the rope structure and protrudes, or loops, out from the rope structure

3. Wear of one-third of the original diameter of outside individual wires

4. Kinking, crushing, bird-caging, or any other damage resulting in distortion of rope structure

5. Evidence of heat damage

6. Reduction of nominal diameter from 1/64" to 3/32" depending on rope diameter

11. HOUSEKEEPING

This procedure is designed to outline the project housekeeping requirements for all contractors in order to maintain a safe and clean work environment.

A. Introduction

All contractors are required to maintain their respective work areas in clean, sanitary and orderly condition at all times.

B. Housekeeping

1. Each contractor is responsible for arranging for the removal of all scrap material generated during each project.

2. During the course of construction, renovation, alteration, or repairs, keep all construction debris clear from all work areas and do not allow to accumulate.

3. Properly dispose of all materials according to federal, state and local guidelines.

4. Contractors shall ensure that enough trash receptacles are located within their respective work areas.

5. Clearly mark containers for the contents to be disposed of. (e.g. oily rags, metal, paper waste, etc.)

6. Provide covers for containers used to collect garbage, solvents and other flammable wastes, hazardous wastes such as acids or caustics.

7. Arrange building materials so that they do not pose a hazard to personnel in or around the area.

8. Maintain walking and working surfaces clear of materials and or debris. Cords and hoses must be out of walkways or elevated 7 feet above floor level.

9. Glass containers are not allowed on site.

10. Under no circumstances is the Contractor to leave the jobsite for the day until each of the above Housekeeping requirements is fully complied with. The Contractor shall provide periodic cleanup during the day as necessary to provide working conditions that are clean, sanitary, orderly, and safe.

C. Sanitation

1. Contractors shall ensure that there is adequate supply of drinking water for their employees.

2. Contractors shall provide single use cups.

3. Water containers must be tightly closed and equipped with a tap.

4. The water dispenser shall have the lid taped with the date and time the water was prepared.

5. Provide a trash receptacle near each water dispenser.

6. Water containers must be cleaned daily.

7. Contractors must provide sufficient toilet facilities for their personnel onsite.

12. HAZARD COMMUNICATION PROGRAM

All contractors involved with this project are required to obtain information on any chemicals that are intended to be used onsite, take steps to reduce exposures, substitute less hazardous materials, and establish proper work practices. These efforts will help prevent the occurrence of work-related illnesses and injuries caused by chemicals. Most chemicals/substances used in the workplace have some hazard potential, and thus will be covered by this requirement.

REQUIREMENTS

A. Written Program

1. Each contractor on site must have a written hazard communication program that addresses how information on hazardous chemicals will be provided to their exposed employees.

2. The written program must describe how the requirements for labels and other forms of warning, material safety data sheets, and employee information and training, are going to be met.

B. Identify Responsible Staff

All contractors must identify their employees who will be responsible for conducting Hazard Communication training on site.

C. Identify Hazardous Chemicals/Substances

1. All contractors must prepare a list of hazardous chemicals/substances they plan to bring to the site as part of the written HazCom program.

2. A copy of the list must be supplied to the general contractor.

D. Labels and Other Forms of Warning

1. Label, tag, or mark all containers of hazardous chemicals with the identity of the material and appropriate hazard warnings.

2. If the contractor subsequently transfers the material from a labeled container to another container, the contractor will have to label that container unless the material is for immediate use during the shift period.

E. Material Safety Data Sheets

1. Contractors must have an MSDS for each hazardous chemical that they use on site.

2. Contractors shall use the information contained in the MSDS to design protective programs for their workers.

3. MSDS's must be readily accessible to employees when they are in their work areas during their work shifts.

4. Employees shall not use any chemicals for which the contractor has not received an MSDS. The MSDS provides information needed to ensure proper protective measures are implemented prior to exposure.

5. Copies of all MSDS must be furnished to the general contractor.

F. Employee Information and Training

Each employee who may be "exposed" to hazardous chemicals when working must be provided information and trained prior to initial assignment to work with a hazardous chemical, and whenever the hazard changes. "Exposure" or "exposed" means "an employee is subjected to a hazardous chemical in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.) and includes potential (e.g., accidental or possible) exposure."

In reviewing the written program with regard to information and training, the following items need to be considered:

1. Designation of person(s) responsible for conducting training;

2. Format of program to be used (audiovisuals, classroom instruction, etc.);

3. Elements of the training program;

4. Procedure to train new employees at the time of their initial assignment to work with a hazardous chemical, and to train employees when a new hazardous chemical is brought to site.

In general, the most important aspects of training required in this section are to ensure that employees are informed if they are exposed to hazardous chemicals, that they know how to read and use labels and material safety data sheets, and that, as a consequence of learning this information, they are following the appropriate protective measures established by the contractor.

G. Other Requirements

In addition to the above specific requirements, all contractors shall ensure that their programs address the following:

1. Outline of methods the contractor will use to inform employees of the hazards of non-routine tasks;

2. Availability of the written program to employees and their designated representatives; and

3. Established procedures to evaluate program effectiveness.

13. ELECTRICAL SAFETY

Contractors shall ensure that electrical equipment is free from recognized hazards that are likely to cause death or serious physical harm to employees. Electrical equipment and installations used to provide electric power and light at the jobsite shall meet all OSHA and NEC regulations.

A. Examination, Installation and Use of Equipment

Before installation or use, examine electrical equipment to ensure that its operation shall not constitute a safety hazard to employees. Examine such equipment for the following characteristics:

1. Suitability for installation and use in conformity with the provisions of all applicable regulations. Suitability of equipment for an identified purpose may be evidenced by a listing, by labeling, or by certification for the identified purpose.

2. Mechanical strength and durability. For parts designed to enclose and protect other equipment, this includes the adequacy of the protection thus provided.

3. Electrical insulation.

4. Heating effects under conditions of use.

5. Arcing effects.

6. Classification by type, size, voltage, current capacity, and specific use.

7. Other factors that contribute to the practical safeguarding of employees who use or are likely to come in contact with the equipment.

B. Guarding

Guard live parts of electric equipment operating at 50 volts or more against accidental contact. Accomplish guarding of live parts as follows:

1. Location in a cabinet, room, vault, or similar enclosure accessible only to qualified persons.

2. Use of permanent, substantial partitions or screens to exclude unqualified persons.

3. Location on a suitable balcony, gallery, or platform elevated and arranged to exclude unqualified persons.

4. Elevation of eight feet or more above the floor.

5. Entrance to rooms and other guarded locations containing exposed live parts must be marked with conspicuous warning signs forbidding unqualified persons to enter.

6. Electric installations that are over 600 volts and that are open to unqualified persons must be made with metal-enclosed equipment or enclosed in a vault or area controlled by a lock. In additional, equipment must be marked with appropriate caution signs.

C. Grounding of Equipment Connected by Cord and Plug

All non-current carrying parts of electrical equipment must be grounded or have an approved double-insulated setup. Grounded circuits must have enough capacity to carry all of the currents likely to be imposed upon it.

D. Safety-Related Work Practices

1. Protection of Employees

a. Contractor shall determine before operations start if there is any energized equipment or electrical circuit in the work area that might have risk to the worker. Identify equipment and conductors that must be de-energized to the University of Rhode Island Project Manager who will authorize de-energizing the Equipment under the Lockout/Tagout procedure/system. The contractor shall use the project Lockout/Tagout procedure and strictly adhere to these requirements. The University will monitor adherence to the procedures on a regular basis.

b. Where the exact location of underground electric power lines is known, provide employees using jack hammers or hand tools that may contact a line with insulated protective gloves.

c. Even before work is begun, the contractor must determine by inquiry, observation, or instruments where any part of an exposed or concealed energized electric power circuit is located. This is necessary because a person, tool or machine could come into physical contact with the electric power circuit.

d. Contractors shall advise their employees of the location of such lines, the hazards involved and protective measures to be taken as well as to post and maintain proper warning signs.

2. Passageways and Open Spaces

Contractors shall provide barriers or other means of guarding to ensure that workspace for electrical equipment will not be used as a passageway during the time when energized parts of electrical equipment are exposed. Walkways and similar working spaces must be kept clear of electric cords.

3. Lockout and Tagging of Circuits

Contractors shall place locks and tags on controls that are to be deactivated during the course of work on energized or de-energized equipment or circuits. Render equipment or circuits inoperative that are de-energized, and have locks and tags attached at all points where such equipment or circuits can be energized.

4. Testing

a. All electrical work, installation and wire capacities shall be in accordance with the pertinent provisions of the National Electrical Code, ANSI and OSHA standards.

b. All tools, cords and power sets shall have an assured equipment inspection program maintained on a quarterly basis. The color codes for identifying inspected and tested equipment on the project are:

January, February, March	White
April, May, June	Green
July, August, September	Red
October, November, December	Orange

NOTE: The cycle of colors repeats annually.

c. Portable tools will have the appropriate color code affixed to the male (plug) end. Extension cords will have the appropriate color code affixed to both ends (plug and receptacle). The previous quarter's color code will be removed to avoid confusion.

d. Immediately destroy all electrical tools and extension cords found to be defective (examples: missing or broken ground pins, exposed internal conductors), etc.) by cutting off the plug end.

5. Temporary Wiring

a. All necessary open wiring must be made inaccessible to unauthorized employees and visitors. Encase lighting on barricades, fences, or sidewalk coverings in metal raceways. Temporary lighting must have guards to prevent accidental contact with the bulb unless the bulb is deeply recessed in the reflector. Do not suspend temporary lighting by the cord unless the fixture was specifically designed in that manner, as with trouble lights. Operate portable electric lighting used in moist or other hazardous locations such as drums, tanks, vessels, bins, bunkers, etc. at a maximum of 12 volts (non-explosive).

b. Extension cords used with portable tools must be of a heavy duty 3-witre type. Flat extension cords are prohibited. Do not use damaged electrical cords.

c. Suspend all extension cords seven feet (7') above finish floor or work platform. Do not fasten extension cords with staples, hung from nails, or suspended by non-insulated wire.

d. All temporary power panels shall have covers installed at all times. All open or exposed breaker spaces shall be adequately covered or labeled.

e. All electrical equipment and wiring in hazardous locations must conform with the National Electric Code standards. Ground the frames of all cutting, and welding (arc, heli-arc, gas-plasma arc) machines.

f. Fish tapes or lines made of metal or any other conductive material are prohibited. Use nonconductive tapes and lines in their place.

g. All temporary wiring shall be effectively grounded in accordance with the national Electric Code (Articles 305 and 310). All wiring used for temporary lighting shall be non-metallic sheathed cable (NM) or the equivalent as approved by the University of Rhode Island.

E. Ground-Fault Circuit Interrupters

1. Contractors shall use approved ground-fault circuit interrupters for all 120-volt, single-phase, 15-and 20-ampere receptacle outlets on construction sites, which are not a part of the permanent wiring of the building or structure, and which are in use by their employees.

2. Receptacles on the ends of extension cords are not part of the permanent wiring and, therefore, must be protected by GFCI's whether or not the extension cord is plugged into a permanent wiring.

3. These GFCI's monitor the current-to-the-load for leakage to ground. When this leakage exceeds 5 mA±1mA, the GFCI interrupts the current. They are rated to trip quickly enough to prevent electrocution.

4. Contractors shall have in place approved program for testing GFCI's. All records shall be made available for inspection at any time.

This protection is required in addition to, not as a substitute for, the grounding requirements of OSHA safety and health rules and regulations as specified in 29 CFR 1926.

14. LOCKOUT AND TAGOUT

This procedure establishes the minimum requirements for the isolation of energy sources to ensure the safety and health of employees where unexpected start-up or release of stored or residual energy could cause injury. The following principles must apply to energy isolation tasks to ensure an appropriate level of safety and compliance with Safety Standards.

A. Lockout

1. Use only individually keyed locks.

2. A lockout hasp that allows the use of more than one lock may be needed.

3. A piece of chain or cable may be necessary to complete a lockout on some valves or controls and shall be used wherever needed.

4. When voltage exceeds 600 volts, components must be grounded.

B. Danger Tags

1. Danger tags, on the spot warning of dangerous conditions, shall conform to OSHA specification. **Note: Use the danger tags for lockout purposes only.**

2. Tags will be supplied by the contractors and shall be clearly marked to show their purpose.

C. Procedure

If a device, valve, switch, control or piece of equipment is locked out, attach a danger tag. **Note: Do not operate any device, valve, switch, control or piece of equipment with a danger tag and/or lockout attached regardless of circumstances!**

Contractors are required to check, lock or tag all systems prior to any work. If any of the above methods shows failure of the lockout, stop work and notify the superintendent.

1. Panel Boards (switch gear, etc.)

- **a.** Where placing of lock is not feasible, disconnect the circuit conductor from the breaker and tag out.
- **b.** The panel cover must be of the type that shall cover all breakers when closed and must be equipped with a fastener in order to secure a lock to prevent the panel door from being opened.
- **c.** If the panel cover is of a type that cannot be locked closed, secure a locked, closed and tagged cover over the panel while any work is being performed on any of those circuits.

Note: If the above cannot be accomplished, tag out each circuit as prescribed and post an employee by the panel board to prevent breakers from being tampered with. Assign this physical presence daily until the work is complete.

2. All danger tags shall be dated and signed by the employee who is working on the system. Also, the intended work and equipment for which the tag has been placed must be shown.

3. If employees of more than one contractor or crew are to work on a system, circuit, machinery, or component, the lead man from the craft shall place his or her individual lock and tag; and verify that the system, circuit, machinery or component being tagged, is indeed the system that is to be worked on.

4. Only the person who placed the lock and tag shall remove it without special authorization from the contractor's safety representative.

5. If the lock must remain after one shift, the incoming lead person will assume the responsibility of securing a new issue lock and tag. Secure the tagged system until all work is accomplished.

6. Remove from the Project any employee(s) or person(s) found to have removed another's lock and/or tag without authorization.

D. Operating Equipment

All systems covered under this section (e.g., electrical, mechanical, or others),are considered to be systems in the care/custody/control of the General Contractor.

Contractor's Responsibility:

1. Contractor/sub-contractor shall ensure that fuses and breakers have been removed, when applicable.

2. Contractor/sub-contractor shall tag, lock and try system to ensure that the system cannot be accidentally re-energized.

E. Lock Cutting/Removal

In the event it becomes necessary to remove an employee's lock, due to his/her absence from the project with a family emergency, or sudden illness, Strictly adhere to the following procedures:

1. Contact the employee's immediate supervisor and inform of the reason for the request.

2. Alternatives shall be considered, for example, rescheduling the work if possible. The contractor's safety representative must take precautions to ensure the safety of all employees in the affected work area.

15. BARRICADE TAPE PROGRAM

Use barricade tape for a visual warning only. Do not use it as a physical protection for floor edges, roof edges, floor openings, etc. For physical protection, barricades capable of supporting 200# must be erected

Listed below are various types of barricade tape and their proper usage.

A. Yellow/Black Caution Tape

Use this type of barricade tape to warn individuals of a hazard that can be seen and avoided. Personnel may enter this type of barricade if they are wearing the appropriate required personal protective equipment. Personnel may enter without permission from contractor. Use this barricade tape for, but not limited to, the following:

1. General material storage area.
2. General work area.
3. Identification of slip/trip hazards.

B. Red "Danger" Tape

Use this type of barricade tape to identify areas where entry of employees is restricted due to the nature of the hazard. No one may enter this area without first obtaining permission from the contractor responsible for erecting the barricade. Use this barricade tape for, but not limited to, the following:

1. Around counterweight of equipment.
2. Overhead works where materials may fall to lower levels.
3. High-pressure water cleaning, sand blasting, etc.

16. HOT WORK

Refer to* Document 00740 – HOT WORK PROCEDURE *in the applicable Project Manual for requirements for safe work practices to be used when performing hot work on the project. Hot work is to be defined as an open flame, welding arc, non-explosion proof electrical tools or equipment and any heat source capable of causing ignition.

17. LADDERS

The purpose of this safety regulation is to outline the proper use and care of portable ladders on site. Scaffold ladders are addressed in the scaffolding procedure.

A. Responsibility

All contractors and subcontractors are responsible for ensuring the portable ladders used by their employees are in good working condition.

B. General Requirements

1. Personnel using ladders will be responsible for inspecting them before use and reporting any defective ladders to their supervisor**. These ladders will be taken out of service immediately and destroyed if repair is not feasible.**

2. Contractors shall inspect ladders prior to use. The inspection will include the rungs, feet, lanyard (for extension ladders), side rails, and rivets.

3. Do not use ladders with broken or missing steps, rungs or cleats, broken side rails or other faulty parts. A **"DANGER, DO NOT USE"** tag must be attached.

4. All personnel shall face the ladder while ascending or descending.

5. All personnel shall have their hands free of material while climbing ladders. Use handlines to raise or lower materials as needed.

6. **No portable metal ladders are permitted on the project**. Use fiberglass ladders for electrical work when there is danger of electrical shock.

7. Portable ladders classification:

a. Portable Ladders: Can be either straight (fixed heights, not taller than 12 feet), or extension (two sections or more combined to reach maximum height).

b. Stepladders: Scissors-type opening ladders that are self-supporting.

8. Identify all portable ladders **by contractor name**, properly stored at their assigned location when not in use, and kept in good, clean condition.

9. Equip all ladders with safety feet. Both feet of extension ladders and stepladders shall rest on solid support and be at the same level.

10. Do not place ladders in front of doors unless the door is locked, roped off, or guarded.

11. Do not use tops of ordinary types of stepladders as steps or work platforms. All ladders shall be of sufficient length so that work can be performed while at or below the fourth rung of the ladder from the top or as recommended by the ladder manufacturer (as labeled on ladder).

12. Place all portable ladders, other than stepladders, on the ground or other support so that the distance from the base of the ladder to a line dropped vertically from the top support is approximately one-fourth of the length of the ladder. Example: Place a 16-foot ladder so that the bottom is four feet away from the wall.

13. Secure all portable ladders before starting a job. Another employee shall hold the bottom of the extension ladder while the ladder is being tied off or secured.

14. All ladders used for access to another level shall be of sufficient length so that the top is at least 3 feet above the upper landing.

15. Ladders shall rest on solid support and the feet shall be level. Do not use boxes, barrels or other unstable bases to obtain additional height.

16. Makeshift ladders are **PROHIBITED**.

17. Do not use stepladders (folding ladders) as straight ladders. When using a stepladder, make sure the spreader braces are locked to prevent collapse.

18. Only one employee shall be on a ladder at a time, except in extreme emergency.

19. Keep rungs of ladders free of grease and oil.

20. Do not lean to outside with a shoulder being more than 12 inches beyond the side rail while on a ladder.

21. When it is necessary to do work requiring the release of both hands from an extension ladder, use fall protection. Secure fall protection to a structure of adequate strength for the purpose. Do not secure to the ladder. When ladders are used as a work platform (meaning not just for access/egress) they must meet the minimum requirements of 100% fall protection over six feet.

22. Do not use tools in a position that will transmit an extensive downward force to the ladder, causing rung or step failure.

23. Adjustment of extension ladders shall only be made by the user when standing at the base of the ladder.

24. At the end of the workday, move ladders from the work areas so as not to create a tripping or bumping hazard. Return the ladders to proper storage areas.

C. Job-Built Ladders

1. Use other means such as stairways, scaffold stair towers, or extension ladders before building job ladder if at all possible.

2. Use the following charts and measurements in constructing the ladder; (Ladder Table 2, 3 and Figures 1 through 14).

18. SCAFFOLDING

Inspect all scaffolds, erected and/or dismantled under the supervision of a competent person. No contractor on this site shall allow any employee to erect or use as scaffold without being properly trained.

Contractors are required to comply with all requirements of OSHA regulations dealing with scaffold erection, inspection and training. Use the following provisions as a guide only. Contractors shall maintain a comprehensive program on scaffold erection and use.

A. General Requirements

1. The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load without settling or displacement. Unstable objects such as barrels, boxes, loose brick, or concrete blocks, shall not be used to support scaffolds or planks.

2. No scaffold shall be erected, moved, dismantled, or altered except under the supervision of competent persons.

3. Guardrails and toe boards shall be installed on all open sides and ends of platforms more than 10 feet above the ground or floor, except needle beam scaffolds and floats. Scaffolds 4 feet to 10 feet in height, having a minimum horizontal dimension in either direction of less than 45 inches, shall have standard guardrails installed on all open sides and ends of the platform.

4. Guardrails shall be 2 x 4 inches or equivalent, approximately 42 inches high, with a mid rail, when required. Supports shall be at intervals not to exceed 8 feet. Toe boards shall be a minimum of 4 inches in height.

5. Where persons are required to work or pass under the scaffold, scaffolds shall be provided with a screen between the toe board and the guardrail, extending along the entire opening, consisting of No. 18 gauge U.S.Standard wire ½ inch mesh, or the equivalent.

6. Scaffolds and their components shall be capable of supporting without failure at least 4 times the maximum intended load.

7. Any scaffold including accessories such as braces, brackets, trusses, etc., weakened from any cause shall be immediately repaired or replaced.

8. All load-carrying timber members of scaffold framing shall be a minimum of 1,500 psi. fiber (Stress Grade) construction grade lumber. All dimensions are nominal sizes as proved in the American Lumber Standards, except that where rough sizes are noted, only rough or undressed lumber of the size specified will satisfy the minimum requirements.

9. All planking shall be scaffold grades, or equivalent, as recognized by approved grading rules for the species of wood used.

10. All planking of platforms shall be overlapped (minimum 12 inches), or secured from movement.

11. An access ladder or equivalent safe access shall be provided.

12. Scaffold planks shall extend over their end supports not less than 6 inches or more than 12 inches.

13. The poles, legs, or uprights of scaffolds shall be plumb, and securely and rigidly braced to prevent swaying and displacement.

14. Overhead protection shall be provided for men on a scaffold exposed to overhead hazards.

15. Slippery conditions on scaffolds shall be eliminated as soon as possible after they occur.

16. No welding, burning, riveting, or open flame work shall be performed on any staging suspended by means of fiber or synthetic rope. Only treated or protected fiber or synthetic ropes shall be used for or near any work involving the use of corrosive substances or chemicals. Specific requirements for boatswain's chairs and float or ship scaffolds are contained in the OSHA manual.

17. Wire, synthetic, or fiber rope used for scaffold suspension shall be capable of supporting at least 6 times the rated load.

18. The use of shore or lean-to-scaffolds in prohibited.

B. Tube and Coupler Scaffolds

1. A light duty tube and coupler scaffold shall have all posts, bearers, runners, and bracing of nominal 2-inch O.D. steel tubing. The posts shall be spaced no more than 6 feet apart by 10 feet along the length of the scaffold. Other structural metals when used must be designed to carry an equivalent load. No dissimilar metals shall be used together.

2. A medium duty tube and coupler scaffold shall have all posts, runners, and bracing of nominal 2-inch O.D. steel tubing. Posts spaced not more than 6 feet apart by 8 feet along the length of the scaffold shall have bearers of nominal 2 ½-inch O.D. steel tubing. Posts spaced not more than 5 feet apart by 8 feet along the length of the scaffold shall have bearers of nominal 2-nch O.D. steel tubing. Other structural metals, when used, must be designed to carry an equivalent load. No dissimilar metals shall be used together.

3. A heavy-duty tube and coupler scaffold shall have all posts, runners, and bracing of nominal 2-inch O.D. steel tubing, with the posts spaced not more than 6 feet by 6 feet-6 inches. Other structural metals, when used, must be designed to carry an equivalent load. No dissimilar metals shall be used together.

4. Tube and coupler scaffolds shall be limited in heights and working levels to those permitted in Tables L-10, 11 and 12 (enclosed). Drawings and specifications of all tube and coupler scaffolds above the limitations in Tables L-10, 11 and 12 shall be designed by a qualified engineer competent in this field.

5. All tube and coupler scaffolds shall be constructed and erected to support four times the maximum intended load, as set forth in Tables L-10, 11, and 12, or as set forth in the specifications by a licensed professional engineer competent in this field.

6. Posts shall be accurately spaced, erected on suitable bases, and maintained plumb.

7. Runners shall be erected along the length of the scaffold, located on both the inside and the outside posts at even height. Runners shall be interlocked to the inside and the outside posts at even heights. Runners shall be interlocked to form continuous lengths and coupled to each post. The bottom runners shall be located as close to the base as possible. Runners shall be placed not more than 6 feet-6 inches on centers.

8. Bearers shall be installed transversely between posts and shall be securely coupled to the posts bearing on the runner coupler. When coupled directly to the runners, the coupler must be kept as close to the posts as possible.

9. Bearers shall be at least 4 inches but not more than 12 inches longer than the post spacing or runner spacing.

10. Cross bracing shall be installed across the width of the scaffold at least every third set of posts horizontally and every fourth runner vertically. Such bracing shall extend diagonally from the inner and outer runners upward to the next outer and inner runners. Longitudinal diagonal bracing on the inner and outer rows of poles shall be installed at approximately a 45 degree angle from near the base of the first outer post upward to the extreme top of the scaffold. Where the longitudinal length of the scaffold permits, such bracing shall be duplicated beginning at every fifth post. In a similar manner, longitudinal diagonal bracing shall also be installed from the last post extending back and upward toward the first post. Where conditions preclude the attachment of this bracing to the posts, it may be attached to the runners.

11. The entire scaffold shall be tied and securely braced against the building at intervals not to exceed 30 feet horizontally and 26 feet vertically.

C. Tubular Welded Frame Scaffolds

1. Metal tubular frame scaffolds, including accessories such as braces, brackets, trusses, screw legs, ladders, etc., shall be designed, constructed and erected to safely support four times the maximum rated load.

2. Spacing of panels or frames shall be consistent with the loads imposed.

3. Scaffolds shall be properly braced by cross bracing or diagonal braces, or both, for securing vertical members together laterally, and the cross braces shall be of such length as will automatically square and align vertical members so that the erected scaffold is always plumb, square, and rigid. All brace connections shall be made secure.

4. Scaffold legs shall be set on adjustable bases or plain bases placed on mud sills or other foundations adequate to support the maximum rated load.

5. The frames shall be placed one on top of the other with coupling or stacking pins to provide proper vertical alignment of the legs.

6. Where uplift may occur, panels shall be locked together vertically by pins or other equivalent suitable means.

7. To prevent movement, the scaffold shall be secured to the building or structure at intervals not to exceed 30 feet horizontally and 26 feet vertically.

8. Drawings and specifications for all frame scaffolds over 125 feet in height above the base plates shall be designed and stamped by a registered professional engineer.

9. Guardrails made of lumber, not less than 2 x 4 inches (or other material providing equivalent protection), and approximately 42 inches high, with a mid rail of 1 x 6 inch lumber (or other material providing equivalent protection), and toe boards, shall be installed at all open sides and ends on all scaffolds more than 10 feet above the ground or floor. Toe boards shall be a minimum of 4 inches in height.

D. Manually Propelled Mobile Scaffolds

1. When free-standing mobile scaffold towers are used, the height shall not exceed four times the minimum base dimension.

2. Casters shall be properly designed for strength and dimensions to support four times the maximum intended load. All casters shall be provided with a positive locking device to hold the scaffold in position.

3. Scaffolds shall be properly braced by cross bracing and horizontal bracing.

4. Platforms shall be tightly planked for the full width of the scaffold except for any necessary entrance opening. Platforms shall be secured in place.

5. A ladder or stairway shall be provided for proper access and exit, and shall be affixed or built into the scaffold and so located that when in use, it will not have a tendency to tip the scaffold. A landing platform must be provided at intervals not to exceed 35 feet.

6. The force necessary to move the mobile scaffold shall be applied near or as close to the base as practicable and provision shall be made to stabilize the tower during movement from one location to another. Scaffolds shall only be moved on level floor, free of obstructions and openings.

7. The employer shall not allow employees to ride on manually propelled scaffolds unless the following conditions exist:

a. The floor or surface is within 3 degrees of level, and free from pits, holes or obstructions;

b. The minimum dimension of the scaffold base when ready for rolling, is at least one-half of the height. Outriggers, if used, shall be installed on both sides of staging;

c. The wheels are equipped with rubber or similar resilient tires; and all tools and material are secured or removed from the platform before the mobile scaffold is moved.

d. Scaffolds in use by any persons shall rest upon a suitable footing and shall stand plumb. The casters or wheels shall be locked to prevent any movement.

e. Guardrails made of lumber not less than 2 x 4 inches (or other material providing equivalent protection), approximately 42 inches high, with a mid rail of 1 x 6 inch lumber (or other material providing equivalent protection) and toe boards, shall be installed at all open sides and ends on all scaffolds more than 10 feet above the ground or floor. Toe boards shall be a minimum of 4 inches in height.

19. SITE SAFETY MANAGEMENT

Project safety is a primary responsibility of all management and supervisors and all employees on this site. Each Contractor represented has overall responsibility for safety for their employees.

A. Functions and Responsibilities

The Owner's Safety Representative is responsible for the following functional operations of the project safety programs:

1. Develop applicable safety standards for the project in accordance with The University of Rhode Island's policies and procedures, and any other applicable government regulations.

2. Participate in work-site layouts to assure adequate work areas, traffic control, parking areas, lighting levels, receiving areas, etc. Assure that location of offices, shops, maintenance areas, medical, and sanitation facilities reflect safety considerations.

3. Maintain liaison with appropriate client personnel, insurers, federal and state inspectors and others in matters of safety.

The General Contractor has the overall responsibility for:

1. Implement applicable safety standards for the project in accordance project policies and procedures, and any other applicable government regulations.

2. Ensuring that all new hires receive appropriate training and orientation before working on the project.

3. Review work schedules as they are planned to be aware of the number of contractors and craft workers working in the various areas; anticipate hazards and implement supporting safety activities.

4. Maintaining surveillance of job-site working conditions and safety practices bring findings to the attention of Owner.

B. Practices and Procedures

1. The General Contractor safety representative monitors orientation for all contractor personnel.

2. Owner's representative may periodically audit contractor files to review the safety programs' contents.

3. Each contractor is expected to conduct Tool Box/safety meetings at a minimum of once per week. More frequent meetings are recommended. Copies of topic discussed must be kept on file for review upon request.

C. Safety Equipment

1. Contractor employees are expected to provide their own safety equipment prior to arriving on site.

2. Approved safety equipment as required by the Federal and State Safety and Health Regulations must be available at all times, and strict enforcement of its proper use is exercised by project supervision.

D. Safety Hazards

The Contractor Safety representative shall conduct written safety inspections of work areas and evaluate conditions as they relate to safe work practices. In any area that the representative identifies as dangerous to personnel or property, work shall be stopped to correct hazards immediately.

E. Safety Inspections & Reports

1. Each contractor is required to conduct frequent, at the minimum, daily inspections of their work areas in order to ensure that their employees are working in a safe manner.

2. The Owner's Safety Representative will also perform periodic safety inspections of the site. Affected contractor(s) shall promptly correct any infractions or poor safety practices uncovered by these inspections.

20. STEEL AND PRE-CAST CONCRETE ERECTION

This procedure provides guidelines for the steel erection process and the protection of personnel during steel erection. The steel erecting contractor is required to submit a fall protection plan for the different phases of erection. The plan shall be presented and discussed with The University of Rhode Island before signing contract documents.

A. Planning

1. The potential for serious injury is high for workers engaged in steel erection. Persons performing this type of work must be adequately trained concerning the procedures and hazards prior to beginning steel erection work.

2. Thorough planning is essential and is required for all steel erection. The steel erection contractor must submit a safety program that will, at the minimum, address the following factors:

- Rigging hardware
- Permit requirements
- Training of personnel
- Scheduling (identify responsibilities, procedures, timing, etc.)
- Equipment (cranes, aerial lifts)
- Erection sequence to decrease exposure
- Barricades and warning signs for personnel and equipment protection
- Availability and location of emergency equipment
- Means of access, e.g. stairs, scaffolds, ladders
- Tools appropriate for the task
- Proper personal protective equipment for each worker
- Detailed pre-lift meetings with specific safety instructions
- Method of fall protection/arrest
- Adjacent structures, high voltage lines, transformers

3. An erection plan will be prepared by the Erection Contractor and reviewed with the University of Rhode Island Project Manager prior to the start of work. The Erection Contractor shall have a qualified person prepare a site-specific safety erection plan prior to the start of erection. This erection plan shall be provided to the University Project Manager.

4. An Erection Contractor qualified person shall approve all changes in the safety erection plan. A copy of the erection plan shall be maintained at the job site showing all approved changes.

5. The implementation of the erection plan shall be under the supervision of a competent person.

B. Flooring

1. Permanent floors shall be installed as the erection of the structural members progresses. At no time shall there be more than four floors or 48 feet of unfinished bolting or welding above the foundation or uppermost permanently secured floor. Where skeletal steel erection is being done, temporary and/or permanent flooring shall be maintained within two stories or 30 feet, whichever is less, below and directly under that portion of each tier of beams on which any work is being performed. Planking shall not be less than two inches thick, full size undressed, and shall be laid tight and secured against movement.

2. On buildings or structures not adaptable to temporary floors, and where scaffolds are not used, safety nets shall be installed and maintained wherever the potential fall distance exceeds two stories or 25 feet. The nets shall be hung with sufficient clearance to prevent contacts with the surface of structures below.

C. Floor Periphery

1. A guardrail system of two (2) ½ inch diameter wire rope cables shall be erected at approximately 42 inches from the floor deck and at the intermediate point immediately following the erection of beams and columns that are connected to provide adequate strength. All sequence breaks will require a two-cable assembly.

2. All connections will require a minimum of tow wire rope clamps. Three wire rope clamps must be installed if the cable is to be used as an anchorage for a fall arrest system.

3. Turnbuckles will be installed at suitable intervals to maintain the tightness of the wire ropes, but in no instance less than one per perimeter side.

4. All anchorage for the wire rope cable will be capable of withstanding a minimum of 200 pounds force if the wire rope is used as a guardrail system or a minimum of 5000 pounds force per person attached if the wire rope is used as an anchorage for a fall arrest system.

D. Bolting, Riveting, Fitting-up, and Plumbing-up

1. When connecting steel, do not release the hoisting line until the steel member is secured with no less than two bolts or the equivalent at each connection and drawn up wrench tight.

2. Containers shall be provided for storing and carrying rivets, bolts, and drift pins, and shall be secured against displacement while aloft. When bolts or drift pins are being knocked out, means shall be provided to keep them from falling. Impact wrenches shall be provided with a locking device for retaining the socket.

E. Personnel Protection

1. In all structures, safety harnesses with shock absorbing lanyards with self-locking hooks must be worn by all employees where exposed to a potential fall of greater than six (6) feet. Static lines shall be installed where needed.

2. Barricades or signs must be placed on lower levels where steel is being erected. All personnel are required to remain outside of the swing radius at all times during lifts. Tag lines shall be used to control all loads.

3. Ladders, stairways, scaffolds, or other means of safe access shall be provided as the work progresses. Climbing or sliding down columns is prohibited. Walking steel must be addressed prior to beginning work. Employees will use 100% fall protection during all phases of steel erection.

F. Safe Work Practices

1. The following guidelines apply to this type of work and shall be part of all pre-job planning safety meetings:

- Use tag lines to control loads
- Provide containers, buckets, bags, etc. for storing or carrying bolts or rivets. When bolts, drift pins or rivet heads are being removed, provide a means to prevent accidental displacement. Secure tools in such a manner as to prevent accidental falling.
- Do not overload bolt bags
- Hoist bolt bags and tools with lines
- When climbing ladders, keep both hands free
- Keep hands and fingers clear of pinch points
- Never work directly over personnel where possible. Where required, provide protection for workers below
- Always inspect all equipment prior to use
- Protect wire rope by using softeners
- Perform no welding or burning operation on scaffolding or staging suspended by synthetic rope
- If working above reinforcing rods, employees must be protected from impalement hazards
- Maintain a safe means of access to the level being worked on. Climbing and sliding on columns and diagonals is not allowed.
- Consider lifeline attachments, dynamic fall restraints and other fall protection provisions during shop drawing preparation, incorporate in fabricated pieces, and anchor safety lines or devices prior to erection whenever possible.
- For the protection of other crafts on the project, post “Danger – Men Working Above” signs in the erection area.
- When loads are being hoisted, prevent all personnel from working under the lift.
- Do not permit anyone to ride a lifting load under any circumstances
- When setting structural steel, secure each piece with not less than two bolts drawn up tight at each connection before the load is released.
- Do not hoist material to a structure unless it is ready to be put into place and secured.
- Secure bundles of sheets or small material so as to prevent their falling from the rigging.
- Rigorously enforce the use of personal fall arrest systems during steel and precast concrete erection.

- Provide all employees engaged in steel and precast concrete erection activities including connecting, bolting up, welding, or other activity that exposes them to a fall of six feet or greater with and use 100% tie-off as the primary means of fall protection. The exception contained within OSHA standard 1926.501.b.12 allowing for a written fall protection program in lieu of this requirement is not acceptable for this project and is prohibited.

21. CONCRETE AND MASONRY

Review the applicable OSHA standards under *Subpart Q- Concrete and Masonry---1926. 700, 701, 702, 703, 704, 706.* ***OSHA lists the full standards; included below are reviews of selected text from the standards and the requirements for our program. If you have any questions regarding the standards or interpretation of a section, notify the safety department for clarification.***

A. General Requirements

1. Do not place construction loads on a concrete structure or portion of a concrete structure unless the employer determines, based on information received from a person who is qualified in structural design, that the structure or portion of the structure is capable of supporting the loads.

2. Guard all protruding reinforcing steel, onto and into which employees could fall, to eliminate the hazard of impalement.

3. Do not permit any employees (except those essential to the post-tensioning operations) to be behind the jack during tensioning operations.

4. Erect signs and barriers to limit employee access to the post-tensioning area during tensioning operations.

5. Do not permit employees to ride concrete buckets.

6. Do not permit employees to work under concrete buckets while buckets are being elevated or lowered into position.

7. To the extent practical, route elevated concrete buckets so that no employee, or the fewest number of employees, are exposed to the hazards associated with falling concrete buckets.

8. Do not permit any employee to apply a cement, sand, and water mixture through a pneumatic hose unless the employee is wearing protective head and face equipment.

9. Do not permit any employee to place or tie reinforcing steel more than six feet above any adjacent working surface unless the employee is protected by the use of a safety belt or equivalent fall protection.

B. Equipment and Tools

1. Equip concrete mixers with one cubic yard or larger loading skips with a mechanical device to clear the skip of materials; and guardrails installed on each side of the skip.

2. Equip powered and rotating type concrete troweling machines that are manually guided with a control switch that will automatically shut off the power whenever the hands of the operator are removed from the equipment handles.

3. Concrete buggy handles shall not extend beyond the wheels on either side of the buggy. Provide concrete pumping systems using discharge pipes with pipe supports designed for 100 percent overload.

4. Provide compressed air hoses used on concrete pumping systems with positive fail-safe joint connectors to prevent separation of sections when pressurized.

5. Install positive safety latches or similar devices on concrete buckets equipped with hydraulic or pneumatic gates to prevent premature or accidental dumping.

6. Use concrete buckets designed to prevent concrete from hanging up on the top and the sides.

7. Secure sections of tremies and similar concrete conveyances with wire rope (or equivalent materials) in addition to the regular couplings or connections.

8. Construct bull float handles, used where they might contact energized electrical conductors, of nonconductive material or insulated with a nonconductive sheath whose electrical and mechanical characteristics provide the equivalent protection of a handle constructed of nonconductive material.

9. Guard masonry saws with a semicircular enclosure over the blade.

10. Do not permit any employee to perform maintenance or repair activity on equipment (such as compressors, mixers, screens or pumps used for concrete and masonry construction activities) where the inadvertent operation of the equipment could occur and cause injury, unless all potentially hazardous energy sources have been locked out and tagged.

C. Cast-In-Place Concrete

1. Design, fabricate, erect, support, brace, and maintain formwork so that it will be capable of supporting without failure all vertical and lateral loads that may reasonably be anticipated to be applied to the formwork.

2. Drawings or plans, including all revisions, for the jack layout, formwork (including shoring equipment), working decks, and scaffolds, shall be available at the job-site.

3. Inspect all shoring equipment (including equipment used in reshoring operations) prior to erection to determine that the equipment meets the requirements specified in the formwork drawings.

4. Immediately reinforce shoring equipment that is found to be damaged or weakened after erection, such that its strength is reduced to less than that required.

5. The sills for shoring shall be sound, rigid and capable of carrying the maximum intended load.

6. All base plates, shore heads, extension devices, and adjustment screws shall be in firm contact with the foundation and the form, and secured when necessary.

7. Prohibit eccentric loads on shore heads and similar members unless these members have been designed for such loading.

8. Whenever single post shores are used one on top of another (tiered), the employer shall comply with the following specific requirements in addition to the general requirements for formwork:

a. Have the shoring designed by a qualified designer and the erected shoring inspected by an engineer qualified in structural design.

b. Align the single post shores vertically.

c. Splice the single post shores to prevent misalignment.

d. Adequately brace the single post shores in two mutually perpendicular directions at the splice level. Also, diagonally brace each tier in the same two directions.

e. Do not adjust single post shores to raise formwork after the placement of concrete.

f. Erect reshoring , as the original forms and shores are removed, whenever the concrete is required to support loads in excess of its capacity.

D. Vertical slip form

1. The steel rods or pipes on which jacks climb or by which the forms are lifted shall be specifically designed for the purpose; and adequately braced where not encased concrete.

2. Design forms to prevent excessive distortion of the structure during the jacking operation.

3. Provide all vertical slip forms with scaffolds or work platforms where employees are required to work or pass.

4. Position jacks and vertical supports in such a manner that the loads do not exceed the rated capacity of the jacks.

5. Provide the jacks or other lifting devices with mechanical dogs or other automatic holding devices to support the slip forms whenever failure of the power supply or lifting mechanism occurs.

6. Maintain the form structure within all design tolerances specified for plumbness during the jacking operation.

7. Do not exceed the predetermined safe rate of lift.

E. Reinforcing steel

1. Adequately support reinforcing steel for walls, piers, columns, and similar vertical structures to prevent overturning and to prevent collapse.

2. Employers shall take measures to prevent unrolled wire mesh from recoiling. Such measures may include, but are not limited to, securing each end of the roll or turning over the roll.

F. Removal of formwork

1. Do not remove forms and shores (except those used for slabs on grade and slip forms) until the employer determines that the concrete has gained sufficient strength to support its weight and superimposed loads. Base such determination on compliance with one of the following:

a. The plans and specifications stipulate conditions for removal of forms and shores, and such conditions have been followed, or

b. The concrete has been properly tested with an appropriate ASTM standard test method designed to indicate the concrete compressive strength, and the test results indicate that the concrete has gained sufficient strength to support its weight and any superimposed loads.

2. Do not remove reshoring until the concrete being supported has attained adequate strength to support its weight and all loads in place upon it.

G. Pre-cast Concrete

1. Adequately support pre-cast concrete wall units, structural framing, and tilt-up wall panels to prevent overturning and to prevent collapse until permanent connections are completed.

2. Use lifting inserts embedded or otherwise attached to tilt-up pre-cast concrete members capable of supporting at least two times the maximum intended load applied or transmitted to them.

3. Use lifting inserts embedded or otherwise attached to pre-cast concrete members, other than the tilt-up members, capable of supporting at least four times the maximum intended load applied or transmitted to them.

4. Use lifting hardware capable of supporting at least five times the maximum intended load applied or transmitted to the lifting hardware.

5. Do not permit any employee under pre-cast concrete members being lifted or tilted into position except those employees required for the erection of those members.

H. Masonry Construction

Establish a limited access zone whenever a masonry wall is being constructed. The limited access zone shall conform to the following:

1. Establish the limited access zone prior to the start of construction of the wall.

2. The limited access zone shall be equal to the height of the wall to be constructed plus four feet, and shall run the entire length of the wall.

3. Establish the limited access zone on the side of the wall which will be unscaffolded.

4. Restrict the limited access zone to entry by employees actively engaged in constructing the wall. Do not permit any other employees to enter the zone.

5. Maintain the limited access zone in place until the wall is adequately supported to prevent overturning and to prevent collapse unless the height of wall is over eight feet, in which case, the limited access zone shall remain in place.

6. Adequately brace all masonry walls over eight feet in height to prevent overturning and to prevent collapse unless the wall is adequately supported so that it will not overturn or collapse. Maintain the bracing in place until permanent supporting elements of the structure are in place.

22. HAND AND PORTABLE POWERED TOOLS AND EQUIPMENT

The purpose of this regulation is to provide procedures that will prevent injuries resulting from the use of hand tools. This procedure applies to all hand tools used on site by contractor personnel.

A. Responsibilities

1. Contractors and subcontractors shall ensure only approved tools and equipment are used.

2. All personnel using hand or portable power tools and equipment shall inspect them prior to use.

B. General Requirements

1. Contractors and subcontractors are responsible for the safe conditions of tools and equipment including those furnished by employees.

2. Do not use compressed air for cleaning purposes except when reduced to less than 30 PSI and then only with effective chip guarding and PPE.

3. Tool handles shall be intact and securely attached.

4. Keep cutting tools sharp.

5. Remove any worn or deformed tool shall be removed from service. Repair or discarded it.

6. Secure tools in pouches, sheaths or scabbards to avoid self-inflicted cuts or dropping them on someone else.

7. Do not use "Cheaters" to increase leverage.

8. Use the correct tool for the job.

9. Use the tool properly. Example: When tightening a nut, make sure that the wrench is the proper size, brace yourself and pull on the wrench. Always pull if at all possible. Push only if absolutely necessary.

C. Portable Power Tools

1. Equip circular saws with guards above and below the base plate or shoe.

a. The guards shall cover the saw to the depth of the teeth.

b. The lower guard shall automatically and instantly return to the covering position.

2. Switches: controls

a. Equip all hand held circular and chain saws and precision tools without accessory holding areas with constant pressure switches or controls that turn off when the pressure is released.

b. Hand held power drills, toppers, fastener drivers, disc sanders, grinders, reciprocating saber, scroll and jig saws and other similarly operating tools may have a lock-on control provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.

c. Locate the operating control on hand held power tools so located as to minimize the possibility of its accidental operation.

3. Grounding: Electric tools shall meet all electrical safety requirements.

4. Pneumatic Tools:

a. Install a tool retainer on each piece of equipment where, without such, a blade, bit, wheel or other tool may be ejected.

b. Use air hoses and connections designed for the pressure and service to which they are subjected.

5. Grinders - Portable, Bench and Post

a. General

1) Wear safety glasses and face shields or safety goggles when using grinders. All bench grinders, post grinders, or portable grinders shall have a clean face shield available to this equipment. Clean face shields and leave at the piece of equipment immediately after use.

2) Wheels and drivers must show their rated RPM. The RPM rating of the wheel must be equal to or in excess of the RPM rating of the driver on which it is used.

3) Do not side grind on a wheel unless it is specifically designed for that purpose. Cup grinding wheels and nylon-reinforced wheels are designed for side grinding. Side grinding on a nylon-reinforced wheel

4) Newly mounted wheels must be run at operating speed for at least one minute with the guard in place before beginning grinding. Do not stand in front of the wheel at this time.

5) Keep grinders and buffers in good, safe working condition. Inspect all grinders prior to use. Check face shields for cleanliness and availability.

6) Only a qualified employee shall install abrasive wheels on grinders.

7) Always check to see that grinding wheels, saw blades, sanding and grinding discs are designed to operate at or within intended rotating speed limits.

8) Ensure that protective covers and guards are installed, intact and operational.

9) Check all blades, bits and wheels before every use to insure they are:
- Not cracked (includes ring test for grinding wheels).
- Not out of round
- **N**ot excessively worn.
- Not dull, pitted or caked with clinging bits of material from a previous job.

b. Portable Grinders

1) Equip portable grinders with an operating trigger or handle that automatically stops the power to the wheel when the operator removes his hand.

2) Equip grinding wheels 2" or more in diameter with a safety guard exposing a maximum of 180 degrees of the grinding wheel. Do not remove guards except to change the grinding wheel.

3) Use portable welding shields where portable grinders are in service when the work area is accessible to other people who might be hit by flying sparks, particles, etc.

4) Nylon reinforced wheels shall be limited to a maximum 8-inch diameter.

c. Bench and Post Grinders

1) Equip grinder wheels with wheel guards exposing a maximum of 90 degrees of the grinding wheel, and with an operating light illuminating the grinding wheel work surface.

2) Do not use bench and post grinders for grinding <u>aluminum</u> unless specifically designated for this purpose.

3) Work rests shall be rigid and adjusted within 1/8 inch of the grinding wheel. The tongue guard gap may not exceed 1/4 inch. Do not make adjustments while the wheel is in motion.

d. Cut-Off Saws

1) The automatic raising mechanism shall be in good working order before using a cut-off saw.

2) A hood, which encloses the top half of the cutting wheel, shall be in place before using a cut-off saw.

D. Table Saws

1. Equip all table saws with appropriate blade guards, spreaders and anti-kickback fingers. Equip all other saws with appropriate blade guards. The accessories must be in service while saws are in operation.

2. Only qualified personnel are allowed to operate power saws.

3. Under no circumstances shall adjustments of any kind be made to power saws while in operation.

4. Hand feeding of material near the cutting blade is prohibited. When this work action is required, a push stick must be used.

5. Set a table saw's cutting blade no higher than is necessary to cut through the stock.

6. Keep cutting blades sharp and in good repair.

7. Keep saw tables and work areas clear of scrap and waste.

E. Drill Presses

1. Each drill press must have an approved table work vise on clamps. When the vise is being used, it must be secured to the table with tie-down bolts.

2. **T**he wearing of cloth gloves is prohibited when using this machine.

F. Radial Arm Saws

1. Provide each radial arm saw with an effective device to return the saw automatically to the back of the table when released. Check this device for proper operation before the saw is used.

2. Install the front end of a radial arm saw slightly higher than the back in order to facilitate the cutting head returning to its starting position when released by the operator.

G. Tool Bit Safety

1. Always check to see that grinding wheels, saw blades, sanding and grinding discs are designed to operate at or within intended rotating speed limits.

2. Be sure protective covers and guards are installed, intact and operational.

3. Check that tool rests and tongue guards are the following distances from the grinding sheet, etc.

a. Tool rest gap may not exceed 1/8".

b. Tongue guard gap may not exceed 1/4".

H. Training

1. Contractors and subcontractors are responsible for training employees on proper use of tools, required personal protective equipment and safe work practices that apply to the task/operation to be performed.

2. Conduct Training prior to the use of tools upon initial assignment, when there are changes in associated tooling or previous hazards, and when there is reason to believe the employee does not possess or demonstrate the knowledge or skills required to safely operate or work with a specific tool.

I. Recordkeeping

1. Inspection and training records shall be maintained by each Contractor and subcontractor and shall be available on site.

23. MATERIAL HANDLING AND STORAGE

Review the applicable OSHA standards under Subpart H-Material and storage; 1926, 250, 251. OSHA lists the full standards; included below are reviews of selected text from the standards and the requirements for our program . ***The proper storage and handling of materials will provide for control of material and equipment, increase productivity, and reduce the number of material handling accidents and injuries usually associated with this function.***

A. Requirements for Storage (General)

1. Block, stack, and rack, or otherwise secure all materials to prevent sliding, falling, or collapse.

2. Do not exceed maximum safe loading (pounds per foot) on any elevated floor.

3. In areas of material handling, maintain good access for employees and equipment.

4. Materials stored inside of buildings must not be closer than 6 feet to any floor opening.

5. Materials shall not be stored on scaffolds in excess of supplies needed for immediate use.

B. Bricks

1. Brick stacks shall not be more than 7 feet in height.

2. When a loose brick stack reaches a height of 4 feet, taper it back 2 inches in every additional foot.

3. When masonry blocks are stacked higher than 6 feet, taper the stack back one-half block per tier above 6 feet.

C. Lumber

1. Used lumber shall have the nails withdrawn before stacking.

2. Stack Lumber on level and supported sills and so stacked as to be wholly stable.

3. Lumber piles shall not exceed 20 feet in height.

D. Pipe, Steel

1. Structural steel, poles, pipes, must be racked or stacked and blocked to prevent spreading or falling.

E. Disposal of Waste Materials

1. Whenever materials are dropped more than 20 feet to any point lying outside the exterior walls of the building, use an enclosed (all sides) chute.

2. When debris is dropped inside of a building without a chute, a barricade at least 42 inches high and not closer than 6 feet from the projected edge of the opening must be used. Signs warning of falling material must be posted at each level. Removal of waste material must wait until above operations cease. All scrap lumber, waste material, and rubbish shall be removed from the immediate work area as the work progresses.

24. SAFETY AUDIT

In order to ensure compliance with The University of Rhode Island's safety procedures manual as well as all applicable safety and health regulations, the activities of all contractors and their subcontractors will be audited as often as necessary. The following checklist will be a guide for such an audit. The University of Rhode Island's Safety representative will coordinate this audit with the affected contractor/subcontractor representative.

SAFETY AUDIT CONSTRUCTION SITE SAFETY CHECKLIST

SAFETY BULLETIN BOARD

1. Is there a designated safety bulletin board? Yes_____ No_____

2. Is the OSHA Job Safety and Health Poster on this board? Yes_____ No_____

Corporate Safety Policy Statement? Yes_____ No_____

EEO Poster? Yes_____ No_____

Hazard Communications Poster? Yes_____ No_____

3. Are "Days Without a Lost Time Accident" posted? Yes_____ No_____

4. Are the final totals from OSHA Form 200 posted from Feb 1 to Mar 1 following the year to which they relate? Yes_____ No_____

MEDICAL SERVICES, FIRST AID

1. Is a facility for the treatment of an injured employee reasonably accessible? Yes_____ No_____

2. Is the project provided with an industrial nurse? Yes_____ No_____

3. Are first aid supplies adequate and readily accessible? Yes_____ No_____

4. Are stretchers available throughout the site and easily accessible? Yes_____ No_____

SANITATION

1. Are potable (drinking) water and adequate toilet facilities available at the construction site? Yes_____ No_____

PERSONAL PROTECTION EQUIPMENT

1. Are hard hats worn at all times on the construction site? Yes_____ No_____

Are employees provided with eye and face protection as needed?
Yes_____ No_____

Is this equipment used? Yes_____ No_____

Are employees working more than six (6) feet above any adjacent Working surface provided with safety belt or equivalent? Yes_____ No_____

3. Are safety nets provided when work places are more than (25) feet above ground or water surface where use of ladders, scaffolds etc. are impractical?
Yes_____ No_____

4. Do employees wear all necessary personal protective equipment?
Yes_____ No_____

FIRE PROTECTION AND PREVENTION

1. Has a fire protection program been developed? Yes_____ No_____

2. Is a fire fighting equipment conspicuously located? Yes_____ No_____

3. Is a water supply available and of sufficient volume and pressure to operate fire fighting equipment? Yes_____ No_____

4. Do all fire extinguishers meet requirements established? Yes_____ No_____

5. Are requirements for storage of flammable and combustible liquids being complied with? Yes_____ No_____

MATERIALS STORAGE, HANDLING, AND DISPOSAL

1. Are materials which are stored in tiers either stacked, racked, blocked, interlocked, or otherwise secured so as to prevent sliding, falling, or collapsing?
Yes_____ No_____

2. Are maximum safe load limits of floors posted? Yes_____ No_____

3. Are aisles and passageways clear and in good repair? Yes_____ No_____

4. Are waste materials disposed of properly? Yes_____ No_____

5. Comment on general housekeeping for the entire project.

_____

_____

_____

TOOLS – HAND AND POWER

1. Are hand and power tools maintained in safe conditions? Yes_____ No_____

2. Are power tools, belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, and chains properly guarded? Yes_____ No_____

3. Are electric power operated tools equipped with proper ground or double insulated? Yes_____ No_____

WELDING AND CUTTING

1. When transporting or storing compresses gas cylinders, are cylinders secured and valve protected caps in place? Yes_____ No_____

2. Are cylinders secured in a vertical position when transported by powered vehicles? Yes_____ No_____

3. Are flame arrestors in use on all welding hooks ups? Yes_____ No_____

4. Are employees instructed in the safe use of fuel gas? Yes_____ No_____

5. Are torches inspected at the beginning of each work shift for leaking shutoff valves, hose couplings, and tip connections? Yes_____ No_____

6. Are oxygen and fuel gas pressure regulators in proper working order? Yes_____ No_____

7. Are oxygen cylinders and fittings kept away from oil or grease? Yes_____ No_____

8. Are frames of all arc welding and cutting machines grounded either through a third wire in the cable containing the circuit conductor or through a separate wire which is grounded at the source of the current? Yes_____ No_____

9. Are employees instructed in safe means of arc welding and cutting? Yes_____ No_____

10. Are welding and cutting operations shielded by noncombustible or flameproof screens whenever practicable? Yes_____ No_____

ELECTRICAL

1. Are employees who work near electric power circuits protected against electrical shock? Yes_____ No_____

2. Is sufficient space provided to permit safe operation and maintenance of electrical equipment? Yes_____ No_____

3. Do all 120 volt, single-phase 15- and 20- ampere receptacle outlets on site, which are not a part of the permanent wiring of the building or structure and which are in use by employees, have approved ground fault circuit interrupters, or has an assured equipment grounding conductor program been established?
Yes_____ No_____

4. Are the grounding circuits or equipment checked periodically for effective grounding?
Yes_____ No_____

When? By Whom?

Attach documentation.

5. Are branch circuits and feeders protected by over current devices (fuses, circuit breakers) in accordance with their current carrying capacity? Yes_____ No_____

6. Are switches, circuit breakers, and disconnecting means, identified as to their function? Yes_____ No_____

7. Are receptacles and plugs non-interchangeable when used where different voltages and types of current (AC/DC) are used? Yes_____ No_____

8. Are extension cords used with portable electric tools and appliance of three-wire type?
Yes_____ No_____

9. Have equipment or circuit that are energized been rendered inoperative and have tags been attached to all points where such equipment or circuits can be energized?
Yes_____ No_____

10. Are temporary light equipped with guards to prevent accidental contact with the bulbs? Yes_____ No_____

11. Is it ensured that portable electric lighting used in moist and/or other hazardous locations do not exceed 12 volts? Yes_____ No_____

12. Are flexible cords used only in continuous lengths without splices?
Yes_____ No_____

13. Are extension cords fastened with staples, hung from nails, or suspended by wire?
Yes_____ No_____

14. Are boxes for disconnecting means securely and rigidly fastened to the surface on which they are mounted and fitted with covers? Yes_____ No_____

15. Are boxes and disconnecting means that are installed in damp or wet locations waterproof? Yes_____ No_____

16. Are non-current carrying metal parts or portable and/or plug-connected equipment grounded or double insulated? Yes_____ No_____

LADDERS AND SCAFFOLDING

1. Are defective ladders - broken of missing rungs or steps, broken or splits side rails immediately withdrawn from service? Yes_____ No_____

2. Are scaffold guardrails and toe boards installed on all open sides and ends of platforms more than four (4) feet above ground of floor? Yes_____No_____

3. Do scaffolds four (4) to ten (10) feet in height having a minimum horizontal dimension in either direction of less than 45 inches have standard guardrails on all open sides and ends of platform? Yes_____ No_____

4. Are scaffolds capable of supporting at least four (4) times their maximum intended load? Yes_____ No_____

FLOOR AND WALL OPENINGS, STAIRWAYS

1. Are floor and wall openings properly guarded with standard railing and toe boards? Yes_____ No_____

2. Are skylight openings guarded by fixed standard railings on exposed sides, or are covers capable of holding a 200-pound force? Yes_____ No_____

3. Are wall openings four (4) feet above ground properly guarded? Yes_____ No_____

4. Are extension platforms outside a wall opening properly guarded with side rails or equivalent guards? Yes_____ No_____

5. Are open sided floors or platforms four (4) feet or more above ground? Yes_____ No_____

6. Are runways higher than four (4) feet and on which tools, machine parts, or material are likely to be used, guarded by standard railing and toe board? Yes_____ No_____

7. Are flights of stairs with four (4) or more risers equipped with standard stair railings or standard handrails as required? Yes_____ No_____

CRANES, DERRICKS, HOISTS, ELEVATORS

Prior to operating a crane on the construction site, an up-to-date Certificate of Inspection must be presented to the project safety manager/coordinator for review. The certificate must be signed by a government or by a private agency recognized by the U.S. Department of Labor.

1. Is use of equipment in compliance with the manufacturer's specifications and limitations? Yes_____ No_____

2. Are rated load capacities, recommended operation speeds, and special hazard warnings posted on all equipment and visible from operator's station? Yes_____ No_____

3. Is equipment inspected before each use? Yes_____ No_____

4. Are copies of current inspections on file in the safety office? Yes_____ No_____

5. Are accessible areas within the swing radius of any revolving superstructure barricaded? Yes_____ No_____

6. Before leaving crane unattended, is the load lowered to ground level? Yes_____ No_____

7. Are booms which are being assembled or disassembled on the ground with or without support of the boom harness securely blocked to prevent dropping of the boom and boom sections? Yes_____ No_____

8. Are hoist way entrances on material hoists protected by substantial gates or bars? Yes_____ No_____

9. Are hoist way doors or gates on personal hoists at least six (6) feet, six (6) inches high? Are they provided with mechanical locks which cannot be operated from landing side and are accessible only to persons on the car? Yes_____ No_____

10. Are overhead protective coverings provided on top of hoist cages or platforms? Yes_____ No_____

MOTOR VEHICLES, MECHANIZED EQUIPMENT

1. Are all vehicles, which are left unattended at night, equipped with lights or reflectors, or barricades with lights or reflectors? Yes_____ No_____

2. Are tire racks, cages (or equipment protective devices) provided and used when inflating, mounting, or dismounting tire installed on split rims or rims equipped with licking rings? Yes_____ No_____

3. Are vehicles in use inspected at beginning of each shift to assure that all parts, equipment, and accessories, affecting sage operation are free of defects?
Yes_____ No_____

4. Are bulldozers and scraper blades, dump bodies, etc., fully lowered or blocked when being repaired or not in use? Yes_____ No_____

5. Are parking brakes set on parked equipment, and are wheels chocked when parked on an incline? Yes_____ No_____

6. Are operating levers equipped with latch? Are tailgate handles on dump trucks arranged to keep operator clear? Yes_____ No_____

EXCAVATION, TRENCHING, AND SHORING

1. Are excavation permits filed prior to any excavation? Yes_____ No_____

2. Are excavations inspected daily? Yes_____ No_____

3. Are air quality tests performed daily prior to allowing workers into excavation?
Yes_____ No_____

4. Are walkways, runways, and sidewalks clear of excavated material?
Yes_____ No_____

5. Are sidewalks shored to carry minimum live load of 125 pounds per square foot in undermining is required? Yes_____ No_____

6. Are underground utilities located and protected prior to excavating?
Yes_____ No_____

7. Are walls and faces of all excavations in which employees are exposed to danger from moving ground and trenches four (4) feet or more in depth guarded by shoring system, sloping of ground, or equivalent? Yes_____ No_____

8. Is a registered professional used to design all shoring systems? Yes_____ No_____

9. Is a competent person used to determine soil classification? Yes_____ No_____

10. In excavations which employees may be required to enter, is excavated or other material stored and retained at least two feet from edge of excavation?
Yes____ No_____

11. Do trenches more than four (4) feet deep have ladders or steps located so no more than twenty-five (25) feet of lateral travel is required to reach them?
Yes____ No_____

12. Where employees or equipment are required or permitted to cross over excavations, are walkways or bridges with standard guardrails provided? Yes_____ No_____

CONCRETE, CONCRETE FORMS AND SHORING

1. Do bulk storage bins or silos have conical or tapered bottoms with mechanical or pneumatic means or starting the flow of material? Yes_____ No_____

2. Are concrete mixers equipped with one-yard or larger loading skips equipped with mechanical clearing device and guardrails? Yes_____ No_____

3. Is formwork and shoring capable of supporting all vertical and lateral loads during placement of concrete? Yes_____ No_____

4. Are drawings or plans showing jack layout, formwork, shoring working decks, and scaffolding available at job-sites? Yes_____ No_____

5. Is vertical and horizontal reinforcing steel, guarded to eliminate the hazard of impalement? Yes_____ No_____

6. Is a limited access zone established prior to construction of any masonry wall? This zone shall be established on the unscaffolded side of the wall and shall equal the height of the wall plus four (4) feet and shall run the full length of the wall? Yes_____ No_____

STEEL ERECTION

1. Is permanent flooring installed as erection progresses? Yes_____ No_____

2. Temporary flooring/skeleton steel construction in tiered buildings:

Is the erection floor solidly planked except for access openings?

Is the planking or decking of proper thickness to carry workload?

Is planking two-inch minimum full size undressed, laid tight and secured? Yes_____No_____

3. Are safety nets used when the work area is more than twenty-five (25) feet above ground, water surface, or other surfaces where ladders, scaffolds, catch platforms, temporary floors, safety lines, and safety belts are impractical? Yes_____No_____

4. Where long span joists or trusses forty (40) feet or longer are used, is a center row of bolted bridges installed? Yes_____ No_____

5. Are tag lines used for controlling loads? Yes_____ No_____

6. Bolting, riveting, fitting-up, plumbing-up: Are pneumatic hand tools disconnected and pressure lines released before adjustments or repairs? Yes_____ No_____

7. Are locking devices provided on impact wrenches to retain socket? Yes_____ No_____

8. When riveting in vicinity of combustible material, are precautions taken to prevent fires? Yes_____ No_____

9. Are turnbuckles secured to prevent unwinding while under stress? Yes_____ No_____

10. Are plumbing-up guys and related equipment placed so that employees can reach the connections points? Yes_____ No_____

11. In plumbing-up, so the planks overlap the bearing on each end by a minimum of twelve (12) inches? Yes_____ No_____

12. Is wire mesh placed around columns where planks do not fit tight? Yes_____ No_____

13. Are unused openings in floors planked over or guarded? Yes_____ No_____

14. Are employees who work on float scaffolds provided with safety belt? Yes_____ No_____

ROLLOVER PROTECTIVE STRUCTURES (ROPS)

1. Are rubber tire, self-propelled scrapers, rubber tire dozers, wheel-type agricultural and industrial tractors, crawler tractors, crawler-type loaders, and motor graders (with or without attachments) equipped with rollover protective structures? Yes_____ No_____

2. Do ROPS meet minimum performance criteria? Yes_____ No_____

3. Do operators wear their seat belts at all times while operating the equipment? Yes_____ No_____

OCIP SAFETY AUDIT RECOMMENDATIONS

CONTRACTOR_____

AUDIT DATE_____

RECOMMENDATIONS

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

25. ILLEGAL SUBSTANCE USE & ALCOHOL ABUSE PROGRAM

This document will outline and explain the policies and procedures of this project concerning the use of drugs and abuse of alcohol on this project.

A. Introduction

1. Drugs, alcohol, and any form of non-prescription medications shall be prohibited, as well as reporting to work under their influence. Those involved in distributing or accepting any form of illegal drugs or alcohol on the job site will be terminated.

2. An employee on any type of prescription medication must notify his/her supervisor before starting work for the day.

3. All employees on the jobsite are subject to drug testing for reasonable suspicion, as determined by the Contractor or The University of Rhode Island. The Contractor is responsible for administering drug tests. Employees testing positive in a drug test will be dismissed from the site.

4. Refusal by any employee to submit for reasonable suspicion testing will be interpreted as a positive test result. The employee will be dismissed from this site.

B. Purpose

The policies and procedures set forth herein are adopted for the following purposes:

1. To protect employees from injury to themselves;

2. To protect fellow employees and third parties from injury and, generally, to ensure a safe working environment for all employees;

3. To protect property and equipment of The University of Rhode Island and others from damage;

4. To protect The University of Rhode Island from possible legal liability caused by improper acts of contractor employees/workers on this project; and

5. To prevent/prohibit employees from working under the influence of drugs or alcohol.

C. Policies

The term **"illegal drugs"** as used in the policy refers to drugs which are **"controlled substances"** under federal or state laws, the possession or use of which, without proper prescription therefore, constitutes a violation of law.

In furtherance of the above general policies, the following specific prohibitions shall be in effect and shall be enforced:

1. No one shall report to work on this project or perform any work for The University of Rhode Island while under the influence of illegal drugs or alcohol.

2. No one shall engage in any activity pertaining to the manufacture, distribution, sale, possession or use of illegal drugs. Nor shall anyone possess or consume alcohol while on the project premises, in any company/contractor vehicles, or while engaged in the performance of work for The University of Rhode Island.

3. No one shall use The University of Rhode Island property or equipment, or one's position with project to facilitate any illegal activity pertaining to the manufacture, distribution, sale, possession or use of illegal drugs.

D. Sanctions For Violating This Policy

Violation of this policy by any employee/worker will furnish grounds for immediate removal from the project.

E. Prescription Medication

Any employee/worker who is using prescribed medication which might impair the ability of the employee/worker to perform his or her duties, or which might create a safety hazard to the employee or others, should report to their supervisor. The Supervisor must determine, in consultation with the employee's physician or other medical consultants, if it is safe for the employee/worker to perform his or her regular duties while taking the medication in question. If not, the employee/worker will be directed to perform other duties (if available) or will be directed not to report to work, until it is determined that it is safe to do so.

26. PERSONAL PROTECTIVE EQUIPMENT (PPE)

Contractors are required to utilize appropriate engineering and administrative controls to protect their employees from all recognizable hazards on this project. When implementation of these controls are not feasible, contractors shall issue appropriate personal protective equipment for their employees such as hard hats, eye protection, gloves, body harnesses, and respirators.

Each contractor is responsible for assuring that their employees are properly trained on each type of personal protective equipment (PPE) used.

Contractors are responsible for ensuring that their vendors and visitors abide by all project safety rules.

A. Head Protection

Hard hats must be in good condition, meet ANSI Z89.1 standards, and shall be worn at all times on the jobsite, with the exception of the office trailers.

B. Eyes and Face

Approved safety glasses with rigid side shields that meet ANSI Z87.1 standards must be worn by employees in work areas per OSHA regulations. Office areas are excluded.

Additional eye and/or face protection shall be worn in the following situations:

1. Goggles or a full-face shield shall be worn for chipping, overhead work, and drilling above shoulder height.

2. Full-face shields shall be worn for grinding and abrasive wheel operations, circular saw use or any other tool/equipment that discharges solid material, and when transferring chemicals between two containers.

3. Burning goggles with a minimum shade of 4 shall be worn for all gas welding and burning.

4. Welding hoods will cover all exposed areas of the face and have a minimum shade 10-filter lens.

5. A face-shield and splash-proof goggles must be worn when using a chemical that could splash into the face and/or eyes.

C. Hearing Protection

1. Hearing protection must be worn in all posted areas and around any high noise level producing machines, tools, equipment or operations.

2. High noise areas are defined as areas where employee noise exposure may exceed 90 dBA for an 8-hour Time Weighted Average.

3. Contractors are required to initiate a Hearing Conservation Program for their employees exposed to noise levels beyond 85 dBA.

D. Fingers and Hands

1. Gloves suitable for the job being performed shall be worn unless the use of the gloves creates or increases the hazard.

2. Use the appropriate glove for the task performed (e.g. rubber coated gloves for solvents or chemically treated material; leather gloves for handling rough or sharp material).

3. Do not use gloves around rotating equipment.

4. Electricians shall wear specially designed rubber gloves meeting ANSI standards when working on high voltage.

5. Cut resistant gloves are required on the free hand when using knives or similar type cutters.

6. Keep hands and fingers away from all pinch points.

7. Use tool holders to keep hands out of strike zones.

8. Rings are not to be worn in the work area at any time.

E. Toes, Feet and Legs

1. Sturdy leather work-boots are required on all projects.

2. Steel-toed boots that cover the ankle are strongly suggested and may be required on some projects.

3. Sneakers, sandals, or any other shoe of similar kinds are not allowed to be worn on site.

4. Additional foot protection (foot guards) must be worn when using jackhammers or tampers.

5. Rubber non-slip boots must be worn in slippery areas or in areas where a chemical exposure is possible.

6. Guards, chaps, etc. shall be worn while using equipment such as chainsaws or in areas where snakebites are possible.

F. Fall Protection – Body Harnesses

Fall protection devices include body harnesses, shock-absorbing lanyards, and other equipment that prevent or arrest falls from heights. When exposed to a fall of greater than six (6) feet and not protected by standard handrails, or working under guidelines of an approved Fall Protection Plan, all personnel shall use a body harness. **A fall arresting device is required in the following situations:**

1. Sloping roofs.

2. Flat roofs without handrails within six feet of roof edge or floor opening.

3. Elevated work areas greater than six feet unless employees are protected from falling by standard handrails.

4. Scaffolding that has components missing (e.g. handrails, mid-rails)

5. Steel erection, except for ironworkers doing connecting work.

6. Every employee issued a fall arresting device shall be properly trained on proper use, care, and inspection prior to use.

7. Safety belts shall not be used for fall arresting purposes. They shall only be used as a secondary means of fall protection.

8. 100% fall protection is required in all situations where employees are required to move while in elevated areas.

9. Harnesses shall be equipped with two shock-absorbing lanyards, or as required by additional project rules.

10. Any lifeline, safety harness, or lanyard actually subjected to fall loading shall be removed from service.

G. Respiratory Protection

1. The contractor shall provide respirators where employees' exposure to fumes, dusts, gases or other respiratory hazards are present or reasonably expected.

2. Each affected contractor must have a respiratory protection program in writing that meets or exceeds all OSHA standards.

3. Employees who use respirators must be clean-shaven at the time of use.

4. Respirators must be selected to protect against the appropriate hazard.

5. Respiratory protective equipment shall be regularly inspected and maintained in good condition.

6. Respirators shall be stored in a convenient, clean, and sanitary location.

7. Employees shall not be assigned to tasks requiring a respirator until it has been determined that they are physically able to perform the work and use the equipment.

8. The local physician shall determine what health and physical conditions are pertinent.

9. Contractors shall fit test their employees before allowing them to use respirator.

10. Contractors shall maintain all fit test records on the jobsite.

H. Hearing Protection

1. When employees are subject to sound levels exceeding those specified in OSHA table D-2, ear protective devices must be provided and used.

2. Protective devices inserted in the ear shall be fitted or determined individually by a competent person.

3. Plain cotton is not acceptable to use as hearing protection.

4. When employees are subject to sound levels exceeding those listed in table D-2, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound levels within the levels of the table, then personal protective equipment shall be provided and used to reduce the sound levels.

Table D-2

Duration per day, hours	**Sound Levels DBA**
8	**90**
6	**92**
4	**95**
3	**97**
2	**100**
1 ½	**102**
1	**105**
½	**110**
¼ or less	**115**

When the daily noise levels of exposure are composed of different levels, their combined effect should be considered, rather than the individual effect. Each project varies as to the actual noise level that is generated; included are examples of sound levels for various equipment:

60 lb. Jackhammer	@ 10 ft.	104-108 DBA
15 lb. Chipping Hammer	@ 10 ft.	92-96 DBA
Concrete Saw	@ 10 ft.	101-103 DBA
Steel Grinder	@ 10 ft.	94-98 DBA
Circular Saw	@ 10 ft.	95-100 DBA

By checking Table D-2, you can see that these operations would have to include either hearing protection or a limited time of use to prevent overexposure. Use these as guides, and if in doubt, have employees use hearing protection. For specific site "*noise level testing*", contact the safety department for further information.

27. SAFETY MANUAL MANAGEMENT PROCESS

This Safety Procedures Manual management process is designed to ensure effective review of existing procedures and implementation of new or revised procedures so that compliance and prevention requirements are maintained on site.

A. Responsibilities

Manual Holders shall ensure:

1. Their manual is up to date.

2. All revision forms shall be forwarded to the Safety Representative of The University of Rhode Island.

The University of Rhode Island Safety Representative shall ensure that:

1. All procedures meet the regulatory and The University of Rhode Island's performance requirements.

2. All new/revised procedures and associated implementation plans are reviewed and approved by the site Management before being issued to Manual Holders

3. All completed implementation plans and updated versions are maintained for the most recent iteration of each procedure.

4. This management system and all procedures are reviewed as often as necessary, but at least annually from the latest revision date.

5. All revision suggestions are reviewed and the originator is given feedback, whether or not the suggestion is adopted.

6. A master copy of this manual is maintained at all times.

Contractors/Subcontractors shall ensure that:

1. The coordination of all proposed procedures and implementation plans within their assigned work areas.

2. All implementation requirements are fulfilled and documented.

3. Availability of their manual to their employees and subcontractors.

4. All affected employees are trained on new/revised policies, practices and procedures.

5. Tracking the implementation of each procedure or policy.

B. Manual Update Process

The University of Rhode Island Safety Representative shall maintain the master copy of the safety manual.

1. Manual Holders, including contractor employees, may make suggestions for new or revised procedures by forwarding the suggestion to their supervisor or The University of Rhode Island Safety Representative.

2. The originator of each suggested revision shall be given written feedback on the actions planned or taken for each suggestion.

3. Each new or revised procedure shall have an implementation plan attached that includes all steps required for effective implementation.

4. The plan shall contain:

- **a.** The name and revision date of the procedure/policy to be implemented.
- **b.** Each action required for effective implementation (including all affected procedures and policies).
- **c.** Certification that the procedure or policy has been implemented and the date signed.

5. The University of Rhode Island Safety Representative shall develop all new/revised procedures and implementation plans, and forward them to site management for draft review.

6. Comments shall be reviewed by The University of Rhode Island Safety Representative and incorporated as appropriate. Any conflicts shall be resolved in the appropriate forums.

7. Upon receipt of new or revised procedures, manual holders shall update their manuals.

8. In the event that an immediate procedural change is warranted, an interim change memo may be issued to all manual holders by The University of Rhode Island, which may be used in lieu of formal revision.

C. Manual Distribution

Each contractor and subcontractor on the project is entitled to a copy of this manual

1. Other manual holders shall be as determined by The University of Rhode Island.

END OF MANUAL

SECTION 281300 - CARD KEY ACCESS CONTROL ENTRY SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes access control door hardware for the following:
   1. Online WiFi cylindrical locks.
   2. Online WiFi mortise locks.

B. Section includes, but is not necessarily limited to, the following for the integrated access control security and site management system:

   1. Electrified and Integrated Access Control Card Key Door Hardware
   2. Monitoring and Signaling Equipment.
   3. System Network Control Processors.
   4. Reader Controller Interfaces and Modules.
   5. Input Monitor and Output Control Interfaces and Modules.
   6. IP enabled wireless integrated card reader lock.
   7. **Access Control System Application Software is already owned by, and installed at, URI. However, this work shall include the following:**
      A. Software License Fees – for Wi-Fi locks, one-time license fee as required for integration with Access Control Entry System Application software.
      B. Training.

C. No Brand Substitution: The Persona Card Key Access Control System is the only systems specified. Brand substitutions are not allowed.

D. WORK NOT INCLUDED: Remote Software Support (annual maintenance contract) – to cover software support. The University of Rhode Island will purchase this service separately from this contract.

E. References:
   1. IBC 2009 - International Building Code.
   2. NFPA 80 (1999) - Fire Doors and Windows.
   3. NFPA 101 (2006) - Life Safety Code.
   4. UL 294 - Access Control Systems.
   5. UL 1076 - Proprietary Burglar Alarm Units and Systems.

F. Products installed, but not provided under this Section include the following. Coordination to remain a requirement of this Section.

   1. Security or High Security keyed cylinders, including provisions for temporary construction keying, for mechanical override at access control locking hardware to be furnished under Division 8 Section "Door Hardware".

G. Related Sections:
   1. 087100 Door Hardware

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. System Operational Descriptions: Complete system operational narratives for the integrated access controlled openings defining the owner's prescribed requirements for the opening functionality. Narratives include, but are not limited to, the following situations: normal secured/unsecured state of door; authorized access; authorized egress; unauthorized access; unauthorized egress; fire alarm and loss of power conditions, and interfaces with other building control systems.

C. Shop Drawings: Details of electrified integrated locking hardware and access control firmware, indicating the following:

   1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication and control of the access control system electrified hardware and firmware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

      A. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
      B. Complete (risers, point-to-point) access control system block wiring diagrams.

   2. Electrical Coordination: Coordinate with related Electrical Sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Proof of Certification: Provide copy of manufacturer(s) official certification or accreditation document indicating proof of status as a qualified and authorized provider of the primary access control components.

E. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete access control and site management installation in quantity as required in Division 01, Closeout Submittals. The manual to include the name, address, and telephone number of the supplier/integrator providing the installation and the nearest service representatives for each item of equipment included in the system. The final copies delivered after completion of the installation test to include "as built" modifications made during installation, checkout, and acceptance.

   1. As-Built Drawings: During system installation, the Contractor to maintain a separate hard copy set of drawings, elevation diagrams, and wiring diagrams of the access control system to be used for record drawings. This set to be kept up to date by the Contractor with all changes and additions to the access control system accurately recorded.

F. Warranties and Maintenance: Special warranties and maintenance agreements specified in this Section.

1.4 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum [5] years of documented experience in providing access control and security systems equipment and software similar to that indicated for this Project and that have a proven record of successful in-service performance.

1. Software and access control systems components to have been previously and thoroughly tested together with proven installations similar in size and functionality to the design requirements indicated for this Project.

B. Installer Qualifications: Systems Integrators, verifiably factory trained and certified by the primary product manufacturers, with a minimum 3 years documented experience installing complete integrated access control systems similar in material, design, and scope to that indicated for this Project and whose work has resulted in construction with a proven record of successful in-service performance. Qualifications include, but are not necessarily limited, to the following:

1. References: Provide a list of references for similar projects including contact name, phone number, name and type of project.
2. Professional Staffing: Firms to have a dedicated access control systems integration department with full time, experienced professionals on staff experienced in providing on site consulting services for both electrified door hardware and integrated access control systems installations.
3. Factory Training: Installation and service technicians are to be competent factory trained and certified personnel capable of maintaining the system.
4. Service Center: Firms to have a service center capable of providing training, in-stock parts, and emergency maintenance and repairs at the Project site with 24-hour/7-days a week maximum response time.

C. Supplier Qualifications: Supplier/Dealers, verifiably authorized and in good standing with the primary product manufacturers, with a minimum 3 years experience supplying integrated access control systems similar in material, design, and scope to that indicated for this Project and whose work has resulted in construction with a proven record of successful in-service performance.

D. PERSONA Card Key Access Control is required to be supplied and installed only through designated ASSA ABLOY "Authorized Channel Partner" (ACP) and “Certified Integrator” (CI) accounts. The following ACP's and CI's meet these qualifications and are authorized to supply and/or install the access control products specified in this section:

1. **To obtain names and phone numbers of PERSONA Authorized/Certified Integrators: Contact Door Security Solutions of New England 860-224.9234.**

2. **ONLY AUTHORIZED DEALERS WILL BE CONSIDERED.**

E. Source Limitations: Obtain the access control door hardware, system firmware and application software specified in this Section from a single source, qualified supplier/integrator unless otherwise indicated.]

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
2. Provide integrated access control door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

F. Regulatory Requirements: Comply with NFPA 70, NFPA 80, NFPA 101 and ANSI A117.1 requirements and guidelines as directed in the model building code including, but not limited to, the following:

1. Comply with NFPA 70 "National Electrical Code", including electrical components, devices, and accessories listed and labeled as defined in Article 100 by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
2. Where indicated to comply with accessibility requirements, comply with Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)," ANSI A117.1.
3. Comply with NFPA 101 "Life Safety Code" for doors in a means of egress.
4. Comply with NFPA 80 "Fire Doors and Windows" for fire labeled opening assemblies.
5. The installed access control system shall conform to all local jurisdiction requirements.

G. Keying Conference: Reference Division 8 Section "Door Hardware".

H. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier/Dealer, Systems Integrator, and Contractor to review proper methods and procedures for receiving, handling, and installing the access control system hardware. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedules.

1. Inspect and discuss Division 26 electrical roughing-in and similar preparatory work performed by other trades.
2. Review and verify sequence of operation descriptions for each unique access controlled opening.
3. Review and finalize construction schedule and verify availability of materials.
4. Review the required inspecting, testing, commissioning, and demonstration procedures.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Do not store electronic access control hardware, software or related accessories at Project site without prior authorization.

1. Access control firmware and software: Where approved and directed, inventory upon receipt and store electronic access control equipment in a secure, temperature and humidity controlled environment in original manufacturer's sealed containers.

B. Tag each item or package separately with identification related to the final Access Control Door Schedule, and include basic installation instructions with each item or package.

C. Deliver permanent keys, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner established at the “Pre-Submittal Conference".

1.6 COORDINATION

A. Coordinate quantity and arrangement of assemblies with ceiling space configuration and with components occupying ceiling space, including structural members, pipes, air-distribution components, raceways, cable trays, recessed lighting fixtures, and other items.

B. Access Control System Electrical Coordination: Coordinate the layout and installation of scheduled electrified door hardware, and related access control equipment, with required connections to source power junction boxes, power supplies, detection and monitoring hardware and fire alarm system.

1. Door Hardware Interface: The card key access control system to interface and be connected to electronic door control hardware (electromechanical locks, electric strikes, magnetic locks, door position switches, other monitoring contacts, and related auxiliary control devices) as described under Division 8 "Door Hardware". Coordinate the installation and configuration of specified door hardware being monitored or controlled with the controls, software and access control hardware specified in this Section.

C. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing electrified door hardware and access control system components. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing access control system hardware to comply with indicated requirements.

D. Door and Frame Preparation: Related Division 08 Sections (Steel, Aluminum and Wood) doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article will not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and are in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of the installed access control system hardware and software that fails in materials or workmanship, including all related parts and labor, within specified warranty period after final testing and acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

D. Special Warranty Periods (Electrified Access Control Door Hardware):

1. Two years for Electrified, Wiegand Output, and IP-Enabled Access Control Door Hardware.

1.8 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of the installed access control system hardware and components.

B. Maintenance Service: Beginning at Substantial Completion, and running concurrent with the specified warranty period, provide continuous (6) months full maintenance by skilled employees of the Systems Integrator. Include repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door opening operation. Provide parts and supplies as used in the manufacture and installation of original products.

1.9 SCOPE OF WORK

A. On-Line Electronic Access Control System: Furnish and install at the indicated locations the specified electrified and integrated door hardware and access control firmware and software for a completely operational access control and security site management system. System includes, but is not necessarily limited, to the following:

1. Electrified integrated card reader locks and hardware, network control processors, reader controller panels, I/O monitor/control interfaces, door position switches, card readers, keypads, and display terminals, system application software, special tools, operating manuals, and required cabling and accessories as detailed below and listed in the Access Control Hardware Sets at the end of Part 3.

A. Provide the appropriate number of reader controller panels and I/O monitoring/control expansion interfaces as needed to handle the number of card readers, locking devices, door status devices, and identified alarm inputs specified in this section, and as shown on the security drawings.

B. Provide manufacturer approved integrated card reader locks, exit hardware, and remote wall mounted card readers, keypads, and display terminals that are functionally compatible with the specified access control equipment interfaces.

2. Access control system equipment to be installed in an enclosure box compatible with the specified components. This enclosure to include, but is not necessarily limited to, the network control processor, I/O monitor/control interface panels, power supplies, terminal strips, wire ducts, keyed lock cylinder, integrated outlet for A/C power, and standoffs.

A. Enclosure box to be located in the designated room(s) with connection to the campus wide, local area network for communication back to the central server host.

3. Owner to provide the following:

A. Computer hardware and peripherals to be from an approved, major line computer manufacturer. The following manufacturers will be considered "pre-approved", however, specific information detailing compliance with the manufacturer's requirements must be included within the project submittal package as specified.

1) Compaq
2) Dell
3) Hewlett-Packard
4) IBM

Typical Browser Client Requirements (Web client, online or hybrid)
- Memory: 1 GB minimum; 2 GB+ recommended
- Storage: No requirement
- Processor: Pentium IV @ 2.0 GHz (or equivalent) or faster
- Display: 1024 x 768

Browser Software:
- Internet Explorer, Firefox, and Chrome officially supported; Opera & Safari function as well

Typical Rich Client Requirements (for configuration, online or offline)
- Memory: 1 GB minimum; 2 GB+ recommended
- Storage: 10 GB available
- Processor: Pentium IV @ 2.0 GHz (or equivalent) or faster
- Display: 1024 x 768

Operating Systems:
- Windows XP 32bit, Server 2003 32bit, Vista 32/64 bit, Win7 32/64 bit, Server 2008/2008 R2

Typical Server Requirements (online AND offline, or fully interfaced)
- Memory: 4 GB minimum
- Storage: 20 GB available or more as needed
- Processor: Dual Core / (min Pentium IV w/ HT) @ 2.0 GHz (or equivalent) or faster
- Database: Microsoft® SQL Server 2005, 2008, or 2008 R2**

Operating Systems:
- Windows XP 32bit, Server 2003 32bit, Vista 32/64 bit, Win7 32/64 bit, Server 2008/2008 R2

B. Owner will be responsible for ensuring that each computer hardware component includes the required interfaces, expansion boards, and peripherals that will be necessary to allow the system to operate as described within this specification and as indicated on the drawings.

C. Power Sourcing, Network Switches and Wireless Access Points: Quantity as required to accommodate installed access control (and video surveillance) devices.

D. Network Control Processor Connections:

1) LAN/Ethernet communication ports (jacks) and network interface cards as needed, CAT5e (CAT6) cabling from network router/switch to network control processor, outlet and cover plates and/or patch cables required for network connection within each designated IT/Telecom room.
2) Required static IP addresses.

4. Power Supplies, including battery backup power supply and separately fused surge protection, required for the electrified door hardware, access control equipment, and PoE switches or wireless routers driving the integrated card reader locking devices.
5. Installation, final configuration and commissioning of electrified door and access control system hardware, communication firmware, power supplies and related accessories.
6. **System application software is already installed at URI. Work includes programming and end user training of the access control system demonstrating operating, repair, and maintenance procedures**. Include no fewer than 16 hours of on-site central server training for designated personnel (facilities maintenance, security, IT, administration) by a factory certified representative.

   A. Include minimum of 16 hours of Client Software Application (client workstation) training at each of the remote installed facilities for local administrative staff.

7. Provide manufacturer required power controllers, interface boards, and programming that may be required for approved electric latch retraction exit devices supplied under Division 08 Section "Door Hardware."
8. Electrical contractor, Division 26, to provide the following:

   A. Source power wiring (120VAC) as required for the electrified locking and access control hardware, equipment, accessories and power supplies. This includes quad outlets as required on a dedicated circuit in the designated IT/Telecom room(s) and the related conduit, stub-in, junction boxes and connectors required for the source power delivery and connections.
   B. Provide required conduit, stub-in, junction and back boxes for both the electrified locking hardware and access control equipment at each of the access controlled or monitored openings per plan drawings and specs. Supply and install conduit between each of the aforementioned devices and between the electrical junction boxes, power supplies and access control equipment located on or above the door opening.

      1) At wall mounted remote readers, provide conduit on the secured side of the door, 36" from the finish floor and 6" from the edge of the frame, to the related power supplies and access control equipment.
      2) At electrical hardware power transfers provide conduit on the secured side of the opening from the power transfer, thru-wire hinge, or serviceable panel location on the frame jamb to the related power supplies and access control equipment.

   C. Electrical Contractor to provide all 120VAC cabling connections and terminations from the electrical junction boxes to these electrical devices.

9. Access Control System Integrator to provide the following:

A. Low voltage wiring (12/24VDC) and communication cabling (RS-232/RS-485) from network control processors to reader controllers, I/O monitor/control interface panels, electrified and integrated locking hardware, card readers, keypads, or display terminals, monitoring and signaling switches. Work includes related programming and commissioning the locks for a complete and functional access controlled opening in accordance with applicable codes and specified system operational narratives.

10. Provide permits, submittals and approvals required by the authority having jurisdiction, prior to commencing with work.

PART 2 - PRODUCTS

2.1 SYSTEM ARCHITECTURE - ON-LINE CARD KEY ACCESS CONTROL ENTRY AND SITE MANAGEMENT SYSTEM (ACSMS) – **ALREADY INSTALLED AT URI - THIS PARAGRAPH IS FOR REFERENCE ONLY.**

A. General: The ACSMS is a modular and networked based system providing physical access control security to a Wide Area campus, enterprise. The system to be capable of controlling and integrating multiple security functions including the configuration, management and monitoring of cardholder access, locking hardware units, events, alarms, visitors, and real-time tracking and reporting. The ACSMS is to be alterable at any time depending on the facility requirements and will allow for easy upgradeability or modification of network processors, controller, interface modules, card data, inputs, outputs, and remote work stations. The ACSMS to include, but is not be limited to, the following features and functions:

1. An "Enterprise" class access control software application.
2. Client/Server model operating central server host software modules and client workstation software applications in a multi-user and a multi-tasking environment.

   A. The ACSMS to permit multiple instances of client software applications to run simultaneously on the network. The base system to include software application licenses with an unlimited number of licenses available subject to connection fees.

3. Partitioning: The system to support security partitioning enabling system administrator to segment the configuration database and group multiple entities within the security partition.

   A. Security partitions limit what users can view in the configuration database. Administrators, who have all rights and privileges, can segment a database into multiple security partitions. A user who is given access to a specific partition will only be able to view entities (components) within the partition they have been assigned.

4. Encryption: The system to support encrypted communication between the central server software and client software applications (sever-to-server and client-to-server) using a 128-bit AES encryption algorithm (at a minimum).

   A. Communication between the central server host software module and system controllers to be encrypted if supported by the controllers.

B. The ACSMS client software applications to be password protected with passwords stored in the central server database in an encrypted manner.

5. Distributed Processing: The system is a fully distributed processing application allowing information, including time, date, zones, valid codes, tasks, access levels, and similar data, to be downloaded from the central host station to controller interface devices allowing access-control decisions with or without central host station communication. If communications to a central host station are lost, the controllers will automatically buffer event transactions until communications are restored and events are automatically uploaded to the central host station.

   A. Provide for a higher level of distributed database management at defined perimeter access points such that no single point of failure will allow more than two access points to fail, or affect more than two access points at perimeter points system wide.

6. Single Data Base: The system to support a single database for access control site setup, credential and identity file creation, alarm and control setup, and system user operation and command functions.
7. System Access Management: The system to allow operators through password authentication the ability to make access granted or denied decisions, define access levels, time zones, holidays, assign cardholders, access groups, develop tasks, and generally manage access control, alarm monitoring and response activities system wide from a single login. Operator and user privileges are managed by a system administrator allowing for different levels of system access and system control. Authorization management is fully Owner definable.
8. Cardholder Management: The system to include a cardholder management system integrated within the access control system. This cardholder management functionality allows the enrollment of cardholders into the database, and import/export of employee data.
9. Access Groups and Access Levels: The system to provide adequate access groups and access level assignment capability to meet Owner requirements for the specified project. If required, software application can be expandable to support unlimited access groups and access levels.
10. Alarm Monitoring: The system is able to monitor, report, and provide information about the time and location of alarms, along with their priority.
11. Event Monitoring: The system is able to monitor, report, and archive network access control activity.
12. Transaction Logs: The system to support an unlimited number of logs and historical transactions (events and alarms) with the maximum allowed being limited by the amount of hard disk space available.
13. System Monitoring: The system to have ability to report on the integrity of all network assigned devices, circuits and communications and provide a diagnostics screen showing field level communications system wide
14. Lock/Unlock Commands: The system to allow an operator to manually lock and unlock doors overriding scheduled access control restrictions and configurations if necessary.
15. Hardware Interface: The system to integrate with and control specified electrified hardware, signaling and monitoring devices.
16. Report Generator: The system to have the ability to generate and output reports with any and all combinations of system fields and data including, but not limited to: by

cardholder, by door, by site, by time, by groups of doors and by cardholder field. Any and all combinations of fields must be available for reporting. The report feature to allow exporting of generated reports over a network connection or by remote printing.

17. Multi-User/Web Based Network Capabilities: The system to support multiple operator workstations via local area network/wide area network (LAN/WAN), the Internet, or VPN. The system to be capable of supporting minimum of [ ] concurrent users/clients with software expansions to an unlimited number of workstations based on the Owners network requirements.
18. Systems Integration: The system to have the ability to be fully and seamlessly integrated with existing or specified intrusion detection alarm and video surveillance (CCTV) systems.

B. General: The PERSONA campus security locking solution incorporates the PERSONA Campus 1000™ system software. Campus 1000™ is an advanced and flexible locking system supporting magnetic stripe card technology (Track 1 or Track 3) for offline access control, Track 2 for online security applications as well as 125 KHz Proximity, and iClass for other online applications. PERSONA devices are capable of operating on the same card as existing magnetic stripe, proximity and iClass applications Campus Wide.

1. PERSONA Campus 1000™ software **(already installed at URI)** operates under a Microsoft® Windows™ platform either as a single PC stand-alone system, or as a networked system with existing TCP/IP infrastructure.

   A. Compatible with most high coercivity magnetic stripe, proximity and iClass ID cards.
   B. Interfacing options eliminate operator error and duplicate entry. Software designed to plug into the existing base workflow and blend into an established network environment.
   C. User-defined access patterns and access points (privilege points), and pre-defined keycard start and end times, can be assigned by individual granting access to both off-line and on-line readers with the same card.
   D. Iinvalidation of individual keycards or users, and ability to reactivate cards, can be accomplished without reprogramming the off-line locking unit.
   E. Time controlled access allows different access privileges to multiple users at various times throughout the day.
   F. System operator privileges can be curtailed and partitioned by both building and card types.
   G. “Conference Guest Wizard” allows administrator quick and easy way to encode keycards for guests at training programs and conferences.

2. PERSONA Card Key Locking devices can be set in “passage mode” remaining unlocked during scheduled times and automatically locking down at the end of the specified time period. While in passage mode, users may be granted ability to re-lock and again un-lock the door by individual keycards. Passage mode can be automatically set or triggered by the first person, or first of a group of people, through the opening. Once in lockdown mode, only users with valid keycards and (optionally) PIN codes are allowed access.
3. Six-digit Emergency Unlock Codes can be issued to bypass “lock-outs” (cards left in the room) and codes can be pre-issued to grant future access to an opening for a limited time period without the need to encode a keycard with offline data. Unlock codes will work for specified time periods and then become invalidated.

4. Power-over-Ethernet (PoE) locking devices utilize standard 802.3af PoE switches and cabling within an infrastructure that can be deployed and maintained by current network facility specialists.
5. WiFi locking devices utilize standard 802.11b/g infrastructure without the requirement of any special network access points.
6. Off-line peripheral hardware is industry standard. PERSONA utilizes a Windows Mobile Pocket PC to communicate with the locking devices. Card encoders connect with standard network appliances available from several sources and IT can employ their brand preferences depending on needs and suppliers.

C. Open Architecture: The access control system infrastructure will be based on an open architecture design capable of supporting multiple access control hardware manufacturers and integrate with multiple non-proprietary network processors, controllers, interface modules, integrated locking hardware, remote card readers, keypads and display terminals, and other third party applications.

D. Network Support: Communication network connecting the central server host software modules, client workstation software applications, and hardware controllers to be designed to support all of the following:

1. LAN/Ethernet enterprise ring topology and localized star topology based on TCP/IP.
2. Direct-connected RS-232 and RS-485 communication cabling.
3. Dial-up modem connection using a standard dial-up telephone line.

2.2 MANUFACTURERS

A. General: Provide electronic door hardware and access control system equipment and accessories for each designated opening to comply with requirements in this Section and with the Access Control Hardware Sets listed at the end of Part 3.

1. Access Control Hardware Sets: Requirements for quantity, item, model, design, grade, finish, size, and other distinctive qualities of each type of electrified door and access control hardware are indicated in the Access Control Hardware Sets at the end of Part 3.
2. Named Manufacturer's Products: Product designation and manufacturers are listed for the purpose of establishing requirements**.**

B. System Design: The equipment and materials supplied are standardized components regularly manufactured and utilized within the source manufacturer’s access control systems.

1. System components to be non-proprietary in design and implementations, providing for an open protocol platform with multiple manufacturers having functional software capable of integrating with the hardware specified. The installed integrated product is to be part of a single, cohesive management and access control system.

C. IP Enabled Wireless Integrated Card Reader Mortise Lock: IP enabled, WiFi™ ANSI/BHMA A156.2 Grade 1 bored lockset with integrated contactless card reader and request-to-exit signaling in one complete unit. Motor driven locking/unlocking control of the lever handle trim with 1/2" deadlocking stainless steel latch. Lock is U.L listed and labeled for use on up to 3 hour fire rated openings.

1. Completely intelligent and integrated locking unit with network communication connection capability directly from the locking unit back to the central system host server without additional access control interfaces or components (excluding wireless access points) via an existing or newly installed 802.11b/g wireless network.
2. Networked locks are able to read, analyze, and control access to level of authorization encoded on keycard. Real-time software accessible alarms for forced door, unknown card and door held open, with inside lever handle (request-to-exit) signaling and door position (open/closed status) monitoring (via separately connected in-door DPS)..
3. 2,400 users and 10,000 event transaction history (audit trail). Distributed intelligence allows stand alone operation in absence of network communication allowing for system operational redundancy.
4. Access by HID technology, 13.56 smart/iClass or,
5. Access by vertical swiping of magnetic stripe card and/or keypad pin number or by vertical swiping of magnetic stripe card only.

   A. Card track: Track 2.

6. Advanced data security techniques including AES 128-bit encryption changing with every exchange. Supportive of open standard WiFi™ network security including: WEP, WPA, and LEAP.
7. Emergency override access capability through system-generated special access keycards and keypad codes, which are time, date, and location specific.

   A. Provide high security mechanical key override capability with no electronic activation necessary for latch or lock retraction.

8. 9VDC power provided by (6) AA batteries for completely wireless applications.
9. Real-time lockdown capabilities with separate external 9VDC power supply, hard wiring option.
10. Ethernet system framework, 802.11 b/g wireless access points, and back-up power supplies (by others) required for complete system functionality.

    A. Comply with IEEE 802.11b/g WiFi standard for Wireless LAN communications.
    B. Frequency Range: Worldwide product covering 2.4 to 2.5 GHz, programmable for different country regulations.
    C. Maximum Output Power: 100 mW.
    D. Power Management: Continuous aware power saving polling mode.

11. **Manufacturer/Model:**
    A. Sargent Manufacturing (SA) - Passport 1000 - 10-Line P2 Series.

2.3 APPLICATION SOFTWARE - ON LINE ELECTRONIC ACCESS CONTROL SYSTEM **(ALREADY INSTALLED AND OPERATING AT URI. Par. 2.4 IS FOR REFERENCE ONLY)**

A. On-Line Application Software: The system software is the interface between network control processors, reader interfaces, and entry-control devices allowing for access control configuration and transactions, monitoring of sensors, operation of displays, alarm reporting, report generation, and system operational training. Software to include the following features:

1. The host software will have the ability to contain all Cardholders, ID Cards, Time Schedules, Holidays, Holidays/Holiday Groups, Doors/Door Groups and will be limited only by the capacity of the Server database and the memory capacity of the hard drive of the hosting computer. The practical limits of capacities will be dictated by the access control hardware due to on board storage limitations.

    A. Database Server: The access control software to be based on the Microsoft SQL server database engine. The database shall have the ability to run on the same server (PC) with the other software components to provide a complete control system or, have the ability to run on a separate, networked database server without losing any functionality.
    B. Web Client Server: The support of browser clients is required for this project. Browser clients can connect to the system via Microsoft Internet Information Server (IIS). Systems requiring special proprietary Web Servers will not be accepted.
    C. Partitioned Database: The software can separate objects such as readers, cards, cardholders, reports etc. and event data including alarms into isolated "containers" or partitions. System operators for a given partition can only see objects, people, events, and alarms for their partition.

2. Open architecture: Software design to interface with enterprise level one card and residence life software systems to allow for automated database population and editing. Provides user with the ability to review, modify, and customize the system to owner's unique requirements.
3. Multi-user and multi-tasking: Independent activities and monitoring can occur simultaneously at different workstations.
4. Password protection: Client and server software to be password protected. User management tools must be provided to assign which menus, user screens and security privileges are loaded on a user-by-user basis.
5. Record Importation: Single screen entry for enrollments with importing and exporting of student/faculty/staff data and images.

    A. Ability to overlay optional off-line reader software for single screen management and operation of both on-line and off-line system components. Optional overlay configuration provides single point of data entry, either imported or manually entered, allowing off-line and on-line databases to stay in full synchronization.

6. Graphical Interface and Icons/Maps: Graphical user interface to show pull down menus, icons and maps that display both real time states of the system and allow commanding of the object. These icons have the ability to be displayed in an “explorer tree” or on graphical floor plan (maps).
7. Auto-discovery (Plug-and-Play): Configuration of new devices by automatically discovering and configuring new devices under the owners’ direction.
8. Alarm Notification: A method of routing alarms to users in the operating system software, displayed in the browser, sent via email to pagers, and sent as text messages to PDAs and cell phones will be required. Escalation and re-routing of unacknowledged alarms is available as an option to allow for multiple individuals to be able to respond to an alarm condition.
9. Advanced Reporting Tool: A report generation tool allowing the user to create, name and save custom reports. These reports must be able to be run from either the host

software workstations or web browser clients. Data provided in a PDF format, but have the ability to be exported in HTML, RTF, XLS (Excel), and ASCII text. The report generation tool allows the user to specify the contents of a report by adding criteria such as, but not limited to, Date, Time, Location, Event, Card Number, Cardholder Name and any combination there of. The content in all custom reports must be automatically partitioned to match the user's rights as determined by the system administrator. Sample reports include, but are not necessarily be limited to:

A. Cardholder Reports - Report listing name, card number, pin number, access times, active date range, date issued, issued by, number of times issued, and access level. Reports can be sorted by any of the user-defined fields that contain data.
B. Cardholder by Reader Reports: Based on who has access to a specific reader or group of readers by selecting the readers from a list.
C. Cardholder by Access-Level Reports: Display everyone that has been assigned to the specified access level.
D. Time Zone Listing - Time zone names and intervals.
E. Holiday Listing - Scheduled holiday periods, dates and door assignments.
F. History Reports: Custom reports that allow the user to select any date, time, event type, device, output, input, operator, location, name, or cardholder to be included or excluded from the report.
G. Reports shall have the following print options: view on screen, print to system printer and "save to file" with full path statement.

10. Role Based Security: Security privileges are assigned to users in groups of privileges as “Roles”. Users can belong to multiple roles.
11. Help Documents and Installation Guides: Resource documents assisting the user with software setup, configure and troubleshooting. Additionally the software must allow the owner to contribute by adding new documents to these areas.
12. Database Administrative Tools: Software provides the ability to archive, backup and restore configuration and event data in this system.
13. Future Proof Compatibility: The software package to be continuously supported by the manufacturer as long as the end user is under a valid maintenance contract and is up-to-date with the latest system upgrades and revisions within the indicated system size limits.
14. **Manufacturer/Model:**

A. PERSONA (PN) - Campus 1000 On-Line Software.

2.4 ACCESS CONTROL HARDWARE FINISHES

A. Standard: Comply with BHMA A156.18.

B. Protect mechanical finishes on exposed surfaces from damage by applying temporary protective coverings before shipping.

C. Where specified, finishes on integrated card key locksets or exit hardware to incorporate an FDA recognized antimicrobial coating (i.e., MicroShield™) listed for use on equipment as a suppressant to the growth and spread of a broad range of bacteria, algae, fungus, mold and mildew.

D. BHMA Designations: Comply with base material and finish requirements indicated by the following:

1. Standard US26D finish.

2.7 LICENSING, TRAINING, TECHNICAL SUPPORT

A. Software License – Wi-Fi locksets, one-time license fee as required for integration with Access Control Entry System Application software.

B. Training – to cover all system training/software and interface built for URI as part of this contract.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance of the installed access control system.

B. Examine roughing-in for electrical source power to verify actual locations of wiring connections before electrified and integrated access control door hardware installation.

C. Examine roughing-in for LAN and control cable conduit systems to PCs, controllers, card readers, and other cable-connected devices to verify actual locations of conduit and back boxes before device installation.

D. Notify architect of any discrepancies or conflicts between the specifications, drawings and scheduled access controlled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing

3.2 PREPARATION

A. Doors and frames at scheduled access controlled openings to be properly prepared to receive specified electrified and access control hardware and connections without additional in-field modifications.

3.3 INSTALLATION

A. Install each item of electronic integrated door hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

B. Mounting Heights: Mount electronic integrated door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."

2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."

C. Final connect the system control switches (integrated card key locking hardware, remote readers, keypads, display terminals, biometrics), and monitoring, and signaling equipment to the related Controller devices at each opening to properly operate the electrified door and access control hardware according to system operational narratives.

D. Retrofitting: Install each door hardware and access control item to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

E. System Application Software: Install, and test application(s) software and databases for the complete and proper operation of systems involved. Assign software license(s) to Owner.

3.4 FIELD QUALITY CONTROL

A. Field Inspection: Engage an authorized systems manufacturer representative to perform a final inspection of the installed electronic integrated door hardware and access control system and state in report whether installed work complies with or deviates from requirements, including whether each component representing the opening assembly is properly installed, adjusted, operating and performing to system operational narratives.

B. Commissioning and Testing Schedule: Prior to final acceptance of the access control system installation, the following testing and documentation to be performed and provided to the Owner.

1. Inspection: Verify that units and controls are properly installed, connected, and labeled and that interconnecting wires and terminals are identified.
2. Pre-testing: Program and adjust the system and pretest all components, wiring, and functions to verify they conform to specified requirements. Provide testing reports indicating devices tested, pass/fail status, and actions taken to resolve problem(s) on failed tests.
3. Acceptance Test Schedule: Correct deficiencies identified by tests and observations and retest until specified requirements are met.
4. Provide “as designed” drawings showing each device and wiring connection and electronic enclosure legends indicating cabling in and out.
5. Provide a complete set of operating instructions for access control hardware devices and a complete software user manual. The documentation includes module reference guides for each electronic enclosure.

3.5 ADJUSTING

A. Adjust and check each operating item of integrated access control door hardware, and each door opening to ensure proper secured operation and function of every unit. Replace units that cannot be adjusted to operate as intended.

3.6 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by access control system installation.

B. Clean operating items as necessary to restore proper finish and provide final protection and maintain conditions that ensure access control door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

A. Engage an authorized systems manufacturer representative to train Owner's maintenance personnel to adjust, operate, and maintain electronic integrated door hardware and the access control system.

END OF SECTION 281300

Bid No. 100001
Bid Title: Door and Lock Replacement Group 3:
Hillside, Fayerweather, Gorham, Heathman, and Gateway Residence Halls.

BID FORM

To: The University of Rhode Island, Purchasing Department
Dining Services Distribution Center
581 Plains Road, Kingston, RI 02881

Bidder: _____
Legal name of entity

_____
Address (street/city/state/zip)

_____
Contact name Contact email

_____
Contact telephone Contact fax

1. BASE BID PRICE

The Bidder submits this bid proposal to perform all of the work (including labor and materials) described in the solicitation for this Base Bid Price (*including the costs for all Allowances, Bonds, and Addenda)*:

$_____
(base bid price *in figures* printed electronically, typed, or handwritten legibly in ink)

_____
(base bid price *in words* printed electronically, typed, or handwritten legibly in ink)

- **Allowances**

The Base Bid Price ***includes*** the costs for the following Allowances:

No. 1: Modifications to door frames, doors and door hardware due to unforeseen conditions.
$90,000.00

No. 2: Modifications to electrical, IT and fire alarm, due to unforeseen conditions.
$20,000.00

No. 3: Additional signage due to unanticipated damage to existing signage.
$10,000.00

No. 4: Payment to URI Student escorts for work occurring during occupancy.
$ 5,000.00

Total Allowances: $125,000.00

- **Bonds**

  The Base Bid Price ***includes*** the costs for all Bid and Payment and Performance Bonds required by the solicitation.

- **Addenda**

  The Bidder has examined the entire solicitation (including the following Addenda), and the Base Bid Price ***includes*** the costs of any modifications required by the Addenda.

  All Addenda must be acknowledged.

  Addendum No. 1 dated: _____

  Addendum No. 2 dated: _____

2. ALTERNATES (*Additions/Subtractions* to Base Bid Price)

The Bidder offers to: (i) perform the work described in these Alternates as selected by the State in the order of priority specified below, based on the availability of funds and the best interest of the State; and (ii) increase or reduce the Base Bid Price by the amount set forth below for each Alternate selected.

Check "Add" or "Subtract."

____ Add ____ Subtract Alternate No. 1: **Provide Work at Hillside and Heathman Halls**

$_____
(amount *in figures* printed electronically, typed, or handwritten legibly in ink)

_____
(amount *in words* printed electronically, typed, or handwritten legibly in ink)

3. UNIT PRICES

The Bidder submits these predetermined Unit Prices as the basis for any change orders approved in advance by the State. These Unit Prices include ***all*** costs, including labor, materials, services, regulatory compliance, overhead, and profit.

None.

4. CONTRACT TIME

The Bidder offers to perform the work in accordance with the timeline specified below:

- Start of construction: 7 days after receipt of Purchase Order (PO).
- Substantial completion: January 16, 2015
- Final completion: 30 calendar days from date of Substantial Completion

5. LIQUIDATED DAMAGES

The successful bidder awarded a contract pursuant to this solicitation shall be liable for and pay the State, as liquidated damages and not as a penalty, the following amount for each calendar day of delay beyond the date for substantial completion, as determined in the sole discretion of the State: $ 500.00 per calendar day.

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Bid No. 100001
Bid Title: Door and Lock Replacement Group 3:
Hillside, Fayerweather, Gorham, Heathman, and Gateway Residence Halls.

This bid proposal is irrevocable for 60 days from the bid proposal submission deadline.

If the Bidder is determined to be the successful bidder pursuant to this solicitation, the Bidder will promptly: (i) comply with each of the requirements of the Tentative Letter of Award; and (ii) commence and diligently pursue the work upon issuance and receipt of the purchase order from the University of Rhode Island. The person signing below certifies that he or she has been duly authorized to execute and submit this bid proposal on behalf of the Bidder.

Date:_____

BIDDER

_____
Name of Bidder

_____
Signature in ink

_____
Printed name and title of person signing on behalf of Bidder

#_____
Bidder's Contractor Registration Number

University of Rhode Island
Bid Nos. 2511, 2512, 100001 and 100002
MANDATORY Pre-Bid Conference
Date 05/08/14 Time 1:00 PM

Representative	Company Name	Phone #	E-Mail
Rick Palmer	Securadyne Systems	978.253.5075	rick.palmer@securadyne.com
Brendan Daley	Securadyne Systems	978-857-2559	brendan.daley@securadyne
Michael Bahry	Bahry Building Company	401-354-7014	mb@bahrybuilding.com
Robert B Adams	Graphic Designers Inc	401-398-1168	graphicdesigners160@gmail.com
CRAIG GODINE	ICG CONST. GROUP	401 490 3144	CSG@CGRI.COM
ERIC GODING	URBANE CONSTRUCTION	401-944-6500	egoding@urbaneconstruction.com
SAL Tolley	Tower Construction Corp	401 943-0110	Estimating@TowerConstructioncorp.com
Brian Collins	JJ Cardosi, Inc.	401-435-6101	brian@jjcardosi.com
Ed Wassmer	Assa Abloy - Persona	203.530.7775	ewissmer@assaabloydss.com
JUSTIN HOPKINS	TECTON ARCHITECTS, PC		justinh@tectonpc.com
Charles Hall	URI HRL	401-267-8556	hall@uri.edu
JAY PETERS	SYNET	401-862-1326	JPETERS@SYNETINC.com
JOHN LATOURNEAU	INTEGRATED SECURITY, INC.	508-623-1443	JLETOURNEAU@ESI-SECURITY.com
STEVE EHRLICH	INTEGRATED SECURITY INC	877-581-2233	SEHRLICH@IEI-SECURITY.com
Tracy Angell	URI	401-874-2326	tangell@uri.edu
Betty Lee	URI	401-874-2310	Bettyc@uri.edu

University of Rhode Island
Bid Nos. 2511, 2512, 100001 and 100002
MANDATORY Pre-Bid Conference
Date 05/08/14 Time 1:00 PM

Representative	Company Name	Phone #	E-Mail
James Edwards	J.G. Edwards Construction Co., Inc.	401-683-9110	jedwards@jgedwardsconstruction.com
TRIPP BURMAN	E.W. BURMAN INC	401-738-5400	ESTIMATING@EWBURMAN.COM
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FELIX APPOLONIA	COLUMBUS DOOR CO	401-781-7792	fappoloni@columbusdoor.com
Rick Nut	Nationwide Security Corp.	203-785-0300	rickn@nationwidesecuritycorp.com.
TOM MELLO	MARON CONSTRUCTION	401-272-4930	TMELLO@MCCRI.COM
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GLENN AHLBORG	AHLBORG Construction Corp.	401-265-7100	GAHLBORG@AHLBORG.COM
Timothy Aldrich	AhlBorg Const. Corp.	401-793-6292	taldrich@AhlBorg.com

Robert B. Adams

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graphicdesigners160@gmail.com

IRON CONSTRUCTION GROUP, LLC

CRAIG GODING, PROJECT MANAGER

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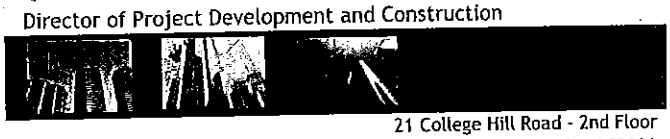
GLENN R. AHLBORG
Director of Project Development and Construction



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