



PROJECT SAFETY MANUAL

Project Safety Manual
FOR
NEIGHBORHOOD TRANSFORMATION INITIATIVE
Owner Controlled Insurance Program

General Information

Notwithstanding the Project Safety Manual or the means of providing insurance, all Contractors and Subcontractors of all tiers collectively referred to as “Contractors/Subcontractors” in this manual are responsible for complying fully with all applicable laws, statutes, ordinances, rules, regulations and/or orders of any public authority (federal, state, local) as they relate to safety of persons, environment, public, or property.

This document is not an attempt to reiterate applicable OSHA standards and is not intended to address all safety and health requirements that may be applicable during the work performed by Contractors/Subcontractors on jobsites. However, Contractors/Subcontractors are required to comply with all applicable OSHA Standards, regardless of whether they are addressed in this document. Any changes in applicable OSHA Standards made during the duration of your contract will be immediately binding and enforced. All applicable OSHA, ANSI, NEC, and NFPA standards are incorporated into this program by reference. Each Contractor/Subcontractor should maintain a current copy of the OSHA standards on the site.

Throughout the duration of this project each individual Contractor/Subcontractor shall be responsible for administering their own Contractor Safety Plan. Neither this document nor the safety services provided by individuals associated with this project are intended to serve as a substitute for the responsibility of the Contractor/Subcontractor to provide a safe work environment for their employees and the public, and to fully comply with all applicable safety and environmental laws and regulations.

This Project Safety Manual shall serve as a general framework. The Contractor will be required to develop a **Contractor Safety Plan**, which identifies specific site safety requirements, potential exposures associated with the project, and the means and methods to be employed to address these exposures. All Subcontractors will be required to either develop their own Safety Plan or adopt the Contractor’s Safety Plan for the duration of their work and involvement with the project. All Contractor Safety Plans must be submitted for review and acceptance prior to the start of any construction activities.

The Contractor Safety Plan submitted must meet or exceed the safety requirements outlined in Section 01324 of the NTI Standard Specifications and in the Neighborhood Transformation Initiative OCIP **Project Safety Manual** and be in compliance with all applicable federal, state, and local safety and environmental laws and regulations.

The Contractor will be responsible for overseeing the safety of all Subcontractor employees on the project unless otherwise specified in the bid specifications for the project. This is required regardless of a Subcontractor's eligibility for coverage under the OCIP program. However, this does not relieve each Subcontractor of their safety responsibilities.

The Neighborhood Transformation Initiative OCIP has specific safety requirements that in many instances exceed current federal, state, or local safety and environmental standards. It shall be expressly understood that the Contractor is solely responsible for construction means & methods and jobsite safety.

The safety requirements outlined in this document and in the bid specifications are designed to address exposures wherein the minimum standards as promulgated by OSHA do not completely or adequately address the exposure inherent in a particular operation. In the event of a conflict, the Owner has the final say as to which safety procedures are to be followed.

Therefore, Contractors/Subcontractors should thoroughly review this document and the appropriate portions of the bid specifications to understand the risks inherent in the project and the safety measures needed to adequately protect employees and the public from harm. No accommodations will be made to Contractors/Subcontractors due to ignorance regarding safety requirements. The cost of compliance shall be borne solely by the Contractor/Subcontractor.

This document shall become part of the contract documents. The requirements contained herein are binding and failure to comply will be deemed as non-compliance or default of the contract. Payments of monthly invoices may be withheld until compliance is deemed satisfactory. Failure to comply may result in removal from the project.

The Neighborhood Transformation Initiative OCIP reserves the right to make any changes and modifications to this document via bulletin form and said changes will be effective immediately upon being communicated.

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SECTION 1 SAFETY POLICY STATEMENT

The safety, protection and convenience of the general public, visitors, and Contractor/Subcontractor employees are of primary importance. Precaution shall be exercised at all times for the protection of persons and property. The Project Safety Manual for this program formalizes and defines our commitment to:

- a. Pre-plan, coordinate, and execute all project activities in a manner that assures the prevention and control of conditions that may cause neighborhood residents injury or illness.
- b. Prevention and control of conditions that may cause Contractor/Subcontractor employee injury and work related illness.
- c. Controlling exposures and/or conditions that come in contact with the general public.
- d. Complying with all applicable federal, state, and local regulations.
- e. Decreasing operating costs through conservation of our human physical resources.

It is our intent that all Contractors/Subcontractors perform operations in the safest manner possible consistent with good construction practices. In order to reduce the potential for employee and non-employee injury, each Contractor/Subcontractor will be responsible for implementing an organized and effective Safety Plan.

Responsibilities are in keeping with Agreements between the Neighborhood Transformation Initiative OCIP and each of its Contractors/Subcontractors, recognized industry standards, work practices, rules, and regulations established and enforced by the Occupational Safety and Health Administration, especially 29 CFR 1926 for construction and 29 CFR 1910 for General Industry, and other Municipal, State, and Federal standards and regulations which apply. All subcontract agreements executed by the Contractors with their Subcontractors and vendors and Subcontractors with Sub-subcontractors shall incorporate these safety guidelines and all other agreement requirements.

We solicit the support and assistance of every employee at all levels in making this program functional and successful.

Mark J. Troxell

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SECTION 2

DEFINITIONS OF TERMS USED IN THIS MANUAL

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| Approved Contractor | A Contractor/Subcontractor who has successfully completed and submitted all OCIP required documentation and has received confirmation of enrollment for participation in the insurance program. |
| Broker of Record | The insurance broker authorized to represent, negotiate, and obtain appropriate insurance coverage on behalf of the Owner. |
| Claim | A written or oral demand for compensation, including a request for benefits, injuries or damages arising out of an insured loss. |
| Competent Person | A competent person is an individual who, by way of training and/or experience, is knowledgeable of applicable standards, is capable of identifying workplace hazards relating to the specific operation, is designated by the employer, and has authority to take appropriate actions. |
| Contract | A written agreement between the Owner and a Contractor, or between a Contractor and a Subcontractor, or by and between any tier of Subcontractors. This also includes any written and/or verbal agreement, invoice, purchase order, or work order that includes direct labor on one or more Insured Sites. |
| Contractor | A specified individual, firm, or corporation under Contract with the Owner or its designee to undertake demolition and related work at the Insured Site(s). |
| Contractor's Safety Representative | Individual assigned by the Prime Contractor who inspects and surveys all tiers of Subcontractors and Sub-subcontractors for safety at the jobsite. |
| Employer | Any individual, firm, or corporation, except the Owner who provides direct manual and non-manual labor or service personnel at or emanating from the Site either by written or verbal Contract. |
| Insurance Company | The company which provides financial protection against property damage or bodily injury losses to third parties. |
| Insured | The entity named in a Policy or Certificate of Insurance signed by a duly authorized representative of the Insurer. |
| Insured Loss | The total amount of cost, charges and expenses, inclusive of deductibles, relating to an incident or occurrence, which is insured under the Owner Controlled Insurance Program (OCIP). |
| Insured Site | The Project Site as defined in your Contract. Employees performing services, under Contract, are covered under the OCIP while working on-site (see Part 1). |

Employees are not covered when traveling between home and an Insured Site.

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| Insurer | The entity issuing a policy. |
| Jobsite | See "Insured Site". |
| OCIP | The Owner Controlled Insurance Program under which Commercial General Liability Insurance, Workers' Compensation, Employer's Liability, Contractor's Pollution Liability and Excess Liability are procured by the Owner for approved Contractors and/or Subcontractors providing direct labor at one or more Insured Sites. |
| OCIP Administrator | A representative of the Broker of Record designated to Administer the OCIP. |
| OCIP Manager | The Graham Company |
| OCIP Team | The professional firm's employees from the Owner, Broker and Insurance Company. |
| Owner | City of Philadelphia, their commissions, officers, officials, employees and/or agents, associated and/or affiliated organizations, successors or assigns, as now exist or may hereafter be acquired or formed which any of the named insured owns, operates or controls, including the interest as successor to any organization acquired, merged, or transformed into any of the foregoing, and any trust, foundations, funds and welfare plans of any kind and other interests as are now or hereafter related to the insured but not specifically named. |
| Program Manager | Professional consulting firm hired by the City of Philadelphia to manage the NTI Demolition and Encapsulation program. |
| Project Safety Monitor | The full-time safety person representing the City of Philadelphia safety interests, who is also given direction and the ability by the City of Philadelphia to stop work if an imminent danger situation is identified. |
| Project Safety Manual | The safety and loss prevention program established by the City of Philadelphia to control hazards and risks associated with the operations performed at the City of Philadelphia Neighborhood Transformation Initiative Project sites. |
| Qualified Person | One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems related to the subject matter, the work, or the project. |
| Risk Manager | The City of Philadelphia employee responsible for the administration of the insurance programs. |

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| Safety Representative | Individual assigned safety responsibility at the jobsite by a Subcontractor. |
| Site | All of the City of Philadelphia Neighborhood Transformation Initiative premises, including the land and all buildings and structures. |
| Subcontractor | A specified individual, firm or corporation providing direct Labor to perform subcontracted work on the Insured Sites, with the consent of the Contractor or its designee, <u>excluding</u> vendors, suppliers, material dealers, or others whose function is solely to supply and/or deliver materials, parts, or equipment to and from one or more Insured Sites. |
| Temporary Site Employees | Those contractor and subcontractor employees not assigned to an Insured Sites (i.e., an employee who does not directly bill his or her time to Owner). As general guidance, an employee whose salary and overheads are included in the overhead component of Contractor or Subcontractor's billing rate is not covered under the OCIP even though they may occasionally be on site. Examples include, but are not limited to: home office auditors, sales personnel, payroll clerks, and human relations personnel. |
| Third Party | Any party other than employees of an Approved Contractor or its Subcontractor of any tier. |
| Work | Any direct or indirect physical task to be performed to Complete the Project at the Insured Site. For the purpose of the OCIP, Work will commence when the approved Contractors' employees first report or are present at the Insured Site after enrollment in the OCIP and completion of any existing required badge procedures. No physical activity will be performed until the Contractor/Subcontractor is enrolled in the OCIP. |

SECTION 3 ORGANIZATION, ADMINISTRATION, AND RESPONSIBILITIES

SAFETY MANAGEMENT for the PROJECT

The Owner's Consultant for safety will be designated as the Project Safety Monitor. The Project Safety Monitor will be observing projects at various times of the week. The Project Safety Monitor has been given the authority, by the City of Philadelphia, to stop work if an imminent danger situation occurs, issue safety violation fines, request documentation of safety orientations, request documentation of employee safety training, etc. Contractors and Subcontractors are expected to fully cooperate with the Project Safety Monitor.

The Owner, the Owner's Designated Representatives, Insurance Broker, and Insurance Carrier's Loss Control Consultant will make periodic surveys to monitor the implementation of the Contractor Safety Plan and physical conditions on the jobsites. It is the Project Safety Monitor's and/or Contractor's Safety Representative duty to aid these personnel in their surveys.

All Contractors/Subcontractors are committed by contract to observe and comply with all applicable safety regulations and procedures. All persons who come into the work area, for any reason during construction, will be required to comply with the established safety regulations that govern the project.

The assignment of safety responsibility on each site shall be as follows:

1. Contractor
 - a. The Contractor is solely responsible for means and methods and for jobsite safety. The Contractor shall assume responsibility for overall site safety coordination and shall provide a full time Contractor's Safety Representative. This individual shall be on site daily. The Prime Contractor shall supply an alternate Contractor's Safety Representative if this individual is on vacation, out sick, etc. The Contractor's Safety Representative's sole responsibility shall be safety. The Contractor's Safety Representative shall have the authority to stop work if an imminent danger situation occurs.
 - b. The Contractor's Safety Representative is required to be on site, full time, from the first day of the Contractor's mobilization activities (including mobilization activities of their Subcontractor and Sub-Subcontractors) or when any project has on site activities of any Contractor/Subcontractor.
 - c. Each Subcontractor working on projects will designate a Subcontractor's Safety Representative. The Subcontractor's Safety Representative must be a foreman or superintendent, who has authority to stop work and make necessary changes to eliminate exposures. The Subcontractor's Safety Representative may have other responsibilities.

- d. The Contractor's Safety Representative must have completed or be presently enrolled in a 30-Hour OSHA Construction Outreach Program and each Subcontractor Safety Representative must have at least attended a 10-Hour OSHA Construction Outreach Program. The Contractor's Safety Representative and Subcontractor Safety Representative must have a current CPR and First Aid Certification. The Contractor's Safety Representative and Subcontractor's Safety Representative will be responsible for the implementation and enforcement of the requirements of the Project Safety Manual and OSHA.

The Project Safety Monitor and Program Manager will monitor each Contractor's safety performance. The Program Manager will follow-up with Contractors that do not respond to the Project Safety Monitor's request for abatement of safety hazards or submission of appropriate safety documentation and forward formal notification to Contractors when abatement is inadequate.

In turn, each Contractor shall support this program and provide leadership by example. Additional Contractor safety responsibilities include:

1. Follow-up with Subcontractors who do not respond to the Project Safety Monitor's or Contractor's Safety Representative's request for abatement of safety hazards or submission of appropriate safety documentation.
2. Forward formal notification to Subcontractors when abatement is inadequate or abatement measures need to be taken by the Contractor for the Subcontractor.
3. Enforce the Contract language and take such measures necessary to either improve the performance of Subcontractors in default of their Contract or remove them from the project.
4. Provide the resources needed to maintain an effective Contractor Safety Plan.

The Contractor's Safety Representative will be responsible for overall safety efforts on the work areas within their demolition package and will have the authority to initiate the stoppage of work when imminent danger exists.

Additional responsibilities of the Contractor's Safety Representative include:

1. Performing several daily inspections of all work areas within their demolition package for safety and health exposures. These inspections shall be documented in a logbook. Sample format for items that must be contained in the logbook for this daily inspection can be found in Appendix F.
2. Conducting a formal/documented weekly inspection of all work areas for safety and health exposures. The Job Site Safety Checklist in Appendix A should be used to document this inspection. A copy of the Job Site Safety Checklist must be forwarded to the Project Safety Monitor on a weekly basis.
3. Reporting hazards identified as a result of the inspections to the employees or Subcontractors involved and follow-up to make sure that the exposure has been eliminated or controlled.

4. Participating in the Progress Meetings.
5. Coordinating safety efforts with Subcontractors.
6. Reviewing Subcontractor weekly safety inspection reports.
7. Receiving, reviewing, and distributing Supervisor Incident Reports.
8. Assisting in the review and analysis of incidents and accidents.
9. Assist Subcontractors with changes necessary to implement safe work practices when required.
10. Performing all required safety training and retraining as necessary.
11. Accompanying any OSHA Compliance Officer on site during an inspection.

Each Subcontractor on the site will have an assigned Subcontractor's Safety Representative. This person will usually be a project manager, superintendent, or foreman, who is on the site full time. The Subcontractor's Safety Representative will have the authority to stop work at any time if an imminent danger situation is observed or when directed to do so by the Contractor's Safety Representative, Project Safety Monitor, Program Manager, Contractor, or Owner's Representatives. He/she will have the authority to implement corrective actions. The Subcontractor's Safety Representative's additional responsibilities include the following:

1. Becoming familiar, understanding, implementing the Project Safety Manual.
2. Conducting daily informal inspections of his/her work area(s) several times a day and a formal (documented) weekly inspection of his work area(s). The daily inspection shall be documented in a logbook. Sample format for items that must be contained in the logbook for this daily inspection can be found in Appendix F. The Contractor's Safety Representative should receive a copy of the weekly inspection report. The Job Site Safety Checklist in Appendix A should be used to document the weekly inspections.
3. Carrying out activities required in this safety manual including: accident investigation, toolbox talks, attending project safety meetings, conducting inspections, etc.
4. Responding in writing to safety recommendations submitted to their organization by the Contractor's Safety Representative within 24 hours after the receipt of the violation notice.
5. Familiarizing themselves with current OSHA Standards and Regulations for construction.
6. Instructing workers in safe work practices and work methods.
7. Setting a good example for fellow employees.
8. Correcting or reporting immediately any observed unsafe conditions, practices, or violations.

If the Contractor's Safety Representative, or Contractor find a Subcontractor's work area or individuals being, or acting in non-compliance with the Occupational Safety and Health Act of 1970 (OSHA), as amended, items outlined in the Project Safety Manual or any other applicable regulation, the Contractor's Safety Representative and/or the Contractor shall have the authority to order immediate correction and cessation of the non-compliant occurrence. Non-compliance with project safety regulations will be grounds for Subcontractor dismissal and/or employee(s) being forbidden entry onto

the project. All costs of compliance shall be borne by the Contractor/Subcontractor deemed responsible.

Similarly, if the Owner, Owner's Representatives, Program Manager, or the Project Safety Monitor, find a Contractor's/Subcontractor's work area or individuals being, or acting in non-compliance with the Occupational Safety and Health Act of 1970 (OSHA), as amended, items outlined in the Project Safety Manual or any other applicable regulation, the Owner, its agents and/or Project Safety Monitor shall have the authority to order immediate correction and cessation of the non-compliant occurrence. Non-compliance with project safety regulations will be grounds for Contractor/Subcontractor dismissal and/or employee(s) being forbidden entry onto the project. All costs of compliance shall be borne by the Contractor/Subcontractor deemed responsible. The Owner's decision of responsibility shall be final. The Owner may divide these costs accordingly.

Construction personnel from all Contractors/Subcontractors also have a responsibility to perform work in a safe and workmanlike manner. Minimal safety responsibilities include:

1. Become familiar with and abide by the safety rules and regulations of both your employer and the project.
2. Always work safely to avoid personal injury, injury to others or damage to property.
3. Properly use personal protective equipment, tools, and other equipment required and furnished to perform assigned work tasks.
4. Promptly report all unsafe working conditions, tools, or equipment to supervisory personnel.
5. Immediately report all accidents or incidents to supervisory personnel.
6. Accept proper first aid treatment and follow-up medical attention for all injuries, no matter how minor.
7. Abide by the project Substance Abuse Policy.
8. Attend a Project Safety Orientation prior to commencing work on this site.
9. Abide by requirements of this program and OSHA Standards for Construction Industry 29 CFR Part 1926 and 29 CFR Part 1910 in the performance of your work.

CONTRACTOR SAFETY REQUIREMENTS

1. **Pre-Construction Meeting** - After a Contractor has been awarded a contract on this project, they are required to attend a Pre-Construction Meeting. One of the purposes of the meeting is to review the Contractor's Safety Plan. At this time, specific safety concerns related to the Contractors' work will be discussed. Each Contractor is responsible for making sure that any Subcontractor they use on the site is familiar with the site safety requirements. This will be achieved through the Project Safety Orientation.

2. **Contractor Safety Plan** - The Contractor's Safety Plan shall be submitted to Program Manager and Project Safety Monitor prior to beginning work on site. The Program Manager and Project Safety Monitor shall review the Contractor Safety Plan in order to determine if the Contractor Safety Plan meets the requirements of Section 01324 of the specifications and this Project Safety Manual. The Project Safety Monitor shall forward all comments related to the review of the Contractor's Safety Plan to the Program Manager. The Program Manager shall in turn forward all the comments to the Contractor and City of Philadelphia's Risk Management Division.

Once the Contractor addresses all comments from the review of their Contractor Safety Plan, the Program Manager shall notify the Contractor in writing that their Contractor Safety Plan meets the requirements outlined in this manual and in Section 01324 of the specifications. The Program Manager shall copy the City of Philadelphia's Risk Management Division and Insurance Broker on correspondence of the Contractor's Safety Plan. No Contractor shall begin work on site until their Contractor Safety Plan meets or exceeds the Neighborhood Transformation Initiative safety requirements.

Subcontractors must work under a site-specific safety plan for the project. There are two options for complying with this requirement:

1. The Subcontractor shall submit to the Contractor a Safety Plan that meets or exceeds the Contractor's Safety Plan. The Contractor must then submit to the Program Manager a letter stating that they reviewed and accepted the Subcontractor's Safety Plan.

OR

2. The Subcontractor may work under the Contractor's Safety Plan. If a Subcontractor works under the Contractor's Safety Plan, the Contractor shall submit a letter, signed by the Subcontractor, to the Program Manager acknowledging that the Subcontractor will be working under the Contractor's Safety Plan.

If deemed necessary by the Project Safety Monitor, or Owner's Representatives, a written Job Safety Analysis (JSA) will be required from the Contractor/Subcontractor. This is to ensure that appropriate controls are established prior to beginning work. If a JSA is required, the Contractor will be responsible for completing and submitting the JSA to the Project Safety Monitor at least two weeks prior to beginning work on the site.

3. **Inspections** - During demolition and restoration operations, continuous inspections shall be made by the competent person as the work progresses to ensure that applicable NTI OCIP safety requirements and OSHA Standards are being followed, and to detect hazards resulting from weakened or deteriorated floors or walls, or loosened material. No worker shall be permitted to work

where such hazards exist until they are corrected. This includes basements of structures that have been or are being demolished.

The frequency of self-inspections required of the Contractor's Safety Representative on each project are as follows:

- a. The Contractor's Safety Representative will make several daily inspections of their work areas to identify and correct hazards. These daily inspections are to be documented in a logbook. Safety exposures noted during the inspections should be corrected immediately. A sample Daily Inspection Logbook Form can be found in Appendix F.
 - b. Documented inspections are required on a weekly basis. Ideally, these inspections should be made prior to the weekly toolbox meeting so that deficiencies can be discussed during the meeting. The weekly inspection reports from each Contractor shall be maintained on file and be available for review.
 - c. All Contractors are responsible for inspecting their own work areas and those of Subcontractors employed by them.
4. **Progress Meetings** - Safety will be the first agenda item at all Progress Meetings. The safety portion of the Progress Meeting must address at least the following items:
- A review of accidents since the last meeting
 - A discussion of inspection results
 - Specific safety concerns of the Contractors and Subcontractor
 - Unique or unusual hazards and their control
 - Proactive discussion of future work and anticipated exposures

Minutes will be kept for these meetings. The Program Manager is responsible for maintaining and distributing the meeting minutes.

5. **Toolbox Talks** - Each Contractor/Subcontractor is required to hold a weekly (minimum) "toolbox" safety meeting. These meetings will cover at a minimum:
- Training on a specific safety topic
 - Results of weekly inspections
 - Special hazards being encountered & their controls
 - Specific concerns of employees

The toolbox meeting will be documented with the topic listed and signatures of the attendees. A copy of the sign-in sheet should be forwarded to the Project Safety Monitor by the end of the week. All employees are required to attend these meetings.

PROJECT SAFETY ORIENTATIONS

A formal **Project Safety Orientation** is required for all employees on the project.

1. The Project Safety Monitor is responsible for verifying that all Contractors are informed of their responsibilities. This will usually be done during the Pre-Construction Meeting.
2. All Contractor/Subcontractor employees will be required to participate in a formal Project Safety Orientation prior to their assignment to any Neighborhood Transformation Initiative OCIP Project. This orientation will normally be conducted by the Contractor's Safety Representative. Contractors are responsible for providing their employees and Subcontractor employees with a Project Safety Orientation.
3. The Project Safety Orientation will include a review of safe work rules and specific safety requirements of the particular project. The employee must sign the Project Safety Orientation Form (Addendum D) stating that the specific safety requirements for this site have been explained to them and that they understand these requirements. A copy of the form shall be maintained in the job file of the Contractor.
4. Contractor shall be prepared to give the safety orientation in an alternate language (i.e. Spanish) for non-English speaking employees.

In addition to the review mentioned above, the orientation at a minimum will include:

- a. Information to acquaint the employee with special safety requirements of the work site
- b. Description of the nature of the project
- c. Project specific "Substance Abuse Policy"
- d. Accident Reporting Procedures (including the panel of physicians)
- e. How to report unsafe acts or conditions
- f. Site disciplinary procedures
- g. Personal protective equipment requirements
- h. Hazards relevant to the work being performed (fall protection, trenching, ladder usage, scaffold safety, etc.)
- i. Hazard Communication requirements

All Contractors/Subcontractors must perform required employee training per OSHA Standards prior to the employee being permitted to work on the site. This training will be separate from the Project Safety Orientation. Proof of this training shall be maintained by the Contractor/Subcontractor and the training documentation shall be made available upon request.

ACCIDENT REPORTING & INVESTIGATION

Three procedures will be followed after an accident/incident or near miss incident.

1. The Contractor/Subcontractor will immediately call the Program Manager and Program Safety Monitor.
2. The Contractor/Subcontractors will notify the Insurance Carrier per the requirements outlined in the Insurance Manual and complete a Supervisor's Incident Investigation Report. Worker's Compensation injuries, property damage, and general liability incidents must be reported promptly. Contractors/Subcontractors shall become familiar with the Accident Reporting Procedures outlined in the Insurance Manual.

Procedures for reporting accidents are identified in the OCIP Insurance Manual. All Contractors/Subcontractors must report all injuries, occupational-related illnesses or property damage immediately. All known accidents and occurrences must be reported within 24 hours. **At the Owner's discretion, failure to report a known claim within 24 hours of an occurrence will result in a \$400 penalty. This penalty will be issued through a Non-Negotiable Deduct Change Order or other means approved by the Owner.**

All Contractors/Subcontractors must post the Panel of Physicians notices and remind all employees injured in work-related accidents to seek non-emergency treatment exclusively with such panel physicians in accordance with the Pennsylvania Workers' Compensation Act. All Contractors/Subcontractors shall promptly return injured workers to full or light duty work (as their physical condition permits) as soon as being advised of the employee's ability to return to work. Upon such notification, the Contractor/Subcontractor shall immediately return such injured worker to work whether or not a job is immediately available and whether or not such work is available on the Project. **At the Owner's discretion, failure to do so will result in a penalty assessment to the Contractor or Subcontractor of \$1,500 weekly until such time as the injured worker is returned to work. This penalty will be issued through a Non-Negotiable Deduct Change Order or other means approved by the Owner.**

3. The Contractor will complete a Supervisor's Incident Investigation Report. The Supervisor's Incident Investigation Report is a loss control tool. It is an in depth evaluation of the incident to determine what unsafe acts and/or conditions contributed to the incident. Problems or deficiencies uncovered can then be reviewed so that corrective actions can be taken to prevent a reoccurrence.

A Supervisor's Incident Investigation Report (Appendix C) must be completed by the Contractor's Safety Representative within 24 hours of an incident (first aid or lost time), any liability incidents (bodily injury or property damage), property losses, and near miss incidents. A copy of the Supervisor's Incident Investigation Report must be forwarded to the Project Safety Monitor within 24 hours. If for some reason the Supervisor's Incident Investigation Report can not be completed within 24 hours, the Project Safety Monitor must be contacted and an explanation

provided as to why the Supervisor's Incident Investigation Report can not be completed. **At the Owner's discretion, failure to complete a Supervisor's Incident Investigation Report within 24 hours of an occurrence will result in a \$250 penalty. This penalty will be issued through a Non-Negotiable Deduct Change Order or other means approved by the Owner.** Copies of the Supervisor's Incident Investigation Report will be reviewed for completeness and proper corrective action, and will be maintained by the Contractor's Safety Representative.

Any incident involving property damage or non-construction personnel incidents must be reported to the City of Philadelphia's Risk Management Division and Insurance Broker immediately. The Program Manager, personnel from the City of Philadelphia, Project Safety Monitor will investigate all property damage and non-construction personnel incidents along with the Contractor/Subcontractor and file a separate report. This report shall be forwarded to the Program Manager, City of Philadelphia's Risk Management Division and Insurance Broker.

4. Lost Time Accidents

All lost time accidents will require a formal review session. The session will consist of a meeting between the Project Safety Monitor, Contractor's Safety Representative, Subcontractor Safety Representative and other management personnel of the Contractor/Subcontractor to discuss the incident and to ensure that corrective actions have been implemented. The Contractor's Safety Representative must document this meeting and a copy of the minutes must be forwarded to the Project Safety Monitor and Program Manager. Provisions shall be made for following up with the injured worker and determining the possibility of light duty work.

ALCOHOL and DRUGS

Refer to the Substance Abuse Policy in Section 4 of the Project Safety Manual.

DISCIPLINARY PROCEDURES

A structured disciplinary program with a Safety Violation Fine System will be implemented on the project. Penalties for non-compliance with applicable federal, state, and local safety regulations, and the Project Safety Manual are as follows:

1. Owner may withhold progress payments until such non-compliance has been corrected;
2. Owner has the right to correct the safety infraction and charge back to the Contractor the cost of such correction; and
3. Owner has the right to dismiss the Contractor or Subcontractor from the jobsite, any employee of Contractor, or any Subcontractor for continued non-compliance or a serious safety infraction.

The Contractor will take all necessary precautions to protect the safety and health of its employees, Subcontractors' employees and others on the jobsite; including compliance with all applicable federal, state, county and municipal safety and health laws, regulations, and building codes and will adhere to and enforce the safety regulations set forth in the Project Safety Manual.

In order to reduce Contractor and Subcontractor safety violations, the Neighborhood Transformation Initiative OCIP has instituted a direct disciplinary action procedure for Contractor/Subcontractor employees and a financial penalties system for their employers.

Safety Violation Fines may be issued to the Contractor and Subcontractor by the Project Safety Monitor or Safety Consultants from the OCIP Administrator. Safety Violation Fines will be issued through a Non-Negotiable Deduct Change Order or other method approved by the Owner with written notification sent to the Contractor and Subcontractor.

For **ANY** safety violation the following disciplinary action may be taken against an employee:

Employee

1st offense - Employee will be issued a written warning.

2nd offense for the same type of violation - The worker will be directed to leave the project for the remainder of the day or period determined by the Project Safety Monitor or Safety Consultants from the OCIP Administrator. The Project Safety Monitor or Safety Consultant from the OCIP Administrator have the authority to suspend an employee from the project for up to 5 days.

3rd offense for the same type of violation - The worker will be directed to leave the project and will not be permitted to return to any Project under the Neighborhood Transformation Initiative OCIP.

The following financial penalties may be issued to employers who have repeat safety violations:

Employer

1st offense - Contractor and Subcontractor will be issued a written warning. Safety Monitor or Safety Consultant from the OCIP Administrator will meet with the management of the Contractor and/or Subcontractor to discuss a plan of action to address the safety issues being observed.

2nd offense for the same type of violation – The Contractor and Subcontractor shall be fined according to the fine schedule and may be subject to a fine of up to \$1,000 per repeat violation (see following schedule for specific fines).

3rd offense for the same type of violation – In addition to the fines issued, the Project Safety Monitor or Safety Consultant from the OCIP Administrator will arrange a separate agency safety awareness training at the Contractor’s expense. The training shall be given for a period of 2 – 3 hours. All of the Contractor’s and Subcontractor’s personnel working on the project shall attend the training.

Contractor/Subcontractor employees will be permanently removed from site on the 1st offense for serious safety violations (e.g. violation of project fall protection requirements, use of alcohol or drugs on site, fighting, etc.). The Neighborhood Transformation Initiative OCIP considers the safety orientation to be the Employees “Verbal” warning and therefore individuals will be cited without future verbal warnings. It is our expectations that each Contractor/Subcontractor monitor their employees. We will hold each Contractor/Subcontractor responsible and accountable for their employee’s actions. As mentioned above, the Neighborhood Transformation Initiative OCIP requires a detailed safety orientation prior to the Contractor/Subcontractor employees performing work on site. Site specific safety requirements must be reviewed in detail. In addition to this orientation, The Neighborhood Transformation Initiative OCIP expects all Contractors/Subcontractors to train employees per project safety requirements and federal, state, and local requirements.

| Safety Violation Fines | | |
|---------------------------|---|-------------------|
| Contractor/Subcontractor: | | Project Name: |
| | No Hard-hats or Safety Glasses per employee. | \$100/violation |
| | Improper setup of scaffolding. | \$500/violation |
| | No backup or travel alarm on mobile equipment. | \$500/violation |
| | Failure to properly protect reinforcing or form stakes that present an impalement hazard. | \$500/violation |
| | Working with fall hazard 6’ or greater with no personal fall arrest system being properly used or guardrail if alternative means of fall protection as outlined in a site specific fall protection plan are not in place for the project. | \$1,000/violation |
| | Failure to provide adequate protection during excavation and trenching work. | \$1,000/violation |
| | Working in a structure where utilities have not been cut and capped. | \$1,000/violation |
| | Failure to provide proper fencing surrounding the site. | \$1,000/violation |
| | Failure to barricade a sidewalk if fencing has been temporarily removed to complete work. | \$1,000/violation |
| | Failure to provide proper guardrails on a scaffold. | \$1,000/violation |
| | All others: | \$500/violation |

Note: Safety Violation Fines are issued per violation. If a Contractor/Subcontractor has more than one (1) employee in violation of a known safety requirement (example: 2 employees working in an improperly sloped trench, etc.), the Contractor/Subcontractor is subject to a \$1,000 fine per violation. The owner considers this 2 violations since 2 employees were exposed. Also, Contractors will receive safety violation fines for actions of their employees and Subcontractor employees.

DESIGNATION of COMPETENT PERSON

Prior to the start of demolition, each Contractor/Subcontractor will designate a Competent Person(s) for the various activities performed by that Contractor/Subcontractor on the project. Depending on the location of work areas on a specific project, more than one Competent Person may be necessary. Contractor/Subcontractor must have a Competent Person overseeing the demolition of each home. One Competent Person may be able to handle all demolition within a specified area, but the Contractor/Subcontractor may need to designate several employees as the Competent Person if the location of work areas is such that the Competent Person can not physically observe work within a specified area throughout the day.

The Contractor/Subcontractor will make this designation in writing using the Competent Person Designation Form located in Appendix E in this Project Safety Manual. Each Contractor/Subcontractor will complete this form and submit it to the Project Safety Monitor. Contractors/ Subcontractors are responsible for ensuring that the forms are current and that any personnel changes are reflected in changes made to those forms.

A competent person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. (Attending a 10 or 30 hour safety course does not necessarily make an individual a competent person). Each Contractor/ Subcontractor is responsible to ensure that individuals identified as Competent Persons have the requisite knowledge, experience, training and authority to fulfill their duties as competent persons including, if necessary, the authority to stop work and implement corrective action when a particular activity or condition under their control is being performed in a hazardous manner. The Competent Person shall also be able to communicate and convey safety instruction to employees that may not speak English.

EMERGENCY PROCEDURES

The Contractor shall be responsible for a site specific Emergency Preparedness Plan for the Neighborhood Transformation Initiative OCIP. The Emergency Preparedness Plan shall be updated as work progresses and site conditions change. The Contractor shall discuss the emergency procedures with all employees and distribute this Emergency Preparedness Plan to all Subcontractors on the site, the Program Manager, and Project Safety Monitor. This Emergency Preparedness Plan shall cover the following areas at a minimum:

| | |
|--------------------------|---|
| • Fire | • High Winds/Tornado |
| • Severe Injury or Death | • Major Incident (i.e. collapse, etc.) |
| • Property Damage | • Method Used to Warn Personnel of a Site Emergency |

The Emergency Preparedness Plan must include designated persons assigned to emergency functions such as providing first aid, calling authorities, directing emergency personnel, or ensuring that the project is evacuated.

Contractor/Subcontractors shall be aware that only the Office of the Mayor is permitted to talk with the news media in event of a serious incident (severe injury or death, collapse, and fire) on a project.

SECURITY

Contractor shall fully comply with the bid specifications regarding project fencing. All active work areas must be completely fenced to reduce the potential for trespassing during non-work hours. Fencing shall have appropriate signs as outlined in the bid specifications.

FIRST AID PROCEDURES

The Contractor's Safety Representative and all Subcontractor Safety Representatives are required to maintain current First Aid and CPR certification. Appropriate personal protective equipment shall be available on each site. Each Contractor/Subcontractor is required to have first aid equipment and supplies immediately available to their employees. Each Contractor/ Subcontractor is required to maintain their own first aid supplies adequate for the type and amount of work they will be performing and sufficient for the manpower anticipated for the project. In the event that professional medical attention is required, injured workers are to be directed to the designated Panel of Physicians assembled for the Neighborhood Transformation Initiative OCIP. In the event of an emergency, 911 should be dialed and the Project Safety Monitor is to be notified immediately as to the nature and location of the emergency.

MONTHLY SAFETY REPORT

The Contractor's Safety Representative must forward a report on a monthly basis (i.e. no later than the 1st Friday of the following month) to the Project Safety Monitor which addresses the following items:

1. Summary of Accidents/Incidents within the past month.
2. The number of total man-hours worked on the project that month.
3. Summary of Safety Violations issued to any Contractor/Subcontractor.
4. Work to take place in the upcoming month.

The form in **Appendix G** should be used to complete this report.

SECTION 4 SUBSTANCE ABUSE POLICY

The Neighborhood Transformation Initiative OCIP Substance Abuse Policy states that the use of illegal drugs or the abuse of alcohol by Contractor/Subcontractor employees is inconsistent with a safe, healthy and productive work environment. The policy directs each Contractor/Subcontractor to establish and maintain an effective program for achieving a drug-free workforce.

The intention of this program is to establish all Neighborhood Transformation Initiative OCIP Projects as drug and alcohol free workplaces in order to ensure safe and productive working conditions with due regard for the personal privacy interests of Contractor/Subcontractor employees.

The basic elements of the program are simple:

- Use, possession or sale of illegal drugs or alcohol on the Owner's property is prohibited. Persons who violate this rule will not be permitted access to the work area.
- Employees who report for work with illegal drugs, legal drugs causing impairment or alcohol in their system will not be permitted to remain on the jobsite. Such employees will be barred from the Project.

Each Contractor shall be responsible for administering their own drug and alcohol testing program for its employees and Subcontractor employees working on Neighborhood Transformation Initiative OCIP Projects. Documentation of such program shall be available for audit upon request.

PRE-ASSIGNMENT

The working conditions on the Neighborhood Transformation Initiative OCIP warrant special assurances that all Contractor/Subcontractor personnel to be employed at the site are certified as drug-free before they are eligible for regular employment. It is the Contractor's responsibility to make sure that specimens are collected prior to Contractors/Subcontractors employees being permitted to perform any work on Project site.

Contractor/Subcontractor employees shall only be granted access to the jobsites after a "Negative" initial drug test. If the result is "Inconclusive", the applicant shall not be permitted access to the jobsites. Only after the result is confirmed "Negative" will an employee be permitted access to the jobsites.

REASONABLE SUSPICION/FOR CAUSE

All employees are subject to a substance test (drug or alcohol) where the Contractor, Program Manager, Project Safety Monitor, and/or Owner have reasonable

suspicion/cause to suspect that an employee may be impaired on duty. An employee will not be tested after initial testing under this paragraph unless specific, reliable objective facts and circumstances are sufficient to warrant a prudent person to believe that the employee may have ingested or used an intoxicating substance and is suffering from impairment of some sort while on duty. If testing results from an observation, the observation must be confirmed by a second member of Contractor supervision or Program Manager, Project Safety Monitor, Owner, or Owner's Representatives who has received appropriate training on the detection of possible impairment through observation.

Employees removed from duty for reasonable cause testing will remain off duty until test results are received. If the employee tests "Positive", the employee will be barred from Neighborhood Transformation Initiative OCIP Projects.

POST ACCIDENT/INCIDENT/INJURY/ NEAR MISS INCIDENT

An employee who is injured during the course of their employment on site or involved in an accident/incident in the course of job duties which involves use of heavy equipment, power tools or other dangerous instruments or under working conditions which result in an injury or substantial property damage or disruption to the Project must be tested.

Any employee involved in a near-miss incident which could have caused injury, disruption or property loss may be tested under the following circumstances;

1. The incident was caused by human error or could have been avoided by reasonably alert action; or
2. The employee to be tested was an active participant in the incident circumstances; or
3. Substance use cannot be discounted as a contributing factor.

If the employee tests "Positive", the employee will be barred from Neighborhood Transformation Initiative OCIP Projects effective the date and time of the specimen collection. Any employee so barred will not be eligible for referral back to the Neighborhood Transformation Initiative OCIP Projects.

ALCOHOL SCREENING

Alcohol screening shall be conducted in reasonable suspicion/for cause circumstances. Alcohol screening shall be conducted utilizing certified Breath Alcohol Testing devices. Any initial screen yielding an initial result of .04 bac or greater will result in a required confirmatory test to be administered after 15, but no longer than 30 minutes. All confirmatory test results greater than .04 bac is considered a "Positive" result and in violation of the policy.

If the employee tests "Positive", the employee will be barred from Neighborhood Transformation Initiative OCIP Projects effective the date and time of the specimen

collection. Any employee so barred will not be eligible for referral back to the Neighborhood Transformation Initiative OCIP Projects.

CONFIDENTIALITY REQUIREMENTS

Strict confidentiality shall be maintained at all times for all substance abuse testing program activities. All information generated in connection with the testing program is inherently sensitive and is to be treated as confidential.

In implementing this program care must be taken to:

1. Safeguard all written reports by maintaining separate, secured files and limiting written and verbal communications to the necessary functions of this procedure.
2. Conduct testing as privately as possible.
3. Limit the number of persons involved in testing activities to essential personnel only.
4. Prohibit the communication of confidential information about searches, tests, investigations, or the results of same to persons not authorized to receive it, including family members, friends, union representatives, or law enforcement agencies.
5. Release information only to those necessary to administer site employment, safety, and security; in response to legal process or when a written release has been obtained from the individual involved.

SECTION 5 GENERAL SAFETY REQUIREMENTS

PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment shall be furnished by each Contractor/Subcontractor for their employees as follows:

1. Head Protection: The wearing of non-conductive hard-hats meeting the requirements of ANSI Z89.1 is mandatory in all construction areas. Hard-hats must be worn at all times.
2. Eye and Face Protection: Industrial safety glasses meeting the requirements of ANSI Z87.1 with side shields shall be worn at all times. Additional eye and face protection (e.g., face shields, welding helmets, burning goggles, etc.) shall be available for all employees on site as necessary for the tasks being performed.
3. Hearing Protection: Hearing protection shall be provided and its use required wherever it is not feasible to reduce the noise levels or duration of exposure to those specified by OSHA 1926.52.
4. Respiratory Protection: When controls required by OSHA 1926.55 fail or are inadequate to prevent harmful exposure to employees, the employer shall provide appropriate respiratory protection. Employees shall be instructed in the proper use and maintenance of these devices, fit tested, medically qualified, and informed why and where respirator usage is required. Please refer to Section 14 for Respiratory Protection Program requirements.
5. Wearing Apparel: Appropriate work clothing shall be worn at all times to minimize exposures:
 - a. Shirts which cover the shoulders and torso (t-shirts with a 4 inch sleeve are acceptable). Shirts or alternate protection, which covers the entire arm, may be required in certain circumstances. Muscle shirts and cut off shirts are prohibited.
 - b. Long pants are required. Shorts are prohibited.
 - c. Firm sole leather work shoes with rubber soles are required (no sneakers). Please see #7 below for those employees involved in manual demolition activities.
 - d. Loose clothing or jewelry, which may catch or become entangled, is prohibited.
6. Hand Protection: All employees involved with manual demolition or clean up operations shall wear leather protective gloves at all times while in active work areas. The only exception to this requirement is equipment operators, provided that they are in the cab of the machine.

7. Steel Toe Work Shoe with Metatarsal Guards – All employees involved with manual demolition and clean up operations must wear a steel toe work shoe with metatarsal guard. The work shoe must have a steel sole insert. The only exception to this requirement are equipment operators, provided that they are in the cab of the machine full time and not performing any manual demolition activities.

FIRE PROTECTION

1. Only containers approved by Underwriters' Laboratories, Factory Mutual or DOT, and clearly labeled to identify contents shall be used for transporting or storing flammable or combustible liquids.
2. Safety cans with self-closing spouts and flash arresters are required for the storage, handling, and transporting of flammable and combustible liquids.
3. Open fires are prohibited.
4. No bulk storage of flammable or combustible liquids (i.e. portable fuel storage tanks) is permitted on sites.
5. Portable fire extinguishers suitable for the potential hazard shall be provided by each Contractor/Subcontractor for their equipment, office area, and work activities. A fire extinguisher must be in the immediate work area when any spark or open flame producing work is taking place.
6. In addition to the above, the Contractor/Subcontractor shall be responsible for ensuring the removal (protection when removal is not feasible) of all combustible or flammable materials in the area, and shall provide appropriate fire extinguishers and fire watch as required by the work. Contractor shall provide a ½ hour fire watch after any "hot work" is completed.

Additional Precautions:

- a. Hoses/leads shall not be routed through doorways unless the door is propped open and the hoses/leads protected from damage.
- b. Hoses/leads are not permitted to cross stair treads.
- c. Hoses/leads shall be appropriately routed or protected to prevent their damage from slag or sparks. Damaged hose/leads shall be removed from the site.
- d. Hoses, leads, torches, gauges, cylinder valves and welding machines shall be inspected daily by the user for leaks and proper condition. Leaks or malfunctions shall be repaired or replaced prior to use.
- e. Compressed gas cylinders shall be shut off at the valve, capped when not in actual use, and secured in an upright position during storage, transit and use.

- f. Fuel gases shall be separated from oxygen except during use by 20' or by a 5' partition with a 1/2 hour fire rating.
- g. Oil and grease must be kept away from oxygen regulators, hoses and fittings. Do not store wrenches, dies, cutters, or other grease-covered tools, clothing, gloves or rags in the same compartment with oxygen equipment.
- h. Compressed gas cylinders shall not be hoisted using slings or by the valve protection cap. Use only carts or racks approved for hoisting.
- i. Oxygen shall not be used as a substitute for compressed air or other gases (i.e., to operate pneumatic tools, blowout lines, pressurizing vessels, etc.)
- l. All oxy-acetylene assemblies must have flash arresters and check valves.
- m. All work during electric welding must be grounded.
- n. Stingers must not be laid on conductive materials.
- o. Spent rods shall be disposed of in non-combustible containers.
- p. Electric welders shall be shut off at the end of the shift or when not in use for extended periods.
- q. Each welding/burning rig shall be equipped with a minimum 10# ABC fire extinguisher in charged, working condition.

HOUSEKEEPING

1. During the demolition process scrap lumber with protruding nails, bricks, pipes, and all other debris, shall be kept clear from passageways, and stairs, in and around buildings or other structures.
2. Where material is dumped from mechanical equipment or wheelbarrows, a securely attached toeboard or bumper, not less than 4 inches thick and 6 inches high, shall be provided at each chute opening.
3. Materials shall be piled and stacked so that safe clearances are maintained and toppling is prevented.
4. Spills shall be cleaned up or contained immediately. Spillage of fuel, oil or hazardous materials shall be reported to the Project Safety Monitor immediately. On-site disposal of oil or hazardous material is prohibited.

5. Trash and garbage shall be placed by the Contractor/Subcontractor into appropriate containers. Debris is to be cleaned up daily. This project will have a "clean-as-you-go" policy.
6. Nails protruding from lumber shall be removed or bent over immediately.

WORK AREA PROTECTION

Contractor/Subcontractor responsibilities for general protection of personnel in work areas shall include, but are not limited to, the following:

1. Warning signs, barricades, and flagging are to be used to warn personnel of potential or hidden hazards or to advise of intermittent activities which might endanger outside personnel. They are not to be used in lieu of more effective protection.
2. Employees shall not be permitted to work above or adjacent to vertically protruding reinforcing steel unless it has been covered or protected to eliminate the hazard of persons falling onto it and being impaled.

CRANES

The use of cranes to complete this project is not anticipated. However, if any Contractor/Subcontractor brings an owned or rental crane onto the project, the Annual Inspection Certification is required. Cranes and cable (wire rope) rigged hoisting equipment shall have a current annual inspection by an accredited agency prior to working at this site and the Contractor/Subcontractor must maintain a current annual inspection for the duration of work at this site. An accredited agency is a third party that is recognized by the Department of Labor/Occupational Safety and Health Administration. A copy of this annual certification must be submitted to the Project Safety Monitor prior to working at this site.

Crane operators shall have in their possession and on their person at all times a copy of their Certified Crane Operator's (CCO) card or similar evidence of their qualifications to operate the particular type of crane to which the operator has been assigned.

ASBESTOS

All asbestos removal shall be per bid specifications. It is the policy of the Owner that only qualified Contractor/Subcontractor employees shall be involved in any asbestos repairs, maintenance or removal. All unqualified employees in the work area shall be protected from exposure to asbestos fibers by isolating and controlling access to all affected areas during asbestos work. All work shall be in accordance with federal, state, and local requirements. All tasks involving the disturbance of asbestos containing material will be conducted only after appropriate work controls have been identified and implemented. A qualified supervisor shall be available at asbestos controlled work sites during all activities.

Proper personal protective equipment, vacuums and HEPA filters shall be used and properly maintained. If Subcontractors are used, the Contractor shall ensure all of their employees have been properly trained and have been issued proper equipment and protective gear.

The following general work rules apply to all Contractors/Subcontractor performing work under the Neighborhood Transformation Initiative OCIP:

1. When in doubt, treat all material as containing asbestos and comply with all applicable rules and regulations and protective measures.
2. All Asbestos Containing Material (ACM) will be handled by certified and licensed asbestos abatement personnel. The friability of the ACM will dictate the type of removal/maintenance required.
3. Employees who are uncertified and unlicensed will not handle any ACM >1%. This will include encapsulation projects, renovation/removal and/or demolition of any type of structure. This will reduce the potential for accidental exposure from the mishandling of any ACM.
4. When an uncertified, unlicensed employee questions whether they may be handling suspect ACM, the employee will immediately contact their supervisor. The employee shall not resume working in the area in question until the area has been checked to verify the material is not ACM.
5. Uncertified, unlicensed employees will not cross over a barrier/containment area where asbestos projects are in progress.
6. Any employee who discovers ACM or suspect ACM in damaged or poor condition should report it to their supervisor so the identified material is repaired.

HISTOPLASMOSIS

Pigeon droppings may be encountered especially during work on exterior structures where pigeons and other birds have nested, usually for long periods. This nesting can result in a substantial build-up of droppings, a condition, which can be harmful to humans, if the material is disturbed and made airborne. Infectious pulmonary fungal diseases, such as histoplasmosis, have been traced to bird handlers and others involved in similar maintenance operations.

Histoplasmosis is a fungal infection resulting from exposure to pigeon droppings. Infectious material enters the body usually by inhalation into the lungs, but in some cases by ingestion through the mouth into the gastrointestinal tract. Pigeons do not carry the organism that causes histoplasmosis. Histoplasmosis is caused by a soil organism that requires the moist, nutrient-rich environment that large masses of droppings offer. Areas with small amounts of dried droppings pose minimal hazard.

Prior to work in any area where pigeons nest, a thorough inspection should be made to determine if, and to what extent there is a build-up of material. Inspection itself requires minimum precautions such as the use of personal protective equipment, which may include gloves, disposable coveralls, goggles and proper respiratory protection. The following precautionary measures must be taken to limit exposure to this disease during work where pigeon droppings are anticipated:

1. Pigeon droppings will be wetted down prior to all work in those areas and will be re-wetted as necessary to minimize airborne dusting.
2. All workers will wear proper respiratory protection, protective clothing, goggles and gloves.
3. All workers will thoroughly wash hands, arms, neck, face and other exposed skin immediately after working in or around dropping, and again before breaks, smoking, drinking beverages, and eating food. If substantial material is found in the immediate work area, cleaning must be performed. Employees engaged in cleaning activity must wear all of the personal protective equipment specified above. A high-powered water hose is an effective means to remove material. If the material is to be scraped away, it must be kept wet during the entire process. Application of a cleaning agent (bleach, for example) before removal may help dissolve the material, and may be applied as a disinfectant upon the affected surfaces after the droppings have been removed. Compressed air shall not be used to remove pigeon droppings because it increases the potential for inhalation and ingestion of airborne particles and the area of potential exposure.

When cleaning has been successfully completed, the personal protective equipment specified above is no longer required. All other personal protective equipment appropriate for the task and/or location shall be used, such as fall protection, hard hat, etc.

Employees engaged in cleaning, or other activities which involve exposure to pigeon droppings should receive training on these special precautions, and observe a high degree of personal hygiene (even if the exposure is casual) including washing hands thoroughly before eating or smoking.

CHAINSAW USAGE

In the hands of a careless, inexperienced or tired operator, a chainsaw can be very hazardous. Most chainsaw accidents are caused when the operator comes in contact with a moving chain. Injuries from a chain saw are usually serious because of the jagged cut the chain leaves. The following guidelines apply when employees use a chainsaw:

1. Operate, adjust and maintain saws according to the manufacturers' directions and the CSA Standard Z62.1-95 "Chain Saws" (most recent version 01-Oct-1995) or ANSI standard B175.1-2000 (Gasoline Powered Chain Saws, Safety Requirements for).

Both standards describe safety requirements for the design of chain saws and include recommendations on how to use chain saws safely.

2. Be aware of the potential for a chainsaw to kickback, which can throw the saw's cutting edge back into the face or body of the operator. Striking the tip of the chain saw against any object can cause kickback.
3. Start cuts with the base of the chain, and pivot the blade at the base to work the blade through the wood. Never pivot on the tip of the saw.
4. Proper clothing and personal protective equipment is as important in reducing the risk of injury. Clothing should be well-fitted and free of dangling or ragged edges that could become entangled in either the saw or brush.
5. Protective chaps, leggings or pants that cover the area from the groin to about 2 inches above the ankles. These chaps/legging/pants are made from synthetic fabrics that are designed to prevent the running saw chain from coming in contact the body.
6. A properly fitted hard-hat, a face shield and safety glasses, and ear plugs/muffs must be worn.
7. Special woodcutter's gloves have slip-resistant palms and use the same fabric on the backs of the gloves that is used in the chaps, leggings and pants described above.
8. Shoes made of material resistant to the cutting action of the chainsaw will protect the ankles in case of accidental contact with the moving saw chain.
9. Avoid making cuts with the saw between the legs, always cut with the saw to the outside of the legs.

TREE REMOVAL

Tree Felling operations near overhead electric lines shall be done in accordance with the requirements of 29 CFR 1910.333(c)(3).

If employees climb trees during tree removal operations, appropriate climbing and fall protection equipment shall be provided and used.

PROTECTION of the PUBLIC

All necessary precautions shall be taken to prevent injury to the general public or damage to property of others. Precautions to be taken shall include but are not limited to the following:

1. Work shall not be permitted in any area occupied by the general public unless specifically permitted by the contract.
2. When it is necessary to maintain public use of work areas involving sidewalks, Contractors/Subcontractors shall protect the public with appropriate barricades, temporary fences, overhead protection, or shields.
3. Sidewalks that are not barricaded to reduce the potential for pedestrian traffic shall be kept clear of obstructions to permit safe entrance and exit of the public at all times.

4. Appropriate warnings and instructional safety signs shall be conspicuously posted where necessary. In addition, a signalman shall control the movement of motorized equipment in areas where the public might be endangered.
5. Temporary fencing shall be provided around the perimeter of above ground operations adjacent to public areas. Perimeter fences shall be at least six (6) feet high.
6. Backup alarms shall be maintained on all mobile equipment and vehicles operating on site with obstructed rear views. The operator shall perform a daily pre-operational inspection to make sure the backup alarm is functional. The backup alarm shall be able to be heard over background noise.

PROCEDURES for CORRECTING SAFETY and HEALTH HAZARDS

The following procedures for correcting safety and health hazards must be followed. When a hazard is observed, a procedure will be as follows:

1. If abatement of the hazard is within the authority of the worker, the worker will take steps to solve the problem.
2. If the worker cannot solve the problem, he or she will report the situation to his/her immediate supervisor.
3. If the supervisor cannot address the exposure, he/she must contact their Safety Representative.
4. If the Safety Representative cannot address the exposure, he/she will inform the Contractor's Safety Representative as soon as possible.
5. Unsafe conditions on the jobsite will be brought to the Contractor's Safety Representative's attention as soon as reasonably possible. The Contractor's Safety Representative will instruct the appropriate Contractor/Subcontractor to correct the problem. Contractor/Subcontractor shall cease operations in the area where the safety exposure exists until it is adequately corrected.
6. Imminent danger situations brought to the attention of the Contractor will be corrected immediately by the Contractor in accordance with the Project requirements. All work will cease in the area where the imminent danger situation exists until the exposure is adequately corrected.
7. Lost time and lost productivity associated with this or any safety violation shall not entitle the Contractor/Subcontractor to an increase in the contract price or a delay in the project schedule.

OSHA TRAINING

Instruction and training of employees is a requirement of OSHA and will be enforced on this project. Training of employees is the responsibility of the Contractor/Subcontractor. Each employer shall:

1. Instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury, (This means that each employee shall receive training specific to demolition operations.), and
2. Evaluate employees who have been trained to ensure that they have acquired the required skills and knowledge.

All Contractor/Subcontractor personnel must attend the Project Safety Orientation prior to starting work on the site. Documentation of this orientation is to be maintained by the Contractor's Safety Representative and is subject to periodic audit by the Project Safety Monitor or OCIP Administrator.

Additional training on certain subjects is required. The Contractor/Subcontractor shall verify that all employees are trained per OSHA requirements prior to performing work on the site. The list of topics for which Contractors/Subcontractors must provide documented training (if exposure exists) includes, but is not limited to:

1. Fall Protection
2. Scaffolding
3. Ladders
4. Hazard Communication
5. Confined Space
6. Excavation
7. Power-actuated tools
8. Lockout/tagout

When the employer has reason to believe that any affected employee who has already been trained does not have the required understanding and skill, the employer shall retrain each such employee. Circumstances where retraining is required include, but are not limited to, situations where:

1. Changes in the workplace render previous training obsolete; or
2. Inadequacies in an affected employee's knowledge indicate that the employee has not retained the requisite understanding or skill.

OSHA INSPECTIONS

It is the Owner's policy to allow OSHA to conduct an inspection of the project. The Contractor's Representatives, including the Contractor's Safety Representative, will

accompany the OSHA Compliance Officer at all times and make arrangements for the meetings between OSHA, Subcontractors, and organized labor representatives (if any). The Owner, Owner's Representatives, Program Manager, and Program Safety Monitor do not assume liability or responsibility for the presence of any alleged hazards or their correction. Subcontractors will inform the Contractor of the issuance of any OSHA citations and provide a copy when requested.

The Project Safety Monitor, Program Manager, Insurance Broker, and City of Philadelphia's Risk Management Division must be notified of all OSHA Inspections prior to the OSHA Compliance Officer beginning the formal inspection of the project. If possible, the Project Safety Monitor is to be present for the OSHA inspection.

SECTION 6 DEMOLITION

All Contractors and Subcontractors must follow the requirements of this program during all demolition activities. Each Contractor/Subcontractor must have a Demo Plan as part of their Safety Plan. Each Demo Plan must contain a specific procedure for completing the Engineering Survey Report for each structure to be worked on and a Safety Report specifically for the demolition operations.

ENGINEERING SURVEY REPORT

Before beginning any demolition work, an **Engineering Survey Report** is required. The Contractor/Subcontractor shall confirm existing conditions and all information supplied to them by the Neighborhood Transformation Initiative as part of the Engineering Survey Report. Once demolition work has started, there will be additional safety requirements for various activities. A **Qualified Person** is required to conduct the Engineering Survey of the structure prior to beginning any demolition operations.

The demolition contractor must maintain a written copy of this survey at the jobsite. The purpose of this survey is to determine the condition of the framing, floors, and walls so that measures can be taken, if necessary, to prevent the premature collapse of any portion of the structure. When indicated as advisable, any adjacent structure(s) or improvements should also be similarly checked.

If the structure to be demolished has been damaged by fire, flood, explosion, rot, water leakage, or some other cause, appropriate measures, including bracing and shoring of walls and floors, shall be taken to protect workers and any adjacent structures before demolition operations begin. It shall also be determined if any type of hazardous chemicals, gases, explosives, flammable material, or similar dangerous substances have been used or stored on the site. If the nature of a substance cannot be easily determined, samples should be taken and analyzed by a qualified person prior to demolition.

The engineering survey provides the demolition contractor with the opportunity to evaluate the job in its entirety. The contractor should plan for the wrecking of the structure, the equipment to do the work, manpower requirements, and the protection of the public. The safety of all workers on the job site should be a prime consideration. During the preparation of the engineering survey, the contractor should plan for potential hazards such as fires, cave-ins, and injuries.

Contractors/Subcontractors must have a written Engineering Survey and retain that report on-site. The Engineering Survey Report shall be signed and dated by the Qualified Person that conducted the survey. A copy of the Engineering Survey Report shall be forwarded to the Program Manager prior to any demolition work taking place.

At a minimum, the Engineering Survey Report must include:

1. Building characteristics.
 - Construction type & structure size
 - Number of stories or height
 - Structural hazards
 - Basements & confined spaces
 - Party wall locations
 - Wall tie requirements and number
 - Shoring requirements for adjacent structures
 - Type of shoring and location
2. Protection requirements for adjacent structures.
3. Demolition methods that will be used.
4. Public protection required.
 - Pedestrian walkways or roadways that may need to be relocated.
 - Walkways or roadways should be well lit and kept clear of equipment & debris.
 - Special controls or procedures may be necessary if a portion of the structure is occupied.
 - If the project is entirely protected with security fencing, the gates should be kept closed at all times throughout the demolition work.
5. Overhead and underground utility protection is required.
 - The location of all electric, gas, water, sewer & communications lines should be identified and the lines shut off before work is started.
 - The National Association of Demolition Contractors recommends that utility lines be color-coded:
 - Red, if the lines are to stay.
 - Green, if the lines are to be removed.
 - The PA One-Call system should be notified.
6. Above and below-ground tanks should be protected.

- Purging & testing of these tanks should be completed.
 - Locations of pits or open holes should be identified and barricaded.
 - Compliance with EPA regulations and guidelines is required.
7. If hazardous materials are found, responsibilities should be assigned to the appropriate Contractor(s)/Subcontractor(s) for removal & disposal of the materials.
- Asbestos and other materials may be in furnaces, reactors, boilers, insulation, other fire protection materials, certain types of floors and ceiling tiles.
 - Lead may be in pipe systems and with lead based paints.
 - Polychlorinated biphenyls may be in electrical systems such as transformers and capacitors.
8. Existing damage to nearby structures.
- This damage should be documented. Photographs and/or videotape can be taken to supplement documentation.
 - The documentation should be dated and retained with the Engineering Survey Report.

SAFETY REPORT

During the planning stage of the job, all safety equipment needs should be determined. The required number and type of respirators, lifelines, warning signs, safety nets, special face and eye protection, hearing protection, and other worker protection devices should be determined during the preparation of the engineering survey.

The **Safety Report** identifies and plans specific safe work procedures and practices and safety equipment that should be in place when demolition activities begin. The Safety Report should be tailored to the specific demolition job tasks being undertaken. The Safety Report must be included with the Engineering Survey Report. A copy of the Safety Report must be forwarded to the Program Manager prior to the start of demolition work.

Items that must be covered in the Safety Report include:

1. Confirmation that the Engineering Survey Report is read by jobsite supervisory personnel and reviewed by craft personnel.
2. Notification of medical personnel, fire department, utility companies and local authorities that their services may be required for the demolition.
3. Posting of emergency telephone numbers for all these services at all telephone locations.

4. A comprehensive plan for fall protection and other identified hazards and exposures.
5. Confirmation that appropriate personal protective equipment (PPE) is available on-site.
6. Means of securing the project site perimeter and posting of warning signs.
7. Fire prevention and protection measures:
 - Due to the serious nature of fire hazards, all potential sources of ignition arising from the demolition work should be identified.
 - The Fire Department must be able to gain access to any part of the jobsite, as well as fire hydrants.
 - Ample supplies of portable fire extinguishers must be available.
 - Smoking, open flames and spark producing operations must be restricted to specific, safe areas.
 - A fire warning system must be in place so that personnel can be quickly notified and evacuated in the event of a fire.

WORK PROGRESSION

Except for cutting holes in the floors for chutes, holes to drop materials through, preparation of storage space & similar preparatory work, the demolition of floors and exterior walls shall begin at the top of the structure and proceed downward. During hand demolition operations, demolition shall start at the top of the structure being demolished. The roof and its supporting members shall be fully removed before the floor below is demolished. Each floor and its supporting members shall be fully removed before removal of a lower floor is begun.

The demolition Contractor/Subcontractor shall implement controls to eliminate potential hazards from the fragmenting glass, concrete, brick and other building materials.

Mechanical equipment shall not be used on floors on working surfaces unless such floors or surfaces are of sufficient strength to support the imposed load.

During demolition, continuing documented inspections by a competent person shall detect hazards resulting from weakened or deteriorated floors, walls, or loosened material. No employee shall be permitted to work where such hazards exist until they are corrected by shoring, bracing or other means to complete the demolition safely.

DEBRIS REMOVAL

Any chute opening into which debris is dumped shall be protected by a guardrail 42 inches above the floor or other surface on which personnel stand to dump the material.

Any space between the chute and the edge of openings in the floors through which it passes shall be solidly covered over.

When the debris is dropped through openings in the floors without chutes, the openings and the area onto which the material is dropped shall be enclosed with barricades not less than 42 inches high and not less than six (6) feet back from the projected edge of the opening above.

Signs warning of the hazard of falling materials shall be posted at *EACH SIDE* of the debris opening at each floor. Debris removal shall not be permitted in lower areas until debris handling ceases on the floors above. The storage of waste and debris on any floor shall not exceed the allowable floor load. In buildings having wood floor construction, the floor joists may be removed from not more than one floor above grade to provide storage space for debris, provided falling material is not permitted to endanger the stability of the structure.

When wood floor beams serve to brace interior walls or free-standing exterior walls, such beams shall be left in place until other support can be installed to replace them.

Storage space to which material is dumped shall be blocked off, except for openings for the removal of materials, and such openings shall be kept closed when material is not being removed.

Any opening cut in the floor for the disposal of materials shall be not longer in size than 25% of the aggregate total floor area, unless lateral supports of the removed flooring remain in place. Floors weakened or otherwise made unsafe by demolition shall be shored to carry safely the intended imposed load from demolition operations.

WALL REMOVAL

Masonry walls, or sections of masonry, shall not be permitted to fall upon the floors of the building in such masses as to exceed the safe carrying capacities of the floors.

No wall section which is more than that specified in the bid specification or ten feet in height shall be permitted to stand without lateral bracing, unless such wall was designed and constructed to stand without such lateral support and is in a condition safe enough to be self supporting.

Employees are not permitted to work on top of a wall at any time.

Structural or load supporting members on any floor will not be cut or removed until all stories above such floor have been demolished and removed. This does not prohibit the cutting of floor beams for the disposal of materials, providing floor joists removal is not more than one floor above grade to provide storage space for debris, provided falling material is not permitted to endanger the stability of the structure and the requirements for floor removal are met.

Walls which serve as retaining walls to support earth or adjoining structures shall not be demolished until such earth has been braced or adjoining structures have been underpinned.

Walls shall not be used to retain debris unless capable of safely supporting the imposed load.

FLOOR REMOVAL

Openings cut in a floor shall extend the full span of the arch between supports. Before demolishing any floor arch, debris and other material shall be removed from such arch and other adjacent floor area.

Planks not less than two inches by ten inches in cross section, full sized undressed, shall be provided for and shall be used by employees to stand on while breaking down floor arches between beams. (OSHA scaffold grade planks are recommended). Planks shall be so located as to provide a safe support for personnel should the arch between the beams collapse. Straddle space between planks shall not exceed sixteen (16) inches. Safe walkways, not less than eighteen (18) inches wide, formed of wood planks not less than two (2) inches thick or of the equivalent strength, shall be provided and used by personnel when necessary to enable them to reach any point without walking upon exposed beams.

Stringers of sufficient strength shall support the flooring planks; the ends of such stringers shall be supported by floor beams or girders and **not** by floor arches alone. Planks shall be laid together over solid bearings with the ends overlapping at least one foot.

When floor arches are being removed, employees shall not be allowed in the area directly underneath and that area shall be barricaded to prevent access and signed to warn of the hazards.

MECHANICAL DEMOLITION

No person shall be permitted in any area which can be affected by demolition when mechanical demolition is being performed. ONLY those persons necessary for the operations shall be permitted in this area at any other time.

When pulling over walls or portions of walls, all steel members affected shall have been cut free. All roof cornices or other ornamental stonework shall be removed prior to pulling walls over.

SECTION 7 FALL PROTECTION

The Owner requires fall protection for work greater than or equal to six (6) feet above a lower working level or surface for all trades working on all projects unless the Contractor is able to prove that conventional methods of fall protection (i.e. personal fall arrest system, floor hole covers, guardrails, etc.) or alternative methods (i.e. use of an articulating boom lift, etc.) of completing the demolition are infeasible or create a greater hazard. If the Contractor claims that conventional methods of fall protection or alternative methods of completing the demolition are infeasible or create a greater hazard, the Contractor's proposed method of assuring that its' workers are protected from falls to the maximum extent possible must be submitted to the Program Safety Monitor for review. The Program Safety Monitor will review the Contractors written statement and alternative fall protection plan to see if it complies with OSHA's NTI Alternative Fall Protection Plan.

This requirement is mandatory for work greater than or equal to six (6) feet above a lower working level or surface. This policy will be strictly enforced. There will be no second chances under this policy. Employees observed in violation of this policy will be immediately removed from the project and shall not be permitted to return to a Neighborhood Transformation Initiative OCIP Project. Employers will receive Safety Violation Fines for violation of this policy.

The written fall protection procedures contained in this section establish guidelines to be followed whenever an employee works above dangerous equipment, on ramps or runways, or at heights with a fall exposure 6 feet or greater at the job site. The regulations are designed to provide a safe working environment, and govern use of fall protection procedures and equipment.

All fall protection systems selected for each application will be installed before an employee is allowed to go to work in an area that necessitates the protection. To prevent falls, all Contractors/Subcontractors have a duty to anticipate the need to work at heights and to plan work activities accordingly. Careful planning and preparation lay the necessary groundwork for an accident-free jobsite. Each Contractor/Subcontractor should anticipate the particular fall hazards to which their employees may be exposed. Specifically, each Contractor/Subcontractor shall:

1. Inspect the area to determine what hazards exist or may arise during the work.
2. Identify the hazards and select the appropriate measures and equipment.
3. Give specific and appropriate instructions to workers to prevent exposure to unsafe conditions.
4. Ensure employees follow procedures given and understand training provided.

5. Evaluate the steps employees have taken to meet their fall protection requirements.

During demolition of structures under the NTI OCIP, employees shall be protected whenever possible by one of the three conventional fall protection systems (guardrails, personal fall arrest systems, or nets). It is likely that conventional fall protection will be feasible during some parts of the demolition of a structure. For example:

1. When windows have been removed, a guardrail, in the form of a 2x4, could be placed in the window opening, and
2. Handrails and stair-rails could be left in place to protect employees from falls.

Where conventional fall protection is not feasible, or its usage creates a greater hazard, ladders, scaffolds, and aerial lifts shall be used to the extent that they do not create a greater hazard and/or it is not infeasible. Ladders and scaffolds shall be used in accordance with all applicable standards, and conventional fall protection shall be used for work performed from scaffolds and aerial lifts.

However, in those situations where an employer can demonstrate, on a site specific basis that it is infeasible or creates a greater hazard to use conventional fall protection during the demolition process, and use of ladders, scaffolds and aerial lifts are not feasible, alternate methods shall be developed for protecting employees from falls.

1. DEMONSTRATE: Means to provide a written explanation of why none of the three standard fall protection systems can be used, and why your alternate method does provide adequate fall protection. You must show all of the work-site-specific circumstances that prevent you from installing, using or relying on any one of the three conventional fall protection systems. You must also show that the hazards caused by complying are greater than those encountered by not complying or that it is not feasible.
2. INFEASIBLE: - In general infeasible means that there is no way to attach the fall protection system to the building or work surface or it isn't possible to obtain the load or anchor requirements because of work surface, slope or means of attachment. NETS have additional problems such as there is no way to attach to the structure, no way to install support posts to take imposed loads or they cannot be installed because of beams and other obstructions in the fall path.

ANCHORAGES

An anchorage is where the lanyard or lifeline is attached to a structural support. This anchorage must be capable of supporting 5000-pounds or twice the maximum arresting force generated when the employee falls. Workers must always tie off at or above the D-ring point of the belt or harness. This ensures that the free fall is minimized, and that the lanyard doesn't interfere with personal movement. Workers must also tie off in a manner that ensures no lower level will be struck during a fall. To do this, add the height of the worker, the lanyard length, and an elongation factor of 3.5 feet. Using this

formula, a six-foot tall worker requires a tie-off point at least 15.5 feet above the next lower level.

HOLES

All holes in horizontal surfaces shall be protected by guardrails or covers.

1. When guardrail systems are used around holes used for the passage of materials, the hole shall have not more than two sides provided with removable guardrail sections to allow the passage of materials. When the hole is not in use, it shall be closed over with a cover, or a guardrail system shall be provided along all unprotected sides or edges.
2. Covers for holes in floors, roofs, and other walking/working surfaces shall meet the following requirements:
 - Covers located in roadways and vehicular aisles shall be capable of supporting, without failure, at least twice the maximum axle load of the largest vehicle expected to cross over the cover.
 - All other covers shall be capable of supporting, without failure, at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time.
3. All covers shall be secured when installed so as to prevent accidental displacement by the wind, equipment, or employees. and
4. All covers shall be color coded or they shall be marked with the word "HOLE" or "COVER" to provide warning of the hazard.

When debris is dropped through holes in the floor without the use of chutes, the area onto which the material is dropped shall be completely enclosed with barricades not less than 42 inches high and not less than 6 feet back from the projected edge of the opening above. Signs warning of the hazard of falling materials shall be posted at each level. The number and size of holes shall be as limited as possible. Removal shall not be permitted in this lower area until debris handling ceases above. All floor openings, not used as material drops, shall be covered over with material substantial enough to support the weight of any load which may be imposed. Such material shall be properly secured to prevent its accidental movement.

ALTERNATIVE FALL PROTECTION PLANS

Employers engaged in demolition work under the NTI OCIP, who can demonstrate that it is infeasible or creates a greater hazard to use conventional fall protection systems, must develop (in writing) and follow a fall protection plan. There must be an individual fall protection plan for each structure being demolished.

At the end of this section is a sample fall protection plan that could be tailored to be site specific for a specific jobsite. The sample plan outlines the elements that must be addressed in any fall protection plan. The reasons outlined in this sample fall protection plan are for illustrative purposes only and are not necessarily a valid, acceptable rationale (unless the conditions at the job site are the same as those covered by these sample plans) for not using conventional fall protection systems for a particular

demolition worksite. However, the sample plans provide guidance to employers on the type of information that is required to be discussed in fall protection plans.

RESCUE PLAN

Each Contractor/Subcontractor that has employees using a personal fall arrest system must assure that employees can be promptly rescued or can rescue themselves should a fall occur. This rescue plan shall be in writing and must be part of the written fall protection plan for the project.

TRAINING REQUIREMENTS

Under no circumstances shall employees work in areas where they might be exposed to fall hazards, do work requiring fall protection devices, or use fall protection devices until they have successfully completed fall protection training that each Contractor/Subcontractor is required to perform prior to assigning an employee to the site (provided the contractor has a falls from heights exposure). The fall protection training is required prior to an employee performing work on site.

The training program should include classroom instruction and operational training on recognition and avoidance of unsafe conditions and the regulations applicable to their work environment for each specific fall hazard their employee may encounter. The training program must cover the following areas:

1. The nature of fall hazards in the work area.
2. Selection and use of personal fall arrest systems, including application limits, proper anchoring and tie-off techniques, estimation of free fall distance (including determination of deceleration distance and total fall distance to prevent striking a lower level), methods of use, and inspection and storage of the system.
3. The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.
4. The use and operation of guardrail systems, personal fall arrest systems, controlled access zones, warning line systems, and other protection to be used.
5. The role of each employee in the safety monitoring system when this is used.
6. The role of employees in fall protection plans.
7. The standards contained in OSHA 1926 Subpart M of the construction regulations.

Training on the above components will occur both in the classroom and on the jobsite, as appropriate. Classroom training will cover written policy/procedures on fall

protection for the Project. Jobsite instruction will include demonstration of and practice in wearing fall protection equipment and any instruction necessary for a specific job. Each Contractor/Subcontractor is responsible for arranging for their own classroom and jobsite instruction training.

Each Contractor/Subcontractor has overall responsibility for the safety of their employees and will verify compliance with OSHA 1926.503(a), training program, for each employee required to be trained.

A written certificate of training is required which must include:

1. The name or other identity of the employee trained.
2. The date(s) of training.
3. The signature of the competent person who conducted the training or the signature of the employer.

Verification of training shall be forwarded to the Contractor's Safety Representative. The Contractor's Safety Representative has the responsibility of determining when an employee who has already been trained, does not have the understanding and skill required by the training program (OSHA 1926.503(a)). Retraining is required when an employee cannot demonstrate the ability to recognize the hazards of falling and the procedures to be followed to minimize fall hazards.

INCIDENT INVESTIGATION

In the event that an employee falls or some other related, serious incident (e.g., a near miss) occurs, this plan will be reviewed to determine if additional practices, procedures, or training need to be implemented to prevent similar types of falls or incidents from occurring.

CHANGES to PLAN

The Contractor/Subcontractor must have a qualified person review their fall protection plan for this project. The plan is to be reviewed by a qualified person as the job progresses to determine if additional practices, procedures, or training needs to be implemented to improve or provide additional fall protection. Workers will be notified and trained, if necessary, in the new procedures. A copy of this plan and all approved changes must be maintained at the jobsite.

Sample Alternative Fall Protection Plan

Sample Alternative Fall Protection Plan for Residential Demolition for *(Insert Company Name)*

- Name of Project:
- Location of Job:
- Date Plan Prepared or Modified:
- Plan Prepared By:
- Plan Approved By:
- Plan Supervised By:

The following Fall Protection Plan is a sample program prepared for the prevention of injuries associated with falls. A Fall Protection Plan must be developed and evaluated on a site by site basis.

I. Statement of Company Policy

(Your company name here) is dedicated to the protection of its employees from on-the-job injuries. All employees of *(Your company name here)* have the responsibility to work safely on the job. The purpose of the plan is to supplement our existing safety and health program and to ensure that every employee who works for *(Your company name here)* recognizes workplace fall hazards and takes the appropriate measures to address those hazards.

This Fall Protection Plan addresses the use of conventional fall protection at a number of areas on the project, as well as identifies specific activities that require non-conventional means of fall protection. **In these cases, conventional fall protection systems may not be the safest choice for builders. This plan is designed to enable employers and employees to recognize the fall hazards associated with this job and to establish the safest procedures that are to be followed in order to prevent falls to lower levels or through holes and openings in walking/working surfaces.

Each employee will be trained in these procedures and will strictly adhere to them except when doing so would expose the employee to a greater hazard. If, in the employee's opinion, this is the case, the employee is to notify the competent person of their concern and have the concern addressed before proceeding.

It is the responsibility of *(name of competent person)* to implement this Fall Protection Plan. Continual observational safety checks of work operations and the enforcement of the safety policy and procedures shall be regularly enforced. The crew supervisor or foreman *(insert name)* is responsible for correcting any unsafe practices or conditions immediately.

It is the responsibility of the employer to ensure that all employees understand and adhere to the procedures of this plan and to follow the instructions of the crew

supervisor. It is also the responsibility of the employee to bring to management's attention any unsafe or hazardous conditions or practices that may cause injury to either themselves or any other employees. Any changes to the Fall Protection Plan must be approved by (name of qualified person).

II. Fall Protection Systems to Be Used on This Job - Controlled Access Zones (CAZ)

When using the Plan to implement the fall protection options available, workers must be protected through limited access to high hazard locations. Before any non-conventional fall protection systems are used as part of the work plan, a controlled access zone (CAZ) shall be clearly defined by the competent person as an area where a recognized hazard exists. The demarcation of the CAZ shall be communicated by the competent person in a recognized manner, either through signs and painted lines, wires, tapes, ropes or chains. The minimum depth of a CAZ shall be at least 6 feet.

(Your company name here) shall take the following steps to ensure that the CAZ is clearly marked or controlled by the competent person in that:

1. All access to the CAZ must be restricted to authorized entrants,
2. All workers who are permitted in the CAZ shall be listed in the appropriate sections of the Plan (or be visibly identifiable by the competent person) prior to implementation,
3. The competent person shall ensure that all protective elements of the CAZ be implemented prior to the beginning of work, and
4. A safety monitor, who remains outside the CAZ, shall instruct employees when they are not working in a safe manner.

Removal of roof trusses/rafters, exterior wall erection, roof sheathing, floor sheathing and joist/truss activities will be conducted by employees who are specifically trained to do this type of work and are trained to recognize the fall hazards. The nature of such work normally exposes the employee to the fall hazard for a short period of time. This Plan details how *(Your company name here)* will minimize these hazards.

Removal Procedures for Roof Truss and Rafters

During the removal of roof trusses/rafters, conventional fall protection may present a greater hazard to workers. On this job, safety nets, guardrails and personal fall arrest systems will not provide adequate fall protection because the nets will cause the walls to collapse, while there are no suitable attachment or anchorage points for guardrails or personal fall arrest systems.

All workers will ensure that they have secure footing before they attempt to walk on the sheathing, including cleaning shoes/boots of mud or other slip hazards.

(Your company name here) shall take the following steps to protect workers who are exposed to fall hazards while removing roof sheathing:

1. Once roof sheathing removal begins, workers not involved in that activity shall not stand or walk below or adjacent to the roof opening or exterior walls in any area where they could be struck by falling objects,
2. The competent person shall determine the limits of this area, which shall be clearly communicated to workers prior to removal of the first piece of roof sheathing, and
3. The competent person may order work on the roof to be suspended for brief periods as necessary to allow other workers to pass through such areas when this would not create a greater hazard.

When wet weather (rain, snow, or sleet) are present, roof sheathing removal operations shall be suspended unless safe footing can be assured for those workers removing sheathing.

When strong winds (above 40 miles per hour) are present, roof sheathing removal operations are to be suspended unless wind breakers are erected.

Removal of Floor Joists and Sheathing

During the removal of floor sheathing/joists, the following steps shall be taken to protect workers:

1. Only designated trained workers will be allowed to remove floor joists or sheathing,
2. No employee shall be allowed to walk on floor joists, and
3. Any workers not assisting in the removal operations shall not be permitted within six feet of the removal operations.

Removal of Exterior Walls

During the demolition of exterior walls, employers shall take the following steps to protect workers:

1. Scaffolds or aerial lifts shall be used to the extent feasible to remove exterior walls. and
2. Only designated trained workers will be allowed to remove exterior walls.

III. Enforcement

Constant awareness of and respect for fall hazards, and compliance with all safety rules are considered conditions of employment. The crew supervisor or foreman, as well as the Contractor's Safety Representative, reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this program.

IV. Accident Investigations

All accidents that result in injury to workers, regardless of their nature, shall be investigated and reported. It is an integral part of any Contractor Safety Plan that documentation takes place as soon as possible so that the cause and means of prevention can be identified to prevent a reoccurrence.

In the event that an employee falls or there is some other related, serious incident occurring, this plan shall be reviewed to determine if additional practices, procedures,

or training need to be implemented to prevent similar types of falls or incidents from occurring.

V. Changes to Plan

Any changes to the plan will be approved by (name of the qualified person). This plan shall be reviewed by a qualified person as the job progresses to determine if additional practices, procedures or training needs to be implemented by the competent person to improve or provide additional fall protection. Workers shall be notified and trained, if necessary, in the new procedures. A copy of this plan and all approved changes shall be maintained at the jobsite.

SECTION 8

LADDER SAFETY REQUIREMENTS

The Contractor's Safety Representative and Subcontractor's Safety Representative are responsible for making sure that all ladders in use are in adequate condition for use and that employees are properly using them.

PORTABLE LADDERS

All portable ladders to be used on site by employees are to be constructed according to ANSI specifications in order to insure safety under normal conditions of usage.

For portable wood ladders, all wood parts are to be:

1. Free from sharp edges and splinters;
2. Not painted (only company ID marking on side rail is permitted); and
3. Visually inspected to ensure that the ladder is free of shake, wane, compression failures, decay, or other irregularities.

WORK PRACTICES

1. When ascending or descending, the employee must face the ladder.
2. Employees must always work facing the ladder.
3. Employees may not straddle a stepladder to perform work.
4. Employees shall not climb with materials in their hands. A handline should be used to raise or lower tools or materials.
5. Employees must get down off the ladder to move it.
6. Portable rung and cleat ladders will be used at such an angle that the horizontal distance from the top support to the foot of the ladder is one-quarter of the working length of the ladder (the length along the ladder between the foot and the top support).
7. The ladder will be so placed as to prevent slipping, or it will be lashed, or held in position. The ladder base section must be placed on a secure footing.
8. Employees will equip all portable rung ladders with non-slip bases when there is a hazard of slipping. However, non-slip bases are not intended as a substitute for care in safely placing, lashing, or holding a ladder that is being used on oily, metal, concrete, or slippery surfaces.
9. The top of the ladder must be placed with the two rails supported, unless equipped with a single support attachment.

10. On two-section extension ladders, the minimum overlap for the two sections in use will be according to OSHA specifications.
11. Two-section extension ladder shall not be taken apart and used separately.
12. Portable rung ladders with reinforced rails will be used only with the metal reinforcement on the under side.
13. The bracing on the back legs of stepladders is designed solely for increasing stability and not for climbing.
14. Ladders will not be:
 - a. Used in a horizontal position as platforms, runways, or scaffolds.
 - b. Placed in front of doors opening toward the ladder unless the door is blocked open, locked, or guarded.
 - c. Placed on boxes, barrels, or other unstable bases to obtain additional height.
 - d. Tied or fastened together to provide longer sections. They must be equipped with the hardware fittings necessary if the manufacturer endorses extended uses.
 - e. Used to gain access to a roof or landing unless the top of the ladder extends at least 3 feet above the point of support, at eave, gutter, roofline, or landing.
 - f. Used as a brace, skid, guy or gin pole, gangway, or for other uses than that for which they were intended, unless specifically recommended for use by the manufacturer.
15. Ladders for which dimensions are specified should not be used by more than one person at a time nor with ladder jacks and scaffold planks where use by more than one person is anticipated. In such cases, specially designed ladders with larger dimensions of the parts should be procured from their immediate supervisor.
16. Ladders with broken or missing steps, rungs, or cleats, broken side rails, or other faulty equipment must not be used. Employees finding ladders with any of these conditions must report them to their immediate supervisor. Improvised repairs may not be made.
17. Ladders made by fastening cleats across a single rail will not be used.
18. The top and top step of ordinary stepladders will not be used as steps.
19. No aluminum ladders are permitted on this site.
20. Ladders shall be Type IA (300 pound rated) or greater.
21. No job-made wooden ladders are permitted on job sites.

INSPECTION AND MAINTENANCE

1. Ladders will be inspected daily prior to use by the person using the ladder to ensure safety and serviceability.
2. Ladders will be maintained in good usable condition at all times.
3. The joint between the steps and side rails must be kept tight, all hardware and fittings securely attached, and the movable parts must operate freely without binding or undue play.
4. Metal bearings of locks, wheels, pulleys, etc., will be frequently lubricated.
5. Frayed or badly worn rope will be replaced.
6. Safety feet and other auxiliary equipment will be kept in good condition to insure proper performance.
7. Ladders, which have developed defects, will be taken out of service for repair or destruction and tagged or marked as Dangerous Do Not Use.
8. If ladders tip over, the Subcontractor Safety Representative will:
 - a. Inspect the ladder for side rails dents or bends, or excessively dented rungs;
 - b. Check all rung-to-side-rail connections;
 - c. Check hardware connections; and
 - d. Check rivets for shear.
9. If ladders are exposed to oil and grease, equipment will be cleaned and kept free of oil, grease, or slippery materials.

TRAINING

For all employees who work on ladders, training shall be provided by their employer. Elements included in the training program include the safe work practices and other requirements of this written plan. Documentation of this training shall be available upon request.

Each subcontractor is responsible for making sure that their employees have received proper training for the type of ladder(s) being used. Note that safety requirements of job-made wooden ladders shall be per ANSI A14.4.

SECTION 9 SCAFFOLDING SAFETY REQUIREMENTS

GENERAL REQUIREMENTS

The scaffolding requirements contained within this program are general in nature. All scaffolding used on this project shall be erected, used, maintained, and dismantled in accordance with requirements of the CFR Part 1926 Subpart L - Scaffolding.

SCAFFOLDING REQUIREMENTS

1. The footings and anchorage for scaffold 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. A safe means of access to and egress from the work level must be provided. Ladders used for access/egress must be secured at top and bottom. Ladder frame scaffolds must not be offset or used with other scaffold frames. Rung spacing on ladder frame scaffolds must not exceed 16-3/4 inches from top of rung to top of rung.
3. No scaffold shall be erected, moved, dismantled, or altered except under the supervision of a competent person. A competent person shall inspect the scaffolding daily prior to usage and as it is moved to assure it is setup properly. The Contractor's Safety Representative shall observe the scaffolding as it is being erected or moved in order to verify that it is being properly erected.
4. Any scaffold including accessories such as braces, brackets, trusses, screw legs, ladders, etc. damaged or weakened from any cause shall be immediately repaired or replaced. It should be stressed to the Competent Person of the Subcontractor erecting the scaffolding during the Pre-Construction Meeting to inspect the accessories before they are erected. Finding a damaged section before it is erected will save time and money.
5. All load-carrying timber members of scaffold framing shall be a minimum of 1,500 fiber (Stress Grade) construction grade lumber. All dimensions are nominal sizes as provided in the American Lumber Standards, except that where rough sizes are noted, only rough or undressed lumber of the size specified will satisfy minimum requirements. All planking shall be Scaffold Grades, or equivalent, as recognized by approved grading rules for the species of wood used.
6. All planking of platforms shall be overlapped (minimum 12 inches), or secured from movement.

7. All scaffolds shall be erected plumb. The poles, legs, or uprights of scaffolds shall be plumb, and securely and rigidly braced to prevent swaying and displacement. The competent person should check to ensure that the scaffold remains plumb as part of the daily scaffold inspections. Any change due to settling or displacement must be corrected immediately and prior to use.
8. Scaffolds and their components shall be capable of supporting without failure at least four times their maximum intended load. This intended load shall not be exceeded. OSHA 1926 Subpart L of the OSHA Standard contains information on minimum sizes of the various scaffold components based on light, medium and heavy-duty use.
9. **Guardrails and toeboards shall be securely installed on all open sides and ends of platforms more than six (6) feet above the ground or floor. Guardrails shall be 2 x 4 inches, or the equivalent, approximately 42 inches high, with a midrail at approximately 21 inches. Supports shall be at intervals not to exceed 8 feet. Toeboards shall be a minimum of 4 inches (nominal) in height.**
10. Where persons are required to work or pass under or adjacent to the scaffolds, scaffolds shall be provided with a screen (or the equivalent) between the toeboard and the guardrail, extending along the entire opening.
11. Scaffolds shall be tied into the structure, guyed or have outriggers whenever their height exceeds four (4) times the minimum base dimension, and/or their length exceeds twenty (20) feet.
12. Personnel are not permitted to ride on mobile scaffolds. Equipment or material on the scaffold deck must either be removed or secured when scaffolds are moved.
13. Mobile scaffolds must only be used on smooth, level surfaces; otherwise the wheels shall be contained in wooden or iron channels which are level and stabilized.
14. No rigging from scaffold members is permitted unless catheads or well wheels designed for such use are utilized and the scaffold is braced or counterweighted to account for the increased load forces. Whenever such systems are used, the personnel performing the work shall ensure that no personnel are exposed to falling material or equipment.
15. Overhead protection shall be provided for personnel on a scaffold exposed to overhead hazards. A competent person shall review any overhead exposures before scaffolding is erected.
16. Slippery conditions on scaffolds shall be eliminated as soon as possible after they occur. If personnel are working with a slippery material that could spill on the scaffold, an absorbent material should be available in the area to immediately correct the problem.

17. The use of shore or lean-to scaffolds is prohibited.
18. Materials being hoisted onto a scaffold shall have a tag line.
19. Employees shall not work on scaffolds during storms or high winds.

AERIAL LIFTS

Aerial lifts shall be used per 29 CFR 1926.453. All manufacturer operation and maintenance specifications also apply. Any employee operating an aerial lift must be trained in the safe operation of the aerial lift. Training documentation must be maintained.

TRAINING REQUIREMENTS

1. All employees using scaffolding shall be trained by their employer in order to recognize the hazards associated with the type of scaffold being used.
2. All employees shall be trained on electrical hazards and falling object hazards.
3. All employees shall be trained on proper handling of materials on scaffolding.
4. All employees should know the maximum intended load and the load-carrying capacities of the scaffolds used.
5. Employees erecting and disassembling scaffolding shall be trained to recognize hazards for this type of work.
6. Retraining shall be performed per 29 CFR 1926.454(c)(1-3).

SECTION 10 TRENCHING/EXCAVATION REQUIREMENTS

DEFINITIONS

Aluminum hydraulic shoring means an engineered shoring system comprised of aluminum hydraulic cylinders (cross braces), used in conjunction with vertical rails (uprights) or horizontal rails (walers). Such a system is designed specifically to support the sidewalls of an excavation and prevent cave-ins.

Benching means a method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

Cave-in means the separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.

Competent Person means one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. A competent person should have and be able to demonstrate the following:

1. Training, experience, and knowledge of:
 - soil analysis,
 - use of protective systems, and
 - requirements of 29 CFR 1926 Subpart P.
2. Ability to detect:
 - conditions that could result in cave-ins,
 - failures in protective systems,
 - hazardous atmospheres, and
 - other hazards including those associated with confined spaces.
3. Authority to take prompt corrective measures to eliminate existing and predictable hazards and to stop work when required.

Excavation means any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

Registered Professional Engineer means a person who is registered as a professional engineer.

Shield (shield system) means a structure that is able to withstand the forces imposed on it by a cave-in and thereby protect employees with the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses. Also known as trench box or trench shield.

Shoring (shoring system) means a structure such as a metal hydraulic, mechanical or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.

Sloping (sloping system) means a method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation so as to prevent cave-ins. The angle of incline varies with differences in such factors as the soil type, environmental conditions of exposure, and application of surcharge loads.

Trench (trench excavation) means a narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet or less, the excavation is also considered to be a trench.

GENERAL REQUIREMENTS

All excavations shall be made in accordance with the rules, regulations, requirements, and guidelines set forth in 29 CFR 1926.650, .651, and .652; the Occupational Safety and Health Administration's standard on Excavations, except where otherwise noted below.

PROCEDURES

A [competent person](#) shall be placed in charge of all excavations. Underground utilities must be located and marked before excavation begins.

Employees are not allowed in the excavation while heavy equipment is digging.

INSPECTIONS

The [competent person](#) shall conduct inspections:

1. Daily and before the start of each shift.
2. As dictated by the work being done in the trench.
3. After every rainstorm.
4. After other events that could increase hazards, such as snowstorm, windstorm, thaw, earthquake, dramatic change in weather, etc.
5. When fissures, tension cracks, sloughing, undercutting, water seepage, bulging at the bottom, or other similar conditions occur.
6. When there is a change in the size, location, or placement of the spoil pile.

7. When there is any indication of change or movement in adjacent structures.

SOIL TYPES

All soil on the NTI projects will be classified as Type C unless a competent person can document that it is Type A or Type B.

Type A - Most stable: clay, silty clay, and hardpan (resists penetration). No soil is Type A if it is fissured, is subject to vibration of any type, has previously been disturbed, or has seeping water.

Type B - Medium stability: silt, sandy loam, medium clay and unstable dry rock; previously disturbed soils unless otherwise classified as Type C; soils that meet the requirements of Type A soil but are fissured or subject to vibration.

Type C - Least stable: gravel, loamy sand, soft clay, submerged soil or dense, heavy unstable rock, and soil from which water is freely seeping.

[Layered geological strata](#) (where soils are configured in layers) - The soil must be classified on the basis of the soil classification of the weakest soil layer. Each layer may be classified individually if a more stable layer lies below a less stable layer, i.e. where a Type C soil rests on top of stable rock.

TESTING METHODS

The [competent person](#) in charge of the excavation shall be responsible for determining whether the soil is Type B or C. The competent person shall use a visual test coupled with one or more manual tests.

Visual test

The [competent person](#) should perform a visual test to evaluate the conditions around the site. In a visual test, the entire excavation site is observed, including the area adjacent to the excavation and the soil being excavated. The competent person also checks for any signs of vibration.

During the visual test, the competent person should check for crack-line openings along the failure zone that would indicate tension cracks, look for existing utilities that indicate that the soil has been previously disturbed, and observe the open side of the excavation for indications of layered geologic structuring.

This person should also look for signs of bulging, boiling, or sloughing, as well as for signs of surface water seeping from the sides of the excavation or from the water table.

In addition, the area adjacent to the excavation should be checked for signs of foundations or other intrusions into the failure zone, and the evaluator should check for surcharging and the spoil distance from the edge of the excavation.

Manual Tests

Thumb Penetration Test - Attempt to press the thumb firmly into the soil in question. If the thumb penetrates no further than the length of the nail, it is probably Type B soil. If the thumb penetrates the full length of the thumb, it is Type C. It should be noted that the thumb penetration test is the least accurate testing method.

Dry Strength Test - Take a sample of dry soil. If it crumbles freely or with moderate pressure into individual grains it is considered granular (Type C). Dry soil that falls into clumps that subsequently break into smaller clumps (and the smaller clumps can only be broken with difficulty) it is probably clay in combination with gravel, sand, or silt (Type B).

Plasticity or Wet Thread Test - Take a moist sample of the soil. Mold it into a ball and then attempt to roll it into a thin thread approximately 1/8 inch in diameter by two inches in length. If the soil sample does not break when held by one end, it might be considered Type B.

SPOIL

Temporary spoil shall be placed no closer than two feet from the surface edge of the excavation, measured from the nearest base of the spoil to the cut. This distance should not be measured from the crown of the spoil deposit. This distance requirement ensures that loose rock or soil from the temporary spoil will not fall on employees in the trench.

Spoil should be placed so that it channels rainwater and other run-off water away from the excavation. Spoil should be placed so that it cannot accidentally run, slide, or fall back into the excavation.

Permanent spoil should be placed some distance from the excavation.

SURFACE CROSSING of TRENCHES

Surface crossing of trenches should not be made unless absolutely necessary. However, if necessary, it is only permitted under the following conditions:

1. Vehicle crossings must be designed by and installed under the supervision of a registered professional engineer.
2. Walkways or bridges must have a minimum clear width of 20 inches, be fitted with standard guardrails, and extend a minimum of 24 inches past the surface edge of the trench.

INGRESS and EGRESS

Trenches 4 feet or more in depth shall be provided with a fixed means of egress.

Spacing between ladders or other means of egress must be such that a worker will not have to travel more than 25 feet laterally to the nearest means of egress.

Ladders must be secured and extend a minimum of 36 inches above the landing.

EXPOSURE to VEHICLES

Employees exposed to vehicular traffic shall be provided with and required to wear reflective vests or other suitable garments marked with or made of reflectorized or high-visibility materials.

Trained flag persons, signs, signals, and barricades shall be used, when necessary.

EXPOSURE to FALLING LOADS

All employees on an excavation site must wear hard hats.

Employees are not allowed to work under raised loads.

Employees are not allowed to work under loads being lifted or moved by heavy equipment used for digging or lifting.

Employees are required to stand away from equipment that is being loaded or unloaded to avoid being struck by falling materials or spillage.

Equipment operators or truck drivers may remain in their equipment during loading and unloading if the equipment is properly equipped with a cab shield or adequate canopy.

The following steps should be taken to prevent vehicles from accidentally falling into the trench:

1. Barricades must be installed where necessary,
2. Hand or mechanical signals must be used as required,
3. Stop logs must be installed if there is danger of vehicles falling into the trench.
3. Soil should be graded away from the excavation; this will assist in vehicle control and channeling of run-off water.
4. Trenches left open overnight shall be fenced and barricaded.

HAZARDOUS ATMOSPHERE and CONFINED SPACES

Employees shall not be permitted to work in hazardous and/or toxic atmospheres. Such atmospheres include those with:

1. Less than 19.5% oxygen,
2. A combustible gas concentration greater than 10% of the lower flammable limit, and
3. Concentrations of hazardous substance that exceed those specified in the Threshold Limit Values for airborne contaminants established by the ACGIH.

All operations involving such atmospheres must be conducted in accordance with OSHA requirements for occupational health and environmental controls for personal protective equipment and for lifesaving equipment. Engineering controls (such as ventilation) and respiratory equipment may be required.

If there is any possibility that the trench or excavation could contain a hazardous atmosphere, atmospheric testing must be conducted prior to entry. Conditions that might warrant atmospheric testing would be if the excavation was made in a landfill area or if the excavation was crossed by, was adjacent to or contained pipelines containing a hazardous material (e.g., natural gas lines).

Testing shall be conducted before employees enter the trench and should be continuous to ensure that the trench remains safe while any work is taking place in it.

Employees required to wear respiratory protection must be trained, fit-tested, and enrolled in a respiratory protection program.

Some trenches qualify as confined spaces. When this occurs, compliance with the Confined Space Program is also required.

BENCHING, SLOPING, SHORING, and SHIELDING REQUIREMENTS

All excavations or trenches 5 feet or greater in depth shall be appropriately benched, shored, or sloped according to the procedures and requirements set forth in OSHA's Excavation standard, 29 CFR 1926.650, .651, and .652.

Excavations or trenches 20 feet deep or greater must have a protective system designed by a registered professional engineer.

Excavations under the base of footing of a foundation or wall require a support system designed by a registered professional engineer.

Sidewalks and pavement shall not be undermined unless a support system or another method of protection is provided to protect employees from their possible collapse.

SLOPING

Maximum allowable slopes for excavations less than 20' based on soil type and angle to the horizontal are as follows:

| Soil Type | Height/depth ratio | Slope angle |
|------------------|---------------------------|--------------------|
| 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 |

A 10-foot-deep trench in Type B soil would have to be sloped to a 45-degree angle, or sloped 10 feet back in both directions. Total distance across a 10-foot-deep trench would be 20 feet, plus the width of the bottom of the trench itself. In Type C soil, the trench would be sloped at a 34-degree angle, or 15 feet back in both directions for at least 30 feet across, plus the width of the bottom of the trench itself.

BENCHING

There are two basic types of benching, [single](#) and [multiple](#), which can be used in conjunction with sloping.

In Type B soil, the vertical height of the benches must not exceed 4 feet. Benches must be below the maximum allowable slope for that soil type. In other words, a 10-foot deep trench in Type B soil must be benched back 10 feet in each direction, with the maximum of a 45-degree angle. Benching is not allowed in Type C soil.

SHORING

Shoring or shielding is used when the location or depth of the cut makes sloping back to the maximum allowable slope impractical. There are two basic types of shoring, timber and [aluminum hydraulic](#).

Hydraulic shoring provides a critical safety advantage over timber shoring because workers do not have to enter the trench to install it. It is light enough to be installed by one worker; they are gauge-regulated to ensure even distribution of pressure along the trench line; and they can be adapted easily to various trench depths and widths. However, if timber shoring is used, it must meet the requirements of 29 CFR 1926.650, .651, and .652.

All shoring shall be installed from the top down and removed from the bottom up. Hydraulic shoring shall be checked at least once per shift for leaking hoses and/or cylinders, broken connections, cracked nipples, bent bases, and any other damaged or defective parts.

The top cylinder of hydraulic shoring shall be no more than 18 inches below the top of the excavation. The bottom of the cylinder shall be no higher than four feet from the bottom of the excavation. (Two feet of trench wall may be exposed beneath the bottom of the rail or plywood sheeting, if used.)

Three vertical shores, evenly spaced, must be used to form a system.

Wales are installed no more than two feet from the top, no more than four feet from the bottom, and no more than four feet apart, vertically.

Hydraulic shores must be installed in accordance with OSHA Standards in soil Type B.

Hydraulic shores must be installed with sheeting in accordance with OSHA Standards in Type C soil.

SHIELDING

Trench boxes are different from shoring because, instead of shoring up or otherwise supporting the trench face, they are intended primarily to protect workers from cave-ins and similar incidents.

The excavated area between the outside of the trench box and the face of the trench should be as small as possible. The space between the trench box and the excavation side must be backfilled to prevent lateral movement of the box. Shields may not be subjected to loads exceeding those which the system was designed to withstand.

Trench boxes are generally used in open areas, but they also may be used in combination with sloping and benching. The box must extend at least 18 inches above the surrounding area if there is sloping toward the excavation. This can be accomplished by providing a benched area adjacent to the box.

The manufacturer must approve any modifications to the shields.

Shields may ride two feet above the bottom of an excavation, provided they are calculated to support the full depth of the excavation and there is no caving under or behind the shield.

Workers must enter and leave the shield in a protected manner, such as by a ladder or ramp. Workers may not remain in the shield while it is being moved.

SECTION 11 CONFINED SPACE ENTRY PROCEDURES

All confined spaces on the Neighborhood Transformation Initiative OCIP Projects shall be considered "Permit Required". The Contractor performing the confined space entry shall submit an exposure specific Confined Space Entry Procedure in writing as part of their Contractor Safety Plan if they expect to encounter confined spaces as part of their work.

The following general principles apply to all confined spaces on the Neighborhood Transformation Initiative OCIP:

1. Whenever personnel must enter or perform work in a confined space, the precautions and procedures of this section must be adhered to. For the purpose of this section, confined spaces are defined as enclosed areas that restrict the access or egress of personnel, are not intended for continuous occupancy, and lack natural ventilation. Such areas include, but are not limited to vessels and tanks, manholes, meter pits, electrical vaults, silos, and hydraulic pits.
2. Consideration must be given to major recognized hazards:
 - a. Fire or explosion, due to the accumulation of gases, mists, fumes or dusts
 - b. Personal injury, impairment and death due to exposures to noxious or toxic gases as a result of inhalation or absorption through the skin
 - c. Suffocation due to lack of oxygen
3. All activities involving work in confined spaces shall be reviewed with the Contractor's Safety Representative prior to their commencement.
4. The responsibility for the recognition and avoidance of all hazards and provision of all necessary safety equipment is passed to the Contractor performing the work.
5. All employees who must work on, in or enter a confined space must receive special hazard training by their employers as to:
 - a. Personal protective equipment requirements and their proper use
 - b. Instruction as to the specific hazard(s) of the work to be performed
 - c. Means and methods of access and egress
 - d. Rescue and emergency procedures
6. Forced mechanical ventilation of the confined space must be provided prior to and during operations to remove harmful vapors, mists and dusts, and/or to provide an adequate supply of breathable air. The method and equipment to provide this ventilation to the confined space shall be the responsibility of the Contractor/Subcontractor.

7. The atmosphere in a confined space shall be surveyed for oxygen and combustible gas prior to the performance of any work. The air monitoring should be continuous for the entire time that employees are working in a confined space. Where a potentially hazardous atmosphere is noted or suspected, special procedures for this work should be developed. This shall be addressed prior to the commencement of work, based upon conditions at the beginning of work or as conditions within the confined space change. All personnel involved in confined space entry shall be instructed as to the atmospheric testing requirements.
8. The permit (or an equivalent permit) at the end of this section is required for all confined space entries. The Contractor's Safety Representative will issue the permit after verifying that the Subcontractor has followed all regulations pertaining to a confined space entry. The Contractor/Subcontractor is required to fill out the permit, post it at the entrance to the work area, and maintain a copy on file. The Contractor/Subcontractor may be audited to verify permit system is being followed and therefore must maintain records. The Contractor's Safety Representative shall also verify emergency rescue procedures with the Subcontractor prior to any confined space entry.
9. Contractor's Safety Representative shall also review emergency rescue procedures with the subcontractor prior to any confined space entry. A "buddy system" shall be utilized whenever personnel enter a confined space. This requires that a properly trained employee of the Contractor/Subcontractor performing the work remain outside of the confined space, maintain constant visual or verbal contact with the employee(s) inside the confined space, and attend the lifeline of any employee inside the space. This employee may occasionally pass tools but must not have any other job which would require him to take his attention from the employee(s) working in the confined space. He must never leave his post unless properly relieved.
10. In remote areas, or where assistance is not immediately available, two-way radios for the purpose of notifying rescue personnel are required and shall be provided by the Contractor/Subcontractor unless other provisions are made in writing.
11. If a change to conditions within or surrounding the confined space is noted (such as spills, leakage, or the introduction of solvents, toxic or flammable materials), work in the confined space shall cease at once. All equipment in use shall be shut off and all personnel shall exit the confined space. Re-entry is prohibited until a thorough survey of the area and the confined space is conducted by the Contractor/Subcontractor.

CONFINED SPACE ENTRY PERMIT

| | | | | | |
|---|-----|----|--|-----|----|
| Contractor/Subcontractor: | | | Project Name: | | |
| Location of Confined Space: | | | Date/Time: | | |
| Purpose of Entry: | | | Duration: | | |
| Authorized By: | | | Expires On: | | |
| Attendant(s): | | | | | |
| Authorized Entrants (list others on the back of the form) | | | | | |
| Measures for Isolating & Equipment | Yes | No | Measures for Isolating & Equipment | Yes | No |
| Lockout/Tagout Equipment | | | Self-Contained Breathing Apparatus (SCBA) | | |
| Line(s) Broken, Capped, Blanked | | | Air-Line Respirators | | |
| Purge- Flush & Vent | | | Air Purifying Respirators | | |
| Ventilation | | | Resuscitator/ Inhaler | | |
| Secure Area (Post and Flag) | | | Communications Equipment | | |
| Full Body Harness | | | Protective Clothing | | |
| Tripod Emergency Escape Unit | | | Head/Eye/Hearing Protection (Circle Types) | | |
| Lifelines | | | Hot Work Permit Required | | |
| Fire Extinguishers | | | | | |
| Lighting (Explosion-Proof) | | | | | |

Atmosphere Monitoring

| Test(s) To Be Taken | Yes | No | Acceptable Entry Conditions (Circle Appropriate Level) | | | Test Date: | 1 Date | 2 Date | 3 Date | 4 Date |
|---------------------|-----|----|--|---------------|-------|------------------|--------|--------|--------|--------|
| | | | TLV | PEL | OTHER | | | | | |
| | | | | | | 9/28 8:45 a.m | __m | __m. | __m | __m |
| Oxygen | | | 19.5 - 23.5% | | | | | | | |
| Combustible Gas | | | Below 10% LEL | | | | | | | |
| Carbon Monoxide | | | 0 - 25 PPM | 0 - 50 PPM | | | | | | |
| Hydrogen Sulfide | | | 0 - 10 PPM | 0 - 10 PPM | | | | | | |
| Hydrogen Cyanide | | | 0 - 10 PPM | 0 - 10 PPM | | | | | | |
| Sulfur Dioxide | | | 0 - 2 PPM | 0 - 5 PPM | | | | | | |
| Ammonia | | | 0 - 25 PPM | 0 - 50 PPM | | | | | | |

Individual Conducting Test (name): _____

Standby Person(s): _____

For Rescue & Emergency Services Call: _____

Signature of the Entry Supervisor: _____

SECTION 12 ELECTRICAL SAFETY REQUIREMENTS

The responsibility for the safe use of all portable electric power tools and equipment, extension cords, and secondary leads on welding equipment shall be considered within the scope of each Contractor/Subcontractor using such equipment. This responsibility shall be construed to include the inspection, maintenance and repair of cords and power tools.

GROUNDING

1. Effective Grounding Defined: The path from circuits, structures, conduits, or enclosures to ground shall be permanent and continuous; have ample capacity to safely conduct the current likely to be imposed; have an impedance sufficiently low to limit the potential above ground, and to result in the operation of the over current devices in the circuit.

2. Portable and/or Cord & Plug Connected Equipment:
 - a. The exposed metal parts of portable and/or plug connected equipment shall be grounded.

 - b. Portable tools and appliances protected by an approved system of double insulation, or its equivalent, need not be grounded. Where such an approved system is employed, they shall be distinctively marked and properly maintained.

 - c. Extension cords used with portable electric tools and appliances shall be of the three-wire type and rated for heavy duty or extra heavy duty use.

 - d. All 120 volt, 15 & 20 amp female outlets on the site which are part of the temporary power distribution system shall be protected by a ground fault circuit interrupter. The use of permanent 120 volt, 15 & 20 amp outlets is permitted as long as they are GFCI protected or if a portable GFCI device is used. All temporary electric GFCI receptacles on site shall be tested monthly by the electrical contractor. A log of these tests shall be maintained and made available upon request.

Operations that require a Ground Fault Circuit Interrupter (GFCI) or an Assured Equipment Grounding Program in accordance with the OSHA 1926 Construction Safety and Health Standards, will use GFCIs and not the Assured Equipment Grounding Program option.

3. Inspection of cords and power tools: The Neighborhood Transformation Initiative OCIP will require all electrical receptacles on site to be under GFCI protection. However, each subcontractor shall comply with the following minimum requirements for every 120-volt, 15 & 20 amp tool appliance or extension cord.

- a. Each cord set, attachment cap, plug and receptacle of cord sets; and any equipment connected by cord and plug, shall be visually inspected before each day's use for external defects, such as deformed or missing pins or insulation damage. Equipment found damaged or defective shall be immediately removed from service until it is repaired or replaced.
 - b. The Contractor/Subcontractor shall not make available nor permit the use by employees of any equipment, which is not in adequate condition.
 - c. Defective or damaged extension cords, tools, etc. shall be removed from the work area immediately.
4. Contractor/Subcontractor shall be aware of and comply with OSHA regulations in regard to working near energized overhead power lines.
 5. Mechanical Equipment (Including Aerial Lifts) -Except where electrical distribution and transmission lines have been de-energized and visibly grounded at point of work or where insulating barriers, not a part of or an attachment to the equipment or machinery, have been erected to prevent physical contact with the lines, the following rules shall apply:
 - For lines rated 50 kV. or below, minimum clearance between the lines and any part equipment, machinery, or load shall be 10 feet.
 6. Scaffolds - Scaffolds shall not be erected, used, dismantled, altered, or moved such that they or any conductive material handled on them may come no closer than 3 feet to insulated energized power lines of less than 300 volts. Scaffolds shall not be erected, used, dismantled, altered, or moved such that they or any conductive material handled on them may come no closer than 10 feet to energized power lines of less than 50,000 volts. As a general rule, overhead power lines are covered but not insulated. The covering on the power lines is not considered to be insulation. Therefore, unless the utility that owns or leases the lines indicates otherwise, all overhead lines shall be considered to be uninsulated.
 7. Employee Exposure to Electrical Shock - No employee may work in such proximity to any part of an electric power circuit that the employee could contact the electric power circuit in the course of work, unless the employee is protected against electric shock by de-energizing the circuit and grounding it or by guarding it effectively by insulation or other means.

SECTION 13 HAZARD COMMUNICATION

The Occupational Safety and Health Administration (OSHA) requires that each employee potentially exposed to hazardous chemicals be advised of the potential hazards and how to guard against those hazards. Each Contractor/Subcontractor whose employees are potentially exposed to hazardous chemicals must develop a list of all such chemicals used on the project, obtain a Material Safety Data Sheet (MSDS) for each material, develop a labeling system for all materials, and train all potentially exposed personnel on the hazards and controls for all listed compounds. These steps are outlined in detail in the following material. Initial employee training for this requirement will be documented and acknowledged by signatures after the site safety orientation. Toolbox talks will be used to train employees if any new materials are introduced into the work area.

1. Material Safety Data Sheet (MSDS)

Every Contractor/Subcontractor will be responsible for development and maintenance of a list of hazardous chemicals utilized within the project operations and will be further responsible for obtaining and maintaining a MSDS for all such hazardous chemicals. Employees will be allowed access to this information and the specific MSDS for chemicals utilized in their work areas. All questions relating to the program should be directed to the Contractor's Contractor's Safety Representative or the Safety Representative. A copy of all MSDSs and the chemical inventory list (in a three-ring binder) will be delivered to the Contractor prior to starting work. The Contractor will maintain the binders supplied in their office area for the duration of the project. No hazardous chemical shall be on site without a MSDS sheet.

2. Employee Information and Training

All new and present employees will be given information regarding the requirements of the Hazard Communication Program, the hazardous chemicals present in their work place, and the physical and health risks of these chemicals. This requirement may be met through orientation sessions for new employees and refreshers for all during toolbox talks. The information and training will also include the following elements:

- a. The symptoms of overexposure to the chemicals.
- b. How to determine the hazardous presence or release of a chemical in the work place.
- c. Methods to reduce or prevent the exposure to hazardous chemicals, such as control procedures, work practices, or personal protective equipment.

- d. Procedures to follow in the event of an exposure to hazardous chemicals. The location of the log containing the MSDSs which apply to their work place and the location of the written Hazard Communication Program.
- e. How to review a MSDS to obtain the hazard information for the chemical, and how to read the labels, which are required on the chemical containers, will be reviewed. When a new chemical is obtained for use, each employee who could be exposed will be given the information and training as described above. The MSDS for all chemicals used on site will be available to all employees during each work shift and can be obtained through their employer or the Contractor. Employees also have a right to receive a copy of any MSDS requested. This copy must be supplied to the employee within five working days.
- f. Proper disposal procedures of waste materials shall be enforced. Labeling of waste containers and disposal of all hazardous materials by a licensed disposal facility is required.

3. Container Labeling

All chemical containers at the site must be clearly labeled as to the contents, the hazards involved, and the name & address of the manufacturer. All secondary containers of hazardous chemicals are to be clearly labeled with the same information as the original container.

4. Hazardous Non-Routine Tasks and Nearby Work

In the event an employee is assigned to perform a hazardous task, non-routine to their work, or is assigned to work in an area involving exposure to hazardous chemicals, the employee will be given the additional information and training related to the hazardous chemicals which may be encountered in the non-routine task. The employees' foreman, superintendent, or Safety Representative will provide this information and training. The information will include the specific chemical hazards of the task, the controls and protective measures required, the types of personal protective equipment required, how to use the equipment, the nature of other work being performed in or near the non-routine task, and what emergency procedures are involved with the task.

5. Demolition

Contractor/Subcontractor shall stop the work if material reasonably believed to be asbestos, lead, Polychlorinated Biphenyl (PCB), or other hazardous material is encountered in the work area.

6. Chemicals in Unlabeled Pipes, Vessels, or Containers

To ensure that employees who work on unlabeled pipes, vessels, or containers have been informed as to the hazardous materials contained within, the following policy has been established.

Prior to starting work on unlabeled pipes, vessels or containers, employees are to contact their foreman for the following information:

- a. Type of chemical in the pipe, vessel or container.
- b. Potential hazards.
- c. Safety precautions which should be taken.

7. Audit and Review

It will be the responsibility of each Contractor/Subcontractor to review the entire Hazard Communication Program. It will also be the responsibility of the Contractor/Subcontractor to make sure the procedures in use meet the requirements as set forth in the MSDS.

SECTION 14 RESPIRATORY PROTECTION

GENERAL CONSIDERATIONS

Respiratory protective equipment may be used during intermittent emergency situations or when exposure cannot be controlled through engineering methods. Use of respiratory protective equipment should not be considered a substitute for long-term engineering controls. Equipment use does not eliminate the external hazard, and failure results in exposure. Respiratory protective equipment may become ineffective without warning. If respiratory protection must be used, it is important that the type of respirator used be correct, approved for the hazard involved, and that a complete respirator program be developed by the Contractor/Subcontractor. A copy of the written Respiratory Protection Program as well as medical and fit test documentation shall be forwarded to the Contractor's Safety Representative for record keeping purposes.

PROGRAM ELEMENTS

A complete respiratory program shall include the following components:

- Written Operating Procedures
- Proper Selection
- Training & Fitting
- Cleaning & Disinfecting
- Inspection & Maintenance
- Storage
- Work Area Surveillance
- Medical Examinations
- Program Evaluation

Each of these sections are discussed in OSHA's Respiratory Protection Standard, 1910.134.

WRITTEN OPERATING PROCEDURES

If employees use respiratory protection, the Contractor/Subcontractor shall establish a written operating procedure governing the selection and use of respirators. Possible emergency and routine uses of respirators should be anticipated and planned for. These procedures should address each respiratory protection program element and the general respirator use criteria listed below:

- Areas designated as requiring the use of respirators or areas in which respirators are offered to employees who want them;
- Type of respirator to be used in each area;

- Where and how respirators should be cleaned, stored, and how to obtain new parts.

PROPER SELECTION

Proper equipment selection is the single most important part of any respirator program. The equipment must fit the employee and the hazard. Approved equipment must always be used. An approved respirator is one that has been tested and found to meet minimum performance standards by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH). Approval is specific to each contaminant/hazard situation. For additional information on respirator selection, contact your safety equipment supplier or a safety/health professional knowledgeable in respiratory protection. OSHA requires that approved respirators be used if they are available. The statement “if they are available” does not refer to the employer’s work site but, instead, means available for purchase. If only one brand of respirator is approved for a particular hazard, then that brand is considered to be “available” and must be used. Mixing components of the different types or makes of respirators and/or using non-approved components nullifies the approval of a respirator. When air-supplied respirators are used, an appropriate breathing air supply (minimum Grade D) must be maintained. In evaluating a hazard for the purpose of respirator selection, it is usually necessary to obtain a close estimate of the airborne concentration of contaminants involved. This can, in many cases, be accomplished by the use of indicator tubes, direct reading instruments, or full-scale air sampling.

TRAINING

Adequate training is essential for employees to know the why, when, and how of using the respiratory protective equipment. Knowledge of how to check the equipment and what to do if equipment malfunctions or failure is detected is a must. Each person expected to wear a respirator should be given training that must include:

- A discussion of the airborne contaminants for which protection is desired.
- Reasons for using respirators.
- The construction, selection criteria, operating principles, and limitations of the respirator.
- Instructions on procedures for checking the condition of the respirator, including methods for securing and testing for a good face fit.
- Instruction, demonstration, and training in actual use of the equipment.
- Instructions on cleaning, inspection, storage, and maintenance of the respirators, if employees are expected to perform these activities.
- Instructions and field training in emergencies and what to do if equipment malfunctions.

FIT TESTING

To be effective, the respirator face piece must fit properly. Individual facial structure, facial deformities, or excessive facial hair may interfere with or affect the proper fit of

respirators. Therefore, some type of fit testing must be performed on all employees who wear negative-pressure respirators. The Subcontractor shall forward documentation of the Fit Test to the Contractor prior to being permitted to perform work on a site where respiratory protection will be used. Fit tests are not required on positive-pressure respirators. A fit test is an exercise in which a challenge agent is used to determine the effectiveness and, therefore, the “fit” of a respirator.

There are two types of fit tests:

Qualitative: An employee wearing the respirator selected is subjected to a challenge agent, such as irritant smoke, isoamyl acetate (banana oil), or saccharin while performing simple head movements and speaking. Detection of the agent by the employee indicates a poor fit.

Quantitative: Similar to qualitative except that the challenge agent concentration is controlled in a booth. Special respirators with a sample port are used by employees during the exercise. The concentration of agent inside the respirator is measured and compared to the concentration in the booth. A high concentration of agent inside the respirator indicates poor fit. Corn oil and dioctyl phthalate (DOP) are examples of quantitative fit test agents.

Qualitative fit tests are simple, quick, easy, and inexpensive, but they are subjective in that the employee tested must respond to the presence of the agent. Quantitative fit tests are accurate, objective in that the agent concentration inside the respirator is determined accurately, but they are time consuming, expensive, and special equipment is needed. Fit tests should be performed annually or more frequently, if required by regulation. Positive and negative pressure checks should be performed each time the respirator is used to ensure good fit. A negative pressure check is performed by covering the filter ports and inhaling – the face piece should collapse. A positive pressure check is performed by covering the exhalation port and exhaling – the face piece should expand.

CLEANING/INSPECTION/STORAGE

Reusable respirators should be cleaned and disinfected after each use. The procedure for cleaning and sanitizing respirators, as recommended by ANSI Z88.2- 1992, is as follows:

- Remove, when necessary, the filters, cartridges, canisters, speaking diaphragms, demand and pressure-demand valve assemblies, and any components recommended by the respirator manufacturer.
- Wash assemblies in warm (120°max.) cleaner/sanitizer solution. A stiff bristle (not wire) brush may be used to facilitate removal of dirt or other foreign material.
- Rinse assemblies in clean, warm water.
- Drain all water and air-dry the respirator assemblies.

- Clean and sanitize all reusable parts removed from respirator as recommended by the manufacturers.
- Hand wipe respirator assemblies, all parts, and all gasket and valve sealing surfaces with damp, lint-free cloth, as needed, to remove water residues and all foreign materials.
- Inspect parts and replace any that are defective.
- Reassemble parts on respirator.
- Attach new filters, cartridges, and canisters to respirator.
- Visually inspect and, where possible, test parts and respirator assemblies for proper function.
- Place assembled respirators in appropriate containers for storage.

Respirators should be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Routinely used respirators may be placed in plastic bags and should not be stored in such places as lockers or tool boxes unless they are in carrying cases or cartons. Respirators should be packed or stored so that the face piece and ex-halation valve will rest in a normal position and so that function will not be impaired by the elastomer sitting in an abnormal position. Equipment designated for emergency use should be inspected after each use, during cleaning, and at least monthly.

WORK AREA SURVEILLANCE

Many things such as changes in operation or process, implementation of engineering controls, temperature, and air movement can affect the concentration of the substance(s) that originally required the use of respirators. To determine the continued necessity of respiratory protection or need for additional protection, the employer shall measure the contaminant concentration whenever operation or process changes are made or detected. The employer is required to maintain a record of these measurements.

MEDICAL EVALUATIONS

Use of any type of respirator may impose some physiological stress on the user. The wearer should have a medical examination to determine if he/she is medically able to wear respiratory protective equipment without aggravating a pre-existing medical problem. This should be done prior to being permitted to wear a respirator and should be repeated periodically, preferably annually. A physician with knowledge of pulmonary disease and respiratory protection factors should determine what medical factors are pertinent, which tests will be performed, and whether an employee can wear a respirator. Conditions that may prevent an employee from wearing a respirator, thereby eliminating him from working in a contaminated area, include:

- Diabetes, insipidus or mellitus
- Epilepsy, grand mal or petit mal
- Alcoholism
- Use of certain medications
- Punctured ear drum

- Skin sensitivities
- Impaired or non-existent sense of smell
- Emphysema
- Chronic pulmonary obstructive disease
- Bronchial asthma
- X-ray evidence of pneumoconiosis
- Coronary artery or cerebral blood vessel disease
- Severe or progressive hypertension
- Anemia, pernicious
- Pneumomediastinum gap
- Cardiovascular disease
- Amputated body part
- Communication of sinus through upper jaw to oral cavity
- Breathing difficulty or claustrophobia caused by wearing a respirator
- Any other condition that a physician determines may place the employee at added physical risk.

VOLUNTARY USAGE of RESPIRATORS

The Contractor/Subcontractor shall perform training per 29 CFR 1910.134 Appendix D if employees voluntarily use respiratory protection. This training shall be documented using the sign off sheet at the end of this section. The sign off sheet shall be maintained on site by the Contractor/Subcontractor and a copy shall be forwarded to the Contractor's Safety Representative.

The Contractor/Subcontractor shall also monitor employees to make sure they are not having any physiological effects from wearing the respirator.

PROGRAM EVALUATION

The effectiveness of a respirator program can be largely determined by the degree of worker acceptance. Periodically observing employees during normal activities and soliciting their comments will assist in determining the degree of acceptance. Respiratory protection is no better than the respirator in use, even though it is worn conscientiously. Frequent random inspection should be conducted to assure that respirators are properly selected, used, cleaned, and maintained. In general, the respirator program should be evaluated at least annually, with program adjustments, as appropriate, made to reflect evaluation results.

Appendix D to 29 CFR 1910.134: (Mandatory)
Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for employees. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the employee. Sometimes, employees may wear respirators to avoid exposure to hazards, even if the amount of the hazardous substance does not exceed the limits set by the OSHA Standards. If your employer provides respirators for your voluntary use, or if you voluntarily provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard. You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and to what exposure level it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fume or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

I, _____, have chosen to voluntarily wear a filtered facepiece respirator (i.e. dust mask). As such, I have been provided a copy of the above detailed Appendix D to 29 CFR 1910.134 (OSHA's Respiratory Protection Standard) by my employer, _____. I have read, understand and shall comply with the information provided.

Signature

Date

SECTION 15 CONCLUSIONS

The purpose of this manual is to assist in injury prevention and property protection on the project. This project is committed to providing the highest level of safety.

The Project Safety Manual is part of the contract documents for the Neighborhood Transformation Initiative OCIP. It is a binding agreement and failure to comply with its requirements could be deemed as non-compliance of the contract. Failure to comply can result in removal from the project and/or payments' being withheld until compliance is deemed satisfactory. All Contractors will be held accountable for their Subcontractor's compliance with the project safety and health program.

The majority of this manual outlines administrative procedures. All local, state and federal guidelines including OSHA 1910 and 1926 will govern safe work practices. Each Contractor and Subcontractor should have a copy of these standards on the site. There was no attempt to reiterate these standards in this manual. In many instances, this manual exceeds OSHA Standards. Any changes in OSHA Standards during the duration of the project will be binding and will be enforced if they exceed a safety requirement outlined in this manual.

This manual outlines several safety requirements made to address exposures, which were felt to be not adequately addressed in the OSHA standards. Such requirements may result in additional costs to the contractor/subcontractor/sub-subcontractor. The Contractor/Subcontractor should thoroughly review this manual prior to bidding the work.

Finally, it is each individual Contractors/Subcontractors responsibility for administering their own safe work program. This manual, and safety services provided by individuals associated with this project, are in no means a replacement of the subcontractors/sub-subcontractors responsibility to provide a safe work environment for their employees and to meet safety regulation compliance.

APPENDIX A

JOB SITE SAFETY INSPECTION CHECKLIST

Project Name: _____

Date: _____

Prepared By: _____

Time: _____

Contractor: _____

For Work Week Ending: _____

| ACTION REQUIRED | | ITEM | REMARKS |
|--------------------|------|---|---------|
| CONTR. | SUB. | | |
| | | Personal Protection Hard-hats Eye/Face Protection Shirts, Pants, & Work Shoes | |
| | | Excavations Shoring/Sloped Sides Access/Egress Barricaded Utility Location | |
| | | Site Equipment & Vehicles Backup Alarms Seat Belt Usage Crane Swing Radius Clear | |
| | | Welding/Burning Hot Work Permits Proper Bottle Storage Fire Extinguishers Fire Watch Welding Lead Condition | |
| | | Ladders & Scaffolding Condition Proper Use | |
| | | Fall Protection Roof/Floor Openings & Holes Guardrails; Open Sided Floors Stairs/Temporary Treads Harness/lanyards | |
| | | Fire Protection Fire Extinguisher Inspection Housekeeping Flammable Liquid Storage | |
| | | Electrical GFCI Receptacles/Testing Tool/Cord Condition | |
| | | Miscellaneous (wall bracing, engineering survey report on file, job site fencing, etc.) | |

Additional Comments:

APPENDIX C

SUPERVISOR'S INCIDENT INVESTIGATION REPORT

| | | | |
|---|--|---|-------------------|
|  THE GRAHAM COMPANY INSURANCE BROKERS AND CONSULTANTS The Graham Building One Penn Square West, Philadelphia, PA 19102 Telephone: 215-567-6300 Facsimile: 215- 525-0259 | WORKERS' COMPENSATION/GENERAL LIABILITY INCIDENT INVESTIGATION REPORT Neighborhood Transformation Initiative Owner Controlled Insurance Program | | |
| IMPORTANT: This form is not a substitute for the Employer's First Report of Injury Form | | | |
| EMPLOYEE/NON EMPLOYEE'S INJURY | NAME, ADDRESS AND TELEPHONE NUMBER OF INJURED: | EMPLOYEE: Y N | NAME OF EMPLOYER: |
| | LOCATION WHERE ACCIDENT OCCURRED: | WITNESSES: (INCLUDE TELEPHONE NUMBER) ___ Yes ___ No If YES, PLEASE USE FORM ON ATTACHED PAGE | |
| | OCCUPATION: | DIRECTED TO PANEL PHYSICIAN: Y N | |
| | DATE OF ACCIDENT: | TIME: | AM/PM |
| ASPECTS OF INJURY | DESCRIBE HOW THE ACCIDENT HAPPENED/DESCRIBE INJURY: (USE OTHER SIDE IF NECESSARY) | | |
| EMPLOYEE SENT TO | B. TYPE ACCIDENT: | | |
| | C. SOURCE OR AGENT: (LIST TOOLS, EQUIPMENT AND MATERIALS) | | |
| | A. BODY PART AFFECTED: | | |
| | <input type="checkbox"/> Doctor <input type="checkbox"/> Employee refused treatment <input type="checkbox"/> Emergency Room <input type="checkbox"/> Result impression <input type="checkbox"/> Personal Physician <input type="checkbox"/> 1 st Aid Only <input type="checkbox"/> On-Site Medical Station <input type="checkbox"/> Medical Recordable <input type="checkbox"/> Other <input type="checkbox"/> Lost Time or Restricted Duty | | |
| CORRECTIVE MEASURES | CORRECTIVE ACTIONS TAKEN (i.e. additional enforcement, improve site conditions, additional training, guarding, repairs, replacement, etc.) | | |
| CONTRACTOR (S) | LIST ALL CONTRACTORS INVOLVED: (INCLUDE CONTACT NAME AND TELEPHONE NUMBER FOR EACH CONTRACTOR) | | |
| PROPERTY DAMAGE | DESCRIBE PROPERTY DAMAGE: (INCLUDE NAME, ADDRESS AND TELEPHONE NUMBER OF OWNER OF DAMAGED PROPERTY) | | |
| INVESTIGATED BY/PERSON COMPETING FORM: | | DATE: | |

**INSTRUCTIONS ON DISTRIBUTION OF THE SUPERVISOR'S INCIDENT
INVESTIGATION REPORT**

Original to: Contractor

Copy to: Program Safety Monitor

Program Manager

OCIP Administrator

The Graham Company

ATTN: Mark Troxell, Director of Safety Services

Fax: 215-525-0259

City of Philadelphia

Risk Management Division

ATTN: Director of Safety and Loss Prevention

Fax: 215-683-1718

**APPENDIX D
SITE ORIENTATION FORM**

| | |
|---|---|
| Name of Employee: (Print Name) | Orientation ID #: |
| Name of Project: | Date: |
| Company: | Person Conducting the Orientation: |
| <p>The following topics are to be reviewed with all employees during their initial site orientation.</p> <p style="text-align: center;">Topics</p> <ol style="list-style-type: none"> 1. Information to acquaint the employee with special safety requirements of the work site, including security and traffic regulations; 2. Description of the nature of the project; 3. Substance Abuse Policy; 4. Accident reporting procedures; 5. How to report unsafe acts or conditions; 6. Site disciplinary procedures; 7. Personal protection equipment requirements; 8. Hazards prevalent for the work being performed (fall protection, trenching, ladder usage, scaffold safety, etc.); and 9. Hazard Communication Program 10. Other _____ | |
| Comments: | |

By signing this site orientation form, I hereby acknowledge that the basic site safety controls outlined above have been thoroughly reviewed with me and that I agree to obey by the contents of the site Safety Requirements. Furthermore, I give my consent to be tested per my employer's Substance Abuse Policy.

Employee Signature

Date

Note: Any employee questions regarding the Safety Requirements should be directed to the Contractor's Safety Representative.

APPENDIX E

Competent Person Assignment Form

A Competent Person is a person who has the ability to recognize existing and predictable hazards and has the authority to correct them.

RESPONSIBILITIES:

The designated Contractor/Subcontractor Competent Person is responsible for recognizing and correcting safety risks/hazards. This person has the authority to stop work in the event of any potential safety concern in the work area they are responsible for. This form must be completed by the Contractors/Subcontractors Project Manager or Superintendent and the designated competent person. Where a Contractor is responsible for multiple crafts, it will be necessary to maintain additional designated competent persons and forms. Each Contractor/Subcontractor must submit this completed form to the Construction Manager prior to beginning work on the project and update the forms any time there is a change in designated representative(s) or exposure.

ACKNOWLEDGEMENT:

I _____ (*Insert name of Project Manager or Superintendent*) representing _____ (*Insert name of Contractor or Subcontractor*) have assigned _____ to be the competent person in the areas indicated and I acknowledge that this individual has been thoroughly trained and is experienced in hazard recognition and has the authority to stop work and correct hazards in the event of a potential hazardous or imminent danger situation.

Project Manager's or Superintendent's Signature

Date

I, _____ acknowledge that I have been thoroughly trained and have the experience to perform the duties as the competent person in the areas marked on the next page. I understand that I have the responsibility and authority to identify existing and predictable hazards and to correct or stop work in the event of a potential hazard or imminent danger situation.

Signature of the Competent Person

Date

| | | | | | |
|--|--|--|--------------------|--|--------------------------|
| | Asbestos | | Hearing Protection | | Welding/Cutting |
| | Cranes/Derricks | | Scaffolding | | Rigging |
| | Falls Protection | | Electrical/LO-TO | | Lead |
| | Demolition (including mechanical Demolition) | | Ladders | | Trenching/Excavation |
| | Hazmat/Waste | | Forklift Trucks | | First Aid/CPR |
| | Bolting/Riveting/ Fitting | | Material handling | | Concrete/ Forms/ Shoring |

Other: _____

APPENDIX F

| NTI DAILY SAFETY INSPECTION LOG | | | |
|--|-----------------|-------------------------|-------|
| PROJECT INFORMATION | | | |
| Name of Project: _____ | | Inspector(s): _____ | |
| Date: _____ | | Prime Contractor: _____ | |
| Time: _____ | | (subcontractors): _____ | |
| Temperature: _____ | | _____ | |
| Weather Conditions: _____ | | _____ | |
| EXPOSURE | | | |
| Time | Address | Code/Exposure | Other |
| | | | |
| RECOMMENDATIONS | | | |
| Code | Recommendations | | |
| | | | |
| ADDITIONAL COMMENTS | | | |
| | | | |

APPENDIX G
Monthly Safety Report

| Monthly Safety Report | |
|---|--|
| Project Name: | |
| Month: | Total Man-hours Worked in the Past Month: |
| Year: | Number of Incidents in Past Month: |
| Summary of Accident/Incidents Within the Past Month: | |
| <i>(List Name of Contractor/Subcontractor, Date of Incident, Name of Injured Employee or Description of Property Damage or Name of Person Injured, and Brief Description of the Incident)</i> | |
| | |
| Summary of Safety Violations Issued: | |
| <i>(List safety Violations Issued Within the Past Month)</i> | |
| | |
| Work to Take Place in Upcoming Month: | |
| <i>(Give a Brief Description of Work to take Place in the Upcoming Month)</i> | |
| | |