CONTRACTOR SAFETY REQUIREMENTS MANUAL

September 2022

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MICHIGAN STATE
UNIVERSITY

September 21, 2022

Welcome and thank you for your interest in working with Michigan State University.

It is our firm belief that no task or job is more important than worker safety and health, and the expectation for each of our contracting partners is to strive for zero incidents, zero injuries, and zero illnesses.

The purpose of this Contractor Safety Requirements Manual is to inform each party in the contracting process of the specific requirements and expectations they must meet while working at Michigan State University.

We look forward to working with you!

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1 PURPOSE AND VERSION

The Contractor Safety Requirements Manual ("Manual") identifies the minimum requirements for Constructors performing construction or other work at Michigan State University sites. Constructors shall flow requirements down to Contractors.

It is the University's expectation that all Constructors provide a safe and healthful workplace for their personnel. Constructors are responsible for ensuring compliance with "all applicable requirements" that govern their work at MSU facilities, including any consensus standards incorporated therein by reference, and will take steps to ensure Contractors are also in compliance.

This Manual contains excerpts from and references to numerous regulations, codes, and standards not presented in their entirety. Similarly, not all Environmental, Safety and Health subject matter is covered in

this Manual. If the Manual does not contain information relative to a particular Environmental, Health or Safety topic, the Constructor shall ensure that the governing regulatory provisions or national consensus standards as applicable are implemented as part of their Site-Specific Safety Plan (SSSP). The following pages do not intend to reproduce all applicable standards and regulations; instead, the intent is to highlight specific expectations that are above and beyond the minimum established by existing regulation. *It is the Constructor's and each Contractor's responsibility to comply with all applicable regulations.* If there is a conflict among requirements, the Constructor is to apply the most stringent requirement applicable. Constructors are encouraged to apply best management practices in all their endeavors. MIOSHA standards, which apply to all work at MSU at a minimum, are available online at no cost at www.michigan.gov/mioshastandards.

Michigan State University reserves the right to comment on any work product produced by the Constructor or a Contractor to satisfy the requirements of this Manual, but has no obligation to comment, correct, or alter these works. Michigan State University also reserves the right to waive or modify requirements found within this Manual for any reason at any time. The controlled version of this Manual will be kept online at www.ehs.msu.edu.

Issued: **September 2022**

Revised:

2 EMERGENCY AND CONTACT INFORMATION

In the event of an Emergency: **Call 911**
MSU Police Non-Emergency Phone Number: (517) 355-2221

MSU Environmental Health and Safety
(517) 355-0153
Infrastructure Planning and Facilities
(517) 353-1760

For Program Information:
Zach Hansmann, Contractor Safety Manager
hansmann@msu.edu
(517) 355-4094

3 CONTRACTOR SAFETY COMMITTEE

The University has formed a Contractor Safety Committee which includes representation from the following groups:

- Infrastructure, Planning, and Facilities
- Risk Management
- General Counsel
- Student Life and Engagement
- Environmental Health and Safety

The contractor safety committee is charged with:

- Establishing the University's approach to oversight of contractor safety.
- Implementing safety and risk management requirements for contractors.
- Monitoring and reporting contractor safety performance metrics.

4 CONSTRUCTOR'S SITE-SPECIFIC SAFETY PLAN

The Constructor is required to develop a *Site-Specific Safety Plan (SSSP)* prior to conducting any work activities on site and will communicate the requirements of the SSSP to all Contractors. The Constructor shall ensure that the requirements in this Manual are incorporated into or addressed within their SSSP.

The SSSP shall be submitted through the Unifier platform and undergo a review by the MSU Project Manager and the MSU Contractor Safety Manager prior to the Constructor or any tier Contractor being allowed to start work. A new SSSP shall be submitted for each construction project, regardless of whether the Contractor has performed prior work at MSU.

All affected Contractor personnel involved in the work being performed shall review the SSSP and any subsequent changes. The updated SSSP shall be made available for review by the MSU Project Manager and the MSU Contractor Safety Manager. The SSSP shall be kept at the worksite and available for review.

4.1 Area-Specific Safety Plan (ASSP)

Contractors delivering small projects on a continuing basis may be eligible to submit an *Area- Specific Safety Plan (ASSP)* for work throughout campus. The ASSP must meet each of the requirements for an SSSP and the level of detail within each ASSP should be commensurate with the size, complexity, and risk level of the Constructor's operation, and is valid for up to one (1) year.

Table 4-1 below identifies the characteristics of projects that may be eligible to work under an ASSP. Approvals for a Constructor to operate under an ASSP in lieu of an SSSP will be given on a case-by-case basis by the MSU Contractor Safety Manager. Bidding documents and project advertisements will identify which plan will be required.

Table 4-1: Project Characteristics of Safety Plans by Type

	Area-Specific Safety Plan	Site Specific Safety Plan
Project Cost	< $1 Million	≥ $1 Million
Project Type	PO, Minor	Major
Project Complexity	Low, Medium	High
Duration	< 2 Months	> 2 Months
# of Contractors	0 - 2	3+

5 SPECIFIC ADMINISTRATIVE REQUIREMENTS AT MSU

These requirements apply to the Constructor and all tiers of Contractors as defined in their respective agreements with Michigan State University and must be addressed in each respective SSSP.

5.1 Hazard Identification and Control Process

This section provides the requirements for establishing a method for identifying, controlling, and documenting hazards associated with Constructor work activities and communicating this information to all affected workers.

Three primary requirements:

1. *Hazard analysis and treatment*: Evaluating each distinct work task for foreseeable hazards and identifying the controls and work practices to be used to reduce risks.
2. *Pre-task planning*: To ensure controls identified in the Hazard Analysis are in place for upcoming work
3. *Daily coordination and communication*: Pre-task plans must be both coordinated between Contractors and crews for conflicts and discussed with workers who will conduct or be impacted by the work.

Many terms exist for each of these three components of the hazard identification and control process. Constructors may use existing procedures such as Job Hazard/Safety Analysis, Task Safety Plans, Safety Task Assessment etc. if the Constructor can demonstrate that the intent of each requirement is met.

The Constructor is responsible for understanding the scope of work in sufficient detail to ensure that the work is effectively planned for each definable work activity, the hazards associated with the work are identified, and the identified protective measures are implemented.

5.1.1 Hazard Analysis and Treatment

The Contractor shall conduct Hazard Analyses for all construction activities prior to the commencement of work. MSU retains the right to require hazard specific Hazard Analyses based upon the scope of work. At a minimum, a Hazard Analysis shall:

- Be reviewed by the Constructor. This includes all tiers of Contractors.
- Be conducted and reviewed before work commences.
- Be written and reviewed by the crews conducting Task Safety Plan meetings.
- Detail any actions to reduce or eliminate risks.

The completed Hazard Analysis must be documented and made available to MSU upon request.

5.1.2 Pre-Task Planning

The SSSP must detail the process the Constructor and Contractor(s) will use to manage pre-task planning, including training, auditing, document retention and ongoing quality control. The pre task planning process shall at a minimum:

- Be conducted by the site superintendent, contractor safety representative, or craft lead designated by the foreman, provided however, that the foreman reviews all pre-task plans/safe plan of action to ensure that they are appropriate, complete, and accurate for the subject task(s).
- Include hazards and precautions identified in applicable Hazard Analysis.
- Be documented in writing.
- Be conducted for every task prior to the start of work and when the job task changes.
- Have the Task Safety Plan be reviewed and revised whenever work conditions or crew membership experience change that may affect the ability to safely complete the work.
- Require all crew members to participate at the job location in pre-task planning/safe plan of action and shall sign the completed plan.
- Be readily available at the work site (posted and/or placed where crew members have knowledge of its location at the work area).

5.1.3 Daily Coordination and Communication

The Site-Specific Safety Plan shall detail the process the Constructor will use to communicate the Pre-Task Plan to all affected workers. At a minimum, such Pre-Task Plan briefings shall be held the day before or each morning prior to the start of work. Each Contractor may integrate these requirements into their exiting EHS program format if the required information is effectively provided to employees and documentation for these briefings and/or meetings is maintained. This may be accomplished through daily construction meetings, plan of the day (POD) meetings, pre-task activity reviews, or other means which prove effective in the dissemination of the required information and has been accepted by MSU. All crew members shall acknowledge the information disseminated by signing the meeting attendance roster.

Suggested content for the briefings includes:

- EHS pre-task planning for the day's work activities
- Changes in work practices or environmental conditions
- Required equipment/system daily inspections

- Previous day's incidents, near misses, lessons learned and/or other relevant issues as applicable
- Other ongoing activities that may have project EHS implications or may impact MSU operations
- New or modified site-wide procedures or requirements
- Review of hazard analysis for new activities and/or revised existing hazard analyses.

5.2 Orientation, Training, and Documentation

The SSSP must detail the procedures the Constructor will use to ensure workers are properly trained and related documentation meets all applicable requirements. For all workers, site-specific environmental, safety and health orientation training will be required. This orientation will be documented, and documentation must be provided to MSU upon request.

For work activities where specific training is required by regulation (e.g., MIOSHA or other applicable entity mandated), the Contractor shall maintain records on-site, showing proof of current training records for any qualified individual(s). Constructor shall detail in the SSSP steps taken to ensure Contractor staff have all required training prior to the start of work.

Designated "Competent Persons" are expected to have a higher level of experience, training, and qualification. Contractors shall demonstrate a mechanism to verify that the "Competent Person(s)" knowledge and skill sets match their "Competent Person" designation (i.e., written test). Constructor shall detail in the SSSP steps taken to ensure Contractor staff are designated as Competent Persons and such persons possess the required knowledge and skill sets prior to the start of work.

Digital or photocopies of training certificates, certification cards, wallet IDs, etc. identifying the individual, the specific training, who conducted the training, and the date completed (and/or expiration date) are accepted in lieu of originals.

5.2.1 Worker Activity Hazard Training and Recordkeeping

The Contractor shall ensure that affected workers are made aware of the foreseeable hazards and the protective measures described within the activity analysis prior to beginning work on the affected activity.

The Constructor shall also ensure that workers acknowledge being informed of the hazards and protective measures associated with assigned work activities and understand those requirements. Each worker involved in that work must sign the daily Pre-Task Plan or equivalent prior to performing work.

5.3 Inspections and Reporting

The SSSP must include, at a minimum, the following core audit and inspection activities:

5.3.1 Weekly Constructor Safety Audits

The Constructor shall conduct a regularly scheduled weekly site safety inspection and maintain adequate documentation. The MSU Contractor Safety Manager and the MSU Project Manager reserve the right to observe and/or participate. Each Contractor with active operations on-site shall be represented at the Constructor's weekly site safety inspection by a foreman or approved designee.

Findings of the weekly site safety inspection must be assigned to a responsible party for correction and closure. Records of weekly site safety inspection reports, findings, and corrective actions must be retained through project close-out.

5.3.2 Monthly EHS Report

Monthly EHS reports shall be compiled and maintained as part of the project record. The monthly EHS report shall be completed on the approved reporting form and/or submitted via Primavera Unifier as part of each monthly payment application.

The following data must be submitted with each pay application for the previous month's activities:

- Listing of man-hours, incidents, and incident statistics
- Summary of significant EHS activities, including any site discipline, stop work orders, or regulatory visits

5.4 Incident Response, Notification, and Investigation

The SSSP must describe how the Constructor will respond to, investigate, and report safety incidents to the MSU Project Manager, MSU Contractor Safety Manager, and appropriate regulatory agencies, including the following minimum notification requirements:

- Near Miss – 24 hours
- First Aid injuries – 24 hours
- Property Damage – 24 hours
- Injury requiring medical treatment beyond first aid – one hour from occurrence
- Environmental releases – one hour from occurrence
- Fatality – immediately upon occurrence

The Constructor shall submit an incident summary to MSU in addition to investigation requirements noted in this document. MSU may use these records (minus personal information) to develop incident communications for distribution within other MSU projects. The Constructor shall maintain incident records throughout the duration of the Project and transfer these records to MSU at project completion.

Investigations of incidents shall contain:

- Identification of all incident causal factors (root and contributing causes) using investigative means.
- Identification and documentation of all corrective actions
- Documentation of closure of all identified corrective actions

Investigation and review of incidents shall be completed within 48 hours of incident occurrence. MSU must receive the incident review report for each incident. For recordable injuries and above, MSU shall be given sufficient notice to be present in the investigation. MSU may choose to participate in any other investigations, including but not limited to near miss and first aid cases.

Injury/Incident full details (including root cause and corrective action) must be provided in writing within 5 working days of the injury/incident. The Project Manager may extend this time period if necessary. Constructors shall use the Contractor Incident Reporting Form found at www.ehs.msu.edu/contractors.

5.5 Disciplinary Action

The SSSP must contain a disciplinary action process which will ensure workers compliance with the SSSP. Minimum requirements include:

- A progressive disciplinary action plan containing the appropriate corrective actions for workers who violate environmental, safety, and health requirements.

- Appropriate consideration for disciplinary action for those in a supervisory capacity who allow for the violation of environmental, safety, and health requirements.
- A list of “zero tolerance” acts or omissions that constitute grounds for immediate removal. The process must also contain appropriate guidelines that address durations for personnel banned from the project site for these violations.
- At a minimum, zero tolerance items shall include any significant violations of fatality prevention programs such as Fall Protection, Control of Hazardous Energies (lockout/tagout), Energized Electrical Work, and Confined Space Entry.

Failure to report incidents shall be included as a zero-tolerance item. The response shall contain two components:

1) The initial component shall address individual worker’s failure to report and be followed-up according to the plan required in the above section.

2) The second component shall address failure to report an incident by the company management (with management defined as foreman through upper management.) Discovery of an unreported incident shall be addressed through a formal communication from the Constructor to the Contractor containing the steps to improve Contractor’s safety performance. The Constructor shall copy the MSU Contractor Safety Manager on any such correspondence.

5.6 Stop Work Authority

The SSSP shall describe Stop Work Authority procedures. All workers at MSU sites have the authority to stop work, but this authority does not relieve the Constructor of any responsibility to monitor and manage the work. It is expected that if unsafe conditions are identified during construction activities, workers shall be instructed to stop the work immediately and notify their supervisor and health & safety officer of this action. Work may not proceed until the circumstances are investigated and deficiencies corrected.

6 SPECIFIC SAFETY REQUIREMENTS AT MSU

MIOSHA regulations apply to all university projects. The following sections detail specific technical requirements that either exceed MIOSHA regulation or are specific to work conducted at MSU. These requirements apply to the Constructor and to each Contractor as defined in their respective agreements with Michigan State University.

Constructors shall submit their Corporate Safety Manual and include any necessary alterations or clarifications to meet these minimum requirements in their SSSP. Constructors shall assure that these requirements flow down to all Contractors engaged in work on-site.

6.1 Confined Space

The workplace may contain both permit and non-permit confined spaces. Any work conducted in confined spaces shall be performed in accordance with applicable MIOSHA regulations, accepted industry standards, the Constructor’s Site-Specific Safety Plan, and each Contractor’s specific confined space entry program requirements. Each Contractor remains responsible for protection of their employees and adherence to their written procedures.

Each Contractor required to enter a confined space is responsible for assessing real or potential atmospheric hazards and other serious safety and health hazards in the space. The Constructor shall ensure such testing occurs where required. MSU will make available records of known confined space hazards. The Contractor shall provide all necessary equipment for confined space entry and shall be solely responsible for rescue provisions required by MIOSHA.

If MSU personnel will be working in or near confined spaces occupied by a Contractor, the Contractor and MSU are required to coordinate activities. The *Constructor* will inform the MSU Project Manager of procedures to be followed and hazards which may be confronted or created during entry operations. Where conflict arises between MSU, Constructor, and Contractor programs, the more stringent requirement shall prevail. A copy of the current MSU program is available from the MSU Project Manager and online at: https://ehs.msu.edu/occ/confined-space.html.

6.2 Control of Hazardous Energy (Lockout/Tagout)

The requirements of this section apply to all Contractor activities (i.e., constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining/servicing equipment) where the unexpected release of hazardous energy (i.e., electrical, hydraulic, pneumatic, chemical, thermal, compressed gases, mechanical and/or gravity) or startup of the machines, equipment, and systems could cause injury on the MSU project site.

Any control of hazardous energy work shall be performed in accordance with applicable MIOSHA regulations and accepted industry standards. The Constructor shall have overall responsibility for coordinating and enforcing a project specific program to comply with MIOSHA requirements and the requirements of this section. Each contractor remains responsible for protection of their employees and adherence to their written procedures. Contractors who do not have a written Lock Out/Tag Out program shall not perform any work that is covered by MIOSHA regulations or the MSU Lock Out/Tag Out program.

6.2.1 Exchange of Lock Out/Tag Out Programs

Each Contractor who will perform work requiring energy control methods must be informed of all university lockout/tagout safety program requirements. The Constructor must ensure their lock out/tag out program meets or exceed all elements of the MSU Lockout/Tagout Energy Control Program. A copy of the current MSU program is available from the project manager and online at https://ehs.msu.edu/occ/lockout-tagout/index.html. The Constructor must inform the university of the lockout/tagout procedures to be used on a project site as part of their SSSP.

The Contractor must comply with the Constructor's Lockout/tagout program identified in the SSSP. The Constructor and Contractor must provide provisions for suitable energy isolation equipment including locks, tags, and hasps and ensure that lockout devices that have been put in place are only removed by the Authorized Personnel who placed them.

Where conflict arises between MSU, Contractor, and Constructor programs, the more stringent requirement shall prevail.

6.2.2 Lock Out/Tag Out on MSU Infrastructure

Before a contractor can isolate electrical services at the primary or secondary switch gear, they must coordinate with the Constructor and the MSU IPF Authority Having Jurisdiction (AHJ) for approval and scheduling. Contractors shall not operate a primary steam line, water line, or chilled water line without coordinating with the MSU Project Manager and contacting the supervisor or manager of the associated systems or departments for approval and scheduling.

6.2.3 Written Lock Out/Tag Out Procedures

Where required by MIOSHA, written lock out tag out procedures shall be developed, documented, and utilized for specific lock out/tag out applications. The procedures shall clearly and specifically outline the scope, purpose, authorization, rules, and techniques to be utilized for the control of hazardous energy, and the means to enforce compliance.

Written Energy Control Procedures include:

- A specific statement of the intended use of the procedure;
- Specific procedural steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy;
- Specific procedural steps for the placement, removal, and transfer of lockout devices or tagout devices and the responsibility for them; and
- Specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices, tagout devices, and other energy control measures.

Where available, MSU will provide written equipment-specific procedures. If there are no available equipment-specific procedures, written procedures should be developed prior to locking and tagging out equipment.

Work on energized systems at MSU must be strenuously avoided unless it has determined by an appropriate authority that there is no reasonable alternative course of action. Where energized work must be performed on any type of energy system, it shall be authorized in writing by the Constructor's Safety Manager and appropriate notice shall be provided to the MSU Project Manager.

6.3 Electrical Safety

The Constructor shall be responsible for the development and implementation of an electrical safety program to be followed throughout all phases of the project and this program shall apply to the Constructor and all lower-tier Contractor activities performed on MSU project sites.

Contractors shall identify the electrical hazards associated within each task and establish the controls necessary to maintain an acceptable level of risk. To assist in the evaluation of electrical hazards, Contractors shall employ an Electrical Hazard Analysis consistent with requirements of NFPA 70E, Standard for Electrical Safety in the Workplace (Current Revision) for shock and arc flash hazards. The identified hazards and control measures shall be documented in the associated activity hazard analysis or other work control document that provides an acceptable level of hazard identification and control for the associated task or work sequence. The safe electrical work practices that are employed shall prevent electric shock, burns, arc flash or other injuries that could result from either direct or indirect electrical contact. This may include specialized training, observing required approach distances, and the use of appropriate personal protective equipment (PPE) consistent with the requirements of MIOSHA and NFPA 70E, as applicable.

6.3.1 Qualified Electrical Worker

Only qualified workers who maintain the necessary skills and knowledge related to the construction, operations of electrical equipment and the associated hazards are permitted to work on electrical systems. A "Qualified Electrical Worker" is a person who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training on the hazards involved. The Qualified Electrical Worker shall be licensed by a State of Michigan licensing authority or be actively enrolled in a certified apprenticeship program and verified by the Contractor.

The Contractor shall be responsible for documenting the qualifications of the "Qualified Electrical Workers" utilized on any MSU project. The Constructor shall review and maintain Contractor's documentation.

6.3.2 Ground Fault Circuit Interrupter (GFCI) Protection

Constructors and Contractors shall ensure that GFCIs are used on 120-volt circuits as specified below:

- in damp or wet (standing water) work areas outdoors

- for temporary power (e.g., extension cords) during construction, remodeling, maintenance, repair or similar activities - outdoor receptacles shall be enclosed with weatherproof covers
- when using portable, electric hand tools and equipment with cord/plug connectors

The users of the GFCIs shall test portable GFCIs using the test button provided before *each* use. If the GFCI breaker fails the test, tag out of service with a "DANGER — DO NOT USE" tag and (if portable) remove from service. Tripped circuit breakers may not be re-energized until it has been determined that the equipment and circuit can be safely re-energized. Do not reset or operate facility circuit breakers. Use of an assured grounding program is prohibited.

6.3.3 Flexible Cords and Cables

Use UL-listed flexible cords suitable for conditions and location of use. Flexible cord sets used with grounding-type equipment shall contain an equipment grounding conductor. Protect flexible cords and cables from damage. When possible, hang extension cord sets appropriately in the overhead to avoid tripping hazards and damage caused by foot traffic and equipment.

Avoid sharp edges, pinching, or improper storage. Cords sets that are damaged shall be removed and discarded or repaired by a qualified person.

6.3.4 Hazardous Energized Electrical Work

The Constructor shall ensure that electrical systems and equipment are effectively isolated, locked, and tagged out in accordance with the requirements of the *Section 6.2: Control of Hazardous Energy (Lockout/Tagout)* prior to performing any work on or near the systems. Where any energized electrical work must be performed on energized systems, it shall be authorized in writing by the Contractor's Safety Manager and approved in writing by the Constructor, and appropriate notice shall be provided to the MSU Contractor Safety Manager and MSU Project Manager.

Hazardous Energized Electrical Work is defined as "work performed on or close to exposed parts of electrical systems and equipment operating at greater than 50 volts to ground, or less than 50 volts to ground where the current exceeds 5mA, creating the potential for injury, explosion or injuries due to electric arcs."

Controls may still be required for energized work on "non-hazardous circuits" to protect against secondary hazards such as startle or involuntary reactions from contact with low voltage high current sources. These would include circuits operating at 50 volts and less with a short circuit current of greater than 0.5ma or energy greater than 0.25 joules.
Exception: Taking voltage, current measurements and verification of zero energy using standard test equipment such as voltmeters and current probes is permitted on energized electrical systems when performed in accordance with the Contractor's electrical safety plan.

6.3.5 Two Worker Rule

The Constructor shall ensure the Contractor has a plan for a second worker when required. The Contractor shall ensure that a second worker is present when hazardous energized electrical work is performed. The second worker functions as a safety observer and does not participate in the actual work. This worker shall be trained in cardiopulmonary resuscitation and be prepared to initiate other emergency response procedures.

6.4 Excavations

The Constructor is responsible for submitting to the MSU Project Manager an "Excavation Plan" for review before any excavation activity begins. This plan shall show the proposed boundaries on a site map including

depth of the affected areas and the safety precautions, which shall at a minimum comply with MIOSHA Part 9, Excavation, Trenching and Shoring. The Constructor may delegate excavation-specific responsibilities listed below to an appropriate Contractor, but will remain responsible for compliance with all provisions of this section.

6.4.1 Utility Locates

Prior to excavation, the Constructor must arrange for underground utility location and identification. Public utility locates can be coordinated through Miss Dig Systems at https://www.missdig811.org/, 800-482-7171, or 811. Miss Dig will contact the various utility companies responsible for locating and identifying all underground utilities with the appropriate color-coded markers. The MSU Project Manager can provide drawings with approximate location of existing utilities and structures to aid in marking the utilities.

If there is any uncertainty as to the degree of safety protection anticipated on underground electrical power lines, the electrical service should be de-energized first with a planned outage arranged and coordinated through the MSU Project Manager.

The Contractor shall hand dig or otherwise safely "pot hole" (daylight) to verify location and depth of the various utilities and MSU-owned underground structures and/or lines which may conflict with the excavation activity.

6.4.2 Damage to Underground Utilities

When any contact with, or damage to, any pipe, cable, or its protective coating, or any other underground utility occurs, the Constructor shall notify the owner of the utility and the MSU project manager immediately.

6.4.3 Confined Spaces in Excavations

When the configuration of an excavation is such that the excavation is deemed to be a confined space, as defined by MIOSHA, the provisions of the Constructor's confined space program will apply.

6.4.4 Contractor Training Requirements for Excavation, Trenching, and Shoring

Contractor's Competent Person(s) that are trained and knowledgeable about soils analysis, the use of protective systems, identification of existing and predicable excavation hazards, and the requirements of MIOSHA Part 9, Excavation, Trenching and Shoring will be considered as meeting the necessary excavation competent person training for working at MSU.

The Contractor shall provide proof of such training as requested. The Contractor is required to provide a qualified and competent person at the job site when excavation work is ongoing. The Constructor shall require the Contractor to provide a list of their personnel on-site, designating each individual's "Competent Person" responsibilities. The Contractor shall ensure that the "Competent Person(s)" can demonstrate that their knowledge and skill sets match the excavation and protective system(s) that are in place. In addition, all other Contractors and their personnel working in or around excavations shall receive general excavation hazards awareness training.

6.4.5 Excavation-Specific Responsibilities

At a minimum, the Constructor and/or Contractor shall be responsible for the following:

- Monitoring/daily inspections of excavation, trenching and shoring operations.
- Designating a Competent Person, who has had the training to act in this position and providing the competent person the authority to effectively discharge their duties. (Contractor)

- Ensuring the requirements of this section are effectively communicated and enforced to other Contractors present. (Constructor)

6.5 Fall Protection

Fall protection requirements apply to all construction activities which require personnel to work or potentially be exposed to unprotected heights of six feet or more on MSU sites. Additionally, all workers who are constructing a leading edge 6 feet or more above lower levels shall be protected from falling by guardrail systems, safety net systems, or personal fall arrest systems. No exceptions allowed.

6.5.1 Fall Protection Program

The Constructor and Contractors shall have in place a Fall Protection Program that ensures effective fall protection system(s) are in place **anytime** workers are exposed to falls at heights of six feet or more. The Constructor's Site-Specific Safety Plan shall outline how the Constructor intends to comply with the requirements of this section. The requirements for the plan are outlined in *Section 6.5.2: Fall Protection Plan*.

6.5.2 Fall Protection Plan

Contractors shall develop and submit a fall protection plan (FPP) to the Constructor for concurrence prior to the start of work. The plan shall be prepared by a qualified person or competent person for the Contractor and developed specifically for the activity and/or project where the work will occur, and shall be available to Contractor Safety Manager for review. The FPP shall be documented and contain the following elements at a minimum:

- Project/Job location/date(s).
- Project/Job description.
- Name of the Contractor Fall Protection Program Administrator, Qualified Person and the Competent Person(s) responsible for fall protection on this site/project.
- Fall Hazard Analysis(es) (FHA) conducted in accordance with *Section 6.5.3* for each activity or similar activity type/grouping associated with the project. (Note: For projects that cannot identify all activities that will require fall protection during the life of the project, the Contractor shall ensure that an FHA is performed, reviewed, and accepted as required by MSU and attached to the project Site Specific Fall Protection Plan prior to performing the work).
- Identify the means to be utilized for the prompt rescue of employees in the event of a fall as necessary.
- Provide verification of training certification for personnel affected by the fall protection plan.
- Signature of the competent person preparing the plan and the Contractor Site Safety Representative.
- Document how the requirements of this plan will be flowed down to lower-tier Contractors.

6.5.3 Fall Hazard Analysis

A fall hazard analysis (FHA) shall be conducted for each activity or similar activity type/grouping prior to the start of work and shall be included in the FPP or as part of the activity hazard analysis (AHA) for the subject activity and/or task. The FHA shall be performed by a competent person and/or qualified person. This analysis shall identify one or more methods to eliminate or mitigate fall hazards. The analysis shall be comprehensive, thorough, and address the following elements:

- Describe the fall hazards associated with the proposed activity.
- Identify the controls that will be in place to eliminate or mitigate the fall hazard. The controls shall achieve 100% continuous fall protection. The selection of controls shall be in accordance with *Section 6.5.4: Fall Protection Hierarchy of Control and Mitigation Methods*
- As necessary, identify the means to be utilized for the prompt rescue of employees in the event of a fall.

The Contractor may perform this analysis by using a separate form or this analysis may be conducted and included as part of the Hazard Analysis prepared for the subject project/activity. The FHA and/or Hazard Analysis shall be revised when changes occur that render the analysis obsolete.

6.5.4 Fall Protection Hierarchy of Control and Mitigation Methods

The Contractor shall incorporate the following hierarchy of control when selecting methods to eliminate or mitigate fall hazards:

- *Hazard Elimination*. First consider eliminating fall hazards. This might involve moving the work surface to ground level or changing a task so that workers do not approach the fall hazard.
- *Passive Fall Protection*. Take actions that isolate or effectively separate the hazard from workers, such as installing floor coverings or handrail/guardrail systems.
- *Fall Restraint*. Establish a travel restraint system that prevents a worker from accessing a position from which he or she could fall.
- *Fall Arrest*. Configure a Personal Fall Arrest System designed to arrest a fall after it has begun.
- *Administrative Fall Protection System*. Establish controlled-access zones and safety monitoring systems. Generally, these controls are considered ineffective and are prohibited at MSU, unless specifically authorized by the MSU Contractor Safety Manager.

6.5.5 Fall Protection Equipment System Requirements

Fall protection equipment and systems shall be used in accordance with the manufacturer's recommendations and applicable MIOSHA requirements. Misapplication or use of this equipment in a way contrary to those requirements is prohibited. A competent person shall supervise the work and verify that the fall protection system is properly established and maintained.

6.5.6 Portable Ladders

Fall protection is not required when using portable ladders in compliance with the following requirements.

- Portable ladders shall be set up and used in accordance with MIOSHA and manufacturer requirements and be at a minimum non-conductive Type I, Heavy Duty Classification. Light and medium duty class ladders are prohibited.
- Extension ladders shall be tied/secured off to prevent displacement.
- Ladder users shall maintain three-point control (three limbs maintain contact on the ladder), and their body shall remain centered.
- Ladder users are not subject to a fall to a level lower than the base of ladder they are working from.

6.6 Fire Safety and Hot Work Permit System

Before conducting operations that involve hot work, the Constructor must notify the Project Manager. The Constructor must conform to the FM Global Hot Work Permit system. These documents are available from the MSU Project Manager.

The Constructor will be responsible for establishing a compliant wot work program. Contractors are responsible for providing all the required materials, personnel and, protective equipment to conduct all hot work. Prior to the start of any hot work activity, the Contractor shall perform a walk-down of the work to facilitate thorough hazard identification and control. The Constructor is responsible for documentation of compliance with the requirements of the permit.

6.7 Hazard Communication

This section applies to the Constructor and all contractors who use, apply, store, or generate hazardous materials on-site. The Hazard Communication Program shall comply with the applicable requirements of Michigan Part 42, Hazard Communication. Required components of a Hazard Communication Program include hazard determination, Safety Data Sheets (SDS), labels and other forms of warning, employee information training, and a written Hazard Communication Program defining the above.

6.7.1 General Requirements

The Constructor is responsible for maintaining an up-to-date chemical inventory and copies of Safety Data Sheets (only of those chemicals brought on site). These shall be maintained at the task or project support facilities and made readily available for review by site workers, other contractors, or MSU representatives. The list (inventory) may include a book of SDSs, appropriately labeled and updated as necessary to reflect the workplace inventory.

Prior to using any newly introduced hazardous material or product, the Contractor shall obtain a copy of the appropriate SDS and review it with their employees. Project Activity Hazard Analyses should be updated to reflect health and safety controls specific to chemical use.

Each original container of hazardous materials shall have the manufacturer's label affixed to it or be labeled, marked, or tagged showing the identity of the hazardous chemicals, the appropriate hazard warning, and the name and address of the chemical manufacturer, importer, or other responsible party.

Secondary and subsequent containers of hazardous chemicals shall be labeled, marked, or tagged prior to use with the identity of the hazardous materials and the appropriate hazard warnings.

6.7.2 Communication Requirements

If the Contractor uses a labeling system that is an unusual format, or not readily understandable, the Contractor shall inform the Constructor, Project Manager and other affected workers of how to read/understand their labeling system.

The Contractor shall determine if their use of hazardous materials may affect (expose, or pose a potential danger in the event of an emergency) other Contractors, MSU employees, or the general public. If the hazardous materials form (or the way it will be used creates) a potential for affecting other employees, the Contractor shall take appropriate notification steps. The Contractor shall inform the other employer(s) of any precautionary measures that need to be taken to protect other Contractors and/or MSU employees from inadvertent/unnecessary exposure to the Contractor's hazardous materials during normal operating conditions and in foreseeable emergencies.

Work areas where chemical and/or biological hazards are known to pose an exposure potential shall be clearly designated as such (with signs, placards, postings, etc.) along with control requirements (PPE requirements, ventilation, authorization for access required, etc.).

6.7.3 Special Emphasis

Some chemicals are considered by MSU to be extremely hazardous and may have additional requirements for bringing on MSU property or may be entirely prohibited. Extremely hazardous materials at MSU include (but are not limited to) the following classes of chemicals:

- Alkali metals
- Asbestos
- Beryllium
- Perchloric Acid and other peroxide-forming chemicals

- Unstable, reactive, pyrophoric or explosive chemicals
- Hydrofluoric acid
- Radioactive materials
- Highly toxic chemicals and reproductive toxins (depending upon the form, the quantity and method of application or use)
- Pesticides/Herbicides
- Bio-chemicals

Use of these chemicals at MSU may necessitate additional control mechanisms such as establishing dedicated use areas, specific postings/warning signs, notification to adjacent workers, ventilation controls, decontamination procedures, personal hygiene facilities, etc. It is the Contractor's responsibility to notify the Constructor and the MSU Project Manager prior to bringing the material on site (preferably during the project planning stages) if intending to use extremely hazardous materials on their project, to ensure that the proper controls are built in.

6.8 Hazardous Materials

If the Constructor suspects a material, preexisting or newly discovered, within the scope of this project to be a hazardous material such as, asbestos, lead, polychlorinated biphenyl or any other potentially hazardous material, that has not already been identified and/or in the scope of work for the Contractor to abate, notify the Project Manager immediately. Do not impact or disturb the material in question until it has been determined to either be non-hazardous, included in the original scope of work, or until other arrangements can be made with the Project Manager and the MSU Office of Environmental Health and Safety.

6.8.1 Asbestos

Any work that impacts Asbestos shall comply with the requirements of the MSU EHS Asbestos Management Plan.

The Office of Environmental Health and Safety annually prequalifies asbestos abatement contractors for use on university owned projects. The current approved abatement contractor list can be found at: https://ehs.msu.edu/enviro/asbestos/index.html

6.8.2 Lead

Due to the age of buildings on the Michigan State University campus, all coated surfaces shall be assumed to contain lead-based paint. This includes but is not limited to any type of paint, primer, coating, lacquer, or varnish on any building component. Proper precautions must be taken to ensure that workers and building occupants are not exposed to airborne lead concentrations at or above the OSHA Action Level (AL) of 30 ug/m3.

If work will be conducted on any coated surface at MSU, the contractor must submit to the Project Manager current proof of appropriate detailed written lead work plan in accordance with 29 CFR § 1926.62 (Michigan Part 603). This submittal will include proof of training, written respirator program, and negative exposure assessments from projects with similar conditions at a minimum. Where appropriate testing has determined lead is not present in any coated surfaces, this work plan may not be required. Contractors performing work on campus must comply with the requirements of the MSU EHS Lead Management Program.

6.8.3 Mold

Mold is managed at MSU by a dedicated team. Should mold be encountered on a Constructor's project site, please inform the MSU Project Manager.

6.8.4 Odorous Chemicals or Processes

Where the use of chemicals, products, or equipment which contain or generate odor is required, the Constructor shall take appropriate actions to control the spread of harmful or unpleasant conditions. Examples of odorous chemicals or processes include paints, stains, and finishes, epoxy-resin systems, roofing tar, and equipment exhaust fumes. These actions may include continuous air monitoring, the use of negative air machines vented outdoors, restricted and contained mixing and prep locations, and modified work hours. All work generating odors shall be coordinated with the MSU Project Manager.

6.9 Hazardous Substance Spills

Releases of hazardous substances that pose a significant threat to health and safety, or that, by their very nature, require more than a routine response, are emergency situations.

If a release of an emergency nature occurs, call 911 immediately. Provide all applicable information and stay on the phone until told to hang up. If a non-emergency release of a hazardous substance occurs, contact the MSU Project Manager immediately.

6.10 Hoisting and Rigging

The equipment covered under this section includes hoisting devices and associated equipment and attachments such as slings, ropes, and chains, which provide mechanical assistance in raising and lowering a load as defined by MIOSHA. This includes either power or Manually operated equipment. The Constructor shall use a hoisting and rigging program that meets or exceeds the provisions of this section and MIOSHA Construction Safety Standard Part 10.

6.10.1 Planning

The Contractor shall evaluate and plan hoisting and rigging operations in advance. A competent person shall identify the hazards and determine the controls necessary to maintain an acceptable level of risk. A Hoisting and Rigging Lift Plan is required for complex and critical lifts. This plan shall be documented.

Crane hoisting of equipment or materials over occupied spaces shall be performed at the convenience of the Owner, with arrangements made with the Project Manager. During lifts over occupied spaces, all persons shall be removed from the lift radius and impact zone.

6.10.2 Critical and Complex Lifts

The Contractor shall utilize a Hoisting and Rigging Lift Plan or other MSU accepted equivalent plan to document critical and complex lifts. All critical and/or complex lift plans require the review and concurrence of the Project Manager and Constructor. Hoisting of personnel with a crane or derrick is not allowed.

Critical Lifts are defined as lifts for which any of the following conditions exist:

- The weight of the lift exceeds 85 percent of the crane's rated capacity in the configuration that will be used during the lift. Exception: During steel erection, a critical lift is defined as a lift that exceeds 75 percent of the crane's rated capacity or requires the use of more than one crane.
- Lifts involving non-routine or difficult rigging arrangements or where loads will require exceptional care in handling because of size, weight, close-tolerance installation or high susceptibility to damage.
- If the item being lifted were to be damaged or upset, it could result in a release of hazardous material into the environment or the release of airborne concentrations that could exceed established occupational exposure limits.

- The item being lifted is unique and, if damaged, would be irreplaceable or not repairable and is vital to a system, facility, or project operation.
- The cost to replace or repair the item being lifted, or the delay in operations of having the item damaged, would have a negative impact on the facility, organization, or construction project to the extent that it would affect project commitments.
- The item, although non-critical, is to be lifted above or in close proximity to a critical item or component.
- Any personnel lift

Complex Lifts are defined as lifts that present logistical difficulties or lift coordination complications, thus requiring a higher level of planning and execution. Complex lifts may involve the following:

- A lift involving multiple cranes.
- Axial rotation of an object in the vertical plane or other complex movement of the load.
- A lift where the behavior of the load while in suspension is questionable.

6.10.3 Pre-Lift Meeting

Prior to performing a complex or critical lift, the Contractor shall conduct a pre-lift meeting with workers involved in the work activity. This meeting shall be documented. The following items shall be reviewed:

- The scope and sequence of work
- Roles and responsibilities
- Hazards and controls
- Other relevant information identified in the Hoisting and Rigging Lift Plan.

6.10.4 Personnel Hoisting

The use of a man basket or other personnel structure to elevate workers to a working position or to hoist workers onto a platform is prohibited. Exceptions may be made when the use of a conventional means of reaching the work area, such as a ladder, scaffold, or man lift, would be more hazardous or is not possible because of structural design or worksite conditions. Personnel lifts shall be properly planned and executed, and all requirements of *MIOSHA Construction Safety Standard Part 10, § 1926.1431 – Hoisting Personnel* must be met. The Constructor shall recommend and authorize this type of activity and the MSU Project Manager shall be notified in advance of the lift.

A pre-lift meeting shall be conducted prior to initiating a personnel lift. Workers involved in the work activity shall attend the pre-lift meeting, including any involved Contractor, man-basket occupants, and the equipment operator at a minimum.

6.10.5 Inspections, Testing, and Maintenance

Constructor shall assure that required inspections are conducted for all hoisting and rigging equipment in service at the project site. This includes any inspection required by the manufacturer, ASME/ANSI Standards, and MIOSHA Construction Safety Standard Part 10.

All inspection records and documents produced to meet these requirements must be available on-site. Where deficiencies are identified, equipment must be removed from service until an appropriately qualified individual conducts the necessary inspection and certifies in writing that the equipment is available for use.

- For cranes and other hoisting equipment, this inspection requirement includes *modified equipment, repaired/adjusted equipment, post assembly, each shift, monthly, annual/comprehensive, severe service,* and *equipment not in regular use* inspections at a minimum.
- For equipment and attachments, this inspection requirement includes *prior-to-use* and *periodic* inspections at a minimum.

6.10.6 Qualifications, Training, and Assessment of Personnel

The Contractor shall assure that personnel involved in hoisting and rigging operations meet the requirements identified in *MIOSHA Construction Safety Standard Part 10, § 1926.1427-1430*. This includes requirements for Operators, Signal-Persons, and Maintenance and Repair Employees. Constructor shall ensure unqualified individuals do not perform regulated activities.

6.11 Protection of the Public

The Constructor and each Contractor shall take all appropriate precautions to prevent construction impacts to the MSU students, faculty, staff, and the public. Examples of required precautions include:

- Proper site control including temporary fencing, barricading, lighting, and signage.
- Accessible temporary facilities, including ingress/egress, walkways, ramps, building partitions, etc.
- Dropped and falling object protection
- Planned access routes for workers, equipment, and materials
- Dust and other fugitive emission controls

Where the Constructor's operations require the comingling of Contractor staff and MSU students, faculty, staff, or the public, the Constructor shall coordinate such operations with the MSU project manager, any appropriate building contacts or management, and the MSU Contractor Safety Manager.

6.12 Red Tag Permit Monitoring System

Contractors performing work shall plan their work and take the necessary steps to minimize outages or impairments of fire suppression, detection, or alarm systems. When outages are necessary to perform a particular scope of work, they shall be coordinated in advance and approved by the MSU Project Manager.

6.13 Traffic Control

The Constructor shall not block or interfere with campus vehicular and pedestrian traffic. Where impacts to traffic are required to achieve project objectives, all modifications shall comply with the Michigan Manual of Uniform Traffic Control Devices (MMUTCD) and MIOSHA Construction Safety Standard Part 22.

7 DEFINITIONS

Constructor – The person or entity identified in the contract with Michigan State University and includes the Constructor's Representative. The Constructor functions as the Controlling Contractor on a project. Examples include but are not limited to General Contractors and Construction Managers. Constructors retain overall safety coordination responsibility. On projects with no Constructor, each employer must fulfill the responsibilities of the Constructor.

Contractor – Where used in this document, Contractor refers to any employer engaged in construction activities, inclusive of any Subcontractor, Sub-subcontractor, Supplier, Vendor, or Service Provider. This category includes the Constructor only for activities where employees of the Constructor are actively engaged in construction activities.

Contractor Safety Manager (CSM) – The MSU EHS representative (or designee) who represents the University in interactions with internal and external entities regarding management of risk of work conducted at MSU by non-MSU affiliated staff.

EHS – Means Environmental Health and Safety and as used in this Manual may refer to either the plain

language meaning or the Unit at Michigan State University responsible for matters of Health and Safety.

EMR – Is the Experience Modification Rate.

Exposure Hours – Exposure to injuries shall be measured by the total number of hours of employment (i.e., the actual worked hours) of all employees for each Contractor companies for the reporting period.

$$\textbf{Total Recordable Injury Frequency Rate} = \frac{\textbf{Number of Recordable Injuries X 200,000}}{\textbf{Total Exposure Hours}}$$

First Aid Injury – An Occupational Injury/Illness that requires first aid treatment only and does not result in loss of time from work or Restricted Work. First Aid Injuries include:

a) Use of non-prescription medications at a non-prescription strength, including antiseptics;
b) Administration of tetanus or diphtheria shot(s) or booster(s). Other immunizations such as
c) Hepatitis B vaccine or rabies vaccine related to an injury are considered medical treatment;
d) Cleaning, flushing or soaking wounds on skin surface;
e) Use of wound coverings such as bandages including liquid bandages, gauze pads, steristrips or butterfly bandages, etc. Wound closing devices such as staples and sutures are considered medical treatment;
f) Use of any hot/cold therapy (e.g., compresses, soaking, whirlpools, non-prescription skin creams or lotions for local relief, etc.);
g) Use of any non-rigid, non-immobilization means of support (e.g., elastic bandages, wraps);
h) Use of temporary immobilization devices while transporting an accident victim;
i) Drilling of a nail to relieve pressure or to drain fluid from a blister;
j) Use of eye patches;
k) Removal of foreign bodies not embedded in the eye if only irrigation or removal with a cotton swab is required;
l) Removal of splinters or foreign material from areas other than eyes by irrigation, tweezers, cotton swabs or other simple means;
m) Use of finger guards;
n) Use of massages; and,
o) Drinking of fluids for relief of heat stress.

Lost Days – The number of calendar days that the employee is unable to work beyond the day of injury/illness recommended by a physician or other health care professional. Lost time ends as of the date that the employee is deemed fit to work either full or Restricted Work or to a maximum of 180 calendar days for any individual case. For cases where the disability will continue beyond the closing date, Lost Days and Restricted Days shall be estimated on the basis of medical opinion as to probable ultimate disability and included in the data submission. Lost Days are only recorded for the period that the injured person is in the employ of the company.

Lost-Time Injury – An injury/illness resulting in Lost Days beyond the date of injury as a direct result of an Occupational Injury/Illness incident.

Medical Treatment – means the management and care of a patient to combat disease or disorder. The following are not considered Medical Treatment Injuries:

a) Visit(s) to a health care provider limited to observation or counseling or prescribed Restricted Work;
b) Diagnostic procedures (e.g., X-rays, blood tests), including the use of prescription medications solely for diagnostic purposes (e.g., eye drops to dilate pupils).
c) First aid as defined in MIOSHA OSH Part 11.

Michigan Manual of Uniform Traffic Control Devices (MMUTCD) – The Michigan Manual on Uniform Traffic Control Devices (MMUTCD) is the State of Michigan standard for all traffic control devices installed

on any street, highway, bikeway, or private road open to public travel.

Near Miss – Near-miss accidents/exposures are those situations which under slightly different circumstances, could have resulted in recordable injury or illness as defined by MIOSHA OSH Part 11, Recording and Reporting of Occupational injuries and Illnesses. Routine recognized violations of standards observed during field work will generally not be considered near-miss.

Other Recordable Injury/Illness:

Restricted Work – When an employee, due to a work-related injury/illness, is medically determined to be unable to perform one or more routine functions or unable to work the normal time period of their pre-injury/illness workday, they are working in a "restricted" capacity. Routine functions are the work activities that employees regularly perform at least once a week.

Significant Occupational Injury/Illness – Any injury/illness, that is not recorded as a Fatality, Lost-Time Injury, Medical Treatment Injury or Restricted Work case, but has been medically diagnosed and determined to be work-related and the cause is a verified trauma or workplace exposure that has extended to be within the current reporting period. Injury examples include punctured eardrums and fractured or cracked bones. Illness examples might be hearing loss, or respiratory disease.

Loss of Consciousness – Is a work-related, altered state of consciousness that can vary from disorientation to time, place, or person, to coma. For reporting purposes, the Loss of Consciousness must be witnessed or medically substantiated as related to a work activity or exposure.

Project Manager – means the individual authorized to represent Michigan State University through the contracting process, and may also be identified as the Construction Representative, MSU Official, or Owner.

Recordable Injury – Any Occupational Injury/Illness that results in an employee experiencing:

a) Fatality;
b) Lost-Time Injury;
c) Medical Treatment Injury; or
d) Other Recordable injury/illness (not captured above), which has:
   i) Restricted Work; or
   ii) Significant Occupational Injury./Illness; or
   iii) Loss of Consciousness.

Restricted Days – The number of calendar days to a maximum of 180 days during which the employee is subject to Restricted Work, based on the recommendation of a physician or licensed health care professional, for an individual case. For cases where the disability will continue beyond the closing date, Lost Days and Restricted Days shall be estimated on the basis of medical opinion as to probable ultimate disability and included in the data submission. Restricted Days are only recorded for the period that the injured person is in the employ of the company.

Subcontractor – A person or entity retained by the Constructor as an independent contractor to provide the labor, materials, equipment, or services necessary to complete a specific portion of the Work. The term Subcontractor does not include the Design Professional or Others. This manual will use the term "Contractor" to refer to Subcontractors.

Sub-Subcontractor – A person or entity retained by a Subcontractor as an independent contractor to provide the labor, materials, equipment, or services necessary to complete a specific portion of the Work. Sub-Subcontractors shall adhere to all Subcontractor requirements. This manual will use the term "Contractor" to refer to Sub-Subcontractors.