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SECTION 013100 – ENVIRONMENT, SAFETY, AND HEALTH REQUIREMENTS

PART 1 GENERAL

1.1 LABORATORY'S ES&H POLICY

A. At Fermilab, safety and environmental protection are of the highest importance. The Laboratory's policy is to protect the environment and the safety and health of all persons, may they be laboratory employees, subcontractor employees, scientific visitors, or visiting members of the public, from accident or injury while they are present on the Fermilab Site or other location managed by Fermi Research Alliance, LLC (FRA).

B. Nothing shall have a higher priority.

1.2 SUMMARY

A. This section describes the requirements, responsibilities and expectations for the environment, safety and health (ES&H) aspects of the project.

B. Safety, as used in this document, encompasses environment, safety, and health, including pollution prevention and waste minimization.

C. The Subcontractor shall provide all labor, materials, equipment, services, occupational exposure monitoring, and supervision required to maintain work sites that meet the ES&H requirements of all applicable federal, state, local and Fermilab regulations. In addition, the Subcontractor shall protect the environment and the safety and health of its employees, the employees of its sub-subcontractors, sub-tier vendors, FRA's employees and the general public.

1.3 REFERENCES

A. The Subcontractor and sub-tiered contractors shall comply with the following referenced documents. The publications referenced herein, form a part of this Section and Subcontract documents.

1. Fermilab ES&H Manual http://eshq.fnal.gov/manuals/feshm/
2. 10 Code of Federal Regulations (CFR) 851, Department of Energy (DOE) Worker Safety and Health Program
3. 10 CFR 820, Procedural Rules for DOE Nuclear Activities
4. 10 CFR 835, Occupational Radiation Protection
5. 10 CFR 860, Trespass to Land Owned & Leased by the US Government
6. 10 CFR 708, DOE Contractor Employee Protection Program
7. 29 CFR 1904, Record Keeping Guidelines for Occupational Injuries and Illnesses
8. 29 CFR, 1910, Occupational Safety and Health General Industry Standards
9. 29 CFR 1926, Occupational Safety and Health Standards for Construction
10. 40 CFR Protection of the Environment (USA EPA)
11. 49 CFR Transportation
12. 35 IAC Illinois Environmental Protection (Illinois EPA)
13. Illinois State, "Rules of the Road" and the Illinois Vehicle Code

14. DOE Order 442.1A, Department of Energy Employee Concerns Program
15. National Fire Protection Association (NFPA) codes and standards
16. NFPA 70E, Standard for Electrical Safety in the Workplace
17. American Conference of Governmental Industrial Hygienists (ACGIH), "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices"
18. American Society of Mechanical Engineers (ASME) Codes and Standards:
    a. ASME B30 Series, Crane Safety
    b. ASME B31 Standards of Pressure Piping
19. American National Standards Institute (ANSI) Standards:
    a. ANSI A10, Construction Package
    b. ANSI Z136.1 Safe Use of Lasers

B. Subcontractor(s) working on Fermilab site are subject to United States of America - Department of Energy (DOE) civil penalties or subcontract fee reductions for noncompliance, in accordance with 10 CFR 851 "Worker Safety and Health Program" and 10 CFR 835 "Occupational Radiation Protection". Subcontractor(s) shall also comply with 10 CFR 851 "Worker Safety and Health Program" which defines worker safety and health requirements for the Department of Energy contractors and their subcontractors. The Worker Safety and Health Program acknowledgment is part of the Construction ES&H Certification. Additional information can be found at: http://eshq.fnal.gov/worker-safety-health-for-subcontractors/.

C. Subcontractor shall comply with 10 CFR 835 "Occupational Radiation Protection". This Regulation defines the requirements pertinent to work where potential exposure to ionizing radiation hazards occur. The protective measures to be taken where this hazard is present shall be communicated to the Subcontractor through the FRA Construction Coordinator. FRA has an extensive level of expertise in management of ionizing radiation hazards that will be utilized to identify the work locations where such hazards are present and establish these protective measures.

D. The publications listed below form a part of this specification to the extent referenced.
    1. FRA General Terms and Conditions for Construction (06-19)
    2. 010010 General Requirements
    3. 013100 ES&H Requirements

1.4 DEFINITIONS

A. Competent Person: 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 the identified hazardous. Duties related to ES&H shall take precedence over other duties.

B. Construction: The combination of erection, installation, assembly, demolition, or fabrication activities involved to create a new facility or to alter, add to, rehabilitate, dismantle, or remove an existing facility. It also includes the alteration and repair (including dredging, excavating, and painting) of buildings, structures, or other real property, as well as any construction, demolition, and excavation activities conducted as part of environmental restoration or remediation efforts.

C. Construction Coordinator (or Task Manager): A FRA person responsible for ensuring the work being performed is in conformance to the subcontract technical requirements. The FRA Construction Coordinator is the primary point of contact with the Subcontractor. The term Construction Coordinator shall also mean Task Manager and therefore, interchangeable within the subcontract documents.

D. Construction Environmental Safety & Health Certification: An official, binding document prepared by the Subcontractor, bearing the signature of a responsible manager of the subcontracting company that defines the safety and health practices and responsibilities necessary to conduct operations on Fermilab property in a safe manner.

E. Construction Manager: An individual or firm responsible to DOE or its contractor, Fermi Research Alliance, LLC, for the supervision and administration of a construction project to ensure the construction contractor's compliance with construction project requirements.

F. Construction Management Office: An office comprising of a Construction (Project) Manager, Construction Coordinator, Procurement Administrator, and ES&H Safety Coordinator. This office is responsible for supervising and administrating the construction project to ensure the construction subcontractor's compliance with technical specifications and ES&H requirements. An office member will serve as the primary liaison between the Subcontractor and FRA, and this office member is the designated Construction Coordinator.

G. Construction Worksite: The area within the limits necessary to perform the work described in this Subcontract. Reference Section **010010** Site Location Article 1.4, Parking and Staging Article 1.11, & Site Access and Hauling Article 1.12.

H. Design Coordinator: A FRA person who is assigned to the project and works with the Construction (Project) Manager and Construction Coordinator to assist in the technical coordination of the project.

I. ES&H Coordinator: A FRA person responsible for ES&H guidance, periodic construction site visits, support for the FRA Construction Coordinator, and provide oversight of the Subcontractor's safety program. The ES&H Coordinator will review Hazard Analysis and training documentation for on-going work activities. Any deficiencies noted shall be brought to the attention of the FRA Construction Coordinator for follow up with the Subcontractor. The ES&H Coordinator has authority to stop work activities for imminent danger, fatality, or major environmental release, but does not have authority to direct changes in the work scope of the project or the Subcontractor's means and methods of construction.

J. Fermi Research Alliance, LLC (FRA) – The entity that manages Fermi National Accelerator Laboratory (Fermilab) for the U.S. Department of Energy's Office of Science.

K. Field Superintendent: 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 the identified hazardous. The superintends role is to run the day-to-day operations and control the short-term schedule. In addition, the superintendent includes important quality control and coordination responsibilities with sub tier

contractor/vendors. FRA also requires the Subcontractor Field Superintendent to have completed an OSHA 30-hour construction safety course. Duties related to ES&H shall take precedence over other duties.

L. Imminent Danger: A hazard which, if allowed to persist, is likely to cause an accident that will result in death, injury, property damage, or environmental impairment.

M. Integrated Safety and Environment Management (ISEM): ISEM is defined as a system for performing work safely and in an environmentally responsible manner. The term "integrated" is used to indicate that the Environment, Safety and Health (ES&H) management systems are normal and natural elements of accomplishing work. The intent is to integrate the management of ES&H with the management of the other primary elements of construction: quality, scope, cost, and schedule. FRA subscribes to the philosophy of Integrated Safety and Environment Management (ISEM) by following the program outlined in this section. The ISEM core functions are implemented by robust daily work planning of construction activities. The ISEM core functions include 1) define the scope of work, 2) identify and analyze the hazards, 3) develop and implement hazard controls, 4) perform work with controls, and 5) provide feedback for continuous improvement. FRA also requires this of subcontractors and sub-tier subcontractors.

N. Procurement Administrator: A FRA person responsible for and specifically assigned to the project, who is responsible for negotiating and administering the subcontract terms and conditions. All modifications to the subcontract shall come from the Procurement Administrator or designee, in writing. The Procurement Administrator or designee is the sole entity that can modify the subcontract or initiate change orders.

O. Project Manager: A FRA person responsible for managing, phasing, and ensuring the project is meeting key milestones.

P. Qualified Person: One who, by possession of a recognized degree, certification, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems relating to the subject matter, the work, or the project.

Q. Subcontractor's Safety Officer/Representative: If required by Section **010010** Article 1.9, paragraph A, the Subcontractor's Safety Representative shall have completed the OSHA 30-hour construction safety course and have a minimum of 10 years of construction safety experience consistent with the type of activities included in the scope of work.

R. Subcontractor's ES&H Program: Subcontractor's (corporate) company policies and procedures to ensure operations comply with applicable safety and occupational health laws and regulations and protect the safety and health of employees and members of the public.

S. Stop-Work Order: A definitive statement made openly to another individual that an imminent danger situation exists and therefore, all related work must stop immediately.

T. Time and Material (T&M) Office: A FRA person or office assigned to oversee the overall Subcontract compliance effort and operating procedures for Subcontract Time and Material Releases. This individual serves as the focal point for T&M administration of their assigned Subcontract Releases.

1.5 SUBMITTALS

A. Submittals with Subcontractor's proposal:
   1. Construction Environmental Safety and Health Certification, which includes acknowledgement regarding Worker Safety 10 CFR 851; (See Article 1.8)
   2. Experience Modification Rating (EMR) Rates and Occupational Safety Health Administration (OSHA) 300 log for last three years. Reference the Fermilab Subcontractor Safety Information Questionnaire;
   3. Subcontractor's ES&H Program (if required by Article 1.9); and
   4. If required by Section **010010**, Resume' of the Subcontractor's Safety Representative

B. ES&H Submittals Required Prior to Notice to Proceed but not limited to. Within ten (10) business days after subcontract award, the Subcontractor shall submit the following to FRA for acceptance. These items must be submitted and accepted by FRA prior issuance of Notice-To-Proceed (NTP):
   1. Hazard Analysis (if NTP is waived, a project Hazard Analysis is still required prior to commencement of work). The initial hazard analysis, at a minimum, should be for visitor's access to the work site and mobilization. Depending on the scale and scope of the project, a more detailed hazard analysis may be required;

C. Submittals after Notice to Proceed include, if applicable:
   1. The completed Construction Environmental Safety & Health Certification
   2. Individual Trade, Craft, or Task Specific Hazard Analysis
   3. Global Harmonizing System, Safety Data Sheets (SDS)
   4. Tabulation of On-site Work Hours on a Weekly basis as part of Weekly Progress Meetings
   5. Incident Investigation Reports
   6. Lift Plans
   7. Welding Plans
   8. Environmental, Erosion Control Reports; and
   9. Excavation Plans, etc.

1.6 STOP WORK AUTHORITY

A. If unsafe behavior or potential environmental release is observed, any FRA or Subcontractor employees shall stop the task activity, inform the FRA Construction Coordinator and Subcontractor's Field Superintendent.

B. If the hazard cannot be abated in a timely manner, the work activity shall be stopped though the use of a Stop Work Order by the FRA Construction Coordinator and the FRA Procurement Administrator.

C. Work shall not be permitted to continue until the hazardous situation has been eliminated and FRA has issued a Restart Work Order.

D. The Subcontractor is solely responsibility for safe working methods. Subcontractor shall ensure that Subcontractor employees, sub tier employees, FRA workers and other personnel or visitors are not exposed to safety hazards inside their designated work sites.

1.7 ENFORCEMENT

A. The US Department of Energy has the authority to exercise enforcement actions on any subcontractor who violates any requirement set forth in 10 CFR 851 and 10 CFR 835. The subcontractor may be subject to civil penalties up to $80,000 for each such violation, in accordance with 10 CFR 851 and civil penalties up to $110,000 for each such violation, in accordance with 10 CFR 835.

B. If any violation is a continuous violation, each day of the violation shall constitute a separate violation for the purpose of computing the civil penalty.

1.8 CONSTRUCTION ES&H CERTIFICATION

A. To ensure acceptance to 10 CFR 851, the Subcontractor shall complete and submit the attached Construction ES&H Certification.

B. The Construction ES&H (CESH) Certification shall be submitted with the Subcontractor proposal and reviewed by FRA prior to the award of the subcontract.

C. The CESH Certification shall encompass the work of any and all lower-tier subcontractors involved in activities under this Subcontract, and it shall include the Subcontractor's methods to enforce the elements of the safety program for all personnel on the construction worksite.
   1. The Subcontractor's CESH Certification shall include the following, at a minimum:
      a. A statement of the subcontractor's commitment to provide a safe and healthful construction worksite for all employees including Subcontractors' employees and FRA personnel;
      b. A signature of a responsible manager of the subcontracting company;
      c. If required by Section **010010** provide Name, title and qualifications of the designated site Safety Representative and designated alternates;
      d. Occupational Medicine Program, including identifying the qualified occupational medicine services provider;
      Procedures for coordinating safety and health with lower-tier subcontractors and with FRA personnel on the construction worksite;

D. The Subcontractor's incident reporting and occupational medical program and the specifics for the construction worksite shall include:
   1. Identification of the activities on the construction worksite that will require employees to be under an occupational medical or exposure-monitoring program. Upon FRA's request, the Subcontractor shall submit documentation of compliance.
   2. Discussion of how medical personnel will be made available for advice and consultation on matters of occupational health.
   3. An emergency response plan that sets forth the procedures to be followed upon the occurrence of serious injuries, illnesses, fatalities, fires, structural failures, or other emergencies, including procedures for the administration of first aid and/or other necessary medical treatment including:
      a. Identified of provision for prompt medical treatment.

b. Process for reporting and investigating recordable injuries for possible cause and corrective action in accordance with 10 CFR 1904.
c. Specific designation of management persons responsible for reviewing injury and illness reports.

4. Procedures for recording and reporting safety incidents and maintaining safety and health records in accordance with Occupational Safety and Health Administration (OSHA) requirements and in accordance with Article 3.3.
   a. Procedures for the investigation of job-related incidents to determine possible cause and corrective action.
   b. Specific designation of management persons responsible for review of injury and illness reports

1.9 SUBCONTRACTOR'S ENVIRONMENT, SAFETY, AND HEALTH PROGRAM

A. On all subcontracts that require performance bonding, the Subcontractor shall have an ES&H Program that is commensurate with the complexity and nature of the work. This ES&H Program will describe the Subcontractor's overall commitment to safety and measures that will be taken specific to this project work scope and site. The following describes the ES&H Program requirements.
   1. The Subcontractor shall submit to FRA one (1) printed copy and one (1) electronic copy in Adobe portable document format (PDF);
   2. The ES&H Program will address the Subcontractor's commitment to each of the following Integrated Safety and Environmental Management (ISEM) principals. A brief explanation and key elements to be addressed follows each:
      a. <u>Line Management Responsibility for Safety</u>: Line management shall be responsible and accountable for the protection of the employees, the public, and the environment. Examples of expected items to support this statement are:
         1) Statement of ES&H policy and goals;
         2) Workforce accountability for strict compliance with subcontractor's ES&H program;
         3) Policy statement concerning substance abuse on the construction worksite;
         4) Process for progressive discipline;
         5) Means of holding sub-tier contractors accountable for compliance with ES&H requirements;
         6) Evidence of worker participation;
         7) Participation of management in safety meetings, inspection, and documentation;
         8) Process for employees to identify and help resolve ES&H issues quickly, including stop work authority; and
         9) Management support without hint of retribution or harassment.
         10) On-going status and compliance verification reporting to FRA.
      b. <u>Clear Roles and Responsibilities</u>: The roles and responsibilities, and authority at all levels of the organization, including potential sub-tier subcontractors are clearly identified. Examples of expected items to support this statement are:

1) ES&H and Quality Control (QC) responsibilities for principals, field superintendent, foremen, competent person, ES&H officer, and workforce are documented; and
2) Stop work authority.

c. Competence Commensurate with Responsibility: Personnel possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities. Examples of expected items to support this statement are:
1) Identification of required training and experience of field superintendent, foremen, competent person, ES&H personnel, and workforce;
2) Identification of process for documenting completion of training;
3) Process for assuring sub-tier contractors are adequately skilled to perform their work activities; and
4) Training for employees and sub-tiers employees on Integrated Safety Management and hazard analysis.

d. Balanced Priorities: Resources are effectively allocated to address safety, programmatic, and operational considerations. Protecting the public, the workers, and the environment shall be a priority whenever activities are planned and performed. Examples of expected items to support this statement are:
1) Management commitment of resources to adequately implement their ES&H program;
2) Selection process for sub-tier contractors that include cost, quality, schedule adherence, and safety performance; and
3) Process for the Subcontractor to authorize start of work by sub-tier contractors.

e. Identification of Safety Standards and Requirements: Before work commences, the associated hazards are evaluated and an agreed upon set of safety standards and requirements are established which will provide adequate assurance that the public, the workers, and the environment are protected from adverse consequences. Examples of expected items to support this statement are:
1) Subcontractor ES&H Program, by reference;
2) Subcontractor QC Program, by reference; and
3) Hazard analysis process which includes defining scope of work, analysis of hazards, identification of hazard controls, requirement to perform work within these controls, and means to provide feedback and improvement.

f. Hazard Controls Tailored to Work Being Performed: Administrative and engineering controls, tailored to the work being performed, are present to prevent and mitigate hazards. Examples of expected items to support this statement are:
1) Hazard analysis process;
2) Subcontractor ES&H Program, by reference;
3) Planning and selection of appropriate and effective protective measures;
4) Active regimen of workplace inspections and prompt abatement of identified hazards; and

5) Occupational exposure (industrial hygiene) monitoring to verify adequacy of controls and compliance with occupational exposure limits;
6) Inspections, assessment, and audits of sub-tier contractor's adherence to ES&H and QC program;
7) Daily work planning and hazard reviews at the worker level documented in form found in Attachment B.

g. Operations Authorization: The conditions and requirements to be satisfied for operations to be initiated and conducted are clearly established and understood by all. Examples of expected items to support this statement are:
1) Process to assure workers are informed of hazards and required protective measures before work is allowed to begin;
2) Process to assure workers, including sub-tier contractors are appropriately trained to do their job safely;
3) Process to assure that when an incident occurs, the scene is secured until the incident investigation is complete; and
4) Investigation process includes analysis, examination of trends and lessons learned, and a means to report to FRA in a timely manner.
5) Process to assure that applicable Fermilab permits are in place prior to allowing work to commence.

B. The ES&H Program should describe the following:
1. Basic Safety and Health Provisions including Emergency Action/Response Plan, Accident Investigation Program, Recording and Reporting of Injuries, Housekeeping, Hazard Communication Plan, Personal Protective Equipment and Fire Protection and Prevention.
2. Hazard Analysis Process including how hazards are identified and analyzed, preventive controls and the periodic inspection program. How workers are informed of hazards and protective actions. How objective evidence, i.e., monitoring results, is to be used for establishing controls measure, including exposures assessments to verify adequacy of control, e.g., verifying adequacy of hearing protection while monitoring equipment noise that is expected to be greater than 85dba exposure.
3. Waste Handling and Disposal including characterization of waste, packaging and labeling requirements and assurance that appropriate transportation and handling facilities will be used;
4. Erosion Control and Environmental Protection including Storm Water Pollution Prevention Plan (SWPPP) when required and Erosion/Sediment Control Plan(s);
5. Other Program components (as dictated by the scope of this work) including the following:
a. Control of Hazardous Energy (Lockout/Tagout);
b. Confined Space;
c. Concrete Cutting;
d. Hearing Conservation;
e. Ionizing Radiation;
f. Nonionizing Radiation;
g. Lead, Beryllium, or Other Metals;
h. Electrical (including Power Transmission and Distribution);

i. Welding and Cutting;
j. Scaffolds;
k. Fall Protection;
l. Excavations;
m. Signs, Signals, And, Barricades;
n. Tools - Hand and Power;
o. Ladders & Stairways;
p. Commercial Diving Operations;
q. Motor Vehicles, Mechanized Equipment, and Marine Operations;
r. Cranes, Derricks, Hoists, Elevators, and Conveyors;
s. Concrete and Masonry Construction;
t. Steel Erection;
u. Underground Construction, Caissons, Cofferdams, & Compressed Air
v. Demolition; and
w. Blasting and the Use of Explosives

C. Changes and Updates: The ES&H Program is a living program. Updates that reflect changes to processes and program shall be submitted as changes are made. FRA may require changes for the program acceptance prior to Subcontract award. Once accepted by FRA, the Subcontractor shall be required to comply with the requirements set forth in their program.

D. All sub-tier subcontractors employed by the Subcontractor must agree in writing to follow the Subcontractor's ES&H Program. If not, the Sub-tier subcontractor's will submit for acceptance one (1) electronic version in Adobe portable document format (pdf) of their ES&H Program and provide their own CESHC to ensure acceptance of 10 CFR 851, reference paragraphs 1.3, B and Article 1.8.

1.10 JOB SITE ORIENTATION

A. The Subcontractor shall ensure and demonstrate; through a documented job site orientation program that sub-tier subcontractor personnel are aware of the ES&H requirements of the job.

B. The Sub-tier subcontractors working for the Subcontractor shall follow and perform all required ES&H programs defined by the Subcontractor's approved and accepted ES&H program for the job site.

1.11 HAZARD ANALYSIS

A. The hazard analysis document details the specific hazards associated with the work activities and mitigating actions (including personal protective equipment) that the Subcontractor and Sub-tier subcontractors will take to reduce or eliminate the risk of injury.

B. The initial hazard analysis shall be submitted as part of the CESHC and accepted by FRA prior to notice to proceed (NTP).

C. As the project progresses, task specific hazard analysis shall be prepared and submitted. The Subcontractor shall prepare a hazard analysis for all trade work. A link

to the hazard analysis can be found at http://eshq.fnal.gov/worker-safety-health-for-subcontractors/. The Fermilab format shall be used unless otherwise approved, see attachment D.

D. The following criteria shall be addressed, if applicable, when developing the hazard analysis:
   1. A FRA accepted hazard analysis shall be required for all work activities;
   2. All subcontractor and sub tier subcontractor employees are required to sign the analyses affecting their work thereby acknowledging understanding of the hazards and the mitigation activities. The signature list shall be available for review by the FRA Construction Management Office. As the HA is updated, the subcontractor and sub-tier subcontractor employees shall be advised of the new information and re-sign the document;
   3. Prior to the start of subsequent new work activities, the Subcontractor shall review and revise the hazard analysis, or develop a new hazard analysis, as necessary to incorporate new hazards. Each revision must be submitted and accepted by FRA before the associated element of work is begun;
   4. Safety Data Sheet (SDS) of products that may significantly impact the safety or environment of Fermilab or subcontractor personnel are to be submitted as part of the hazard analysis process;
   5. The name of Competent Persons shall be included on the hazard analysis and communicated to all affected workforces;
   6. Specific procedures in the areas of fall protection, excavation, confined space, hoisting and rigging, and Lockout/Tagout may be required as job conditions dictate; and
   7. Identifying silica exposure such as cutting masonry products, installing, cutting, or removing concrete, installation of or removal of sheet rock compound or dealing with other silica constraining products. Reference Attachment A for recommended mitigations.

E. The FRA Construction Management Office will provide informal hazard analysis training for Subcontractor and sub-tier contractor personnel upon request.

1.12 EXISTING UTILITIES, EQUIPMENT, AND STRUCTURES

A. Utility Identification and Location:
   1. Structures and utilities shown on the drawings represent the best information available. Their number and exact locations are not guaranteed. Excavation during construction may reveal the presence of underground drainage tiles, culverts, utilities, and other obstructions. The Subcontractor shall request from FRA direction for rerouting, sealing or otherwise modifying underground obstructions not shown on the drawings.
   2. The Subcontractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this subcontract. The Subcontractor shall only remove trees when specifically authorized to do so and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during subcontract performance, or by the careless operation of equipment, or by workmen, the Subcontractor shall trim those limbs or

branches with a clean cut and paint the cut with a tree-pruning compound as directed by FRA.

3. The Subcontractor shall protect from damage all existing infrastructure (1) at or near the work site and (2) on adjacent property of a third party, the locations of which are made known to or should be known by the Subcontractor. The Subcontractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this subcontract or failure to exercise reasonable care in performing the work. If the Subcontractor fails or refuses to repair the damage promptly, FRA may have the necessary work performed and charge the cost to the Subcontractor.
4. Electrical cables, duct banks, fiber optic cables, and gas service in the area of the excavation, that is, 18 inches either side or crossing, must be de-energized/de-pressured and lock-out/tagged-out. If the services cannot be de-energized/de-pressured, then vacuum excavation methods, consisting of air or water to break up the soil and a vacuum device to collect the spoil, shall be used to locate fiber optic cables, electrical cables, duct banks, and gas lines prior to the excavation activity.

B. Work on Existing Utilities:
1. FRA will identify through drawings, notations and field locates, the approximate location of known utilities and underground structures;
2. No work shall be performed on existing in-service utility systems without prior approval and coordination of the system outage by the FRA Construction Coordinator;
3. Pressure shall be relieved on all piping systems before opening system and starting the work;
4. Lockout/Tagout shall be used by the Subcontractor for all valves, blank-offs and relief lines;
5. “Hot Tap” connections on utility services shall not be permitted unless specified by the subcontract documents and specific procedures have been submitted to and accepted by FRA.
6. Existing fire and life safety systems shall be re-activated at the end of each business work day. If systems are unable to be re-activated at the end of the business work day, notification must be made to the FRA Construction Coordinator.

C. Fermilab Access for Information Gathering:
1. Fermilab utilizes a GPS system for on-site mapping and documentation of underground utilities;
2. The Subcontractor shall provide access for data gathering;
3. The Subcontractor shall notify the FRA Construction Coordinator two (2) working days prior to backfilling.

1.13 ENVIRONMENTAL ISSUES AFFECTING THE WORK

A. Environmental issues affecting the work planning specific to this project can be found in Section **010010,** Article 1.9.

B. Soil Erosion and Sediment Control shall be employed on all projects involving excavations. The following requirements apply:

1. Subcontractor shall have all required erosion control devices required by the Soil Erosion Sediment Control Plan (SESCP) or SWPPP (if required) and as shown on the drawings, in place prior to commencing any work for which they are required.
    a. As the work evolves, additional interim control structures may be required in order to protect waterways and/or comply with permit terms and conditions.
    b. Costs for installation and maintenance of these structures shall be considered incidental to the project and included in the original proposal.
    c. The Subcontractor shall install all such structures within 24 hours of notification by FRA.
2. Maintenance of Erosion Control Structures:
    a. Subcontractor shall be required to perform inspections of all control structures as specified in the drawings and SWPPP, and to maintain all control devices until final stabilization of all disturbed areas.
    b. Subcontractor shall perform at a minimum, weekly erosion control inspections and after ½-inch or more precipitation events.
3. Temporary and Permanent Seeding and Stabilization
    a. The Subcontractor shall be required to follow seeding dates and requirements as specified and in accordance to the Illinois Urban Manual.
    b. The Subcontractor shall be responsible for providing appropriately vegetated surfaces as outlined in the technical specifications or specified on the drawings.
    c. The Subcontractor shall be responsible for establishing sufficient final vegetation required for stabilization as accepted by FRA to removing the erosion control structures. Any permanent seeding operations completed at the end of the growing season shall be carried out per dormant seeding requirements (Illinois Urban Manual Standard 880C). Subcontractor shall be responsible for establishing final vegetation over all disturbed areas.

1.14 ADVANCE NOTICE OF WORK ACTIVITIES

A. The following activities require the Subcontractor to provide written notification to the FRA Construction Coordinator a minimum of three (3) business days prior to the commencement of work:
    1. Interruption of road traffic;
    2. Closure of any roads;
    3. Connection to or interruption of any existing underground utility;
    4. Intended use of ICW from any hydrant;
    5. Connection to temporary electric power sources;
    6. Request for disablement of fire alarms or related safety devices;
    7. Request for disablement of fire protection systems;
    8. Intended activity beyond the specified construction limits;
    9. Intended access to or work within a confined space;
    10. Connection to or interruption of any existing 13.8kV power system;
    11. Saw cutting or core drilling at manholes, foundations and paved areas;
    12. Excavation activities;
    13. Backfilling of underground utilities;

14. Delivery of a radioactive source on the Fermilab site.

B. Subcontractor must receive FRA's approval prior to proceeding on the above listed work activities.

1.15 SUBCONTRACTOR'S PROJECT TEAM & PERSONNEL

A. Field Superintendent - The Subcontractor shall, at all times during the progress of the work, provide a competent superintendent. In addition, the following requirements for the Field Superintendent are described below:
   1. The Subcontractor shall provide a competent Field Superintendent, who is the Subcontractor's representative designated for the duration of the project to the running of the day-to-day operations of the work including safety, quality control and sub-tier subcontractor coordination responsibilities.
   2. The Field Superintendent shall have knowledge and experience of Occupational Safety and Health Administration (OSHA) and other related safety standards and has the authority to enforce such standards in the field.
   3. The Field Superintendent must be present on the Fermilab project site whenever work activities are ongoing.
   4. In the absence of the designated Field Superintendent, the Subcontractor shall identify an alternate individual with similar qualifications acceptable to FRA.
   5. Should more than one work shift be required on this project, the Subcontractor shall identify and assign a designated individual meeting the above requirements for each work shift.
   6. In the event excavations are part of the project scope, the Subcontractor shall provide a competent person for excavation activities who meets the requirements of OSHA 29 CFR 1926.650 (b).
   7. In the event scaffolding is be utilized during the execution of the project, the Subcontractor shall provide a competent person for scaffolding who meets the requirements of OSHA 29 CFR 1926.450 (b).

B. Subcontractor's Safety Representative - If a Subcontractor's Safety Representative is required, the Subcontractor shall employ a Safety Representative who acts as the authorized agent of the Subcontractor, responsible for safety activities of all work sites under this subcontract. Reference Section **010010.**

C. The Subcontractor's Field Superintendent or if required by Section **010010** the Subcontractor's Safety Representative as identified in the CESHC shall interface with the FRA Construction Coordinator and FRA ESH Coordinator on all safety matters, and assure the subcontractor does the following:
   1. Act as the Competent Person
   2. Provide Input to Daily Task/Work Planning Meeting
   3. Interface with FRA Construction Coordinator on all safety matters;
   4. Prepare and submit Hazard Analyses including revisions and updates;
   5. Review and accept sub-tier safety plans and hazard analyses;
   6. Assure that all sub-tier contractors have accepted the ES&H Plan;
   7. Update the ES&H Plan as required;
   8. Maintain a list of Competent and Qualified Persons;
   9. Assure that Hazard Analyses are understood and signed by all workers;
   10. Inspect work in progress;

11. Identify and reports and corrects deficiencies;
12. Assure that personal protective equipment is available;
13. Conducts tool box meetings;
14. Maintain all safety records including minutes, training records, inspections, etc.
15. Maintain safety related signage;
16. Assure that equipment inspections are performed;
17. Attend weekly construction meetings;
18. Coordinate permit applications with FRA Construction Coordinator;
19. Investigates all incidents.

D. The Subcontractor's Safety Representative or the alternate shall be present at all meetings between the Subcontractor and FRA at which changes in construction methodology are discussed. The Subcontractor's Safety Representative shall approve these changes.

E. Drug and Alcohol-Free Workplace - All personnel of the subcontractor, sub-subcontractors, and sub-tiers are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of controlled and restricted substances. All subcontractors and subcontractor's personnel shall adhere to the Federal Controlled Substances Act (12 USC 8120 and further defined in Federal Regulations 29 CFR 1308.11-3808.15) and stated in the subcontract documents.

F. After damage to property or environment release by the subcontractor or sub tier contractor associated personnel are subject to drug testing and results shall be submitted to the FRA Construction Coordinator.

1.16 IDENTIFICATION BADGING

A. The Subcontractor employees and sub-tier sub-subcontractors working on site will be required to obtain identification badging for access onto the Fermilab site**.**
   1. The FRA Construction Coordinator will assist in the process of identification badging;
   2. Once identification badges are obtained, they shall be available at all times while on and entering the Fermilab site; and
   3. Deliveries, incidentals, and escorted work activities under eight (8) hours are exempted from the badging requirement.
   4. **Starting October 1, 2020, FRA will only except REAL ID.**

1.17 FERMILAB TRAINING

A. All Subcontractors working at Fermilab shall attend Subcontractor Orientation which is a half-hour presentation conducted weekdays at 7:30 a.m. All Subcontractor employees will receive a card documenting attendance. This training must be repeated every two (2) years. The orientation and badging efforts require approximately one (2) hour.

B. FRA may require that Subcontractor employees receive Radiological Worker training, an approximately eight (8) hour class. Refer to Section **010010** to determine if this class is required.

C. FRA may require that Subcontractor employees receive Oxygen Deficiency Hazard (ODH) training, an approximately eight (8) hour class. This include a medical evaluation by Fermilab Occupational medical department. Refer to Section **010010** to determine if this class is required.

D. FRA may require that Subcontractor employees receive Fermilab LOTO II, a 4-hour class. Refer to Section **010010** to determine if this class is required.

1.18 WASTE DISPOSAL/RECYCLING

A. No trash burning, dumping, or disposal is permitted on Fermilab property. The disposal of regulated waste generated from the use of materials provided by Fermilab (Government property) shall be the responsibility of the designated FRA representative. Disposal of all other trash and waste materials generated during the performance of this subcontract shall be the responsibility of the Subcontractor and must be performed in compliance with all applicable federal, state and local laws and regulations.

B. The governing statutes include, but are not limited to, the Resource Conservation and Recovery Act, the Toxic Substances Control Act, the Hazardous Materials Transportation Act, the Illinois Environmental Protection Act/Solid and Special Waste Management Regulations, and the laws and regulations of any other state receiving regulated waste material generated during the performance of this Subcontract.

C. Fermilab remains subject to a DOE-wide suspension of recycling metal originating from radiological areas. Refer to Section **010010** for requirements pertaining to recycling metals. Off-site disposal of recycled materials, trash, debris, demolished material, pallets, crates, packing materials, rubbish and all waste material shall be the responsibility of the Subcontractor. The goal for recycling construction and demolition waste is 80% based on weight, excluding metals restricted in Section **010010**.

D. Every subcontractor's recycled or waste dumpster(s) leaving site must have a radiological survey. Coordinate with the FRA Construction Coordinator for this survey prior to dumpster removal.

E. The Subcontractor shall furnish all necessary dumpsters or containers to prevent dispersion of debris both within and outside of the construction site.

F. Fermilab Approved Recycling:
   1. The Subcontractor shall utilize a recycling waste hauler, obtain a report on percentage recycled by weight from the vendor and submit the report to the FRA Construction Coordinator;
   2. The minimum amount of recycled material is 50% as measured by weight excluding metals restricted by above in paragraph B.
   3. The Subcontractor shall submit a report that details the percentage, by weight, of recycled materials.

G. Regulated Waste:
   1. Where regulated waste is generated (waste regulated by the Resource Conservation and Recovery Act Hazardous, Toxic Substances Control Act, Illinois Special Waste, etc.) the Subcontractor shall immediately notify the FRA Construction Coordinator; and

2. Unless specified above in paragraph B, all regulated waste shall be disposed through the Fermilab Hazard Control Technology Team.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 PERMITS

A. Fermilab has its own Authority Having Jurisdiction. No municipality permits are required. However, Fermilab conducts work through the use of on-site permits. All Fermilab required permits will be identified to the Subcontractor by the FRA Construction Coordinator, who will arrange for all necessary permits at no cost to the Subcontractor.

B. No work activity shall be performed without the required permits.

C. Activities requiring permits include, but are not limited to:
   1. Work notification;
   2. Excavation (see below);
   3. Electrical work;
   4. Existing Structure/Concrete Cutting & Coring
   5. Hot Work, Burning/Welding & Spark Producing;
   6. Modification to drinking water, sanitary sewer systems or Industrial Cooling Water;
   7. Radioactive sources on site;
   8. Working with/on radioactive material, working in radiological areas;
   9. Moving government or Fermilab property off site.

D. The Subcontractor shall comply with all restrictions or provisions listed on permits.

E. All requests for permits shall be made a minimum of two (2) working days prior to the need for the permit, except excavation permit.

F. Excavation Permit: An Excavation Permit issued by Fermilab via the FRA Construction Coordinator is required before any excavation/digging can begin at the construction site. The following requirements are associated with the Excavation Permit:
   1. Subcontractor shall coordinate the preparation of the excavation permit application with the FRA Construction Coordinator;
   2. Excavation permits require a minimum of ten (10) working days for areas less than one acre (208-ft x 208-ft) unless near accelerator operations. All other excavation permits including near accelerator operations, that is, 100-ft from the center of the beamline, require a minimum of eighteen (18) working days;
   3. No excavation shall proceed without an approved Excavation Permit, signed by the Subcontractor Competent Person and the FRA Construction Coordinator.

G. Confined Space Permit: The minimum acceptable requirements for confined space work at Fermilab include:

1. The FRA Construction Coordinator shall identify all existing confined work spaces to the Subcontractor;
2. If a Subcontractor is required to enter a permit-required confined space as part of their contract with FRA, the subcontractor shall provide the FRA Construction Coordinator with the following information at the pre-construction meeting or at least five (5) working days prior to entry:
    a. A written copy of the Subcontractor's confined space entry program;
    b. Training records for potential entrants, attendants, and entry supervisors;
    c. Evidence that all air monitoring equipment is properly calibrated within the calibration period specified by the subcontractor's program or manufacturer's instructions. This may be in the form of a calibration log, certification indicator on the instrument, or other means. (It is imperative that the equipment used by the Subcontractor be capable of monitoring for the contaminants associated with the confined space to be entered.
3. It will be the Subcontractor's responsibility to provide all of their own personal protective equipment (PPE), such as lifelines, harnesses, respirators, tripods, ventilators, etc., as specified by the entry permit;
4. In addition to complying with the permit space requirements listed above, each Subcontractor retained to perform permit-required confined space entry operations shall:
    a. Obtain any available information regarding permit space hazards and entry operations from the FRA Construction Coordinator;
    b. Coordinate entry operations with FRA, when both FRA personnel and Subcontractor personnel will be working in or near permit spaces;
    c. Prior to entry, inform the FRA Construction Coordinator of the specific permit space procedures the Subcontractor will follow;
    d. Inform the FRA Construction Coordinator who will inform the Fermilab Fire Department prior to entering the space;
    e. Inform the FRA Construction Coordinator of any unanticipated hazards encountered during confined space entry;
    f. Provide the FRA Construction Coordinator with a copy of the Subcontractor's confined space permit, reclassification form or written certification once the work has been completed.

H. Hot Work, Burning, Welding, including Spark Producing around Combustibles Permit:
1. Information concerning the burning/welding permit is listed below:
    a. The FRA Construction Coordinator will contact the Fermilab Fire Department (FFD) and secure the Burn Permit;
    b. Members of the FFD will meet with the FRA Construction Coordinator and the Subcontractor's Field Superintendent and examine the proposed operation, prescribe precautions, assure appropriate instructions are understood, and then issue a written Burn Permit;
    c. The Subcontractor must arrange for fire watches during burning, welding, or other fire or spark generating work. This fire watch must continue for a minimum of thirty minutes after work is complete;
    d. It is the Subcontractor's responsibility to furnish the proper number and type of fire extinguishers for any welding, cutting, or brazing activities as specified in the Burn Permit;

e. The extinguishers must be located in clear sight and no farther than 50 feet from the work areas;
f. All welding shall be in accordance with the requirements of the American Welding Society (AWS) Standard: Safety in Welding, Cutting, and Allied Process (ANSI/ASC Z49.1-94);
g. UL or FM listed check valves shall be installed on oxygen-fuel torch cutting equipment

3.2 PRECONSTRUCTION MEETING

A. Preconstruction Meetings may be required for Subcontracts which require bonding. This meeting, chaired by the FRA Procurement Administrator, will typically be held after Subcontract award and before Notice to Proceed is issued.

B. The Subcontractor's Project Team is expected to attend this meeting.

3.3 REPORTING REQUIREMENTS

A. The following requirements concern Subcontractor reporting requirements:
1. Emergencies: All emergencies occurring at the Fermilab site must be reported immediately by dialing extension **3131** from a Fermilab phone or **(630) 840-3131**. The types of emergencies to be reported include: injury or illness requiring emergency care, fire, explosion, security incident, vehicle accident, radiation incident, utility failure, tornado sighting, and hazardous material spill or release. After emergency is stabilized, contact the FRA Construction Coordinator;
2. Non-Emergencies (or All Other Incidents): All incidents, including any injury/illness, any non-emergency incident and near misses must be reported immediately to the FRA Construction Coordinator. FRA shall determine if the incident scene shall be preserved and secured by the Subcontractor to enable FRA and DOE to conduct any necessary investigations. After any necessary emergency response is made, the scene shall be left unchanged and protected until the FRA Construction Coordinator is notified and releases the incident site for work to continue; and
3. Investigation and Reporting: The Subcontractor must investigate all incidents (including near misses). The Subcontractor shall submit, within 48 hours of an incident, a written report of an investigation. The investigation must include root causes, corrective actions and preventive measures.

3.4 SUBCONTRACTOR TRAINING

A. The following requirements concern Subcontractor training:
1. The Subcontractor shall be responsible for assuring that their employees and sub-tier Subcontractor employees, who do not speak English, understand all ES&H requirements. The Subcontractor must be able to communicate any necessary instructions to those employees;
2. All Subcontractors performing work at Fermilab shall provide to their employees any necessary ES&H training as may be required by federal/state regulations and as appropriate for their Subcontract activities at Fermilab. Exceptions involve hazards, which are unusual for the trade of the Subcontractor's employees. In particular, FRA normally provides

appropriate training for Subcontractors working in radiation areas or oxygen deficient hazard areas and expected emergency response.

B. ES&H training that was provided by the Subcontractor or others and received by Subcontractor employees performing subcontractor activities at Fermilab shall be maintained on-site and available for review by FRA.

C. Subcontractors shall maintain on-site and provide to FRA upon request, any and all occupational safety and environmental records. Such records include, but are not limited to, the records required to be maintained by federal/state regulation. Such records include OSHA injury/illness logs, training records, inspection records, safety meetings, and incident investigations. Additional records appropriate for the Subcontractor's activities shall also be maintained and provided to FRA upon request. Examples include but not limited to:
   1. Excavation
   2. Scaffolding
   3. Fall Protection
   4. Confined Space
   5. Welding
   6. Crane Inspections
   7. NFPA 70E
   8. Monitoring IH Hazards, e.g., silica exposure
   9. Written exposure monitoring program

D. If the Subcontractor intends to administer first aid or Cardio Pulmonary Resuscitation (CPR), the Subcontractor must comply with 29 CFR 1926 and have available the list of names of any employee who will administer first aid or CPR, along with current certifications.

3.5 JOB SITE ES&H INSPECTIONS/MEETINGS

A. After the start of work and throughout the entire work period, the Subcontractor shall monitor and inspect the work area and operations for compliance with the Subcontractor's accepted ES&H Program, Hazard Analysis, and/or CESH Certification on a daily basis. The Subcontractor's Project Team is expected to conduct these inspections and correct any deficiencies found.

B. These inspections shall be documented by the Subcontractor and maintained on-site for the duration of the project. Records shall be available for review upon request by FRA.

C. The following requirements concern Job Site ES&H meetings:
   1. <u>Daily Work Planning Meetings</u> in the form of daily briefings shall be conducted by the Subcontractor Field Superintendent and attended by all sub tier contractors on site that day. The daily planning meeting will discuss the planned work activities, review the applicable hazard analysis, and allow for employee questions and feedback regarding the work activity documented on form found on Attachment B;
   2. <u>Weekly Toolbox Meetings</u> of approximately five (5) minutes duration shall be conducted at the job site by the various area/job foreman or superintendents for their specific crafts. These meetings shall emphasize the current

construction operations and provide an opportunity for inspection of tools and personal protective equipment.

D. The Subcontractor will document the daily and weekly toolbox meetings (date, topic, attendance, etc.) and provide a copy to FRA.

E. The FRA Construction Coordinator will be notified of all job site ES&H meetings and may attend.

3.6 PERSONAL PROTECTIVE EQUIPMENT

A. 100% eye, head, and foot protection – All construction workers and other personnel on the construction worksite shall wear at all times eye, head, and foot protection that complies with the applicable ANSI Standards. The type of protective eyewear shall be selected as appropriate for the hazard. Gloves shall be worn when handling sharp objects.

B. The Subcontractor shall furnish personal protective equipment (PPE) as required to reduce employee exposure to hazards when engineering and administrative controls are not feasible or effective in reducing hazard exposures. The minimum acceptable PPE for work on the Fermilab site are:

1. Hard hats shall be furnished by the Subcontractor and shall be worn in the construction work areas. Personnel working on construction activities or in the field shall also wear hard hats, brim facing forward or full brim style hard hat. Hard hats shall meet the ANSI Z89.1 standard as required by 29 CFR 1926.100 and bear the “Z89.1” designation. High voltage exposure work requires hard hats that meet the ANSI Z89.2 standard and bear the “Z89.2a” designation;
2. Safety glasses with side shields shall be furnished by the Subcontractor and shall be worn in the construction work areas. Eye protection must meet the requirements of 29 CFR 1926.102. Safety glasses shall be ANSI approved and shall be marked with the ANSI “Z87.1” designation;
3. Clothing suitable for the work and weather conditions is required. In construction areas, the minimum shall be short (1/4 length) sleeve shirt, long trousers, and hard sole leatherwork boots providing ankle protection. In addition, any work that presents a greater hazard to the feet or toes requires the use of safety toed or metatarsal guards, meeting ANSI Z41. Canvas, tennis, or deck shoes are not permitted within the construction work area;
4. All personnel working on construction activities shall wear a reflective, high visibility outer garment. When activities require heavy/motor equipment, minimum ANSI Class II visibility outer garments are required.

3.7 FALL PROTECTION

A. All fall hazards equal to or greater than six (6) feet will have 100% fall protection for all Subcontractor and Sub-tier employees.

B. Exception: When climbing reinforcing steel walls. Fall protection is not required when climbing vertically; however, when traversing horizontally or performing work on reinforced steel walls, then 100% fall protection is required.

3.8 ELECTRICAL WORK

A. The Construction Management Office will determine whether electrical work permits are required.

B. The following sets forth the minimum acceptable requirements for work on electrical systems at Fermilab.
   1. All electrical work shall be performed in accordance with NFPA 70E, Standard for Electrical Safety in the Workplace;
   2. The Subcontractor personnel must be trained in Lockout/Tagout (LOTO) prior to participating in LOTO of hazardous energy sources and working on LOTO systems or equipment;
   3. The Subcontractor shall provide ground fault circuit interrupter protection for electric hand-held tools, portable generators, temporary electrical extension cords and other wiring, etc. The assured equipment-grounding program is <u>not</u> an acceptable alternative at Fermilab.

C. All electrical tools and equipment brought onto the Fermilab site shall be Nationally Recognized Testing Laboratory (NRTL) and shall be used in accordance with their listings.

3.9 OXYGEN DEFICIENT HAZARDS (ODH)

A. Fermilab has policies and procedures governing work in ODH areas. The FRA Construction Coordinator will communicate specific requirements and work practices to the Subcontractor.

B. All Subcontractor and Sub-tier contractor personnel who must enter designated ODH areas must have and display a level of medical fitness acceptable to FRA prior to entering those areas.

C. FRA will assess the need for ODH training for Subcontractor personnel. If ODH training is necessary FRA will provide the trainer, free of charge.

D. Oxygen monitoring equipment will be supplied to the Subcontractor personnel, as necessary. The Subcontractor is responsible for returning this equipment upon request or upon completion of the work.

E. FRA will furnish emergency evacuation breathing equipment. Care, use, and the return of such equipment will be the responsibility of the Subcontractor.

3.10 RADIATION PROTECTION

A. Fermilab has policies and procedures governing radiological work. The FRA Construction Coordinator will advise the Subcontractor of the requirements and work practices, if potential for radiation affects the work scope.

B. FRA will assess the need for radiological training for Subcontractor personnel. If radiological training is necessary, FRA will provide the trainer, free of charge.

C. Radiation dosimeters will be supplied to the Subcontractor personnel, as necessary. The Subcontractor is responsible for returning this equipment upon request or upon completion of the work.

D. FRA will furnish protective clothing. Disposal of such clothing will be the responsibility of FRA.

E. Prescribed procedures for material handling and segregation shall be followed explicitly. Potentially radioactive material must be surveyed prior to removal from site. The FRA Construction Coordinator shall coordinate this survey.

F. The use of industrial radioactive testing sources is subject to monitoring and oversight by FRA based on the following:
   1. Nuclear density meters will be inspected at the construction site by Fermilab ES&H personnel. Review for Department of Transportation compliance with survey and inspection requirements will be completed at that time;
   2. When required by specification, Subcontractor use of radiography sources will require five (5) business days' advance notice to the FRA Construction Coordinator. During this time, the Subcontractor shall submit to the FRA Construction Coordinator documentation showing the Subcontractor's Nuclear Regulatory Commission or Agreement State license for the material;
   3. When the source is brought to the Fermilab site, FRA ES&H staff will meet the subcontractor, escort him/her to the construction site, and monitor the use of the source during the testing activity;
   4. Any work with radiography will occur outside normal business hours.

3.11 ENVIRONMENTAL PROTECTION

A. All work on the Fermilab site shall comply with all applicable environmental executive orders, laws, regulations, and permits. All Subcontractors and sub-subcontractors shall conduct their activities in an environmentally sound manner that limits the risks to the environment and protects the public health. The following sets forth the minimum acceptable requirements for environmental protection at Fermilab:
   1. Refer to Section 1.12 of this document for the Soil Erosion and Sedimentation Control (SESC) requirements for this project;
   2. If required, the Subcontractor shall install all erosion control in accordance with SESC plan prior to the start of excavation activities;
   3. Excavation at or adjacent to streams' tributaries, wetlands, or other surface waters shall be done only after notification to the FRA Construction Coordinator;
   4. The FRA Construction Coordinator will inform the Subcontractor if any wetlands are present in the work area and what protective measures are necessary;
   5. Unexpected environmental impacts shall be immediately reported to the FRA Construction Coordinator and mitigated by the Subcontractor;
   6. Flammable and/or combustible liquids, fuels, and oils shall be provided with containment and shall not be stockpiled beyond one day's usage. Storage of these materials, plus maintenance and fueling areas used by the Subcontractor, shall be properly graded and maintained and shall be located a minimum of 100 feet away from a wetland or water body boundary so that adverse effects on the environment are eliminated;

7. The Subcontractor shall make routine inspections to assure that all motorized equipment is free of leaks of petroleum and other toxic or hazardous materials. The Subcontractor shall keep sufficient cleanup supplies on hand (e.g. oil dry, absorbent booms, etc.) to contain/absorb any spill or leak of fuels, oils, etc. that could potentially leak from their equipment. If a spill or leak should occur, the Subcontractor should immediately take appropriate steps to contain spills, move equipment out of sensitive areas (near wetland or water body) and immediately notify the FRA Construction Coordinator;
8. At the close of each workday, the Subcontractor's Field Superintendent shall inspect the complete construction site to ensure that all erosion controls, drainage patterns, excavations and staging areas are in environmentally sound condition for the weather conditions anticipated.

3.12 TEMPORARY HEATING DEVICES

A. Open burning, fire barrels, coal or kerosene type salamanders, or open flame heating devices that have exposed fuel below the flame are not allowed on the Fermilab site.

B. Temporary heating devices shall be coordinated through the FRA Construction Coordinator

3.13 SMOKING

A. Smoking including tobacco products and electronic smoking devices are prohibited in locations where flammable and/or combustible materials are stored. "No smoking" signs shall be posted in these areas.

B. Smoking including electronic smoking devices are prohibited in all Fermilab buildings except in designated areas.

3.14 FUEL STORAGE TANKS

A. Above ground fuel storage tanks for equipment or vehicles shall not be permitted on the Fermilab site.

B. Fuel tanks mounted on pick-up trucks shall conform to the requirements of the Illinois State Fire Marshall's Office.

C. Fuel tanks mounted on pick-up trucks shall be removed from the Fermilab site at the end of each workday.

D. Refueling of equipment while the motor is running is prohibited.

E. During refueling from truck-mounted fuel tanks or with portable fuel cans, etc., a 10-pound (minimum) A-B-C dry chemical fire extinguisher must be present.

F. Maintenance and fueling areas used by the Subcontractor shall be properly graded and maintained and shall be located a minimum of 100 feet away from a wetland or water body boundary to avoid adverse effect on the environment.

3.15 EXPLOSIVES

A. The use of explosives is not permitted without prior written approval of Fermilab.

3.16 VEHICLES AND EQUIPMENT

A. The following sets forth the minimum acceptable requirements for vehicles and equipment at Fermilab:
   1. Operators must have an appropriate, valid driver's license when operating vehicles on site. Seat belts are required to be provided and worn for the operators and passengers of all vehicles;
   2. All vehicles and mobile powered equipment, except automobiles and pickup trucks, shall have reverse signal alarms (a.k.a. backup alarms) audible above the surrounding noise level. If backup alarms are not present on the equipment, a spotter (other than the driver of the vehicle) must be present to warn pedestrians and the drivers of other moving equipment;
   3. If required by the equipment manufacturer, roll over protection structures shall be provided;
   4. Personnel lifts must be equipped with audible motion alarms. These alarms must be in operation and audible over the surrounding ambient noise when the lift is in use. Additionally, all lifts require two distinct actions in order to make the lift move in a forward or backward direction or in an upward or downwards direction. A foot pedal is considered one of the actions if independent of the other controls;
   5. The equipment manufacturer must approve any modifications to lifting and hoisting equipment;
   6. All hand and power tools must be checked prior to use on each shift to assure that they are maintained in a safe condition. Any deficiencies shall be repaired, or defective parts replaced, before continued use.

B. Equipment inspection and modification (The subcontractor shall comply with 29 CFR 1926.600, Subpart O):
   1. The Subcontractor must inspect all heavy equipment before use on site, prior to use on each shift, and during use to make sure it is in safe operating condition. Defective equipment shall be removed from service;
   2. The Subcontractor is to assure that regulatory inspection records are complete and up-to-date and that operating manuals are available;
   3. In no case shall the original safety factor of the equipment be reduced.
   4. All tools and equipment brought on site by the Subcontractor are subject to inspection by FRA. Items found to be damaged or out of compliance shall be repaired or immediately removed from service and tagged out of service.

3.17 CONCERN REPORTING PROCESS

A. Whistleblower Protection for Subcontractor Employees
   1. The Subcontractor shall comply with the requirements of the "DOE Contractor Employee Protection Program" at 10 CFR Part 708.
   2. The Subcontractor shall insert or have inserted the substance of this clause, including this paragraph (b), in lower tier subcontracts, at all tiers, with respect to work performed on any construction worksite at a DOE-owned or leased facility, as provided for at 10 CFR part 708.

3. Concern Reporting Processes - Subcontractor employees on the worksite are entitled to use any of the means available to communicate concerns about ES&H conditions and practices. Information about concern reporting is available on ES&H bulletin boards throughout Fermilab and shall be included with FRA provided materials for the worksite postings for this project. The options for reporting concerns include:
   a. DOE Concern Reporting:
      1) Telephone: (630) 840-3281
      2) Email: EmployeeConcerns@science.doe.gov

3.18 PROJECT BULLETIN BOARD

A. Subcontractor is responsible for installing and maintaining a safety bulletin board at the location where the majority of the subcontractor's employees, sub-subcontractors, and sub-tier vendors report to work. Information shall include:
   1. DOE Worker Safety and Health Poster DOE-F 5480.2 (Worker Rights), furnished by FRA. Spanish versions of the DOE Safety and Health Poster are also available from FRA upon request.
   2. DOE Occupational Safety and Health Complain Form 5480.4, available on-line.

3.19 JOBSITE SAFEGUARDS

A. Housekeeping shall be maintained on a daily basis. The Subcontractor shall plan, organize, layout, and maintain the worksite area in a manner to insure an environmentally healthful working area.

B. All areas of the worksite area shall be kept clear of debris, rubbish, and other materials that could cause tripping or falling conditions. The use of caution construction tape, barricades, and signage shall comply with ANSI Z535 series.

C. The Subcontractor shall be responsible for providing and implementing the necessary precautions to safeguard material and equipment at the project site.

D. In the event of theft or damage to Subcontractor property, Fermilab property, and/or Government property, the Subcontractor shall immediately notify Security Dispatch by telephone (630) 840-3414 and FRA Construction Coordinator.

3.20 EMERGENCY EGRESS AND SEVERE WEATHER

A. The following sets forth the minimum acceptable requirements for emergency egress and severe weather protection at Fermilab:
   1. All emergency egress routes shall be kept clear at all times;
   2. Severe weather shelter locations and specific evacuation procedures will be provided by the FRA Construction Coordinator;
   3. The Subcontractor shall communicate egress routes and severe weather shelter to their employees and all sub-subcontractors.

3.21 WORK COMPLETION AND CLEAN UP

A. All work and clean-up operations shall be in compliance with the Subcontractor's ES&H Plan.

B. Requested documentation for all aspects of the ES&H program shall be complete and submitted prior to Subcontract close-out

END OF SECTION

ATTACHMENT A
SILICA GUIDANCE

I. Purpose: To protect employees, subcontractors, sub-subcontractors, sub-tier contractors, the public, environment, and property from the detrimental effects of dust and respirable crystalline silica generated by construction, restoration, and maintenance activities.

A. As required by 29 CFR 1926.1153, subcontractors must have a written silica exposure control plan. The plan shall be submitted to Fermi Research Alliance, LLC (FRA) and include:
   i. Tasks performed that involve exposure to respirable crystalline silica.
   ii. Engineering controls, work practices and respiratory protection used to limit employee exposure to respirable crystalline silica.
   iii. Housekeeping measures used to limit employee exposure to respirable crystalline silica.
   iv. Procedures used to restrict access to work areas to minimize the number of employees exposed to respirable crystalline silica.

B. FRA and its subcontractors are required by law, 10 CFR 851, to comply with the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV) of 0.025 mg/m^3 for an 8-hour time-weighted average (TWA).

C. Subcontractors must comply with the requirements outlined in the Guidance for Silica Work table at the end of this Appendix, unless the subcontractor has air monitoring data or other objective data sufficient to accurately characterize employee exposures to respirable crystalline silica.

II. Controls: In all cases, engineering controls that reduce dust at the source where it is being generated shall be the control of choice. The subcontractor must document how that determined that controls are valid.

A. Safety and Effectiveness of Dust Control Systems
   i. Procedures shall be implemented to ensure that dust control systems maintain their effectiveness for dust reduction throughout the work activity.
   ii. Dust control system shall be installed, operated, and maintained in accordance with manufacturer recommendations when there are such.
   iii. When electrical tools are used with water as dust control system, it shall be done in accordance with applicable requirements of electrical safety.
   iv. Respirators shall be worn until effectiveness of dust control system are proven through industrial hygiene monitoring.

B. Dust Collection/Management
   i. Dust shall be contained and disposed of in bags that can effectively hold dust without breaking.
   ii. Work surfaces and clothing shall be cleaned with vacuums and not by dry sweeping or the use of compressed air.
   iii. Respirators shall be worn when changing out bags or handling dust.

III. Evaluating the Effectiveness of Controls

A. As soon as possible after the beginning of cutting or grinding tasks, the subcontractor shall conduct personal air monitoring or workers performing the cutting/grinding work activities. An industrial hygienist shall perform the monitoring and must be consulted prior to the execution of work.

B. Once initial monitoring is performed to assure the effectiveness of controls, then work activities can continue without additional monitoring.

C. The Subcontractor shall conduct daily visual inspections of the site for the presence of visible dust that appears during grinding and cutting work activities. The presence of such dust is a sign that the controls are not performing as intended.
D. A copy of the monitoring results/report shall be submitted to FRA.

IV. Training: Operations include using powered tools or equipment to cut, grind, core, or drill concrete or masonry materials, and the following training is required:

A. Proper use and maintenance of dust reduction systems, including the safe handling and disposal of waste materials collected with their use.
B. The importance of good personal hygiene and housekeeping practices when working in proximity to dust from concrete and masonry materials including: not smoking tobacco products including e-cigarettes, appropriate methods of cleaning up before eating, and appropriate methods of cleaning clothes.
C. Have training, medical evaluation, and fit-test documentation/records on site for workers that are using respirators.

ATTACHMENT A
SILICA GUIDANCE

GUIDANCE FOR SILICA WORK -				
Type of Work	**8-hour Duration/Scope**	**Location (general)**	**Required Controls***	**Notes**
Grout/mortar mixing	≤ 7 bags	Inside or Outside	D	Keep employees upwind of dust when outdoors.
Grout/mortar mixing	> 7 bags	Inside or Outside	A, C, D	
Shoveling sand	Any	Outside	B	Keep employee upwind of dust when outdoors
Hole drilling ≤ 1/4 in diameter	< 4 holes	Inside or outside	None	Use HEPA vacuum for housekeeping (no sweeping)
Hole drilling ≤ 1/4 in diameter	> 4 holes	Inside or outside	A or B	Use HEPA vacuum for housekeeping (no sweeping)
Hole drilling > 1/4 in diameter	Any	Inside or outside	A or B	B is for horizontal surfaces only
Coring	Any	Inside or Outside	B	Respirator required if using HEPA vacuum
Saw cutting - chop saw	Any	Inside or Outside	B, C, D	
Saw cutting - hand held saw	< 1 linear ft.	Outside	B, C, D	
Saw cutting - hand held saw	> 1 linear ft.	Outside	B, C, D	
Saw cutting - walk behind saw type equipment	Any	Outside	B, C, D	
Surface finish	Any	Inside or outside	A, C or B, C, & D	
Joint compound sanding	> 1 linear ft.	Inside or outside	A, C, D	Some new joint compounds are silica free
Tuck Pointing/Grout repair - Hand tools	Any	Inside or outside	B, D	
Tuck Pointing/Grout repair - Power tools	Any	Inside or outside	A, C, D	
Jack Hammering	Any	Outside	B, C, D	
Concrete Demolition using Heavy Equipment (enclosed cab)	< 4 continuous hours	Outside	B, C	Sprayer must wear respirator or contact IH through Construction Coordinator
Concrete Demolition using Heavy Equipment (enclosed cab)	> 4 continuous hours	Outside	B, C	Sprayer and operator must wear respirator or contact IH through Construction Coordinator
*Controls - NOTE: OTHER PPE WILL BE REQUIRED FOR ADDITIONAL HAZARDS				
A = Manufacturer's local exhaust ventilation on tool or HEPA Vacuum at Point of Operation				
B = Water to eliminate visible dust				
C = Respirator with P100 HEPA and face piece scaled for anticipated exposure				
D = First aid flush of eye contamination				

ATTACHMENT B

Daily Work Planning

Project: _____ Work Location: _____
Subcontractor_____ Date: _____

Permits Required

- ☐ None
- ☐ Penetration Permit
- ☐ Excavation Permit
- ☐ Confined Space Entry Permit
- ☐ Hot Work Permit-Fire (flame or sparks)
- ☐ Radiological Work Permit
- ☐ Traffic Control Plan
- ☐ Hoisting and Rigging Plan
- ☐ Electrical Work Plan
- ☐ Energy Isolation Plan
- ☐ Elevated Surface Work Plan
- ☐ Pressure Test Plan
- ☐ Other _____
- ☐ Other _____

Discussion & Review Checklist

- ☐ What activities will be performed today?
- ☐ Are there any modified or different activities or equipment being used today?
- ☐ Do all workers have adequate PPE for working on the site and during their individual activities?
- ☐ Have high-hazard activities been identified and evaluated and have controls been established?
- ☐ Has relevant information from the HA(s) been included in today's work plan and discussion?
- ☐ Do all workers understand Fermilab's safety expectations, including stop work?
- ☐ Is the construction area organized and free of trip hazards and debris?
- ☐ Have all work activities been identified and coordinated between all Sub-subcontractors?
- ☐ Will weather conditions impact safety or any work being performed today?
- ☐ Are there any hazardous waste containers or bins needed for today's work?
- ☐ Are all required permits and plans submitted and approved for today's work?
- ☐ Is access by non-construction personnel to all construction areas controlled?
- ☐ Are all workers qualified for the tasks that they will perform today?
- ☐ Have first aid and emergency resources / procedures been identified?
- ☐ Do all workers understand the entire scope of work that will be performed on site today?
- ☐ Other: _____
- ☐ Other

_____

Required Inspections

- ☐ Excavation / shoring inspection
- ☐ Heavy equipment inspection
- ☐ Fall protection
- ☐ Scaffolding
- ☐ Rigging
- ☐ Other _____
- ☐ Other _____

Notes:

_____

_____

_____

ATTACHMENT B

Tasks for the Day	Potential Hazards	Controls

Attendance Sheet

Name (Print	Initial	Company Name

Competent Subcontractor's Representative: _____ Date: _____

ATTACHMENT C

Construction Environmental, Safety & Health Certification (CESHC)

INSTRUCTIONS

This Construction Environmental, Safety & Health Certification (CESHC) is required for each construction project at DOE's Fermi National Accelerator Laboratory site (Fermilab). See Technical Specification 013100 for further information.

This document is a template for the CESHC designed to assist construction subcontractors in describing project conditions and developing project-specific hazards and controls information. The CESHC template is available in electronic format to facilitate editing.

The prime subcontractor may *either* flow down this requirement to each of its subcontractors; or serve as a control and coordination point, requiring all subcontractors' activities to be conducted under the prime subcontractor's solitary CESHC.

Subcontractors must submit the completed CESHC to the FRA Procurement Office, which will distribute the document for review and concurrence by the Fermilab ES&H and Project Management teams prior to work commencing. The CESHC is intended to be a living document, which may be updated as necessary throughout a project as information changes or as the project progresses (e.g. – as additional Task/trade Hazard Analyses are developed, subcontractors added, etc.).

All of the sections in are required to be completed for each construction project, regardless of the size or complexity. Enter information in all of the fill-in blocks that are applicable. For those that are not applicable, enter "N/A" or other suitable explanation.

PROJECT GOVERNANCE / EMERGENCY INFORMATION

Section 1 – Project Description and Emergency Contacts

Fill in the names and telephone numbers of the contact personnel for this particular project. In accordance with Title 10 of the *Code of Federal Regulations*, Part 851 (10 *CFR* 851), the Subcontractor must have a designated on-site safety representative who is knowledgeable of the project's hazards and has the authority to correct unsafe conditions or behavior. This is either the Field Superintendent or a designated Subcontractor's Safety Representative as delineated in Technical Specification 010010. Attach the qualifications of your safety representative's resume' for this project. If you have subcontractors performing work on this project, list their contact information. Update as necessary throughout the project.

Section 2 – Subcontractor Policy Statement

Enter your Company's health and safety policy statement. At minimum, your policy should include:

- Specify if Subcontractor's ES&H Program is required and if a dedicated Subcontractor Safety Representative is required.
- Specify if a Quality Control Plan (Reference Technical Specification 010010 if a dedicated Quality Control Representative is required.
- A statement if occupational exposure monitoring is required and if so, that it complies with 10 CFR 851.
- Specify what occupational (industrial hygiene sampling) monitoring may be required.

Section 3 – 10 CFR 851 Acknowledgement

Because Fermilab is a Department of Energy site, your company must meet the Department of Energy requirements of Title 10, *Code of Federal Regulations*, Part 851, "Worker Safety and Health Program" (Link to 10 CFR 851). It is your responsibility to ensure you have read and understand the actual regulatory requirements. Specify medical surveillance and qualifications. This may include Occupational exposure monitoring.

Fermilab

(Project Name)
(Subcontractor's Name)

Construction Environmental, Health & Safety Certification

SECTION 1 - PROJECT DESCRIPTION & EMERGENCY CONTACTS		
Subcontract / Project Number	Enter subcontract and/or task order number	
Project Start / End Dates	Start:	Complete:
Project Location	Enter the work location(s) at Fermilab	
Scope of Work	Enter breakdown and description of work activities	

FOR ALL EMERGENCIES CALL:

Fermilab Emergency Contact number: x3131 - or - (630) 840-3131 from a cell phone.

For all incidents, injuries, property damage, near-misses, work-induced illness or chemical over-exposures, the following personnel MUST be immediately contacted upon scene stabilization, but in all cases within one hour:

PROJECT TEAM & PERSONNEL CONTACT INFORMATION			
Subcontractor Project Manager	Enter the name of subcontractor Project Manager	Enter number: xxx-xxx-xxxx	Enter: user@domain
Subcontractor Site Superintendent	Enter the name of subcontractor's Site Superintendent	Enter number: xxx-xxx-xxxx	Enter: user@domain
Subcontractor Health & Safety Representative **	Enter the name of subcontractor health & safety representative	Enter number: xxx-xxx-xxxx	Enter: user@domain

Subcontractors - Company Name	**Name of Designated Safety Representative ****	**Phone Number**
Enter Subcontractor company name	Enter name of individual**	Enter number: xxx-xxx-xxxx
Enter Subtier company name	Enter name of individual**	Enter number: xxx-xxx-xxxx
Enter Subtier company name	Enter name of individual**	Enter number: xxx-xxx-xxxx

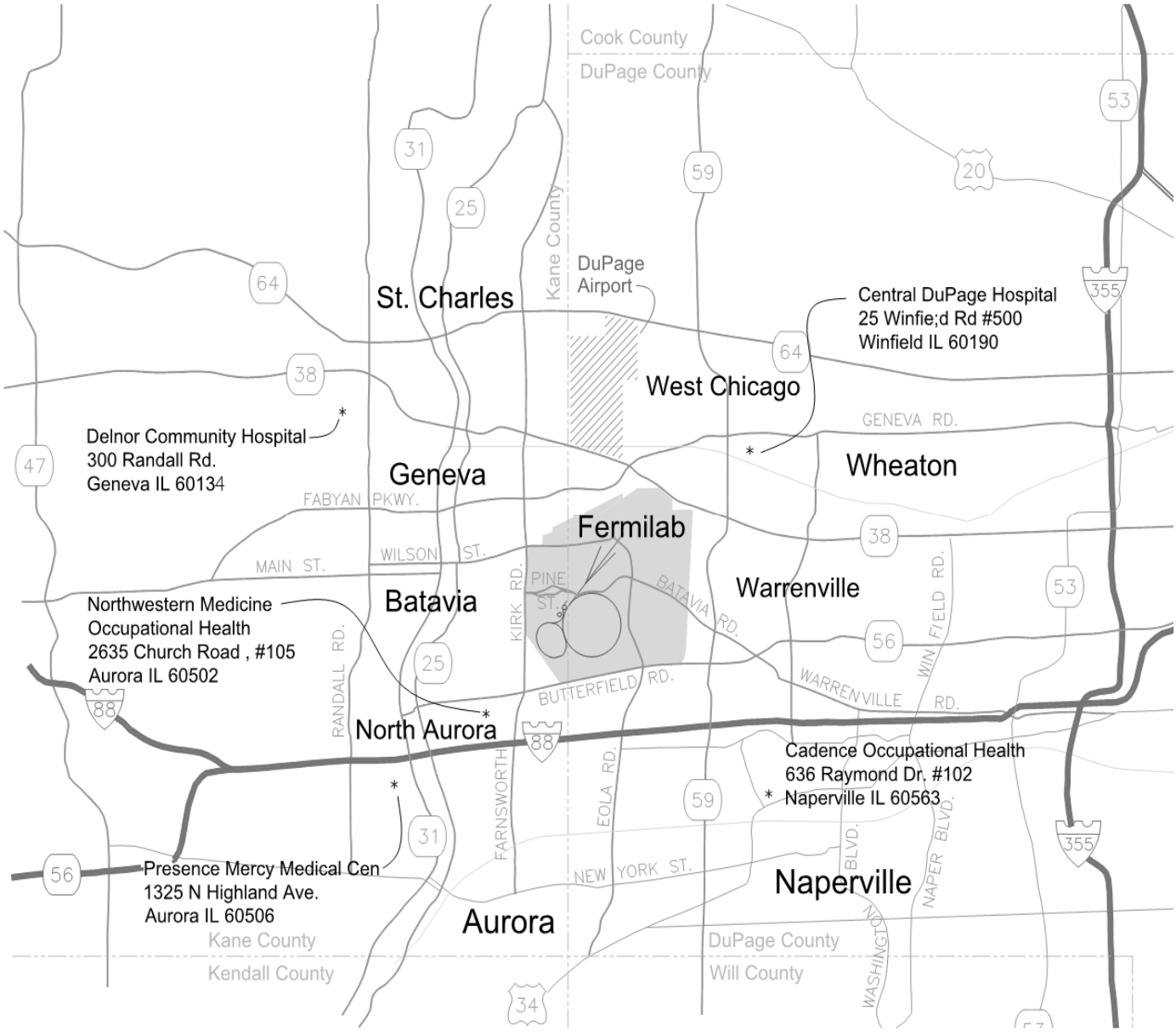
***** If required, attach a description of qualifications, or resume', for each Safety Representative per Technical Specification 010010.***

CESHC REVIEWS		
Reviewed & Approved by: (Subcontractor)	**CESHC Reviewed & Accepted by: (FRA)**	**CESHC Reviewed & Accepted by: (FRA)**
Enter Subcontrator - Company Officer	Enter Fermilab Name	Enter Fermilab Project ESH&Q Name
Signatures and dates		

Fermilab

A location map and address of the Subcontractor's occupational medical facility Hospital Route is attached to this CESH Plan and posted at the work site.

Fermilab has identified several medical facilities. Highlight on the map the appropriate subcontractor designated facility. If the subcontractor would like to use another or different facility, please include map and address location of facility.



Fermilab

SECTION 2a – Subcontractor's ES&H Program	
2a Subcontractor's ES&H Program Required See Technical Specification 013100, Article 1.8	☐ Yes ☐ No
2b Dedicated Subcontractor Safety Representative required, see Technical Specification 010010 (*If yes, Subcontractor Safety Representative resume' required, reference Article 1.5*)	☐ Yes ☐ No

SECTION 2b – Subcontractor's Quality Control Plan (Program) if Section 014100 is required	
2c Subcontractor's Quality Control Plan (Program) Required	☐ Yes ☐ No
2d Dedicated Subcontractor Quality Control Representative required	☐ Yes ☐ No

Section 2c - Occupational Exposure Monitoring and Qualifications			
Occupational Exposure Monitoring	Will you be using materials or engaging in an activity that potentially may produce occupational exposures at 10 to 50% of the occupational exposure limits? (e.g., silica, hexavalent chromium, lead, etc.) Reference Section 10 for additional information.	Yes	No
		☐	☐
	If yes, you will need to: 1. Comply with 10 CFR 851, Appendix A, Section 6. 2. Provide your industrial hygiene provider contact information.		
Certified Industrial Hygienist (CIH) or IH Technician under the supervision of a CIH.	.Enter the name and address of your company's IH provider for this project		

Section 2d - Industrial Hygiene Sampling		
Yes	No	
☐	☐	Asbestos
☐	☐	Asphalt fumes
☐	☐	Diesel Exhaust
☐	☐	Fiberglass Insulation
☐	☐	Hexavalent Chromium
☐	☐	Lead
☐	☐	Naphtha (Coal Tar)
☐	☐	Noise
☐	☐	Non-Ionizing Radiation
☐	☐	Silica
☐	☐	Solvents
☐	☐	Temperature Extremes (Heat or Cold)
☐	☐	Welding, Cutting & Brazing
☐	☐	Other: (List...)

Fermilab

SECTION 3 - ACKNOWLEDGMENT of 10 CFR 851			
As a subcontractor to FRA, while your workers are physically located at Fermilab you must meet the requirements of Title 10, *Code of Federal Regulations*, "Energy", Part 851, "Worker Safety and Health Program" (10 CFR 851). As such, you must be aware of, and comply with, the requirements of this regulation. (Link to 10 CFR 851)			
Acknowledgment	I, (the author of this CEHSP), certify that that I have read the requirements of 10 CFR 851 and attest that my firm and its sub-tier contractors will comply with the requirements of 10 CFR 851.	Yes	No
		☐	☐

MEDICAL SURVEILLANCE AND QUALIFICATION			
Occupational Medicine	Will you have any employees that will work on-site at Fermilab for 30, eight-hour days in a 12-month period, or are enrolled for any length of time in a medical or exposure monitoring program required by federal, state, or local regulations (including hearing conservation, respiratory protection, lead exposure)?	Yes	No
		☐	☐
	If yes, you will need to: 1. Comply with the occupational medicine requirements of 10 CFR 851, Appendix A 2. Provide your occupational medicine provider contact information		
Clinic / Physician	Enter the name and address of your company's occupational medicine provider for this project	Enter telephone number: xxx-xxx-xxxx	Enter e-mail address: user@domain

Required Medical Surveillance		Task-specific medical testing
☐ DOT/Commercial Vehicle	☐ Blood Lead	List specific task(s) requiring medical surveillance
☐ Hearing Conservation	☐ Respirator User	
☐ Fit for Duty	☐ Other(s) List other(s)	
☐ Substance Abuse Testing		

ATTACHMENT D

Fermilab

Hazard Analysis Cover Sheet

Job Title _____

Job Location _____

Subcontract/Work Order/Release # _____

Subcontractor or Sub-tier	**Fermilab**
Company _____	Project Eng/C.M._____
Project Manager _____	Phone _____
Phone _____	TM/CC/SC _____
ESH Rep. _____	Phone _____
Phone _____	ES&H Rep. _____
	Phone _____

Description of Work: _____

_____

_____

Fermilab

Prepared by (print & sign): _____ **Date** _____

Accepted by (print & sign): _____ **Date** _____

	Yes	No
Does this task impact other Divisions or work groups? ***If yes, how are they notified?*** _____ _____		
Do site utilities need to be shut down & locked out? ***If yes, attach lockout/tagout plan.***		
Is a J.U.L.I.E. (utility locate) required prior to the start of work?		

PPE & RISK HAZARD ASSESSMENT – Activities that include the following PPE or risks may require safety planning & training documentation beyond what can be completed in the Hazard Analysis/Pre-Task Plan

☐Fall exposures >4 feet (>6 for construction)*	☐Excavations >4 feet	☐Confined space entry*
☐Energized electrical work (requires LOTO or EWP)*	☐Welding/Cutting/Brazing *(req. permit/fire watch)**	☐Overexertion or Repetition ☐General Demolition
☐Lockout/Tagout (LOTO) activities*	☐Welding on stainless steel*	☐Ergonomic issues
☐High pressure air/fluids*	☐Rotating equipment	☐High noise levels
☐Ladder use	☐Working above others	☐Potential oxygen deficiency*
☐Scaffold erection*	☐Traffic controls	☐Ionizing Radiation/Radioactive Material*
☐Scaffold Use	☐Fork lift operations*	
☐Lead Work*	☐Aerial boom lift*	☐Nonionizing Radiation (e.g. Lasers, RF)*
☐Chemical use *(attach Safety Data Sheet)*	☐Waste generation	☐Critical crane lift(s)*
☐Air emissions (including equipment/generators)	☐Discharges to sanitary system	☐Sandblasting
☐Potential impact to storm water	☐Use of refrigerants	☐Steel erection
☐Potential spill to the environment		☐Work within 10' of overhead utilities
☐Heavy equipment operation *(e.g. crane, boom lift, excavator, etc.)**		☐Structural demolition
☐Potential silica exposure(s) *(concrete/asphalt cutting, drilling, etc.)**		☐_____
☐Installation of underground power – temporary or permanent		☐_____
☐Biological hazards *(e.g. Animal/Insect Bites/Stings, Mold, etc.)*		☐_____

PPE & CONTROLS REQUIRED In Bold

☒Hardhat	**☒Safety glasses**	☐Welding goggles/helmet
☐Bump cap	☐Safety goggles – chemical	☐Arm – cut protection
☐Steel-toed boots	☐Safety goggles – impact/face shield	☐Leg – cut protection
☒Steel-toed shoes	☐Hearing protection	☐Whole body – electrical
☐Gloves – leather	☐Fall Protection _____	☐Whole body – Dust, chemical, heat
☐Gloves – chemical_____	☐Respirators (air purifying), cartridge type:_____	☐Danger tape & signage
☐Gloves – electrical		☐Barricades – solid
☒High visibility clothing	☐Respirators – supplied air	☐Barricades – soft (caution tape)
☐Soil/erosion control	☐Site dust control	☐_____
☐_____	☐Underground- cap lamp & self-rescuer	_____

Denotes Training and/or Competent and/or Qualified Person(s) required

Fermilab

WORK TASKS	HAZARDS (of work, to workers & other trades, to environment, etc.)	MITIGATION MEASURES

The tasks have been reviewed in the work area where they will be performed, and the workers on this crew have been through the required training.

Supervisor or Task Lead Signature

Supervisor or Task Lead Phone

Fermilab

I have reviewed this hazard analysis and I understand the hazards and required precautionary actions. I will follow the requirements of this hazard analysis or notify my supervisor or FRA contact if I am unable to do so. I understand to stop work if conditions change or if there are unsafe conditions or actions. I understand to report all injuries or unsafe conditions to my supervisor or task lead immediately.

Name and ID (please print)	Signature	Date