

Sanford Underground Research Facility



SDSTA LEAD & ASBESTOS

REMOVAL SPECS

**Document #
Version 1
July 30, 2020**

HAZARDOUS MATERIALS ABATEMENT COORDINATION

FOR THE
HEADFRAME SECURITY UPGRADES

SDSTA/SURF

630 E. SUMMIT ST.
LEAD, SOUTH DAKOTA

DRAWINGS

A0.00	COVER SHEET
A0.30	ROSS MAIN LEVEL
A0.31	ROSS LOWER LEVEL
A0.32	YATES MAIN LEVEL
A0.33	YATES LOWER LEVEL

SPECIFICATIONS

ENVIRONMENTAL SPECIFICATION FOR ASBESTOS REMOVAL
ENVIRONMENTAL SPECIFICATION FOR LEAD REMOVAL

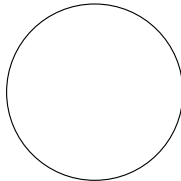
THE HAZARDOUS MATERIAL ABATEMENT DRAWINGS ARE TO BE COORDINATED WITH THE SEPARATE HEADFRAME SECURITY IMPROVEMENTS BID DOCUMENTS DATED JULY 29, 2020. THE HAZARDOUS ABATEMENT WORK WILL BE BID AS A SUB-CONTRACT TO THE GENERAL/PRIME CONTRACTOR(S) BIDDING ON THE HEADFRAME SECURITY UPGRADE PROJECT.

SDSTA/SURF

DATE: JULY 30, 2020

PROJECT MANAGER: TODD HUBBARD

PROJECT NUMBER:



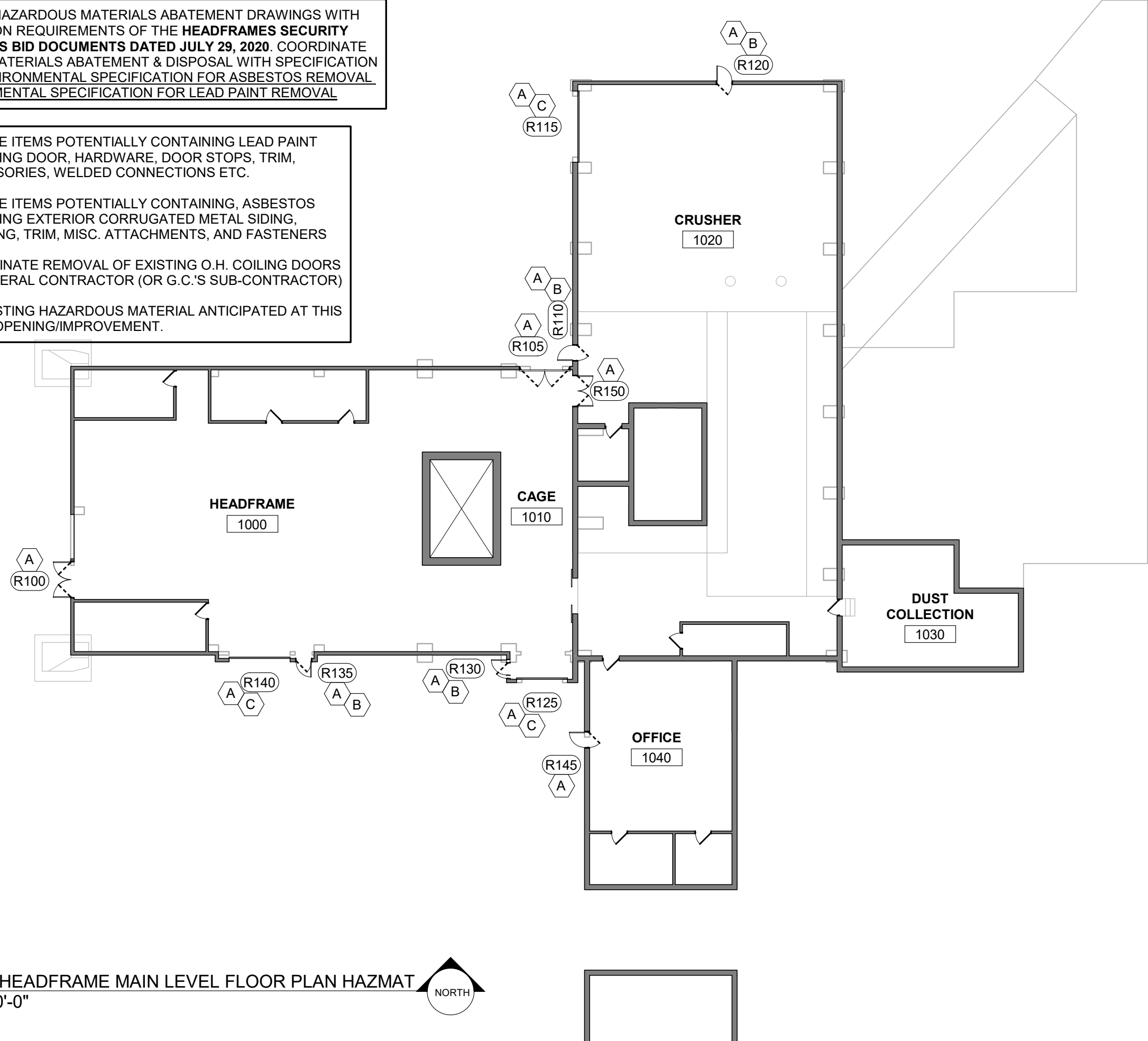
**HAZMAT
ABATEMENT
COORDINATION**
FOR
HEADFRAME SECURITY
UPGRADES
LEAD, SOUTH DAKOTA

COVER SHEET

A0.00

COORDINATE HAZARDOUS MATERIALS ABATEMENT DRAWINGS WITH THE DEMOLITION REQUIREMENTS OF THE **HEADFRAMES SECURITY IMPROVEMENTS BID DOCUMENTS DATED JULY 29, 2020**. COORDINATE HAZARDOUS MATERIALS ABATEMENT & DISPOSAL WITH SPECIFICATION SECTIONS ENVIRONMENTAL SPECIFICATION FOR ASBESTOS REMOVAL AND ENVIRONMENTAL SPECIFICATION FOR LEAD PAINT REMOVAL

- A** REMOVE ITEMS POTENTIALLY CONTAINING LEAD PAINT INCLUDING DOOR, HARDWARE, DOOR STOPS, TRIM, ACCESSORIES, WELDED CONNECTIONS ETC.
- B** REMOVE ITEMS POTENTIALLY CONTAINING, ASBESTOS INCLUDING EXTERIOR CORRUGATED METAL SIDING, FLASHING, TRIM, MISC. ATTACHMENTS, AND FASTENERS
- C** COORDINATE REMOVAL OF EXISTING O.H. COILING DOORS BY GENERAL CONTRACTOR (OR G.C.'S SUB-CONTRACTOR)
- D** NO EXISTING HAZARDOUS MATERIAL ANTICIPATED AT THIS DOOR OPENING/IMPROVEMENT.



1 ROSS HEADFRAME MAIN LEVEL FLOOR PLAN HAZMAT
1" = 20'-0"

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**HAZMAT
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ROSS MAIN LEVEL - HAZMAT

A0.30

COORDINATE HAZARDOUS MATERIALS ABATEMENT DRAWINGS WITH THE DEMOLITION REQUIREMENTS OF THE **HEADFRAMES SECURITY IMPROVEMENTS BID DOCUMENTS DATED JULY 29, 2020**. COORDINATE HAZARDOUS MATERIALS ABATEMENT & DISPOSAL WITH SPECIFICATION SECTIONS ENVIRONMENTAL SPECIFICATION FOR ASBESTOS REMOVAL AND ENVIRONMENTAL SPECIFICATION FOR LEAD PAINT REMOVAL

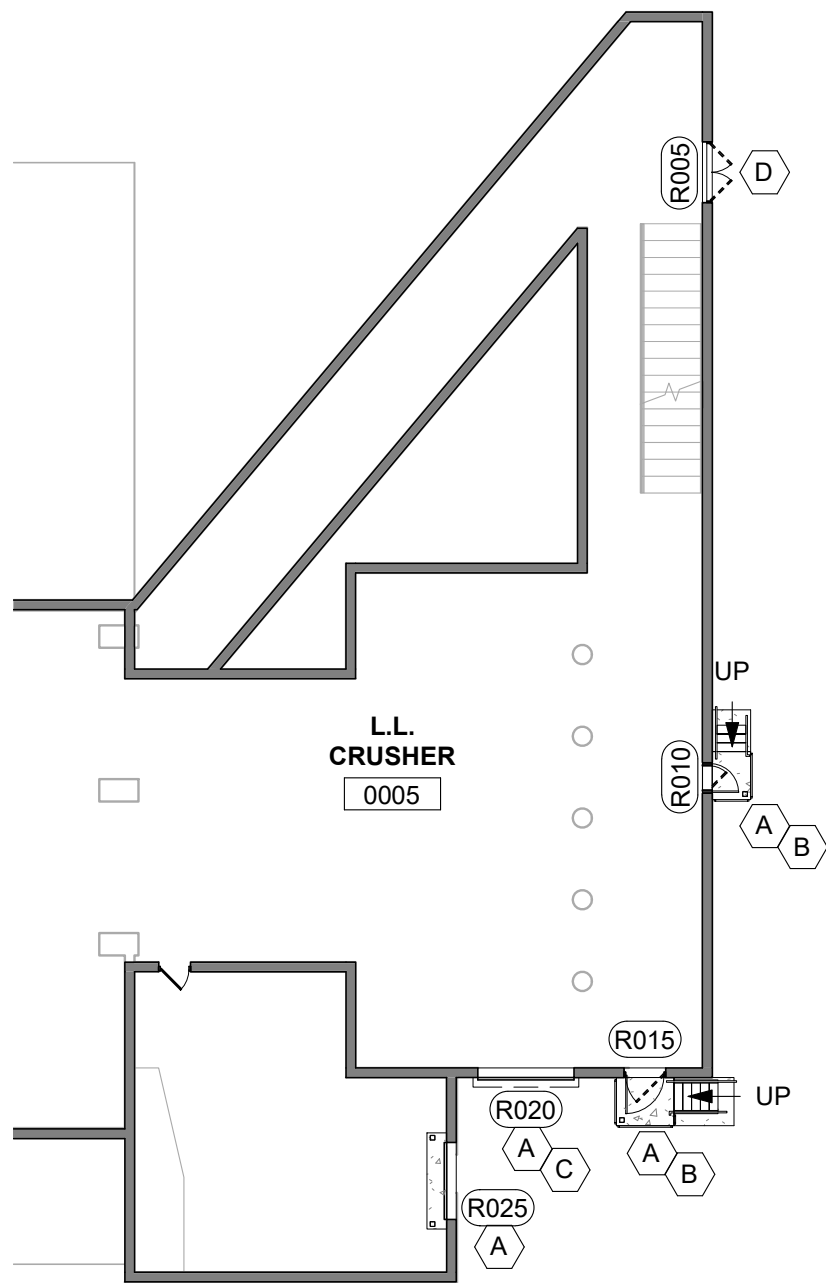
- A

REMOVE ITEMS POTENTIALLY CONTAINING LEAD PAINT INCLUDING DOOR, HARDWARE, DOOR STOPS, TRIM, ACCESSORIES, WELDED CONNECTIONS ETC.
- B

REMOVE ITEMS POTENTIALLY CONTAINING, ASBESTOS INCLUDING EXTERIOR CORRUGATED METAL SIDING, FLASHING, TRIM, MISC. ATTACHMENTS, AND FASTENERS
- C

COORDINATE REMOVAL OF EXISTING O.H. COILING DOORS BY GENERAL CONTRACTOR (OR G.C.'S SUB-CONTRACTOR)
- D

NO EXISTING HAZARDOUS MATERIAL ANTICIPATED AT THIS DOOR OPENING/IMPROVEMENT.



1

ROSS HEADFRAME LOWER LEVEL FLOOR PLAN - HAZMAT
1" = 20'-0"

NORTH

SDSTA/SURF

DATE: JULY 30, 2020

PROJECT MANAGER: TODD HUBBARD

PROJECT NUMBER:

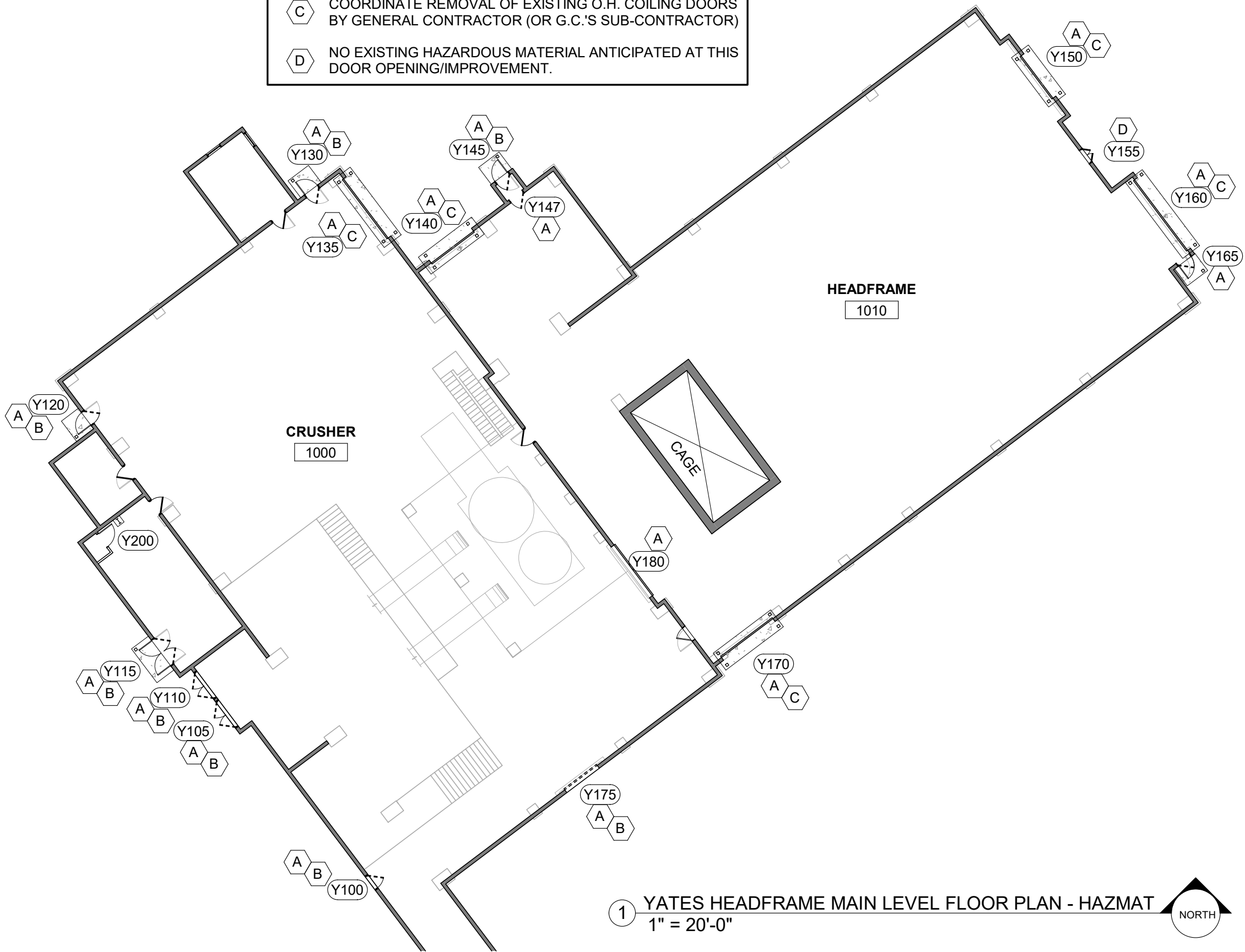
HAZMAT
ABATEMENT
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LEAD, SOUTH DAKOTA

ROSS LOWER LEVEL - HAZMAT

A0.31

COORDINATE HAZARDOUS MATERIALS ABATEMENT DRAWINGS WITH THE DEMOLITION REQUIREMENTS OF THE **HEADFRAMES SECURITY IMPROVEMENTS BID DOCUMENTS DATED JULY 29, 2020**. COORDINATE HAZARDOUS MATERIALS ABATEMENT & DISPOSAL WITH SPECIFICATION SECTIONS ENVIRONMENTAL SPECIFICATION FOR ASBESTOS REMOVAL AND ENVIRONMENTAL SPECIFICATION FOR LEAD PAINT REMOVAL

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- B REMOVE ITEMS POTENTIALLY CONTAINING, ASBESTOS INCLUDING EXTERIOR CORRUGATED METAL SIDING, FLASHING, TRIM, MISC. ATTACHMENTS, AND FASTENERS
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- D NO EXISTING HAZARDOUS MATERIAL ANTICIPATED AT THIS DOOR OPENING/IMPROVEMENT.



1 YATES HEADFRAME MAIN LEVEL FLOOR PLAN - HAZMAT
1" = 20'-0"



SDSTA/SURF

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PROJECT MANAGER: TODD HUBBARD

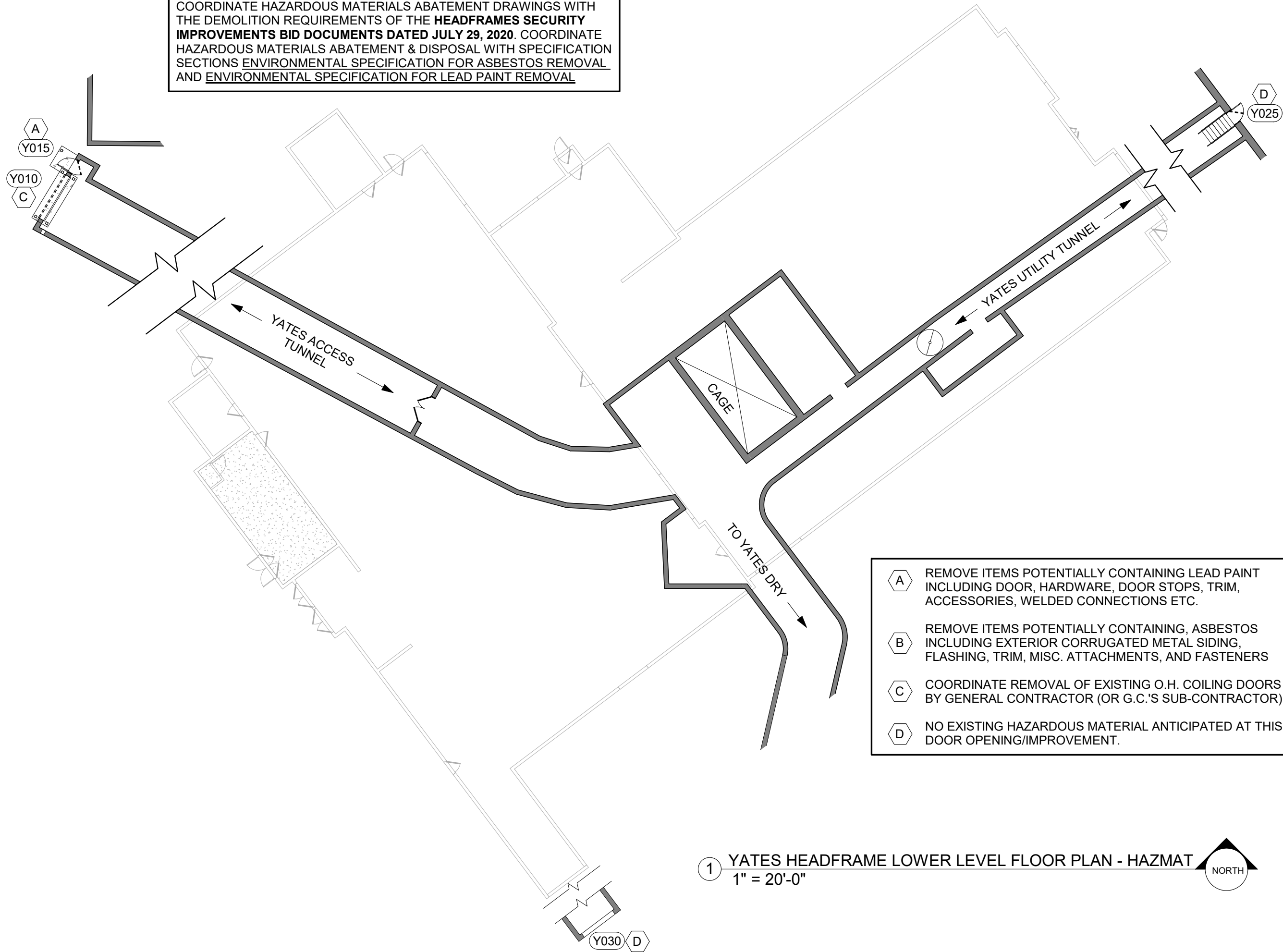
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HAZMAT
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YATES MAIN LEVEL - HAZMAT

A0.32

COORDINATE HAZARDOUS MATERIALS ABATEMENT DRAWINGS WITH THE DEMOLITION REQUIREMENTS OF THE **HEADFRAMES SECURITY IMPROVEMENTS BID DOCUMENTS DATED JULY 29, 2020**. COORDINATE HAZARDOUS MATERIALS ABATEMENT & DISPOSAL WITH SPECIFICATION SECTIONS ENVIRONMENTAL SPECIFICATION FOR ASBESTOS REMOVAL AND ENVIRONMENTAL SPECIFICATION FOR LEAD PAINT REMOVAL



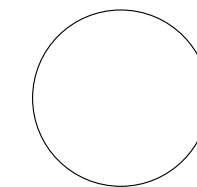
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1 YATES HEADFRAME LOWER LEVEL FLOOR PLAN - HAZMAT
1" = 20'-0"



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YATES LOWER LEVEL - HAZMAT

A0.33

Lead Removal Specifications Headframe Security Improvements

Scope of Work

The work covered in this section includes the handling and control of lead paint (see definition) chips, dust and fumes to protect workers, the environment and occupants of the building or area, or both, from incidental contact with lead chips, dust, and fumes. The identification of lead paint will be performed by SURF and results will be provided to bidding contractors in advance of the work.

To accomplish the work the contractor must prepare a Job Hazard Analysis JHA that defines each work step, the hazards associated with that step, and the controls to eliminate or mitigate the hazards including potential lead hazard(s). A major component of this JHA is the Abatement plan. These controls and procedures must be meet or exceed with those outlined in OSHA's 29 CFR 1926.62. The JHA/Abatement plan must be submitted, reviewed and approved by SDSTA/SURF ESH department prior to the start of work. A copy of the approved JHA will be provided to the Project Manager.

Training

All employees that are exposed to lead as part of their work shall have documented lead training per OSHA 29 CFR 1926.62. Training certificates must be presented prior to the start of the job. This minimum training must cover the following regarding lead: the health implications and risks involved, including the illnesses possible from exposure to airborne lead dust or fumes; the use and limits of the respiratory equipment to be used (if needed); and understands the results of monitoring of airborne quantities of lead as related to health and respiratory equipment.

Submittals

The following submittals are required *in advance* of the project.

- Lead Training Records for all employees working on the job
- An approved (Sanford Laboratory) JHA/Abatement Plan
- Safety Data Sheets (SDS) For all chemicals used to perform the work
- 10-hour OSHA training (minimum)
- Task training on all mobile equipment (if used)

The following submittals in *after* the project is complete.

- Air sampling results
- Lead disposal quantity

Removal Procedures

The key feature of the JHA is to protect workers from generating and or contacting lead dust/fumes. The work should specify (as needed) all controls, PPE, and air monitoring planned for the execution of the work. The work plan must justify reasons for an approach to protect workers and the environment.

There are many ways to help protect workers and others from lead exposure. These included cording off (and labeling) the lead removal area, PPE, vacuum, wetting lead material, and sealants. The Contractors Abatement Plan must decide on the best work plan as a group to help protect workers and execute the scope of work. Please include a plan for Personnel Exiting Procedures includes vacuuming themselves off (or changing clothes prior to leaving the lead control area) and washing exposed skin with soap and water.

Air Monitoring

The contractor must demonstrate that workers and incidental workers are not exposed to lead during the execution of the work. This requires area sampling (air monitoring). The monitoring may be continuous or periodic. Either way the monitoring approach must be justified by the contractor and accepted by Sanford Laboratory EHS staff.

Disposal of Lead

The contractor must reasonably collect lead paint chips, dust, debris, bags, containers, contaminated clothing, and contaminated water (if any) in labeled (SURF labels), sealed, DOT compliant 55-gallon drum(s). SURF will advise the contractor on maintaining different drums for each type of waste. SURF will characterize each waste stream to determine if the waste material inside a drum is a hazardous waste and advise the contractor on labeling requirements beyond the basic identification. Sanford Laboratory (generator) will dispose of the waste in accordance with regulatory requirements.

Some Important Definitions

Area Sampling- Sampling of lead concentrations within the lead abatement area which is representative of the airborne lead concentrations but is not collected in the breathing zone of personnel.

Lead Paint- Paint or other surface coating that contains lead more than 1.0 milligrams per centimeter squared or 0.5 percent by weight (5,000 mg/kg).

Lead-Based Paint Hazard (LBP Hazard)- any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, lead-based paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects.

Paint with Lead- any paint that contains lead as determined by the testing laboratory using a valid test method. Paint with a concentration of 100 mg/kg is considered lead-free.

Lead Permissible Exposure Limit (PEL)- fifty micrograms per cubic meter of air as an 8-hour time weighted average as determined by 29 CFR 1926.62.

References:

OSHA 29 CFR 1926.103 Respiratory Protection
OSHA 29 CFR 1926.21 Safety Training and Education
OSHA 29 CFR 1926.33 Access to Employee Exposure and Medical Records
OSHA 29 CFR 1926.55 Gases, Vapors, Fumes, Dusts, and Mists
OSHA 29 CFR 1926.62 Lead

Previous Sampling Test Results:

Both historic and recent sampling of work areas show that lead typically ranges from 5000 to 10,000 ppm. There are some areas where updates to siding and paint have been performed which have lead values less than 100 ppm. Additional information denoting lead levels to be provided by SDSTA.

Asbestos Removal Specifications Headframe Security Improvements

Scope of Work

The work covered in this section includes the handling and control of asbestos containing materials to protect workers, the environment and occupants of the building or area, or both, from contact with airborne asbestos fibers. Sanford Laboratory or SURF will identify asbestos (non-friable and friable) during the bid process.

To accomplish the work the contractor must prepare a JHA that defines each work step, the hazards associated with that step, and the controls to eliminate or mitigate the hazard(s). A major component of this JHA is the Abatement plan. These controls and procedures must be meet or exceed with those outlined in the EPA Purple Book, 29 OSHA 1926.1101, and 40 CFR 763. The JHA/Abatement plan must be submitted, reviewed and approved by SDSTA/SURF ESH department prior to the start of work. A copy of the approved JHA will be provided to the Project Manager.

Training

All employees that are exposed to asbestos fibers as part of their work shall have documented asbestos training per 40 CFR 763. Training certificates must be presented prior to the start of the job. This minimum training must cover the following regarding asbestos: the health implications and risks involved, including the illnesses possible from exposure to airborne asbestos fibers; the use and limits of the respiratory equipment to be used (if needed); and understands the results of monitoring of airborne quantities of asbestos as related to health and respiratory equipment as indicated in 29 CFR 1926.1101.

Notifications

The state of South Dakota in writing 10 working days prior to commencement of work.

Submittals

The following submittals are required *in advance* of the project.

- An approved (Sanford Laboratory) Job Hazard Analysis/Abatement Plan
- A current South Dakota asbestos contractor's license.
- Safety Data Sheets (SDS) For All chemicals
- Asbestos Training Records for all employees working on the job
- 10 Hour OSHA Training (minimum)
- Task training on all mobile equipment (if used)
- Notification to State of intended work
- Permission form from landfill to accept asbestos

The following submittals in *after* the project is complete.

- Air sampling results
- Waste shipment records
- Asbestos disposal quantity

Removal Procedures

The key feature of the JHA is to protect workers from generating and or contacting asbestos fibers. The work should specify (as needed) all the control, PPE and air monitoring planned for the execution of the work. The work plan must justify (data) reasons for any approach to protect workers.

There are many ways to help protect workers and others from asbestos exposure (for example, refer to the EPA Purple Book Chapters 4 and 5). These included wetting asbestos material with a fine spray of amended water with a specific wetting agent such as light oil or foam during removal, cutting, or other handling to reduce the emission of airborne fibers. Sealants (encapsulates) may also be used as a more permanent way to reduce exposure. The Contractors Abatement Plan must decide on the best work plan as a group to help protect workers and execute the scope of work.

Air Monitoring

The contractor must demonstrate that workers and incidental workers are not exposed to asbestos during the execution of the work. This requires air monitoring. The monitoring may be continuous or periodic. Either way the monitoring approach must be justified by the contractor and accepted by Sanford Laboratory EHS staff.

Disposal of Asbestos

Collect asbestos waste, asbestos contaminated water, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing which may produce airborne concentrations of asbestos fibers and place in sealed fiber-proof, waterproof, non-returnable containers (e.g. securely tied, double plastic bags 6 mil thick). Affix a warning and Department of Transportation (DOT) label to each container including the bags with the approved warnings and DOT labeling preprinted on the bag. The name of the waste generator (Sanford Laboratory) and the location at which the waste was generated shall be clearly indicated on the outside of each container. Dispose of waste asbestos material at the Rapid City Landfill (with their approval)

Some Important Definitions

ACM- Asbestos Containing Materials (asbestos greater than 1 percent).

Area Sampling- sampling of asbestos fiber concentrations which approximates the concentrations of asbestos in the theoretical breathing zone but is not actually collected in the breathing zone of an employee.

Asbestos- includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, and actinolite asbestos and any of these minerals that has been chemically treated or altered. Materials are considered to contain asbestos if the asbestos content of the material is determined to be at least *1 percent*.

Asbestos Permissible Exposure Limit- 0.1 fibers per cubic centimeter of air as an 8-hour time weighted average measured in the breathing zone as defined by 29 CFR 1926.1101 or other Federal legislation having legal jurisdiction for the protection of workers health.

Encapsulants- specific materials in various forms used to chemically or physically entrap asbestos fibers in various configurations to prevent these fibers from becoming airborne.

Friable Asbestos Material- 1-percent asbestos containing material that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

Nonfriable Asbestos Material- contains asbestos in which the fibers have been immobilized by a bonding agent, coating, binder, or other material so that the asbestos is well bound and will not normally release asbestos fibers during any appropriate use, handling, storage or transportation. It is understood that asbestos fibers may be released under other conditions such as demolition, removal, or mishap.

Personal Sampling- air sampling which is performed to determine asbestos fiber concentrations within the breathing zone of a specific employee, as performed in accordance with 29 CFR 1926.1101.

References:

EPA 560/5-85-024 (1985, 2015 revised) **Guidance for Controlling Asbestos-Containing Materials in Buildings (Purple Book)**

OSHA
29 CFR 1926.103
29 CFR 1926.1101
40 CFR 763

OSHA Respiratory Protection
OSHA Asbestos
Asbestos