DTMB-0414 (Rev 10/22)

**DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET**
**State Facilities Administration**
**Design and Construction Division**

# CONSTRUCTION BID ADDENDUM NO. 2

This form identifies an Addendum to Bidding Documents, and incorporates interpretations or clarifications, modifications, acceptance of proposed "or equal" materials, and other information into the Bidding Documents. Addenda will be numbered by the Professional and distributed through www.michigan.gov/SIGMAVSS as an attachment.

| TO: **ALL BIDDERS** | | DATE ISSUED 2/14/2025 |
|---|---|---|
| PROJECT NAME Cadillac Place 15th Floor- Build (3) Judicial Suites | | FILE NUMBER 950/22357.MNB |
| PROFESSIONAL G.H Forbes | PROJECT DIRECTOR Chris Bahjet | BID OPENING DATE: ~~2/19/2025~~ 2 /26/2025 |

ADDENDUM ITEMS:

**1. REFER TO ATTACHED QUESTION AND ANSWER SHEET BY FORBES**

**2. Extend Bid Due Date From 2/19/2025 to 2/26/2025. No Change in due time (2:00 PM Eastern).**

**ACKNOWLEDGEMENT: This Addendum must be acknowledged by the Bidder in the space provided in the Bid Summary and Bid Form. Failing to acknowledge Addenda may be cause for the Bid to be rejected. Addenda will become part of the Contract Documents.**

| | |
|---|---|
| Recieved from GHF 2/17/2025<br>PROFESSIONAL: | DATE: Click to enter date |
| APPROVED BY:<br>PROJECT DIRECTOR: C. Bahjet | DATE: 2/17/2025 Click to enter date |

FORBES ASSOCIATES ARCHITECTS 816 East 4th Street, Royal Oak, MI 48067 • www.ghfaa.com • 248.542.7866

# ADDENDUM NO. 2

Project: **Cadillac Place 15th Floor – Build Three (3) Judicial Suites**
Location: 3044 W. Grand Blvd, Detroit, MI 48202
File No: 950_22357.MNB
A/E File #: 2211
Date: 2/14/2024

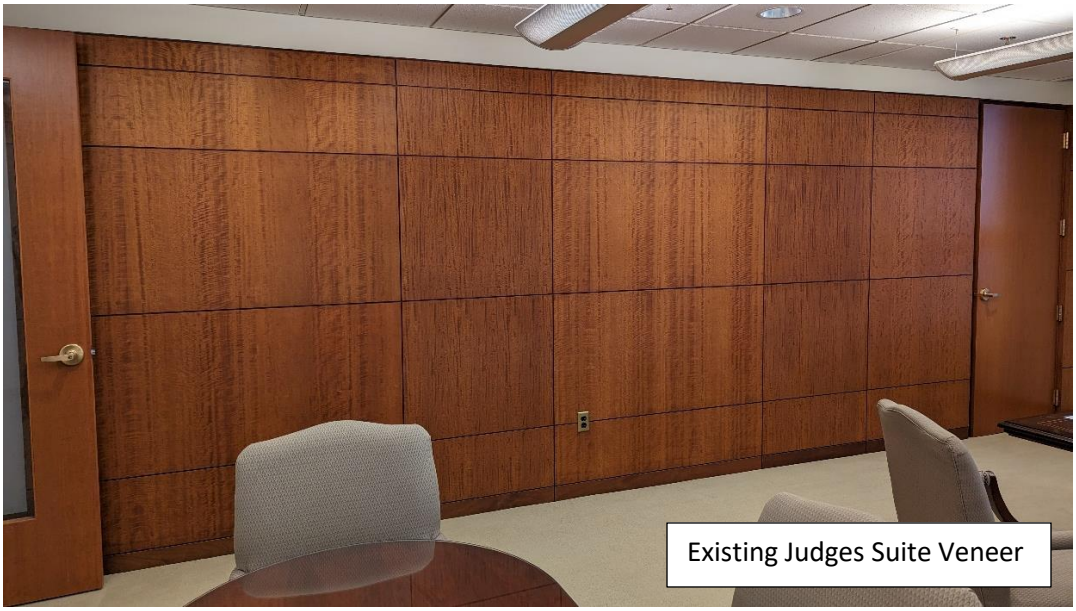
1. **Question:** Can you confirm who is responsible for data and low voltage? Contractor or owner?

    a. **Answer:** Refer to G-002 General Note #53: *The tenant (courts) will be installing the telecommunication systems. Per demolition keynote A [ED-101], the data cable shall be removed from its existing faceplate and neatly coiled above the ceiling. Avoid cutting the data cable at the top of the wall. The tenant will re-land this cable and install new as required. Raceways (e.g. Conduits and boxes) for the telecommunications system is the scope.*

        i. The contractor is responsible for installing data back boxes in walls as noted on E-301 and providing in-wall conduits accessible above the ceiling. The Courts will re-terminate existing data cables and run new data cables as necessary.

2. **Question:** Can you clarify the type of veneer intended for the wood panel feature walls?

    a. **Answer:** The intent is to install a feature wall similar to the existing Judges suites. Details are noted on A-202 and in specification section 06 40 23. See photo of existing feature wall below:




        i. For reference, *Dooge Veneers* identifies this as “Qtd Figured Makore - log number (#79052-01) sequence book matched”

**END OF ADDENDUM**

3. **Question:** Specification Section 02 82 00 (Asbestos) which is listed in the index is missing from the Technical Specifications.

    a. **Answer:** Refer to the attached specification section 02 82 00

4. **Question:** Some of the base cabinet finishes are missing on Drawing A-104. Actually only one has a finish label – M1, M2, M1

    a. **Answer:** Refer to the attached updated A-104 and A-201 with updated millwork/ countertop finishes. Solid surface countertops are to be provided and installed in each of the (3) toilet rooms.

5. **Question:** Reference Specification Section 01 50 00 – 1, Paragraph 1.1C and D. We are to control temperature in a Palm House. Where is that and what work is required in this facility. Nothing on the drawings.

    a. **Answer:** Delete specification sections 01 50 00-1 Paragraphs 1.1C and D.

6. **Question:** Reference Drawing A-201, Elevation 7 right hand area. We believe the door, frame and sidelight indicated to remain is not correct but that the opening is to be altered to receive an existing door and sidelight frame from another location. Correct?

    a. **Answer:** Correct. Modify wall and reinstall door and sidelight frame (1516) that was removed. Refer to attached A-201.

## SECTION 02 8200 - ASBESTOS REMEDIATION

## PART 1 – GENERAL

1.01 SUMMARY OF WORK

A. The type of work under this specification involves proper removal and disposal of asbestos-containing materials (ACM) from the Cadillac Place 15th Floor – Building Three Judicial Suites renovation project. The Cadillac Place Building is located at 3044 W. Grand Boulevard in Detroit, Michigan. The following ACM that may be disturbed as part of the renovation activities include, but are not limited to:

1. Brown glue pods associated with 12” x 12” ceiling tiles that have been removed at areas;
2. Pipe and fitting insulation;
3. Roofing materials (assumed)

B. Information on asbestos-containing materials (ACM) found in the building is presented in **Attachment I**. Verify all information.

1.02 RELATED SECTIONS

A. Section 02 8000 – Hazardous Materials Remediation

B. Section 02 8300 – Lead Remediation

1.03 REFERENCES

A. General Applicability of Codes, Regulations, and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.

B. The references in this Article may apply to the work under this Section. This list shall not be considered complete, and it is the Contractor’s responsibility to perform all work in accordance with all Federal, State and local laws and regulations.

C. Hazardous and Regulated Materials Survey Report for Oxbow Restroom prepared by Beam, Longest, and Neff (BLN Project ID:23022), dated May 15, 2023.

It is the Contractor’s responsibility to verify all information and to interpret all data and reports for removal purposes.

D. A photographic log of current conditions is also included in Attachment I.

E. Federal Requirements: Requirements that govern asbestos-abatement work or hauling and disposal of asbestos waste materials include, but are not limited to, the following:

1. U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:

a. Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules Title 29, Part 1910, Section 1001 and Part 1926, Section 1101 of the Code of Federal Regulations

b. Respiratory Protection Title 29, Part 1910, Section 134 of the Code of Federal Regulations

c. Construction Industry Title 29, Part 1926, of the Code of Federal Regulations

d. Access to Employee Exposure and Medical Records Title 29, Part 1910, Section 2 of the Code of Federal Regulations

e. Hazard Communication Title 29, Part 1910, Section 1200 of the Code of Federal Regulations

f. Specifications for Accident Prevention Signs and Tags Title 29, Part 1910, Section 145 of the Code of Federal Regulations

2. U.S. Environmental Protection Agency (EPA) including, but not limited to:

a. Worker Protection Rule 40 CFR Part 763, Subpart G of the Code of Federal Regulations

b. Regulation for Asbestos Title 40, Part 61, Sub-part A of the Code of Federal Regulations

c. National Emission Standard for Asbestos Title 40, Part 61, Sub-part M (Revised Sub-part B) of the Code of Federal Regulations

3. U.S. Department of Transportation (DOT) including but not limited to:

a. Hazardous Substances: Final Rule Regulation

b. 49 CFR, Parts 171 and 172

c. State and Local Requirements: Abide by all local requirements that govern asbestos abatement work or hauling and disposal of asbestos waste materials.

F. Michigan Labor and Economic Opportunity (LEO) and Michigan Occupational Safety and Health Administration (MIOSHA) Safety Standards relating to asbestos include but are not limited to:

1. Part 1 General Provision
2. Part 451 Respiratory Protection
3. Part 42 Hazard Communication
4. Part 20 Demolition
5. Part 45 Fall Protection
6. Part 6 Personal Protective Equipment
7. Part 7 Welding & Cutting
8. Part 19 Tools
9. Part 12 Scaffolds & Scaffold Platforms
10. Part 602 Asbestos Standards in Construction

G. National Institute of Occupation Safety and Health (NIOSH 7400) – Asbestos and Other Fibers by Phase Contrast Microscopy (PCM).

1.04 SUBMITTALS

At least two weeks prior to beginning work, submit the following items. Do not begin work until they are acknowledged as received by the Owner Representative.

A. Notices: Submit notices required by federal, state and local regulations, together with proof of timely transmittal, to agency requiring the notice, including a copy of the Notification of Intent to Renovate/Demolish which is required to be submitted to Michigan Department of Environment, Great Lakes and Energy (EGLE) and LEO.

B. Licenses: Submit copies of all state licenses necessary to carry out the work of this contract, including a copy of the Contractor's license under Michigan Public Act 135 of 1986.

C. For the proposed disposal facility, submit the name, location, 24-hour telephone number, and Federal, State and local license or permit numbers.

Also, provide copies of all licenses and approvals permitting the disposal of asbestos and provide satisfactory evidence that the facility complies with 40 CFR 61.154 and all other applicable laws and regulations for disposal of asbestos.

D. Submit the name and address, and federal, state and local permit or identification numbers of the proposed transportation contractor.

E. Asbestos Abatement Action Plan. Contractor shall prepare and submit an Asbestos Abatement Action Plan (Plan). The Plan shall be submitted to the Owner Representative for review and approval at least **10 business days prior to the start of the work.** No work shall be allowed until the Plan has been approved. The Plan shall include drawings and narratives, sufficient in detail to demonstrate and indicate the following:

1. Description of materials scheduled for removal in the building.
2. The specific areas of work in the building.
3. Removal methods and work practices to be performed by Contractor.
4. Locations of critical barriers.
5. Delineation of the regulated area.
6. Personal protection equipment and clothing to be worn by employees.
7. Location of Decontamination Enclosure Systems or Decontamination Area.
8. Personal hygiene and equipment decontamination procedures.
9. Location of waste accumulation.
10. Location of waste dumpster (if applicable).
11. Location of remote decontamination enclosure system (if applicable).
12. Location of negative air machine exhaust points and path of exhaust ducts (if applicable).

F. Other:

1. Evidence of training of all workers as required by the State of Michigan.

2. Copies of Contractor's written respiratory protection program, engineering controls, and work practices.

3. Copies of all medical approvals for all applicable workers to use respiratory protective equipment.

4. Records of respirator fit testing for all workers.

5. Identification of designated competent person under 29 CFR 1926.1101 and phone numbers for 24-hour contact.

G. Historic Airborne Fiber Data: Submit airborne asbestos fiber count data from an independent air monitoring firm to demonstrate the ability to perform work

of this Section while maintaining an airborne fiber count below 0.1 fibers per cubic centimeter in the breathing zone of the individual performing the work. Include the following data for each procedure required by the work:

1. Date of measurements; operations monitored; sampling and analytical methods used and evidence of their accuracy; and number, duration, and results of samples taken.

H. Alternate Procedures and Variances: A Variance to the Work Practices may be requested by submitting a written proposal to the Owner and Owner's Representative 10 business days before the commencement of work. The written proposal shall include a detailed description of the procedure(s) to be used in lieu of the requirements described herein. The Owner or Owner's Representative will notify the Contractor in writing of its decision to either grant or deny the variance.

1.05 GENERAL REQUIREMENTS

A. Contractor Responsibility: Assume full responsibility and liability for compliance with all applicable federal, state, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the Site, and persons occupying areas adjacent to the Site. Provide medical examinations and maintain medical records of personnel as required by the applicable Federal, State, and local regulations. Hold the Owner and Owner Representative harmless for failure to comply with any applicable work, hauling, disposal, safety, health, or other regulations on the part of Contractor, Contractor's employees, or subcontractors.

B. Decontamination area location, Contractor parking, dumpster location, and entrances that may be used for the movement of supplies and personnel are subject to the Owner Representative approval.

C. Allow the Owner Representative to inspect and approve all equipment and materials used before the start of any work.

D. Allow the Owner Representative to check or evaluate air monitoring methods, procedures and quality assurance.

E. All personnel performing work under this specification from pre-clean/prep to and including tear down shall be State of Michigan-certified asbestos workers or contractor supervisors.

F. Asbestos abatement procedures are outlined in this specification document. Contractors may submit alternate abatement procedures for compliance with State and Federal requirements. These procedures will require approval by the Owner Representative prior to commencing abatement activities.

1.06 POTENTIAL ASBESTOS HAZARD

A. The disturbance or dislocation of ACM may cause asbestos fibers to be released into the building's atmosphere, thereby creating a potential health hazard to workers. Apprise all workers, supervisory personnel, subcontractors and consultants who will be at the Site of the seriousness of the hazard and of proper work procedures, which must be followed.

B. Take appropriate measures as necessary to protect workers from the potential hazard of exposure to airborne asbestos. Such measures include the procedures and methods described herein, and compliance with regulations of applicable federal, state and local agencies.

1.07 STOP WORK

A. If the Owner Representative presents a written stop work order, immediately stop all work. Do not recommence work until authorized by the Owner Representative.

1.08 PROJECT COORDINATION

A. Project Superintendent - Provide a full-time Project Superintendent who is experienced in administration and supervision of asbestos abatement projects, including work practices, protective measures for building and personnel, disposal procedures, etc.

1. The Project Superintendent is the Competent Person for the Contractor, as required by OSHA in 29 CFR 1926.1101, and is the Contractor's Representative responsible for compliance with all applicable federal, state and local regulations.

2. This person must have completed a course at an EPA Training Center or equivalent certificate course in asbestos abatement procedures and have had a minimum of two (2) years on-the-job training. The Project Superintendent shall be accredited as an Asbestos Abatement Supervisor in accordance with the AHERA Regulation 40 CFR, Part 763, Subpart E, Appendix C.

3. Duties of Project Superintendent

a. Coordination: Coordinate the work of all subcontractors and material suppliers.

b. Supervision: Supervise the activities of every phase of the asbestos abatement work taking place on the project.

c. Communication: Establish lines of authority and communication at the Site.

d. Permits: Obtain building and special permits required for asbestos abatement.

e. Location: Be present on the Site at all times when work is being performed.

f. Regulations: Ensure compliance with all applicable federal, state, and local regulations with regard to ACM.

1.09 NOTICES

A. U.S. Environmental Protection Agency / State and Local Agencies

1. Submit notices required by federal, state and local regulations, together with proof of timely transmittal, to agency requiring the notice. All associated fees are considered incidental to the project.

1.10 AIR MONITORING

A. Personal air monitoring required by Michigan LEO is the work of the Contractor.

B. The Owner Representative shall conduct air monitoring to verify that the building beyond the work area and the outside environment remain uncontaminated. The Owner Representative shall also perform clearance sampling, if required.

C. Use Phase Contrast Microscopy (PCM) analysis for air sampling before and during abatement. Transmission Electron Microscopy (TEM) will be used at the discretion of the Owner Representative.

D. PCM Clearance Criteria: All final air sampling results shall be at or below 0.01 fibers per cubic (f/cc) centimeter to achieve clearance.

E. TEM Clearance Criteria: All final air sampling results shall be at or below 70 structures per square millimeter (s/mm2) to achieve clearance.

F. The Clearance Criteria set forth in this Section also serve as airborne fiber concentrations indicative of a release from the work area.

G. The following procedure will be used to resolve disputes regarding fiber types when a project has been stopped due to excessive airborne fiber counts.

1. "Airborne Fibers: "Includes all fibers regardless of composition as counted by phase contrast microscopy (PCM), unless additional analysis by transmission electron microscopy (TEM) demonstrates to the satisfaction of the Owner Representative that non-asbestos fibers

are being counted. "Airborne Fibers" counted in samples analyzed by TEM shall be all asbestos fibers.

2. Phase Contrast Microscopy (PCM): Performed using the NIOSH 7400 method at the Site.

3. Transmission Electron Microscopy (TEM): Performed using the analysis method set forth in the AHERA Regulation 40 CFR, Part 763, Appendix A.

H. Secure air samples before start of work to establish a baseline.

1.11 WORKER TRAINING AND ACCREDITATION

A. AHERA Accreditation: All workers are to be accredited as Abatement Workers as required by the AHERA Regulation 40 CFR 763, Appendix C, Subpart E, April 30, 1987 and Michigan Public Act 440 of 1988.

B. Train, in accordance with 29 CFR 1926, all workers in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures.

C. All on-site personnel working under this specification shall, at a minimum, be State of Michigan Asbestos Workers. The work must be overseen by an on-site State of Michigan Asbestos Contractor Supervisor.

1.12 QUALITY ASSURANCE

A. Contractor shall be experienced in the removal, packaging, handling, transportation, and proper disposal of asbestos containing material and have all necessary local permits and/or approvals.

B. Contractor shall be responsible for the proper handling of material being disposed from the time the Contractor moves the material until the material is disposed off-site at the licensed disposal facility. The Contractor shall be responsible to clean up all spills that occur during loading, hauling and final disposal at no cost to the Owner. Contractor shall immediately notify the Owner Representative of any spills and appropriately clean up and dispose of all material and impacted media required for cleanup.

C. Do all work required by and in accordance with all applicable federal, state and local government regulatory agencies and arrange for all notifications and licenses for the removal, packaging, loading, hauling, and final disposal operations.

D. If additional data is required to obtain disposal facility approval, collect and analyze appropriate samples. Notify the Owner Representative in writing at least one week in advance of sampling with an explanation for the additional

testing and the date and time of the sampling so that the Owner Representative will have the opportunity to collect co-located samples.

E. The Owner Representative will observe abatement operations, inspect critical barriers and other enclosures, and conduct air monitoring. If the Owners Representative shuts down the project because the clearance level is exceeded outside of the work area, do not resume until corrections are made.

1.13 PROJECT CLOSEOUT

A. Preliminary Procedures: When requesting inspection for Substantial Completion, list exceptions in the request.

B. Inspection Procedures: On receipt of a request for inspection, the Owner Representative will either proceed with inspection or advise the Contractor of unfilled requirements.

C. The Owner Representative will perform a visual inspection and verify that the work has been substantially completed.

D. Results of the completed visual inspection and clearance sample results will form the basis of requirements for final acceptance.

1.14 DEFINITIONS

A. Adequately wet: To sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wet.

B. Aerosol: A system consisting of particles, solid or liquid, suspended in air.

C. Air Cell: Insulation, normally used on pipes and ductwork, which is comprised of corrugated cardboard that is frequently comprised of asbestos combined with cellulose or refractory binders.

D. Air Erosion: The passage of air over friable ACM, which may result in the release of asbestos fibers.

E. Air Monitoring: The process of measuring the fiber content of a specific volume of air.

F. Amended Water: Water to which a surfactant has been added. Use a mixture of surfactant and water that results in wetting of the asbestos-containing material and retardation of fiber release during disturbance of the material equal to or greater than that provided using one (1) ounce of a surfactant

consisting of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with 5 gallons of water.

G. Asbestos: The asbestos-form varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (amosite), anthophyllite, and actinolite-tremolite. For purposes of determining respiratory and worker protection, both the asbestiform and non-asbestiform varieties of the above minerals, and any of these materials that have been chemically treated and/or altered, shall be considered as asbestos.

H. Asbestos Abatement: Removal, encapsulation, enclosure, demolition and renovation activities related to asbestos and procedures to control fiber release from asbestos-containing materials during removal.

I. Asbestos Abatement Contractor: Any person hired to conduct asbestos abatement.

J. Asbestos-Containing Material (ACM): Surfacing asbestos-containing material, thermal system insulation asbestos-containing material, or miscellaneous asbestos-containing material that is found in or on interior structural members or other parts of a building.

Any material containing more than 1% by weight of asbestos of any type or mixture of types.

K. Asbestos-Containing Waste Material (ACWM): Any material that is or is suspected of being or any material contaminated with an asbestos-containing material, which shall be removed from a work area for disposal.

L. Authorized Visitor: The Owner, Owner Representative, testing lab personnel, or a representative of any federal, state and local regulatory or other agency having authority over the project.

M. Barrier: Any surface that seals off the work area to inhibit the movement of fibers.

N. Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches.

O. Ceiling Concentration: The concentration of an airborne substance that shall not be exceeded.

P. Certified Industrial Hygienist (CIH): An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.

Q. Clean Room: An uncontaminated area or room that is a part of the worker decontamination enclosure system, with provisions for storage of workers' street clothes and clean protective equipment.

R. Critical Barrier: A single layer of 6-mil or greater polyethylene sheeting or an equivalent airtight barrier installed initially over all doors, windows, ventilation openings, drains, wall penetrations, etc., as an additional measure to prevent contaminated air from escaping the work area.

S. Curtained Doorway: A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms.

T. Cutting: To penetrate with a sharp-edged instrument and includes sawing, but does not include shearing, slicing, or punching.

U. Decontamination enclosure system: A series of three (minimum) connected rooms, separated from the work area and from each other by air locks or curtained doorways, for the decontamination of workers and equipment.

V. Demolition: The wrecking or taking out of any load-supporting structural member of a facility together with related handling operations or the intentional burning of any facility.

W. Disposal Bag: Six (6) mil thick leak-tight plastic bags used for transporting asbestos waste from work and to disposal site. Each is labeled as follows:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

and

CAUTION
Contains Asbestos Fibers
Avoid Opening or Breaking Container
Breathing Asbestos is Hazardous to Your Health.

X. Duct Tape: Provide duct tape in 2-inch or 3-inch widths as indicated, with an adhesive that is formulated to aggressively stick to sheet polyethylene.

Y. Encapsulant: A material that surrounds or embeds asbestos fibers in an adhesive matrix to prevent release of fibers.

1. Bridging encapsulant: An encapsulant that forms a discrete layer on the surface of an in-situ asbestos matrix.

2. Penetrating encapsulant: An encapsulant that is absorbed by the in-situ asbestos matrix without leaving a discrete surface layer.

3. Removal encapsulant: A penetrating encapsulant specifically designed for removal of asbestos-containing materials rather than for in-situ encapsulation.

Z. Encapsulation: The application of a liquid material to asbestos-containing material to control the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant).

AA. Enclosure: The construction of an airtight, impermeable, permanent barrier around asbestos-containing material to control the release of asbestos fibers into the air.

BB. Equipment room: A contaminated area or room that is part of the worker decontamination enclosure system, with provisions for storage of contaminated clothing and equipment.

CC. Fiber release episode: Any uncontrolled or unintentional disturbance of ACM resulting in visible emissions.

DD. Filter: A media component used in respirators to remove solid or liquid particles from the inspired air.

EE. Final cleaning: The cleaning of all dust and debris from the work areas near the end of the active abatement phase, immediately prior to the final visual inspection.

FF. Fixed object: A piece of equipment or furniture in the work area that cannot be readily removed from the work area.

GG. Friable: Any material, when dry, that may be crumbled, pulverized, or reduced to powder by hand pressure, including previously non-friable material after such previously non-friable material becomes damaged to the extent that, when dry, it may be crumbled, pulverized, or reduced to powder by hand pressure.

HH. Glove bag: A sack (typically constructed of 6-mil transparent polyethylene or polyvinyl chloride plastic) with two inward projecting long-sleeved gloves that are designed to enclose an object from which an asbestos-containing material is removed.

II. Grinding: To reduce to powder or small fragments, including mechanical chipping or drilling.

JJ. HEPA Filter Vacuum Collection Equipment (or vacuum cleaner): High efficiency particulate air (absolute) filtered vacuum collection equipment with a

filter system capable of collecting and retaining asbestos fibers. Filters shall be of 99.97% efficiency for retaining fibers of 0.3 microns or larger.

KK. Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

LL. Negative Pressure Ventilation System: A local exhaust system, utilizing HEPA filtration, capable of maintaining a negative pressure inside the work area and a constant air flow from adjacent areas into the work area and exhausting that air outside the work area.

MM. Negative Pressure: Air pressure lower than surrounding areas, generally caused by exhausting air from a sealed space (work area).

NN. Personal Monitoring: Sampling of the asbestos fiber concentrations within the breathing zone of an employee.

OO. Phase Contrast Microscopy: The analysis of testing asbestos airborne fiber concentration by performing a visual count using NIOSH method 7400.

PP. Pre-cleaning: The cleaning of the work area of visible dust and debris prior to active abatement.

QQ. Polarized Light Microscopy: The analysis of testing bulk building materials for asbestos by performing a visual estimation using the EPA Method 600/R-93/116.

RR. Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 4.0 or 6.0-mils thick as indicated, clear, frosted, or black as indicated.

1. Flame-resistant Polyethylene Sheet: Flame resistant polyethylene film conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films.

2. Reinforced Polyethylene Sheet: Translucent, nylon reinforced or woven polyethylene, laminated, flame resistant, polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films.

SS. Project Design: The preparation of plans, specifications, project procedures, containment design/placement, descriptions of engineering controls, and shop drawings for an asbestos-abatement project or response action. It shall include an accurate and detailed scope of work, quantities of material to be

removed, removal methods, and air exchange calculations. Drawings shall include locations of ACM to be abated, location of the decontamination unit, waste load out, negative air units, air intake and exhaust, and emergency exits when applicable.

TT. Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

UU. Regulated Area: Area established by the Contractor to demarcate areas where asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos, exceed or there is a reasonable possibility they may exceed the permissible exposure limit.

VV. Regulated Asbestos-Containing Material (RACM): Any of the following: (a) Friable asbestos material, (b) Category I, non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by forces expected to act on the material during demolition or renovation operations.

1. Category I Non-friable Asbestos-Containing Materials (ACM): Asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than one percent asbestos as determined using Polarized Light Microscopy.

2. Category II Non-friable ACM: Any material, excluding Category I nonfriable ACM, containing more than one percent asbestos as determined using Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

WW. Respirator: A device designed to protect the wearer from inhalation of harmful atmospheres.

XX. Shower room: A room between the clean room and the equipment room in the worker decontamination enclosure suitably arranged for complete showering during decontamination.

YY. Spray Cement: Spray adhesive in aerosol cans that is specifically formulated to stick to sheet polyethylene.

ZZ. Staging area: The holding area or an area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal from the work area.

AAA. Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

BBB. Transmission Electron Microscopy (TEM): The analysis of testing bulk building materials, air concentrations, or dust wipes for asbestos contamination. The most precise technique used for the definitive identification of asbestos.

CCC. Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.

DDD. Visible Emissions: Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

EEE. Waste load-out area: A specially constructed airlock system utilized as a short-term storage area for bagged or barreled waste and as a port for transferring waste to the transport vehicle. This area is separate from the decontamination unit.

FFF. Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils that have been dampened with amended water or diluted removal encapsulant and afterwards, thoroughly decontaminated or disposed of as asbestos-contaminated waste.

GGG. Wetting Materials: For wetting prior to disturbance of asbestos-containing material, use either amended water or a removal encapsulant.

HHH. Work Area: The area where asbestos-related work or removal operations are performed and that is defined and/or isolated to prevent the spread of asbestos dust, fibers or debris, and entry by unauthorized personnel. Work area is a Regulated Area as defined by 29 CFR 1926.

III. Workday: Means Monday through Friday, not including holidays that falls on any of the days Monday through Friday.

## PART 2 - PRODUCTS

2.01 MATERIALS

A. Sheet Plastic:

1. Polyethylene Sheet: Sheeting for walls shall be a minimum of 4-mils. For floors and critical barriers, other objects in the regulated area and worker decontamination areas, poly shall be 6-mils.

2. Flame-resistant Polyethylene Sheet: Where needed, provide flame resistant polyethylene film. Provide largest size possible to minimize seams, 6.0 mil thick as indicated, frosted or black as indicated.

3. Reinforced Polyethylene Sheet: Where plastic sheet constitutes the only barrier between the Work Area and the building exterior, provide reinforced polyethylene sheet. Provide largest size possible to minimize seams, 6.0 mil thick as indicated, frosted or black as indicated.\

B. Glovebag: A sack (typically constructed of 6-mil transparent polyethylene or polyvinyl chloride plastic) with two inward projecting long-sleeved gloves that are designed to enclose an object from which an asbestos-containing material is removed.

C. Miscellaneous Materials

1. Duct Tape

2. Spray Cement

3. Wetting Materials:

a. Amended Water

b. Removal Encapsulant

c. Garden Sprayer: For glove bag use provide a hand pump type pressure-can garden sprayer fabricated out of either metal or plastic, equipped with a metal wand at the end of a hose that can deliver a stream or spray of liquid under pressure.

2.02 PERSONAL PROTECTIVE EQUIPMENT

A. Additional Protective Equipment – Provide disposable coveralls, head covers, and footwear covers for use by the Owner Representative and other authorized representatives who may inspect the Site.

## PART 3 - EXECUTION

3.01 GENERAL PROCEDURES

A. Remove asbestos containing material in strict accordance with the requirements of OSHA 29 CFR 1926.1101 and this Section.

B. Provide asbestos banner tape and warning signs at each visual and physical barrier.

C. Properly remove additional materials that may be suspected to contain asbestos. Perform all work necessary to remove ACM that is encountered during demolition.

D. Comply with Article 3.07 – Worker Protection.

E. All incoming electrical supplies shall be equipped with ground fault circuit interrupters.

F. Pre-cleaning

1. HEPA vacuum or wet wipe all surfaces in the asbestos abatement work area contaminated with visible dust or debris. Clean movable objects free of dust and debris by HEPA vacuum or wet wiping before removal from the work area.

2. Dispose of all dust and debris, filters, mop heads and other contaminated waste as ACM.

3. After pre-cleaning work area, begin prep of work area.

4. Pick up and containerize ACM-debris in each work area prior to setting up the work area.

G. Impermeable Drop Cloths

1. Install an impermeable drop cloth (i.e., a clear 6-mil sheet plastic) in all areas where asbestos removal work is to be carried out. Completely cover work area around work activity.

2. Remove drop cloth at end of each work shift or as work in an area is completed. Fold plastic toward center of sheet and pack in disposal bags. Keep material on sheet continuously wet until bagged.

H. Airborne Fiber Counts

1. Use work procedures that result in a fiber count outside the work area less than that indicated in Article 1.10 of this Specification.

a. If airborne fiber counts exceed the specified level, immediately mist the area with amended water to lower fiber counts and revise work procedures to maintain airborne fiber levels within the required limit.

2. Use respiratory protection based on fiber counts as indicated in Article 3.08 of this Specification.

I. On a daily basis, stockpile and clean up all rubbish, trash, debris, etc., caused by work done under this project.

3.02 ACCETPABLE REMOVAL METHODS

A. Use wet removal techniques for all ACM removal

1. Thoroughly wet, to satisfaction of Owner Representative, ACM to be removed prior to stripping and/or tooling to reduce fiber dispersal into the air. Accomplish wetting by a fine spray (mist) of amended water or removal encapsulant. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for water or removal encapsulant to penetrate material thoroughly. If amended water is used, spray material repeatedly during the work process to maintain a continuously wet condition. If a removal encapsulant is used, apply in strict accordance with manufacturer's written instructions. Where necessary, carefully strip away while simultaneously spraying amended water or removal encapsulant on the installation to minimize dispersal of asbestos fibers into the air.

2. Mist work area continuously with amended water whenever necessary to reduce airborne fiber levels.

3. Remove saturated ACM in small sections. Do not allow material to dry out. As it is removed, simultaneously pack material while still wet into asbestos disposal bags. Twist neck of bags, bend over and seal with minimum three (3) wraps of duct tape. Clean outside and move to wash down station adjacent to material decontamination unit. Waste shall be double bagged or bagged and placed in a second impermeable container (i.e., cardboard drum).

B. Removal of glue pods and roofing materials and fire doors are classified as “Class II asbestos work” under OSHA’s 29 CFR 1926.1101 Asbestos in Construction. The area shall be set up in accordance with Item 3.04 Work Area Isolation in additional to the following:

1. Glue pods: The area around the removal areas shall be cordoned with asbestos banner tape. An adjacent decontamination station with HEPA-vacuum shall be set up adjacent to the regulated area for worker and equipment decontamination. Drop cloths shall be placed under removal areas. The glue shall be removed using wet methods and hand tools and waste shall be double bagged.

2. Asbestos-containing roofing materials (flashing and membrane) shall be removed intact if feasible. If intact removal is not feasible, then wet methods shall be utilized. Cutting machines shall be continuously misted unless deemed unsafe by the competent person. When

removing built-up roofs using a power roof cutter the following procedures shall be utilized:

a. Use power cutters equipped with HEPA dust collectors or perform HEPA vacuuming along the cut line for roofs that have asbestos-containing roofing felts and an aggregate surface.

b. Use power cutters equipped with HEPA dust collectors, or perform HEPA vacuuming along the cut line, or gently sweep along the cut line and then carefully and completely wipe up the still-wet dust and debris that was acquired for roofs that have asbestos-containing roofing felts and a smooth surface.

c. Do not drop or throw to the ground ACM that has been removed from a roof.

d. Carry or pass the ACM to the ground by hand, or lower the material to the ground via covered, dust-tight chute, crane or hoist.

e. Lower both intact ACM and non-intact ACM to the ground as soon as it is practicable, but no later than the end of the work shift.

f. Keep material wet if it is not intact, or place it in impermeable waste bags, or wrap it in plastic sheeting while it remains on the roof.

g. Lower to the ground, as soon as possible or by the end of the work shift, any unwrapped or unbagged roofing material using a covered, dust-tight chute, crane, or hoist.

h. Place unwrapped materials in closed containers to prevent scattering dust after the materials reach the ground.

i. Isolate roof level heating and ventilation air intake sources or shut down the ventilation system.

3.03 AIR MONITORING – TEST SERVICES

A. The purpose of air monitoring outside of the work area is to detect faults in the work area isolation such as:

1. Contamination of the building outside of the work areas with airborne asbestos fibers.

2. Failure of filtration or rupture in the negative pressure system.

B. Background and Perimeter Area Air-Monitoring: The Owner Representative will monitor airborne fiber counts outside of the work area. Perimeter area monitoring must meet clearance criteria in Article 1.10 or not exceed background levels representing the same area before the asbestos work began. The results of such monitoring will be made known to the Owner no later than 48 hours from the end of the work shift represented by such monitoring.

C. Sample Analysis

1. Sample analysis will be performed using PCM before, during and after asbestos abatement. TEM analysis will be performed if deemed necessary by the Owner or Owner Representative.

2. Provide a microscope and technician at the Site or send samples daily by overnight mail to a testing laboratory so that verbal reports on air samples can be obtained within 24 hours.

D. Personal Monitoring

1. Perform all monitoring to meet MIOSHA requirements (Part 602. Asbestos Standards is Construction) for maintenance of time-weighted average (TWA) fiber counts for types of respiratory protection provided. Submit results within 1 week of receipt of data.

3.04 WORK AREA ISOLATION

A. General

1. When required by the acceptable removal method, completely isolate the work area from other parts of the building to prevent asbestos-containing dust or debris from passing beyond the isolated area. Should the area beyond the work area(s) become contaminated with asbestos-containing dust or debris, determined through visible observations or perimeter air monitoring results, immediately notify the Owner Representative and clean those areas in accordance with the proper procedures. Perform all such required cleaning or decontamination at no additional cost to Owner.

2. Place all tools, scaffolding, staging, etc. necessary for the work in the area to be isolated before erection of plastic sheeting temporary enclosure. Remove all uncontaminated removable furniture, equipment, and/or supplies from the work area before commencing work, or completely cover with two (2) layers of 6-mil polyethylene sheeting securely taped in place with duct tape. Such furniture and equipment shall be considered outside the work area unless covering plastic or seal is breached.

3. Disable Ventilating Systems and any other system that brings air into or out of the work area. Disable system by disconnecting wires, removing circuit breakers, by lockable switch or other positive means that will prevent accidental premature restarting of equipment.

4. The Owner Representative must visually observe and approve all work area set-up before commencing any removal activities.

5. Allow for work area clearance in accordance with Article 3.09 prior to dismantling the enclosure.

B. Control of Access

1. Permit access to the work area only through the Decontamination Area. Close off all other means of access and seal. Display warning signs on the clean side of the sealed access.

2. Provide asbestos banner tape and warning signs at each visual and physical barrier.

C. Critical Barriers

1. Completely separate the work area from other portions of the building and the outside by sheet plastic barriers at least 6-mil in thickness, or by sealing with duct tape.

2. Individually seal all ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, convectors and speakers, and other openings into the work area with duct tape alone or with polyethylene sheeting at least 6-mil in thickness, taped securely in place with duct tape. Maintain seal until all work, including project decontamination, is completed. Take care in sealing off lighting fixtures to avoid melting or burning of sheeting. Use flame resistant or reinforced polyethylene sheet where required.

3.05 NEGATIVE PRESSURE SYSTEM REQUIREMENTS FOR ENCLOSURES

A. The negative pressure enclosure shall consist of the following components:

1. Personnel decontamination unit, which consists of a dirty room, shower and clean room. The decontamination unit shall be attached to the enclosure.

2. Enclosure: Construct an enclosure where the abatement work is to be performed in accordance with this section.

3. Change Room: Provide, at a minimum, an approximately 3-foot by 3-foot Change Room, with additional space as required for storage,

attached to each enclosure. Fabricate Change Room from 6-mil sheet plastic in the same manner as the first layer of the work room. Locate so that access to Work Area is through Change Room.

4. Step-Off Area: Cover floor in front of entry to Change Room with one layer of 6-mil sheet plastic. Securely anchor sheet plastic to prevent slipping.

5. Flapped Door Construction: Provide flapped door as entry to Change Room and entry from Change Room to Work Room. Fabricate each flapped door from overlapping contacting layers of sheet plastic.

   a. Fasten each layer on the top and one side. Fabricate each flap three-inches (3") longer than door opening. Reinforce free side and bottom of each sheet with duct tape. Alternate sides that are fastened on each layer. Form arrows pointing to entry side from duct tape on inside and outside of door.

B. Construction:

1. Walls shall be covered with two-layers of polyethylene sheeting, overlapping in alternate layers with three-layers of polyethylene sheeting covering the floor. Note: Floor requirements listed below are not applicable for removal of floor tile and mastic within enclosures.

2. Use fire resistant polyethylene sheeting if potential for fire hazard exists.

3. If flooring materials are not scheduled for abatement, and after flooring material scheduled for abatement has been removed, floors shall be covered with three-layers of 6-mil (minimum) polyethylene sheeting.

4. Polyethylene sheeting shall be sized to minimize seams. If the floor area necessitates seams, those on successive layers of sheeting shall be sufficiently spaced to reduce the potential for water to penetrate to the flooring material. Seams shall not be located at wall/floor joints.

5. Floor sheeting shall extend, at minimum, 12-inches (12”) up the side walls of the work area.

6. Walls shall be covered with a minimum of two-layers of 4-mil polyethylene sheeting. Where polyethylene sheeting must remain attached to porous wall surfaces for more than 48 hours, furring strips (or the equivalent) shall be used in addition to duct tape and/or spray glue to secure the wall plastic in place.

7. Critical barriers of 6-mil polyethylene sheeting shall be placed over penetrations to outside work areas (vents, windows, holes, etc.).

8. Polyethylene for walls shall be sized to minimize seams. Seams shall be staggered and separated by a distance of at least 6-feet where possible.

9. Polyethylene shall overlap floor sheeting by a minimum of 24-inches beyond the wall/floor joint to provide a better seal against water damage and to enhance the negative pressure strategy.

10. Where construction of barrier wall frames is required, 2-inch by 4-inch studs shall be on 24-inch centers and covered with two (2) layers of 6-mil fire resistant polyethylene sheeting attached to the framing. If the attachment medium penetrates the sheeting, the penetration shall be sealed with duct tape.

C. Pressure Differential

1. Provide a fully operational negative air system within the work area maintaining continuously a pressure differential across work area enclosures of -0.020 inches of water. Demonstrate to the Owner Representative the pressure differential by use of a pressure differential meter or a manometer before disturbance of any ACM. At all times, the differential of the work area to the clean area shall be, at a minimum, -0.020 inches of water and shall be recorded using a strip chart recorder or its equivalent. In addition, smoke tubes shall be readily available on the outside of containment barriers at all times so that airflow direction may be determined. At all times airflow direction shall be from the exterior of the containment barriers into the interior of the containment barriers. If at any time the pressure differential falls below –0.020 inches of water, work shall stop until negative pressure is above –0.020 inches of water.

D. Preparation of the Work Area

1. Determining the Ventilation Requirements: Provide fully operational negative pressure systems supplying a minimum of one (1) air change every 15 minutes. Determine the volume in cubic feet of the work area by multiplying floor area by ceiling height. Determine total ventilation requirement in cubic feet per minute (CFM) for the work area by dividing this volume by the air change rate.

2. Ventilation Required (CFM) = Volume of work area (cu. ft.) / 15 min.

3. Determine number of units needed to achieve 15-minute change rate by dividing the ventilation requirement (CFM) above by capacity of exhaust unit(s) used. Capacity of a unit for purposes of this section is the capacity in cubic feet per minute with fully loaded filters (pressure differential which causes loaded filter warning light to come on) in the machines labeled operating characteristics.

4. Number of Units Needed = Ventilation Requirement (CFM) / Capacity of Unit with Loaded Filters (CFM)

5. Add one (1) additional unit as a backup in case of equipment failure or machine shutdown for filter changing.

6. Location of exhaust units: Locate exhaust unit(s) so that makeup air enters work area primarily through decontamination facilities and traverses work area as much as possible. This may be accomplished by positioning the exhaust unit(s) at a maximum distance from the worker access opening or other makeup air sources.

7. Place end of unit or its exhaust duct through an opening in the plastic barrier or wall covering. The plastic around the unit or duct shall then be sealed with tape.

8. Vent to outside of building unless authorized by the Owner Representative.

E. Use of the Negative Static Pressure System

1. General: A dedicated minimum 115V-20A circuit shall service each unit with overload device tied into an existing building electrical panel which has sufficient spare capacity to accommodate the load of all negative pressure units connected. Dedication of an existing circuit may be accomplished by shutting down existing loads on the circuit.

2. Testing the System: Test negative pressure system before any asbestos-containing material is wetted or removed. After the work area has been prepared, the decontamination facility set up, and the exhaust unit(s) installed, start the unit(s) (one at a time). Demonstrate operation and testing of negative pressure system to Owner Representative.

3. Demonstrate Operation of the negative pressure system to the Owner Representative will include, but not be limited to, the following:

   a. Plastic barriers and sheeting move lightly in toward work area.

   b. Curtain of decontamination units move lightly in toward work area.

   c. There is a noticeable movement of air through the decontamination unit. Use smoke tube to demonstrate air movement from Clean Room to Shower Room, from Shower Room to Equipment Room, and from Equipment Room to Work Area.

d. Use smoke tubes to demonstrate a positive motion of air across all areas in which work is to be performed.

e. Use a differential pressure meter or manometer to demonstrate a pressure difference of at least 0.02 inches (0.02") of water across every barrier separating the Work Area from the balance of the building or outside.

f. Modify the Negative Static Pressure System as necessary to successfully demonstrate the above.

F. Use of System during Abatement Operations:

1. Start exhaust units before beginning work (before any asbestos-containing material is disturbed). After abatement work has begun, run units continuously to maintain a constant negative pressure until decontamination of the work area is complete. Do not turn off units at the end of the work shift or when abatement operations temporarily stop.

2. Start abatement work at a location farthest from the exhaust units and proceed toward them. If an electric power failure occurs, immediately stop all abatement work and do not resume until power is restored and exhaust units are operating again.

3. At completion of abatement work, allow exhaust units to run to remove airborne fibers that may have been generated during abatement work and cleanup and to purge the work area with clean makeup air. The units will be required to run until clearance by the Owners Representative is given.

G. Dismantling the System -When a final inspection and the results of final air tests indicate that the area has been decontaminated, exhaust units may be removed from the work area. Before removal from the work area, remove and properly dispose of pre-filter, and seal intake to the machine with 6-mil polyethylene to prevent environmental contamination from the filters.

H. Extension of Work Area

1. Extension of Work Area: If the enclosure barrier is breached in any manner that could allow the passage of asbestos debris or airborne fibers, then add the affected area to the work area, and enclose it as required by this Specification.

I. If the integrity of the enclosure fails, immediately cease asbestos abatement activities until the fault is corrected. Do not re-commence work until authorized by the Owner Representative.

1. Results of perimeter air monitoring exceeding Clearance Criteria shall be evidence of enclosure failure.

2. Visual observation of damage to the enclosure shall be evidence of enclosure failure.

3.06 WORKER ENTRY AND DECONTAMINIATION/MATERIAL DECONTAMINATION

A. Entry to Regulated Area: Every time that a worker enters the Regulated Area, the workers shall remove all street clothes and don clean coveralls and respirator. A swimsuit or second disposable suit may be worn beneath outer coveralls.

B. Worker Decontamination: Every time that a worker leaves the work area, require adherence to the following procedure:

1. Maintain a bucket of clean potable water in the Regulated Area. Do not amend with a wetting agent.

2. Remove contaminated suit inside the Regulated Area. Leave respirator in place.

3. Wash hands, face, and surface of respirator with water and wet paper towels. Use caution to avoid breaking seal between respirator face piece and face.

4. Proceed with respirator in place to Change Room/Area and remove respirator and don street clothes.

5. At end of workday, decontaminate fully in accordance with Article 3.07 Worker Protection.

6. For work in enclosures, workers must exit through the decontamination unit and shower prior to entering the clean room/area.

C. Material Decontamination: Require that the following procedure be used in removing equipment and bagged debris from the Regulated Area.

1. Remove equipment and bagged debris from the Regulated Area in separate operations.

2. Worker in Regulated Area cleans equipment and bagged debris and hands one piece of equipment or one bag of debris at a time to worker outside the Regulated Area.

3. Transport all bags to the dumpster in clean, sealed containers that have never been in an asbestos work area, Mini-Enclosure, or Decontamination Unit.

3.07 GLOVEBAG REMOVAL

A. Glovebag

1. Use the glovebag technique for removal of pipe and pipe fitting insulation. Provide a glove bag that consists of a specially designed 6 to 12-mil bag fitted with long sleeved gloves, a tool pouch, a small opening for water, and a small opening for a HEPA vacuum hose. Use the glove bag for removal of pipe insulation following the "single use" only technique - one bag to one spot of asbestos. Do not move the bag along the pipe. Owner Representative has the authority to inspect and approve all glove bags proposed for use, before use on the job.

2. Use two persons to perform glove bag removal. Do not perform removal with a glove bag on hot pipes because the heat can cause the bag to melt.

3. Remove ACM inside a glove bag according to the following procedure:

a. Mix amended water according to the manufacturer's instructions.

b. Wear appropriate respiratory protection and protective clothing.

c. Inspect pipe where the work will be performed prior to removal. If the insulation is damaged in locations that cannot be handled inside the glove bag, wrap these areas in polyethylene and secure with duct tape.

d. Place one layer of duct tape around the pipe at each location where the ends of the glove bag will be.

e. Slit open the top and sides of the glove bag to accommodate the pipe.

f. Place the required tools into the pouch located inside the glove bag. This will usually include: bone saw, utility knife, rags, scrub brush, wire cutters, tin snips, steel wool pad, and pre-wetted cloth.

g. Place the glove bag around the pipe and seal the plastic edges with duct tape.

h. Fill the bag with smoke, using a smoke tube and aspirator bulb, seal off the water hose port, and gently squeeze the glove bag from top to bottom. If any leaks exist, the smoke will exit through the leaks. Repair leaks in the glove bag with duct tape. Retest with smoke, as necessary. The smoke leak test is recommended, but other methods will be considered but shall be submitted to the Owner Representative for approval before use.

i. Caution: Some glove bags have a ready-made hose port at midpoint or lower on the bag. If this is the case, do not use that port, but carefully seal it off with duct tape. Next, cut another port of equal size near the top of the bag for the water wand use and insert the wand of the garden sprayer through the hose port and tape the plastic tightly around the wand.

j. Place one person's hands into the long-sleeved gloves, while the second person directs the garden sprayer at the work. Thoroughly wet material to be worked on with amended water or penetrating encapsulant and allow soaking in. Wet adequately to penetrate and soak material through to substrate.

k. A flexible cable saw or bone saw may be used to cut through the asbestos at each end of the section to be removed. A bone saw is a serrated, heavy gauge wire with ring-type handles at each end. While cutting, keep the asbestos thoroughly soaked with amended water.

l. Slit the section of insulation from end to end using a utility knife. Make the slit shall along the bottom of the pipe and keep continuously wetted.

m. Rinse the tools with water inside the glove bag and place back into the pouch.

n. Lift the insulation off the pipe and lower carefully to the bottom of the glove bag.

o. Using a brush, wool pad, rags, and water, clean the pipe of remaining residue.

p. Clean, re-usable tools may be removed from pouch, depending upon type of glove bag. Place tools on glove inside the bag. Pull glove out of bag. Twist and seal the glove on the sleeve portion. Cut the glove sleeve through the twisted/taped section. Cover ends with duct tape. Place the tool pouch with the tools in a bucket of water, open underwater and clean and

dry the tools. Discard rags as asbestos waste and filter water to 5 microns.

q. Remove the water wand from the bag and attach the nozzle of the HEPA vacuum. Briefly operate the vacuum to collapse the bag.

r. Twist the bottom part of the bag and secure with duct tape.

s. Remove the hose and seal the opening.

t. Slip a 6-mil disposal bag over the glove bag, remove the glove bag from the pipe, and fold down into the disposal bag.

u. Remove the disposable clothing and place into the disposal bag.

v. Collapse the bag with a HEPA vacuum twist top of bag, seal with at least three (3) wraps of duct tape, bend over and seal again with at least three (3) wraps of duct tape.

w. Apply an encapsulant and after the encapsulant sets, brush a second coat of encapsulant on to completely seal the exposed ends of the insulation.

4. NOTE - The procedure outlined is a known and proven procedure. Other alternative methods and procedures may be acceptable, but only with approval by the Owner Representative.

## 3.08 WORKER PROTECTION

### A. General

1. Provide worker protection as required by the most stringent LARA, OSHA and/or EPA standards applicable to the work. The procedures listed in this item are to be adhered to regardless of fiber count in the work area. Before beginning work with any material, provide workers with the required protective equipment.

2. Require that appropriate protective equipment be used at all times.

3. Each time the work area is entered, remove all street clothes in the Changing Room of the Personnel Decontamination Unit and put on new disposable coverall, new head cover, and a clean respirator. Proceed to equipment room and put on work boots.

B. Decontamination Procedures - Require all workers to adhere to the following personal decontamination procedures whenever they leave the work area:

1. When exiting area, remove disposable coveralls, disposable head covers, and disposable footwear covers or boots in the Equipment Room.

2. The following procedure is required as a minimum:

a. Thoroughly wash hair, hands and face (and other exposed skin).

b. Carefully wash face piece of respirator inside and out.

c. Proceed to outside work area.

C. Within Work Area

1. Do not allow workers to eat, drink, smoke, or chew gum or tobacco in the work area. To eat, chew, drink, or smoke, the workers shall follow the decontamination procedure described above, and then dress in street clothes before entering the non-work areas of the building.

3.09 RESPIRATORY PROTECTION

A. General

1. Respiratory Protection Program: Comply with OSHA 29 CFR 1910 and 1926 (also MIOSHA Part 451), and MIOSHA Part 602 Asbestos.

2. Require that respiratory protection be used at all times that there is any possibility of disturbance of asbestos-containing materials whether intentional or accidental.

3. Require that a respirator be worn by anyone in a work area at all times, regardless of activity, during a period that starts with any operation which could cause airborne fibers until the area has been cleared for re-occupancy in accordance with Article 3.09 – Work Area Clearance.

4. Regardless of airborne fiber, require that the minimum level of respiratory protection used be a half-face and air purifying respirators with high efficiency filters.

5. Do not allow the use of single use, disposable, or quarter face respirators for any purpose.

B. Fit Testing

1. Initial Fitting: Provide initial fitting of respiratory protection during a respiratory protection course of training. Fit types of respirator to be actually worn by each individual. Allow an individual to use only those respirators for which he/she has been trained and fit.

2. Upon Each Wearing: Require that each time an air-purifying respirator is put on, it be checked for fit with a positive and negative pressure fit test in accordance with the manufacturer's instructions.

C. Type of Respiratory Protection Required

1. Provide Respiratory Protection as indicated in this Article. Using paragraph E of this Article, determine the proper level of protection by dividing the airborne fiber count in the work area by the "protection factors" given below. The level of respiratory protection that supplies an airborne fiber level inside the respirator, at the breathing zone of the wearer, at or below the permissible exposure limit (PEL) is the minimum level of protection allowed.

D. Permissible Exposure Limits (PEL)

1. 8-Hour Time Weighted Average (TWA) of asbestos fibers to which any worker may be exposed shall not exceed 0.1-fibers/cubic centimeter.

2. 30-Minute Exposure Limit (EL): 1.0 fibers/cubic centimeter.

3. Fibers: For purposes of this Section, fibers are defined as all fibers regardless of composition as counted in the OSHA Reference Method (ORM), NIOSH 7400 procedures, or asbestos fibers of any size as counted using a transmission electron microscope.

| **Airborne Fiber Concentration** | **Required Respiratory Protection** |
|---|---|
| Not in excess of 1.0f/cc | Half-mask air purifying with HEPA Cartridges; minimum requirement for all activities |
| Not in excess of 5.0f/cc | Full facepiece respirator with HEPA filters |
| Not in excess of 10.0f/cc | Any tight fitting, full facepiece PAPR with HEPA filters |
| Not in excess of 100f/cc | Full facepiece supplied air operated in pressure demand mode |

| | |
|---|---|
| In excess of 100f/cc | Any supplied air respirator operated in the pressure-demand mode, equipped with auxiliary SCBA |

E. Air-Purifying Respirators

1. Negative pressure - half or full-face mask: Supply a sufficient quantity of respirator filters approved for asbestos so that workers can change filters routinely. Require that respirators be wet-wiped each time a worker leaves the work area. Store respirators and filters at the Site in the Changing Room and protect totally from exposure to asbestos prior to their use.

2. Powered air purifying - half or full-face mask: Supply a sufficient quantity of high efficiency respirator filters approved for asbestos so that workers can change filters at any time that flow through the face piece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced according to the subjectivity of the employee or the written respiratory program of the Contractor. Require that HEPA elements in filter cartridges be protected from wetting during showering. Require entire exterior housing of respirator, including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords to be washed each time a worker leaves the work area. Use caution to avoid shorting battery pack during washing.

3.10 WORK AREA CLEARANCE

A. The following procedures shall be followed to open the area for re-occupancy after abatement:

1. Air testing and other requirements that must be met for decontamination of the Work Area before release of Contractor and re-occupancy of the work area are specified in this Article.

2. Decontaminate air in the Work Area that has been, or may have been, contaminated by the elevated airborne asbestos fiber levels generated during abatement activities, or which may previously have had elevated fiber levels due to asbestos containing materials in the space.

3. Clean and decontaminate of all surfaces (ceiling, walls, floor, etc.) of the Work Area and all furniture or equipment in the Regulated Area by use of damp-cleaning and mopping, and/or a High Efficiency Particulate Air (HEPA) filtered vacuum. Do not perform dry dusting or dry sweeping.

4. Perform visual inspection and complete Certificate of Visual Inspection. The Owner's Representative shall look for debris from any sources, residue on surfaces, dust or other matter. If any such debris residue, dust or other matter is found, repeat final cleaning and continue decontamination procedure from that point.

5. Encapsulation: After a satisfactory visible inspection by the Owner's Representative, the abated surfaces shall be sealed with an encapsulant.

6. The Owner Representative will perform final clearance sampling.

7. Clean, decontaminate, and remove temporary facilities installed prior to abatement work, including critical barriers erected by work of Article 3.04 – Work Area Isolation Enclosures.

B. Final Air Sampling / Clearance Criteria

1. Phase Contrast Microscopy (PCM):

a. Upon receipt of the Certificate of Visual Inspection, the Owner's Representative will, within 24 hours, collect air samples in accordance with the PCM methods and frequency set forth in 40 CFR Part 763 Subpart E and Article 1.10. The Owner's Representative will have the samples analyzed in accordance with the procedures for PCM set forth in 40 CFR Part 763 Subpart E and Article 1.10. Analyst shall be NIOSH 582 certified.

b. If Clearance Criteria is not met, repeat Final Cleaning and visual inspection. Resubmit Certificate of Visual Inspection and have the Contractors Consultant perform clearance sampling again.

c. If Clearance Criteria is met, remove the interior polyethylene wall of the negative pressure enclosure, leaving in place only the Critical Barriers separating the work area from the rest of the building and the operating negative pressure system.

d. Remove small quantities of residual material found upon removal of the plastic sheeting with a HEPA filtered vacuum cleaner and local area protection. If significant quantities, as determined by the Owner Representative or Owner's Representative are found, then decontaminate the entire area affected as specified herein for the Final Cleaning.

2. Transmission Electron Microscopy (TEM) – if deemed necessary by the Owner Representative.

a. Upon receipt of the Certificate of Visual Inspection, the Owner's Representative will, within 24 hours, collect air samples in accordance with the TEM methods and frequency set forth in 40 CFR Part 763 Subpart E and Article 1.10. The Owner's Representative will have the samples analyzed in accordance with the procedures for TEM set forth in 40 CFR Part 763 Subpart E and Article 1.10.

b. If Clearance Criteria is not met, repeat Final Cleaning and continue decontamination procedure, including clearance sampling from that point.

c. If Clearance Criteria is met, remove the interior of the decontamination unit, leaving in place only the Critical Barriers separating the work area from the rest of the building and the operating negative pressure system.

d. Remove small quantities of residual material found upon removal of the plastic sheeting with a HEPA filtered vacuum cleaner and local area protection. If significant quantities, as determined by the Owner Representative, are found, then decontaminate the entire area affected as specified herein for the Final Cleaning.

C. Completion of Abatement Work

1. Asbestos Abatement Work is complete upon meeting the work area clearance criteria and fulfilling the following:

a. Remove all equipment, materials, and debris from the Site.

b. Dispose of all asbestos-containing waste material as specified in Article 3.10.

c. Fulfill Project Closeout Requirements of Article 1.13 and Article 3.09.

D. Certificate of Visual Inspection: Complete the appended "Certificate of Visual Inspection" with the Owner's Representative for signature. Submit with air sampling results and keep on file for the length of the project.

## CERTIFICATE OF VISUAL INSPECTION

The Contractor hereby certifies that he has visually inspected the work area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, Decontamination Unit, sheet plastic, etc.) in accordance with Specification Section 02 8200, Article 3.09 and has found no dust, debris or residue.

By: _____
(Signature)

Date: _____

(Print Name) _____

(Print Title) _____

OWNER'S REPRESENTATIVE CERTIFICATION

The Owner's Representative hereby certifies that he/she has accompanied the Contractor on his visual inspection and verifies that this inspection has been thorough and to the best of his knowledge and belief, the Contractor's certification above is a true and honest one.

By: _____
(Signature)

Date: _____

(Print Name) _____

(Print Title) _____

(Print Company) _____

## 3.11 OFF-SITE TRANSPORTATION AND DISPOSAL

A. Load drums, bags, and wrapped components that have been removed from the work area into an enclosed or covered truck/trailer for transportation. If a rented vehicle is used, notify the owner of the vehicle of its intended use and give a copy of the notification shall be given to the Owner Representative.

B. All vehicles hauling material to the disposal site shall comply with applicable MDOT regulations. Vehicles shall be properly licensed under and comply with all applicable federal, state, and local laws and regulations.

C. Maintain the enclosed cargo area of the vehicle free of debris and line with two layers of 6-mil polyethylene sheeting to prevent contamination from leaking or damaged containers. Install floor sheeting first and extend up to the sidewalls. Lap the wall sheeting over the floor sheeting and tape into place.

D. Provide proper tools/equipment to safely expedite container handling. Place drums on level surfaces in the cargo area and pack tightly together to prevent shifting and tipping. Secure large structural components to prevent shifting.

E. Protect personnel handling asbestos-containing waste by disposable clothing, including head, body and foot protection, and at a minimum, half-face piece, air-purifying, dual cartridge respirators equipped with high efficiency filters.

F. Prior to loading, provide Owner Representative with one manifest for each load of material. Each manifest will be pre-printed with the Site name and address, the Owner's name and address, the name of the landfill, the name of the transporter, and the landfill approval number.

G. During loading, the Owner Representative will provide a manifest signed on behalf of the Owner for each load.

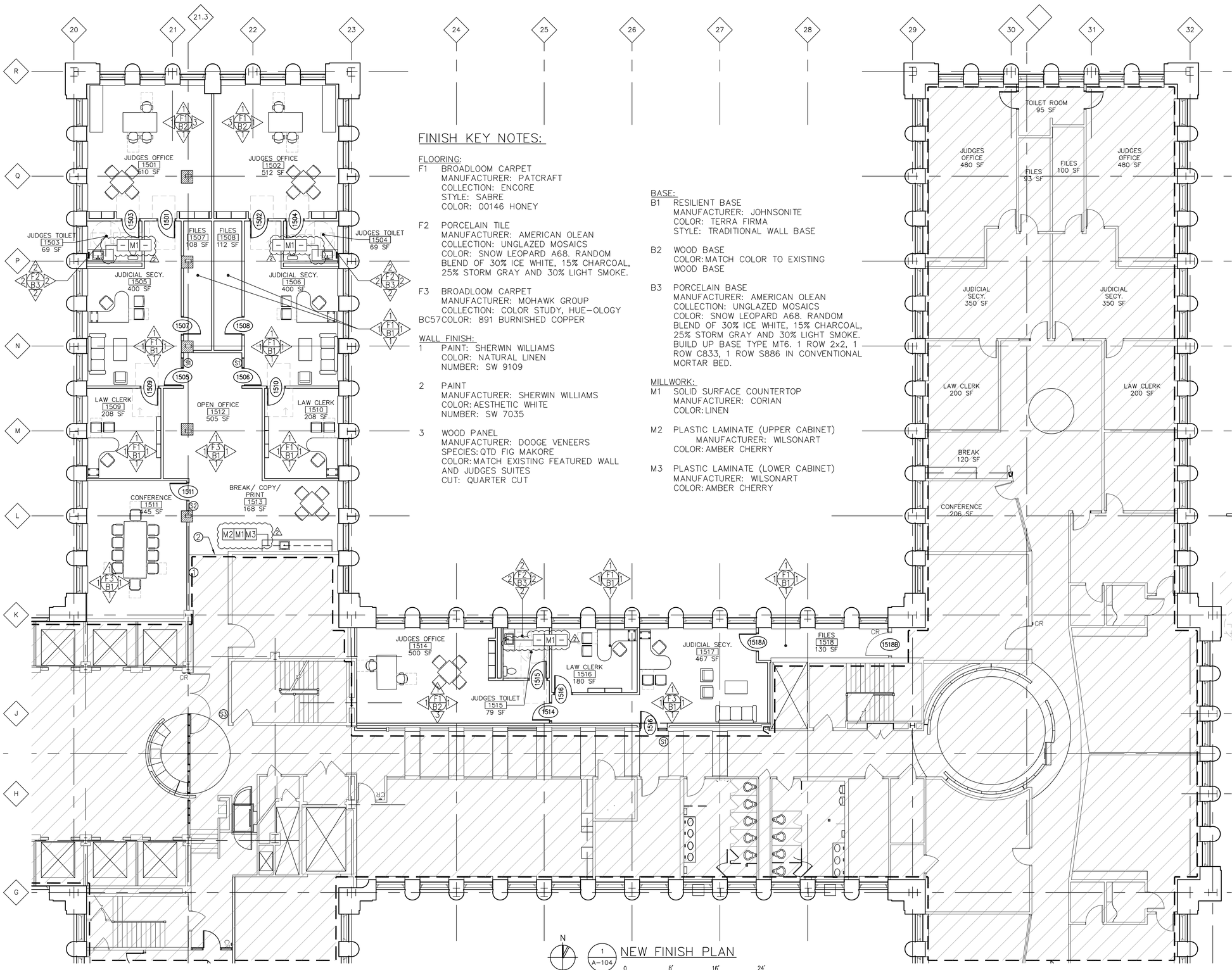
H. Transport contaminated material and excavated fill soil to a Type II landfill disposal facility licensed to accept asbestos for disposal.

I. Dispose of asbestos-containing waste material and debris that is packaged in accordance with the provision of this Specification at the approved landfill in accordance with the regulatory requirements of the NESHAP and any applicable state and local guidelines and regulations.

J. Within 24 hours of the load leaving the Site, provide to the Owner Representative an original manifest and any other documentation indicating receipt signed by the landfill.

K. Obtain and provide certification by and other satisfactory evidence from the owner(s) or operators(s) of the waste disposal facility(ies) attesting to the fact that all disposal activities were conducted and concluded in conformance with the requirements of 40 CFR 61 Subpart M and all other applicable laws and regulations.

**END OF SECTION**




## FINISH KEY NOTES:

FLOORING:

F1 BROADLOOM CARPET
MANUFACTURER: PATCRAFT
COLLECTION: ENCORE
STYLE: SABRE
COLOR: 00146 HONEY

F2 PORCELAIN TILE
MANUFACTURER: AMERICAN OLEAN
COLLECTION: UNGLAZED MOSAICS
COLOR: SNOW LEOPARD A68. RANDOM BLEND OF 30% ICE WHITE, 15% CHARCOAL, 25% STORM GRAY AND 30% LIGHT SMOKE.

F3 BROADLOOM CARPET
MANUFACTURER: MOHAWK GROUP
COLLECTION: COLOR STUDY, HUE-OLOGY
BC57COLOR: 891 BURNISHED COPPER

WALL FINISH:

1 PAINT: SHERWIN WILLIAMS
COLOR: NATURAL LINEN
NUMBER: SW 9109

2 PAINT
MANUFACTURER: SHERWIN WILLIAMS
COLOR: AESTHETIC WHITE
NUMBER: SW 7035

3 WOOD PANEL
MANUFACTURER: DOOGE VENEERS
SPECIES: QTD FIG MAKORE
COLOR: MATCH EXISTING FEATURED WALL AND JUDGES SUITES
CUT: QUARTER CUT

BASE:

B1 RESILIENT BASE
MANUFACTURER: JOHNSONITE
COLOR: TERRA FIRMA
STYLE: TRADITIONAL WALL BASE

B2 WOOD BASE
COLOR: MATCH COLOR TO EXISTING WOOD BASE

B3 PORCELAIN BASE
MANUFACTURER: AMERICAN OLEAN
COLLECTION: UNGLAZED MOSAICS
COLOR: SNOW LEOPARD A68. RANDOM BLEND OF 30% ICE WHITE, 15% CHARCOAL, 25% STORM GRAY AND 30% LIGHT SMOKE. BUILD UP BASE TYPE MT6. 1 ROW 2x2, 1 ROW C833, 1 ROW S886 IN CONVENTIONAL MORTAR BED.

MILLWORK:

M1 SOLID SURFACE COUNTERTOP
MANUFACTURER: CORIAN
COLOR: LINEN

M2 PLASTIC LAMINATE (UPPER CABINET)
MANUFACTURER: WILSONART
COLOR: AMBER CHERRY

M3 PLASTIC LAMINATE (LOWER CABINET)
MANUFACTURER: WILSONART
COLOR: AMBER CHERRY

## GENERAL NOTES:

1. DIMENSIONS ARE MEASURED TO THE FACE OF WALL.
2. CONTRACTOR SHALL LAYOUT WALL LOCATIONS AND REVIEW WITH ARCHITECT PRIOR TO CONSTRUCTING ANY PARTITIONS.
3. REFER TO A-501 FOR WALL TYPE DETAILS.
4. REFER TO SHEET A-601 FOR DOOR SCHEDULE.
5. PROVIDE IN WALL BLOCKING FOR WALL STOPS. REFER TO A-601.
6. ALL DOORS REQUIRE CLEARANCE OF 18" PULL SIDE AND 12" PUSH SIDE U.N.O.
7. WHEREVER TERMINOLOGY (ABA) OCCURS, REFERENCE IS MADE TO THE ARCHITECTURAL BARRIERS ACT ACCESSIBILITY STANDARDS.
8. ALL SWINGING DOORS WITHOUT KEY NUMBERS ARE EXISTING TO REMAIN.
9. ALL NEW PARTITIONS TO DECK ARE TO FOLLOW THE PROFILE OF THE UNDERSIDE OF THE DECK ABOVE.
10. ALL DOORS TO BE INSTALLED WITH OPENING 4" OFF ADJACENT PARTITION U.N.O.
11. REFER TO SPECIFICATION SECTION 06 61 16 FOR INFORMATION ON LAV-1 (BRADLEY OMNIDECK).
12. INSTALL FLOOR LEVELER AS NEEDED, COORDINATE WITH DEMO PLAN. REFER TO SPECIFICATION 03 54 16.

## KEY NOTES:

① PAINT WALL WHERE CARD READER IS REMOVED TO MATCH ADJACENT PAINT. REPAINT ENTIRE SECTION OF WALL IF NEEDED.

② INSTALL NEW CARPET UP TO APPROXIMATELY THIS LINE. PROVIDE NEW TRANSITION STRIP. COORDINATE EXACT LOCATION WITH COURTS/ ARCHITECT.

## LEGEND:

- NEW WALL
- NEW DOOR
- EXISTING DOOR TO REMAIN
- PROJECT AREA NOT WITHIN SCOPE OF PROJECT
- ACCESSIBLE CLEARANCE
- XXXX DOOR TAG REFER TO SHEET A-601
- S1 JUDGE NAME SIGNAGE, REFER TO DETAIL 3 ON A-601
- S2 CONFERENCE SIGNAGE, REFER TO DETAIL 4 ON A-601
- S3 EXISTING DIRECTORY SIGNAGE, REFER TO DETAIL 5 ON A-601
- A1 / B1 INDICATES FLOOR MATERIAL USED IN THIS AREA; INDICATES WALL FINISH ON SURFACE TO WHICH ARROW IS POINTING; INDICATES BASE USED IN THIS AREA
- M1 M2 M1 INDICATES FINISH TO BE USED ON BASE CABINETS/VERTICAL FACE; INDICATES FINISH TO BE USED ON COUNTER AND SPLASH; INDICATES FINISH TO BE USED ON UPPER CABINETS OR SHELVES

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
PROPERTY MANAGEMENT AND REAL ESTATE SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, DIRECTOR

FORBES
816 E 4th ST.
Royal Oak, MI 48067
248.542.7866/www.gmbo.com

PROJECT
CADILLAC PLACE 15TH FLOOR - BUILD (3) JUDICIAL SUITES

| DESIGNED | |
|---|---|
| DRAWN | DEJ/DT |
| CHECKED | TDS/SWG |
| APPROVED | SWG |

| ISSUED FOR | DATE |
|---|---|
| CONSTRUCTION DOCUMENTS | 12/20/2024 |
| ADDENDUM #2 | 2/14/2025 |

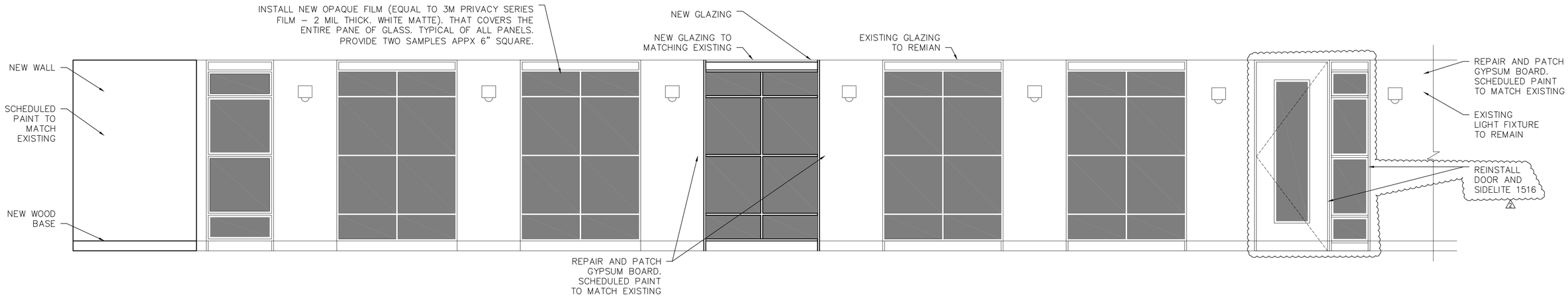
IDENTIFICATION NUMBER
PROJECT: C.P. (3) JUDICIAL SUITES
CONTRACT NUMBER: 923038
FILE NO. 950/22357

SHEET NUMBER 9 OF 35

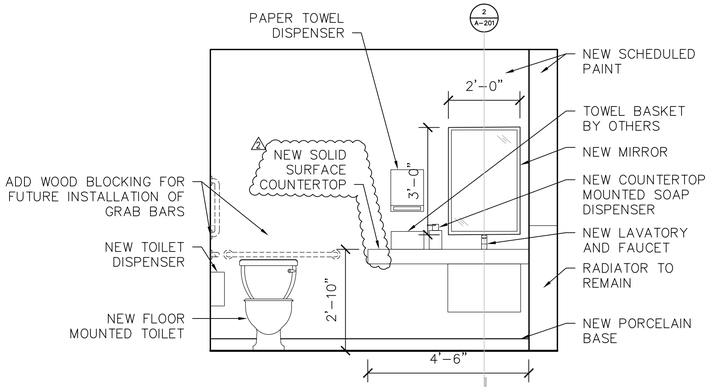
DRAWING TITLE NEW FINISH PLAN

DRAWING NUMBER A-104

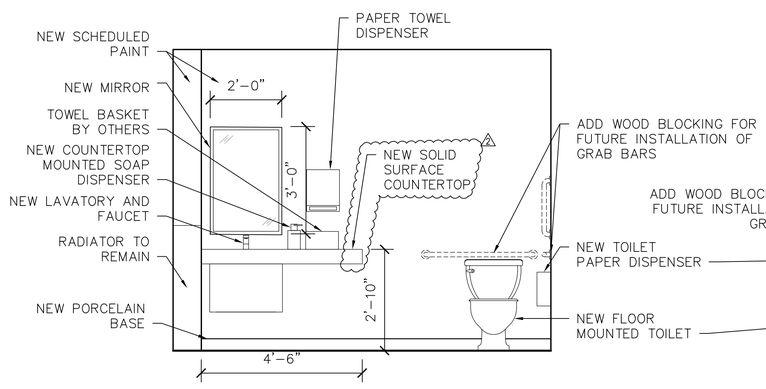
STATE OF MICHIGAN
SCOTT W. GOODSELL
ARCHITECT
No. 1301047664
LICENSED ARCHITECT



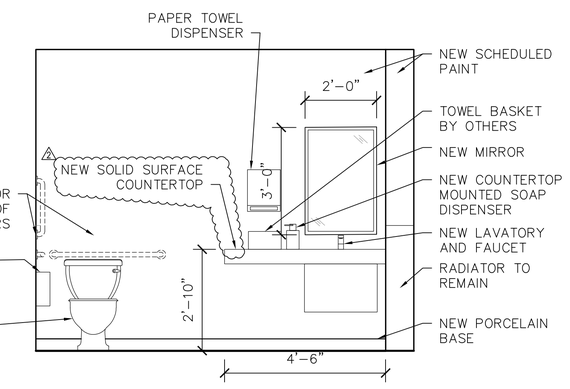

7 A–201 PUBLIC CORRIDOR ELEVATION – NEW
SCALE: 1/2" = 1'–0"



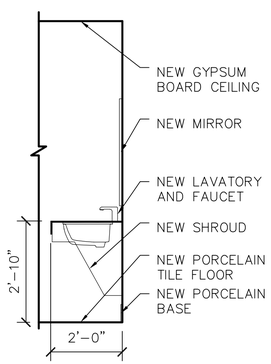

6 A–201 JUDGES TOILET WEST ELEVATION
SCALE: 1/2" = 1'–0"



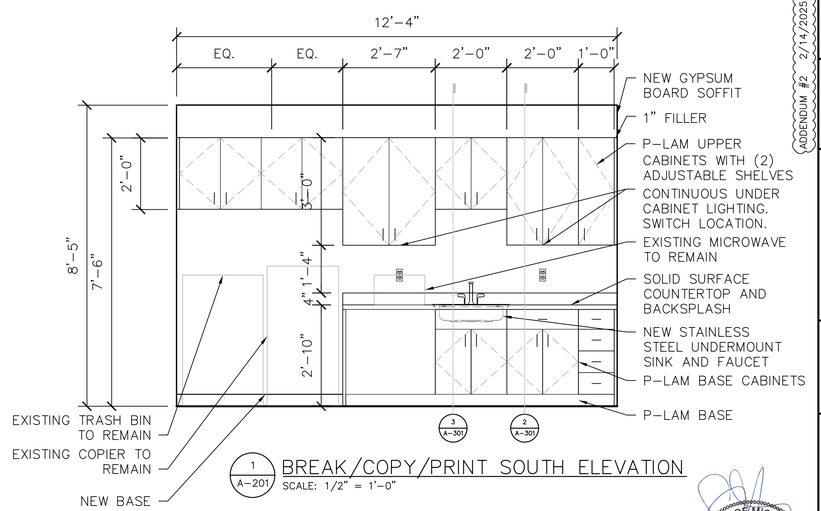

4 A–201 JUDGES TOILET SOUTH ELEVATION
SCALE: 1/2" = 1'–0"




3 A–201 JUDGES TOILET SOUTH ELEVATION
SCALE: 1/2" = 1'–0"




2 A–201 SECTION AT JUDGE'S TOILET ROOM
SCALE: 1/2" = 1'–0"




1 A–201 BREAK/COPY/PRINT SOUTH ELEVATION
SCALE: 1/2" = 1'–0"

2 ADDENDUM #2 2/14/2025

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FORBES ARCHITECTURE + ENGINEERING
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Royal Oak, MI 48067
248.542.7886/www.gnfco.com

PROJECT
CADILLAC PLACE 15TH FLOOR – BUILD (3) JUDICIAL SUITES

DESIGNED
DRAWN DEJ/DT
CHECKED TDS/SWG
APPROVED SWG

DATE
12/20/2024

ISSUED FOR
CONSTRUCTION DOCUMENTS

IDENTIFICATION NUMBER
PROJECT: C.P. (3) JUDICIAL SUITES
CONTRACT NUMBER: Y23038
FILE NO. 950/22357

SHEET NUMBER
12 OF 35

DRAWING TITLE
NEW ELEVATIONS

DRAWING NUMBER
A-201

STATE OF MICHIGAN
SCOTT W. IGOODSELL
ARCHITECT
No. 1301047664
LICENSED ARCHITECT