Contract Documents with Provisions and Specifications for the following project:

Greene County Lewis A. Jackson Airport Terminal Interior Renovation

GREENE COUNTY REGIONAL AIRPORT AUTHORITY

GREENE COUNTY LEWIS A. JACKSON REGIONAL AIRPORT
XENIA, OHIO

Local Project

Dr. James Christensen	President
Mr. Dave Ross	Vice President
Mr. Jim Dorn	Member
Mr. Fredrick Pumroy	Member
Mr. John McCance	Member
Ms. Carrie Sharp	Member
Mr. Steve Baxter	Member

Prepared by:

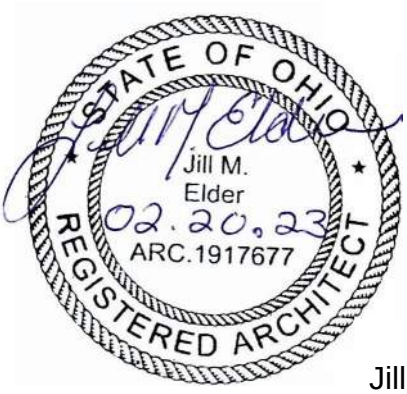
Woolpert, Inc.
4454 Idea Center Boulevard
Dayton, Ohio, 45430

February 2023

TABLE OF CONTENTS

SECTION 000100 - SEAL PAGE

1.1 DESIGN PROFESSIONALS OF RECORD



Jill M. Elder — Architect of Record

02.20.23 — Date

APPENDIX A

ASEBESTOS AND HAZARDOUS BUILDING MATERIAL REPORT

ASC GROUP, INC.
CULTURAL • ENVIRONMENTAL • HAZARDOUS
EVALUATION & CONSULTING

Asbestos and Hazardous Building Material Survey Report
Greene County Municipal Airport Terminal Renovation
Xenia, Ohio

Submitted By:

Malea Casey
Certified Asbestos Hazard Evaluation Specialist #ES545334
and
Stuart Jennings
Certified Lead Risk Assessor #LA9586

Submitted To:
David E. Gotschall
Woolpert
1 Easton Oval, Suite 400
Columbus, Ohio 43219

September 16, 2022

4555 Lake Forest Drive, Suite 650 Blue Ash, OH 45242 Phone: 859.372.6780
www.ascgroup.net

TABLE OF CONTENTS

LIST OF ACRONYMS

ACM	Asbestos Containing Material(s)
ASC	ASC Group, Inc.
Assessor(s)	Stuart Jennings Malea Casey
ASTM	American Society for Testing and Materials
CFR	Code of Federal Regulations
CFCs	Chlorofluorocarbon
EPA	Environmental Protection Agency
HW	Hazardous Waste
iATL	International Asbestos Testing Laboratories
LBP	Lead Based Paint
mg/cm^2	Milligram per square centimeter
NACM	Non-Asbestos Containing Material
NESHAP	National Emissions Standard for Hazardous Air Pollutants
NVLAP	National Voluntary Laboratory Accreditation Program
OAC	Ohio Administrative Code
OEPA	Ohio Environmental Protection Agency
OSHA	Occupational Safety and Health Administration
PACM	Presumed Asbestos Containing Material(s)
PCB	Polychlorinated Biphenyls
PEL	Permissible Exposure Limit
PLM	Polarized Light Microscopy
ppm	Parts per million
RACM	Regulated Asbestos Containing Material(s)
RAPCA	Regional Air Pollution Control Agency
USEPA	United States Environmental Protection Agency
UW	Universal Waste
UWR	Universal Waste Rule

ASBESTOS AND HAZARDOUS BUILDING MATERIAL SURVEY REPORT
GREENE COUNTY MUNICIPAL AIRPORT TERMINAL RENOVATION
XENIA, GREENE COUNTY, OHIO

1.0 EXECUTIVE SUMMARY

The property at 140 N Valley Rd, Xenia, OH 45385 includes an airport terminal and hangar. The terminal was built in the 1970s and is approximately 2,400 square feet. Appendix B: Sample Location Diagrams show the location of the samples collected as part of this investigation.

1.1 ASBESTOS CONTAINING MATERIAL (ACM) OVERVIEW

The Environmental Protection Agency (EPA) defines a homogeneous area as a surfacing material, thermal system insulation, or miscellaneous material that is uniform in color and texture. The use or application of the homogeneous area is also used to identify suspect ACMs. The EPA and the Occupational Health and Safety Administration (OSHA) define ACM as any material that contains more than one percent (by weight) of asbestos (>1 percent). Only one sample from a homogeneous area with an asbestos concentration >1 percent is required to collectively identify that material as an ACM.

The EPA additionally categorizes ACM as follows:

- Category I non-friable ACM – asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than one percent asbestos as determined using Polarized Light Microscopy (PLM).
- Category II non-friable ACM – any material, excluding Category I non-friable ACM, containing more than one percent asbestos as determined using the PLM method that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- Regulated asbestos-containing material (RACM) – (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 the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

Potential asbestos exposure in construction is regulated when construction, alteration, repair, maintenance, renovation or demolition of structures, substrates, or portions thereof contain asbestos (29 Code of Federal Regulations [CFR] 1926.1101 (a)(3)).

On August 16, 2022, Malea Casey, Certified Asbestos Hazard Evaluation Specialist (#ES545334) of ASC Group, Inc. (ASC), conducted an Asbestos survey for the Greene County Municipal Airport Terminal Renovation Project. The assessment was conducted as an Asbestos American Society for Testing and Materials (ASTM) E2356-18 Pre-Construction Survey. The following list summarizes the ACMs determined to be present *(Note: Functional space designations were declared by the assessor and may not represent actual user functional space*

declarations. Reference Appendix B for Map 1: Sample Location Diagram as they relate to ACMs within the functional spaces identified by the assessor):

The following Category I Non-Friable ACM were determined within the confines of the project scope of work:

- **Yellow with Brown Specks Vinyl Floor Tile with Yellow Mastic** – Mechanical room in the terminal (**~81 square feet)**

The following Category II Non-Friable ACM were determined within the confines of the project scope of work:

- **Gray Door Jam Putty** – Door to the mechanical room, men's restroom, and entrance in the hangar **(~15 square feet)**

The following Assumed Non-Friable ACM were determined within the confines of the project scope of work:

- **Assumed ACM Gray Spray-On Coating** – Underside of sink in Kitchenette **(~4 square feet)**. This material could not be sampled since sampling could have caused a potential release. Therefore, the material was assumed.

Appendix B illustrates general sampling locations throughout the property. Appendix F contains photographic documentation representative of the materials found within the structure. Appendix E: Table 1 contains an inventory of ACM detailing the locations, types, quantities, conditions, and friability of ACM determined to be within the limits of the scope of the project requiring asbestos abatement. Appendix G illustrates confirmed ACM locations throughout the proposed project area.

1.2 LEAD OVERVIEW

Several areas within the structure had peeling paint that was collected and sampled to determine the concentration of lead due to the degraded nature of the paint. It was noted that the paint sampled had concentrations below 0.5 percent by weight, indicating that it was not lead-containing paint. However, all paints contain small amounts of lead which was noted in the results.

Contractors impacting or disturbing painted substrates would need to comply with the OSHA Lead in Construction Standard, 29 CFR 1926.62. The OSHA Permissible Exposure Limit (PEL) for airborne lead exposure concentrations has been established to be 50 micrograms per cubic meter and the OSHA Action Level has been established to be 30 micrograms per cubic meter. All contractors will be required to perform personal exposure monitoring when disturbing any existing painted substrates and components and compare sample results to the OSHA regulatory threshold levels and conduct work practices accordingly.

1.3 UNIVERSAL WASTES (UWS) OVERVIEW

The following UWs were determined to be within the scope of work and anticipated to be impacted during this project:

- Non-Polychlorinated biphenyl (PCB) Light Ballast (30 each)
- Fluorescent Lamps (73 each)

Chapter 3745-273 of the Ohio Administrative Code (OAC) establishes requirements for managing UWs in Ohio.

2.0 INTRODUCTION

The intent of this assessment effort was to identify all types, locations, and corresponding conditions of all ACMs, PCBs, and other Hazardous Materials that are anticipated to be impacted or disturbed because of the project. The hazardous materials assessment was conducted in accordance with applicable EPA regulations. The Asbestos assessment was completed in accordance with the National Emissions Standard Hazardous Air Pollutants (NESHAPs) and ASTM E2356-18 Standard Practice for Comprehensive Building Asbestos Surveys. The ASTM outlines practices for three (3) types of ACM surveys: Baseline Surveys, Project Design Surveys, and Pre-Construction Surveys. The objectives established for each of these survey types differs based upon the significance and use intended for the survey. Based upon ASC's interpretation of the ASTM E2356-18 Standard, the survey that was performed for this assessment effort would be classified, in part, as both a Project Design Survey and Pre-Construction Survey. The assessors' certifications and lab creditials are included in Appendix A.

Prior to the assessment, ASC was provided with a set of existing floor plans by Woolpert which were utilized by the assessor to identify the limits of the scope of work for the renovation, as well as to assist in determining building materials/components that are anticipated to be demolished/removed as part of this project.

2.1 ASSUMPTIONS

The initial date of construction of the airport terminal was in the 1970s. The following assumptions were made by the assessors as part of this assessment effort:

- All Presumed Asbestos Containing Materials (PACMs) were treated and sampled as separate homogenous areas since the dates of installation, maintenance, and change-out schedules were not known.
- Quantities of ACM are related to the anticipated impact or disturbance related to this demolition project.
- Possible ACM in inaccessible areas that were not visible or accessible (e.g., wall cavities, inside mechanical equipment, behind locked doors, etc.) was not assessed.

3.0 REGULATIONS

3.1 ENVIRONMENTAL PROTECTION AGENCY (EPA)

3.1.1 Asbestos National Emissions Standard Hazardous Air Pollutant (NESHAP)

In the 1970s, the United States Environmental Protection Agency (USEPA) Clean Air Act implemented regulations which banned and phased out various asbestos products including, but not limited to, spray-applied fireproofing and thermal systems insulation products. Pursuant to the Clean Air Act of 1970, the USEPA established the Asbestos NESHAP, which has since been revised and updated in 1990. The intent of NESHAP is to minimize the release of asbestos fibers during activities involving handling of asbestos and specifies work practices to be followed during renovation, demolition, or other abatement activities when friable asbestos is involved.

The following EPA terminology and corresponding definitions are relative to ACM that have been identified within the demolition areas:

- **RACM** – any friable ACM containing more than one percent asbestos as determined using PLM according to the method specified in Appendix A, Subpart F, 40 CFR Part 763 (Sec. 61.141).
- **Category I non-friable ACM** – any asbestos-containing gasket, resilient floor covering or asphalt roofing product that contains more than one percent asbestos as determined using PLM according to the method specified in Appendix A, Subpart F, 40 CFR Part 763 (Sec. 61.141).
- **Category II non-friable ACM** – Any material, excluding Category I non-friable ACM, containing more than one percent asbestos as determined by the methods specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, PLM that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

The Ohio Enviromental Protection Agency (OEPA) asbestos program licenses and certifies companies directly involved with the asbestos abatement industry. The program regulates asbestos abatement contractors, supervisors, workers, building inspector/management planners, and air monitoring technicians. In addition, OEPA conducts random asbestos abatement project audits and reviews asbestos contractor licenses, certifications, medical, fit testing, and the asbestos abatement project.

The OEPA notification of demolition and renovation form is required to be submitted to the Regional Air Pollution Control Agency (RAPCA) 10 days prior to commencing work for the following:

- **Every demolition of a facility, regardless of whether asbestos is involved. This includes all structures that will be intentionally burned for fire training purposes.**
- **A renovation when the amount of RACM stripped, removed, dislodged, cut, drilled, or similarly disturbed exceeds 260 linear feet on pipes or 160 square feet on other facility components or 35 cubic feet off facility components.**
- **An abatement when the activity involves the removal, renovation, enclosure, repair, or encapsulation of friable ACM in an amount greater than 50 linear feet on pipes or 50 square feet on other facility components.**

State regulations for Asbestos Hazard Abatement Contractors, Specialists, and other professionals are included in Chapter 3745-22 of the OAC.

3.1.2 Universal Wastes (UWs)

ASC performed a visual inspection of existing building equipment for the presence of other hazardous materials and UWs (pursuant to 40 CFR 273.9, and 40 CFR 260.10). The survey was limited to above grade only and did not include a soil or subsurface investigation. Materials evaluated as part of this inspection included: PCB lighting ballasts; lead-containing units such as car batteries or emergency exit sign batteries; fluorescent lighting tubes; mercury containing units such as light switches and thermostats; refrigerants, halon, and other Chlorofluorocarbons (CFCs) such as fire extinguishing systems and Freon® used in refrigeration units such as drinking fountains; heavy metals as may be found in cooling tower water treatment systems; paints, fuel (storage tanks), lubricants, and other associated maintenance and cleaning products; office materials, supplies, and equipment such as computer monitors and printing supplies, and miscellaneous materials such as unlabeled materials or substances of concern.

UWs are specific hazardous waste streams that a generator can choose to manage in an alternative manner in place of the more complex hazardous waste requirements. The Universal Waste Rules (UWRs) are intended to promote recycling as well as proper disposal by easing certain regulatory requirements. Ohio's UWRs are in OAC Chapter 3745-273.

If the material such as PCBs cannot meet the UW specific waste stream, it must be disposed of as Hazardous Waste (HW).

3.2 AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) STANDARDS

The ACM assessment also utilized ASTM E2356-18 Standard Practice for Comprehensive Building Asbestos Surveys. The ASTM outlines practices for three (3) types of ACM surveys: Baseline Surveys, Project Design Surveys, and Pre-Construction Surveys. The objectives established for each of these survey types differs based upon the significance and use intended for the survey. Based upon ASC's interpretation of the ASTM E2356-18 Standard, the survey that was performed for this assessment effort would be classified, in part, as both a Project Design Survey and Pre-Construction Survey.

3.3 OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

3.3.1 Asbestos

OSHA has been involved with controlling work exposure to asbestos since 1971. The 29 CFR 1926.1101 Construction Industry Standard for Asbestos was introduced in 1994. Provisions covered in this standard include asbestos worker protection for those involved with disturbing asbestos, protection of those employees working around asbestos, exposure assessments, periodic monitoring, medical surveillance, work procedures, respiratory protection, personal protective equipment, hazard communication, housekeeping, recordkeeping, and competent person responsibilities. Note that OSHA regulates building materials containing any percentage or amount of asbestos, including all materials less than one percent asbestos.

3.3.2 Lead Based Paint (LBP)

OSHA's definition of a LBP includes all paints, varnishes, stains, lacquers, or coatings containing any concentration of lead greater than zero percent. All contractors impacting existing LBP coated surfaces need to comply with the OSHA Lead in Construction Standard (29 CFR 1926.62). The OSHA PEL for airborne lead exposure concentrations has been established to be 50 micrograms per cubic meter and the OSHA Action Level has been established to be 30 micrograms per cubic meter. All contractors will be required to perform personal exposure monitoring when disturbing any existing painted substrates and components and compare sample results to the OSHA regulatory threshold levels and conduct work practices accordingly. This standard has been developed to protect workers from potential exposures to lead.

4.0 ASBESTOS SAMPLING AND RESULTS CONCLUSIONS

Rooms, functional spaces, and components were assessed and surveyed for the presence of ACM. Bulk samples of suspect ACM were collected to confirm or deny the presence of asbestos. All samples were placed into clean sealed bags and identified with a unique sample number. Sampling tools were decontaminated between each sampling episode. Forty (40) bulk samples (including all layers) of seventeen (17) homogeneous areas were collected by an OEPA Licensed Asbestos Hazard Evaluation Specialist in accordance with current USEPA (40 CFR 61, Subpart M) and OSHA 29 CFR 1926.1101 requirements and sampling protocol. Appendix B contains sampling locations throughout the property. Samples of suspect building materials collected as part of this assessment effort are included within Appendix C: Table 1: Building Materials Bulk Sampled.

4.1 CONFIRMED ASBESTOS CONTAINING MATERIALS (ACMS)

Bulk samples collected for this assessment were analyzed via International Asbestos Testing Laboratories (iATL), an accredited National Voluntary Laboratory Accreditation Program (NVLAP) laboratory using PLM Method EPA 600 R-93/116, 1993. Positive analyses result for asbestos associated with these sampling efforts are listed below:

- **Category I ACM Yellow with Brown Specks Vinyl Floor Tile with Yellow Mastic** – Mechanical room in the terminal (**~81 square feet)**
- **Category II ACM Gray Door Jam Putty** – Door to the mechanical room, men's restroom, and entrance in the hangar (**~15 square feet)**

Laboratory Certificates of Analysis and the corresponding Chain-Of-Custody are included within Appendix D. Appendix C: Table 2 contains a comprehensive inventory of confirmed ACM throughout the anticipated renovation area.

4.2 ASSUMED ASBESTOS CONTAINING MATERIALS (ACMS)

Various building materials were assumed as ACM as part of this assessment effort. These building materials were assumed to contain ACM based upon one or more of the following factors: lack of accessibility to sample, or if the area was un-safe (worker protection) to sample. The following list represents the assumed ACM within the renovation areas for this project:

- **Assumed ACM Gray Spray-On Coating** – Underside of sink in Kitchenette **(~4 square feet)**. This material could not be sampled since sampling could have caused a potential release. Therefore, the material was assumed.

4.3 NON-ASBESTOS CONTAINING MATERIALS (NACMS)

Building materials that were bulk sampled and reported by the laboratory to contain no asbestos content are inventoried within Appendix C: Table 3: Non-ACM.

5.0 LEAD BASED PAINT (LBP) CONCLUSION

Lead is a potential health hazard. Its condition, handling and disposal are regulated by federal, state, and local agencies. Lead in paint generally does not pose a health threat unless the material is disturbed or sufficiently deteriorated to produce dust, which may become airborne and inhaled or ingested. Contractors working in the facility should be informed of the type and the location of lead-containing materials. Applicable Federal regulations may apply depending on the work being performed.

Pursuant to EPA regulations, LBP is defined as paint or other surface coatings containing an amount of lead equal to or greater than one milligram per square centimeter (1.0 mg/cm²) or more than half of one percent (>0.5 percent or 5,000 parts per million [ppm]) by weight. Additionally, worker exposure to materials containing lead during construction work is regulated by the Federal OSHA (29 CFR 1926.62[a]).

On August 16, 2022, ASC representative, Stuart Jennings, conducted an evaluation and subsequent sampling for LBP of painted substrates throughout the anticipated renovation areas. Twenty-three (23) paint samples of suspected LBP were gathered and sent to iATL, an accredited lab, for determination of lead concentration.

Representative painted substrates and components throughout the anticipated renovation areas were tested. As a result of this sampling effort, various painted substrates were reported by the iATL to contain trace lead concentrations. None of the results exceeded the reporting limit of 1.0 mg/cm^2.

The painted surfaces at the Greene County Muncipal Airport Terminal should be considered exceeding concentrations of zero and contractors shall comply with the requirements of OSHA 29 CFR 1926.62 - Lead Exposure in Construction during building and structure renovations.

Appendix B contains sampling locations throughout the property and Appendix D contains the lead results.

6.0 UNIVERSAL WASTE (UW)

6.1 LAMPS

This category includes UW lamps that meet the definition in OAC Chapter 3745-273. Lamps are defined as the bulb or tube portion of an electric lighting device. A lamp is designed to produce radiant energy, most often in the ultraviolet, visible, and infra-red regions of the electromagnetic spectrum. Lamps can exhibit the toxicity characteristic for some heavy metals (i.e., mercury, lead, cadmium). Examples of UW lamps include incandescent, fluorescent, high-intensity discharge, neon, mercury vapor, and high-pressure sodium and metal halide lamps.

During the site visit, 73 Fluorescent Lamps were recorded within the airport terminal. A location map can be found in Appendix H and quantities per area are reported in Appendix E. Removal and disposal of these items will need to follow OAC Chapter 3745-273.

6.2 POLYCHLORINATED BIPHENYLS (PCB) EQUIPMENT

PCBs belong to a broad family of man-made organic chemicals known as chlorinated hydrocarbons. PCBs were domestically manufactured from 1929 until their manufacture was banned in 1979. They have a range of toxicity and vary in consistency from thin, light-colored liquids to yellow or black waxy solids. Due to their non-flammability, chemical stability, high boiling point, and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications including electrical, heat transfer, and hydraulic equipment; as plasticizers in paints, plastics, and rubber products; in pigments, dyes, and carbonless copy paper; and many other industrial applications.

During the site visit, 30 non-PCB light ballast were discovered within the renovation areas. A location map can be found in Appendix H and quantities per area are reported in Appendix E.

7.0 RECOMMENDATIONS

7.1 ASBESTOS

"Regulated asbestos-containing material" means:

(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 the forces expected to act on the material during demolition or renovation operations regulated by OAC chapter 3745-20-01.

The OEPA notification of demolition and renovation form is required to be submitted to the RAPCA 10 days prior to commencing work for the following:

- **Every demolition of a facility, regardless of whether asbestos is involved. This includes all structures that will be intentionally burned for fire training purposes.**
- **A renovation when the amount of RACM stripped, removed, dislodged, cut, drilled, or similarly disturbed exceeds 260 linear feet on pipes or 160 square feet on other facility components or 35 cubic feet off facility components.**
- **An abatement when the activity involves the removal, renovation, enclosure, repair or encapsulation of friable ACM in an amount greater than 50 linear feet on pipes or 50 square feet on other facility components.**

State regulations for Asbestos Hazard Abatement Contractors, Specialists, and other professionals are included in Chapter 3745-22 of the OAC.

7.2 LEAD BASED PAINT (LBP)

All contractors impacting or disturbing painted substrates that would require grinding/sanding/scraping of existing paint would need to comply with the OSHA Lead in Construction Standard, 29 CFR 1926.62. The OSHA PEL for airborne lead exposure concentrations which has been established to be 50 micrograms per cubic meter and the OSHA Action Level has been established to be 30 micrograms per cubic meter. All contractors will be required to perform personal exposure monitoring when disturbing any existing painted substrates and components and compare sample results to the OSHA regulatory threshold levels and conduct work practices accordingly. The construction debris must adhere to the OSHA Lead in Construction Standard, 29 CFR 1926.62.

7.3 OTHER HAZARDS

The contractor will be responsible for the complete removal, recycling, and/or disposal of hazardous building materials and comply with OSHA requirements for their worker safety during the project.

8.0 REPORT RELIANCE

This document was prepared for the use of Woolpert and can be relied upon by this party as the end user of this report. ASC assures that the scope of the investigation and contents included within the report are in conformance with accepted requirements and follow the generally accepted standards and practices of environmental consultants. The statements contained in the report are true and accurate to the best of our knowledge.

Sincerely,

Nichole Lashley
Senior Environmental Scientist
ASC Group, Inc.

9.0 APPENDICES

A: Assessor's Certifications and Lab Accreditations
B: Sample Location Diagrams
C: Tables
    Table 1: Building Materials Bulk Sampled
    Table 2: Laboratory Confirmed ACM
    Table 3: Non-ACM
D: Laboratory Certificates of Analysis and Chains-of-Custody
E: Inventory of ACM and Universal Waste
F: Photograph Documentation
G: Asbestos Material Location Diagram
H: Universal Waste Location Diagram

APPENDIX A ASSESSOR'S CERTIFICATIONS AND LAB ACCREDITATIONS

Ohio Environmental Protection Agency

Mike DeWine, Governor
Jon Husted, Lt. Governor
Laurie A. Stevenson, Director

6/16/2022

Malea Casey
ASC/Auxano
4555 Lake Forest Drive
Suite 650
Blue Ash, OH 45242

RE: Evaluation Specialist
Certification Number: ES545334
Expiration Date: 6/30/2023

Dear Malea Casey:

This letter and enclosed certification card approves your request to be certified as an asbestos Evaluation Specialist. You must present your card upon request at any project site while performing duties. Copies of cards are not acceptable as proof of certification.

This certification may be revoked by the Director of the Ohio Environmental Protection Agency (EPA) for violation of any of the requirements of 3745-22 or 3745-20 of the Ohio Administrative Code.

If you have any questions, please contact the Asbestos Program at 614-644-0226 or by email at asbestoslicensing@epa.ohio.gov.

Sincerely,

Joshua S. Koch
Manager, Business Operations Support Section
Ohio EPA - Division of Air Pollution Control

State of Ohio
Department of Health
Lead Program

Lead Risk Assessor

DOB 10/31/1973

License Number
LA9586

Expiration Date
04/13/2023

Stuart C Jennings
ASC Group, Inc.
800 Freeway Drive North
Columbus OH 43229

Card not valid if altered

This certification is issued pursuant of Chapter 3742 of the Rivised Code and 3701-32 of the Ohio Administration Code

September 30, 2019

Laboratory ID: 100188

Frank Ehrenfeld
International Asbestos Testing Laboratories (IATL)
9000 Commerce Parkway, Suite B.
Mt. Laurel, NJ 08054

Dear Mr. Ehrenfeld:

Congratulations! The AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC's Analytical Accreditation Board (AAB) has approved International Asbestos Testing Laboratories (IATL) as an accredited Industrial Hygiene, Environmental Lead, and Environmental Microbiology laboratory.

Accreditation documentation includes the IHLAP, ELLAP, and EMLAP accreditation certificate, scope of accreditation document and a copy of the current AIHA-LAP, LLC license agreement (if your completed agreement is not on file at AIHA-LAP, LLC). The accreditation symbol has been designed for use by all AIHA-LAP, LLC accredited laboratories. If your laboratory chooses to use the symbol in its advertising the laboratory's accreditation, you must complete and return the AIHA-LAP, LLC license agreement to a Laboratory Accreditation Specialist. Once submitted, an electronic copy of the accreditation symbol will be sent to you.

Laboratory accreditation shall be maintained by continued compliance with IHLAP, ELLAP, and EMLAP requirements *(see Policy Modules 2B, 2C, 2D, and 6),* which includes proficient participation in AIHA-LAP, LLC approved proficiency testing, demonstration of competency, or round robin program as indicated on the AIHA-LAP "Approved PT and Round Robin" webpage, its associated Scope/PT table, and as required in Policy Module 6, for all Fields of Testing (FoTs) for which the laboratory is accredited. An accredited laboratory that wishes to expand into a new FoT must submit an updated accreditation application to AIHA-LAP, LLC for review by the AAB.

Any changes in ownership, laboratory location, personnel, FoTs/Methods, or significant procedural changes shall be reported to AIHA-LAP, LLC in writing within twenty (20) business days of the change.

The accreditation certificate is the property of AIHA-LAP, LLC and must be returned to us should your laboratory withdraw or be removed from the IHLAP, ELLAP, and EMLAP.

Again, congratulations. If you have any questions, please contact Drake McGregor, Laboratory Accreditation Specialist, at (703) 846-0739.

Sincerely,

Cheryl O. Morton

Cheryl O. Morton
Managing Director

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

International Asbestos Testing Laboratories (IATL)

9000 Commerce Parkway, Suite B, Mt. Laurel, NJ 08054

Laboratory ID: LAP-100188

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA LAP), LLC accreditation to the ISO/IEC 17025:2017 international standard, General Requirements for the Competence of Testing and Calibration Laboratories in the following:

LABORATORY ACCREDITATION PROGRAMS

☑	**INDUSTRIAL HYGIENE**	Accreditation Expires: November 01, 2023
☑	**ENVIRONMENTAL LEAD**	Accreditation Expires: November 01, 2023
☑	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: November 01, 2023
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:
☐	**BERYLLIUM FIELD/MOBILE**	Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached Scope of Accreditation. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2017 and AIHA LAP, LLC requirements. This certificate is not valid without the attached Scope of Accreditation. Please review the AIHA LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

Cheryl O. Morton

Cheryl O Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision19.1: 07/28/2021

Date Issued: 12/01/2021

AIHA Laboratory Accreditation Programs, LLC
SCOPE OF ACCREDITATION

International Asbestos Testing Laboratories (IATL)

Laboratory ID: **100188**

9000 Commerce Parkway, Suite B, Mt. Laurel, NJ 08054

Issue Date: 09/30/2019

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 03/01/1991

IHLAP Scope Category	Field of Testing (FoT) (FoTs cover all relevant IH matrices)	Technology sub-type/ Detector	Published Reference Method/Title of In-house Method	Method Description or Analyte *(for internal methods only)*
Spectrometry Core	Atomic Absorption	FAA	NIOSH 7082	
	X-ray Diffraction (XRD)		NIOSH 7500	
Asbestos/Fiber Microscopy Core	Polarized Light Microscopy (PLM)		EPA 600/R-93/116	
	Phase Contrast Microscopy (PCM)		NIOSH 7400	
	Transmission Electron Microscopy (TEM)		NIOSH 7402	

A complete listing of currently accredited Industrial Hygiene laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

AIHA Laboratory Accreditation Programs, LLC
SCOPE OF ACCREDITATION

International Asbestos Testing Laboratories (IATL)
9000 Commerce Parkway, Suite B, Mt. Laurel, NJ 08054

Laboratory ID: **100188**
Issue Date: 09/30/2019

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

The EPA recognizes the AIHA-LAP, LLC ELLAP program as meeting the requirements of the National Lead Laboratory Accreditation Program (NLLAP) established under Title X of the Residential Lead-Based Paint Hazard Reduction Act of 1992 and includes paint, soil and dust wipe analysis. Air and composited wipes analyses are not included as part of the NLLAP.

Environmental Lead Laboratory Accreditation Program (ELLAP)

Initial Accreditation Date: 01/20/1997

Field of Testing (FoT)	Technology sub-type/ Detector	Method	Method Description (*for internal methods only*)
Paint		ASTM D3335-85a	
Soil		EPA SW-846 3050B	
		EPA SW-846 7000B	
Settled Dust by Wipe		EPA SW-846 3050B	
		EPA SW-846 7000B	
Airborne Dust		NIOSH 7082	

A complete listing of currently accredited Environmental Lead laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

AIHA Laboratory Accreditation Programs, LLC
SCOPE OF ACCREDITATION

International Asbestos Testing Laboratories (IATL)
9000 Commerce Parkway, Suite B, Mt. Laurel, NJ 08054

Laboratory ID: **100188**
Issue Date: 09/30/2019

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Environmental Microbiology Laboratory Accreditation Program (EMLAP)

Initial Accreditation Date: 12/01/2013

EMLAP Category	Field of Testing (FoT)	Method	Method Description (*for internal methods only*)
Fungal	Air - Direct Examination	ASTM D7391-09	
	Bulk - Direct Examination	ASTM D7391-09	
	Surface - Direct Examination	ASTM D7391-09	

A complete listing of currently accredited Environmental Microbiology laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

NVLAP® National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

International Asbestos Testing Laboratories
9000 Commerce Parkway
Suite B
Mt. Laurel, NJ 08054
Mr. Frank E. Ehrenfeld III
Phone: 856-231-9449 Fax: 856-231-9818
Email: frankehrenfeld@iatl.com
http://www.iatl.com

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101165-0

Bulk Asbestos Analysis

Code	*Description*
18/A01	EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code	*Description*
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

For the National Voluntary Laboratory Accreditation Program

Effective 2021-07-01 through 2022-06-30

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 101165-0

International Asbestos Testing Laboratories

Mt. Laurel, NJ

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

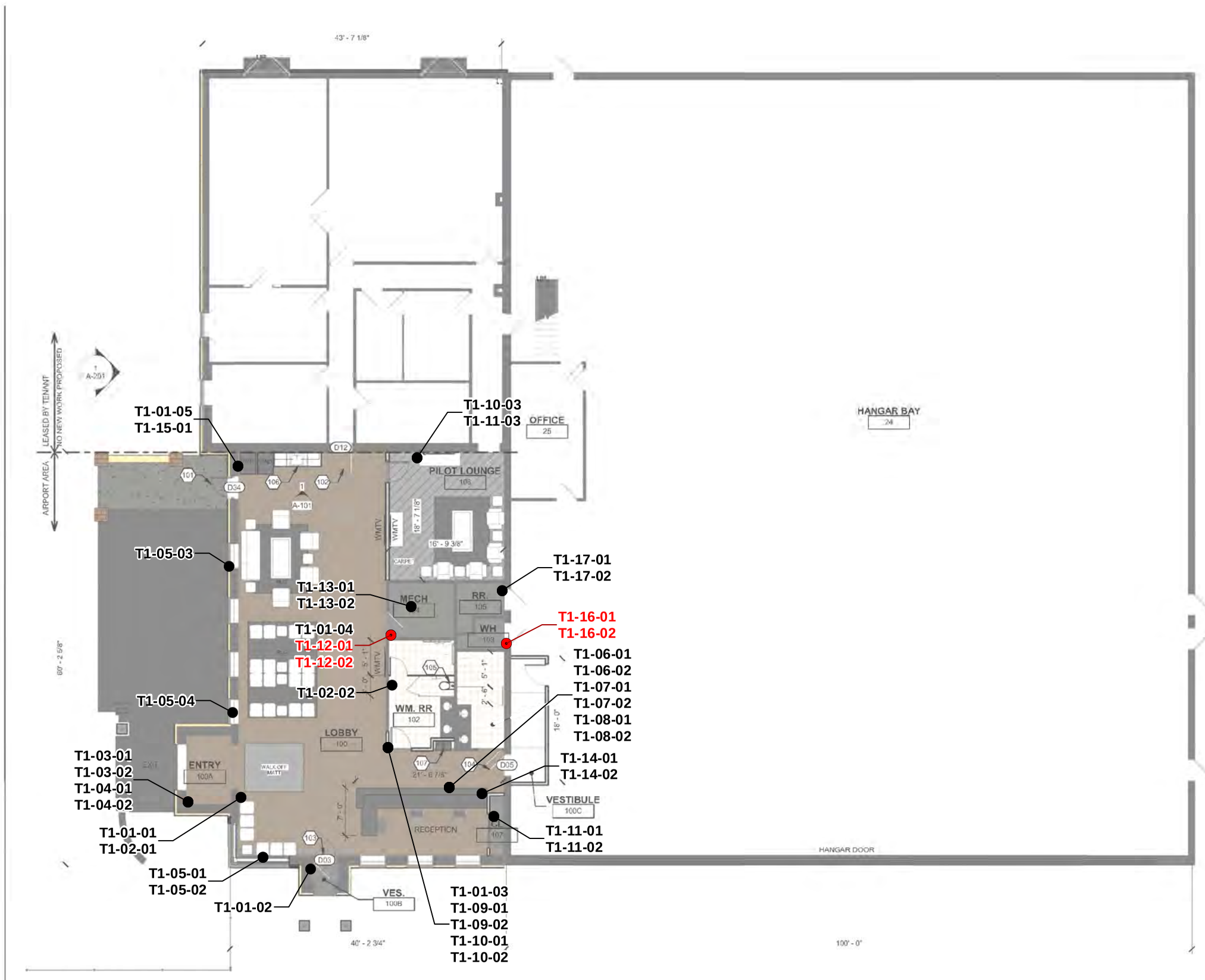
2021-07-01 through 2022-06-30

Effective Dates

DEPARTMENT OF COMMERCE * UNITED STATES OF AMERICA *

For the National Voluntary Laboratory Accreditation Program

APPENDIX B SAMPLE LOCATION DIAGRAMS



- ACM Positive Sample Location
- Non-ACM Sample Location

0 2.5 5 7.5 10 Meters

0 5 10 15 20 25 30 Feet

N

Appendix B, Map 1

Sample Location Diagram
ACM Sampling Locations

Created by TMD, JVT; last saved: 9/9/2022 9:22:42 AM

Lead sample location

0 2.5 5 7.5 10 Meters

0 5 10 15 20 25 30 Feet

N

Appendix B, Map 2

Sample Location Diagram
Lead Sampling Locations

Created by TMD, JVT; last saved: 9/16/2022 8:31:59 AM

APPENDIX C TABLES

TABLE 1: BUILDING MATERIALS BULK SAMPLED

TABLE 2: LABORATORY CONFIRMED ACM

TABLE 3: NON-ACM

TABLE 1: BUILDING MATERIALS BULK SAMPLED

Homogenous Area (HA)	Building Material	Sample Number(s)	Sample Location(s)
Greene County Municipal Airport			
1	Drywall with White Tape and White Joint Compound	T1-01-01, T1-01-02, T1-01-03, T1-01-04, T1-01-05	Lobby, Entry to airfield from lobby, Women's restroom, Mechanical room with entrance from lobby, Conference room
2	Acoustical Ceiling Tile 2x4ft	T1-02-01, T1-02-02	Lobby, Women's restroom
3	Black Vinyl Floor Tile with Tan Mastic	T1-03-01, T1-03-02	Main entryway
4	Beige Mastic on Black Cove Base	T1-04-01 T1-04-02	Main entryway
5	White Window Caulking	T1-05-01, T1-05-02, T1-05-03, T1-05-04	Lobby, Conference room, Front office (closest to reception)
6	Yellow Carpet Mastic under Multicolored Carpet	T1-06-01, T1-06-02	Lobby
7	Subfloor below Multicolored Carpet	T1-07-01, T1-07-02	Lobby
8	Leveling Compound beneath Subfloor below Multicolored Carpet	T1-08-01. T1-08-02	Lobby
9	Gray Vinyl Floor Tile with Yellow Mastic	T1-09-01, T1-09-02	Women's restroom
10	Tan Mastic behind Gray Cove Base	T1-10-01, T1-10-02, T1-10-03	Women's restroom, Pilot Lounge 106
11	Yellow Mastic under Blue Carpet	T1-11-01, T1-11-02, T1-11-03	Office behind reception, Pilot Lounge 106
12	Yellow with Brown Specks Vinyl Floor Tile with Yellow Mastic	T1-12-01, T1-12-02	Mechanical room with entrance from lobby
13	Gray Mastic on Exterior of HVAC Joints	T1-13-01, T1-13-02	Mechanical room with entrance from lobby
14	White Tape behind Wood	T1-14-01, T1-14-02	Wall behind reception
15	Green Sealant on Styrofoam above Ceiling	T1-15-01	Conference room
16	Gray Door Jam Putty	T1-16-01, T1-16-02	Mechanical room in the hangar
17	Tan Mastic behind Brown Cove Base	T1-17-01, T1-17-02	Men's restroom in the hangar

TABLE 2: LABORATORY CONFIRMED ACM

Greene County Municipal Airport HA	ACM	Sample Number (s)	Sample Location(s)	Percent Asbestos	EPA NESHAP Category
12	Yellow with Brown Specks Vinyl Floor Tile with Yellow Mastic	T1-12-01, T1-12-02	Mechanical room with entrance from lobby	6.7% Chrysotile, 6.3% Chrysotile	Category I
16	Gray Door Jam Putty	T1-16-01, T1-16-02	Mechanical room in the hangar	15% Chrysotile, 15% Chrysotile	Category II

TABLE 3: NON-ACM

Greene County Municipal Airport HA	Building Material
1	Drywall with White Tape and White Joint Compound
2	Acoustical Ceiling Tile 2x4ft
3	Black Vinyl Floor Tile with Tan Mastic
4	Beige Mastic on Black Cove Base
5	White Window Caulking
6	Yellow Carpet Mastic under Multicolored Carpet
7	Subfloor below Multicolored Carpet
8	Leveling Compound beneath Subfloor below Multicolored Carpet
9	Gray Vinyl Floor Tile with Yellow Mastic
10	Tan Mastic behind Gray Cove Base
11	Yellow Mastic under Blue Carpet
13	Gray Mastic on Exterior of HVAC Joints
14	White Tape behind Wood
15	Green Sealant on Styrofoam above Ceiling
17	Tan Mastic behind Brown Cove Base

Legend:		
	HA	Homogenous Area
	ACM	Asbestos Containing Material
	HVAC	Heating Ventilation Air-Conditioning

APPENDIX D LABORATORY CERTIFICATES OF ANALYSIS AND CHAINS OF CUSTODY

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449 Email: customerservice@iatl.com

Chain of Custody

PLM

Contact Information

Client Company: ASCGroup. Inc. Auxano Environmental LLC
Office Address: 4222 Lantana Dr.
City, State, Zip: Lebanon, OH 45036
Fax Number:
Email Address: auxanoenvironmental@outlook.com

Project Number: 2592
Project Name: Greene County Airport Terminal Renovation
Primary Contact: Nichole Lashley
Office Phone: 9372711226
Cell Phone: 9372711226

PLM Instructions:

- [x] PLM: Bulk Asbestos Building Materials EPA 600 R-93/116, 1993
- [ ] PLM: Bulk Asbestos Building Materials EPA 600 M-4/82-020, 1982
- [ ] PLM: Bulk Asbestos Building Materials NIOSH 9002, 1985
- [ ] PLM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.1, 2002
- [ ] PLM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.6, 2010
- [ ] TEM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.4, 2009

- [x] PLM: Point Counting
  - [ ] PC: via ELAP 198.1
  - [x] PC: 400 Points
  - [ ] PC: 800 Points *
  - [ ] PC: 1600 Points *
- [x] PLM: Instructions for Multi-Layered Samples
  - [x] Analyze and Report All Separable Layers per EPA 600
  - [ ] Report Composite for Drywall Systems per NESHAP
  - [x] Report All Layers and Composite Where Applicable
  - [ ] Only Analyze and Report Specifically Noted Layer
- [ ] PLM: Analyze Until Positive (Positive Stop)
  - [ ] AUP: by Homogenous Area as Noted
  - [ ] AUP: by Material Type as Noted
- [ ] PLM: NOB via 198.6
  - [ ] PLM: Friable via EPA 600 2.3
  - [ ] If <1% by PLM, to TEM via 198.4 *
  - [ ] If <1% by PLM, Hold for Instructions
- [ ] PLM: Non-Building Material*,** (Dust, Wipe, Tape)
  - [ ] Soil or Vermiculite Analysis*
  - [ ] CARB 435

Special Instructions:

** Additional charge and turnaround may be required* *** Alternative Method (ex: EPA 600/R-04/004) may be recommended by Laboratory*

Turnaround Time

Preliminary Results Requested Date: 8/26/2022 5:00:00 PM (Specific date/time)

- [x] Email
- [ ] Hard Copy
- [x] Portal
- [ ] Verbal

*** End of next business day unless otherwise specified. ** Matrix Dependent. *** Please notify the lab before shipping *****

Chain of Custody

Relinquished (Name/Organization):	ASC/Auxano M. Cruz	Date: 8.17.22	Time: 11:00am
Received (Name/iATL):		Date:	Time: RECEIVED
Sample Login (Name/iATL):	8/24	Date:	Time:
Analysis (Name(s)/iATL):		Date:	Time:
QA/QC Review (Name/iATL):		Date:	Time:
Archived/Released:	Archived/Released:	Date:	Time: AUG 20 2022

iATL - By

☐ 6 Hour ☐ 12 Hour ☐ 1 Day ☐ 2 Day ☐ 3 Day ☐ 4 Day ☑ 5 Day ☐ 10 Day

IATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B Mt. Laurel, New Jersey 08054
Telephone: 8562319449 Email: customerservice@iatl.com

Sample Log

Client: ASC Group Inc. Auxano Environmental LLC

Project: 2592 Greene County Airport Terminal Renovation

Sample Log				
Client Sample #	**IATL #**	**Location**	**Description**	**Notes**
T1-01-01	7481513	Lobby	Drywall with White Tape and White Joint Compound	
T1-01-02	7481514	Entry to the airfield from lobby	Drywall with White Tape and White Joint Compound	
T1-01-03	7481515	Women's restroom	Drywall with White Tape and White Joint Compound	
T1-01-04	7481516	Mechanical room with entrance from lobby	Drywall with White Tape and White Joint Compound	
T1-01-05	7481517	Conference room	Drywall with White Tape and White Joint Compound	
T1-02-01	7481518	Lobby	Acoustical Ceiling Tile 2x4ft	
T1-02-02	7481519	Women's restroom	Acoustical Ceiling Tile 2x4ft	
T1-03-01	7481520	Main Entryway	Black Vinyl Floor Tile with Tan Mastic	
T1-03-02	7481521	Main Entryway	Black Vinyl Floor Tile with Tan Mastic	
T1-04-01	7481522	Main Entryway	Beige Mastic on Black Cove Base	
T1-04-02	7481523	Main Entryway	Beige Mastic on Black Cove Base	
T1-05-01	7481524	Lobby	White Window Caulking	
T1-05-02	7481525	Lobby	White Window Caulking	
T1-05-03	7481526	Conference Room	White Window Caulking	
T1-05-04	7481527	Front office, closest to reception	White Window Caulking	
T1-06-01	7481528	Lobby	Yellow Carpet Mastic under Mulicolored Carpet	

T1-06-02	7481529	Lobby	Yellow Carpet Mastic under Mulicolored Carpet	
T1-07-01	7481530	Lobby	Subfloor below Multicolored Carpet	
T1-07-02	7481531	Lobby	Subfloor below Multicolored Carpet	
T1-08-01	7481532	Lobby	Leveling Compound beneath Subfloor below Multicolored Carpet	
T1-08-02	7481533	Lobby	Leveling Compound beneath Subfloor below Multicolored Carpet	
T1-09-01	7481534	Women's Restroom	Gray Vinyl Floor Tile with Yellow Mastic	
T1-09-02	7481535	Women's Restroom	Gray Vinyl Floor Tile with Yellow Mastic	
T1-10-01	7481536	Women's Restroom	Tan Mastic behind Gray Cove Base	
T1-10-02	7481537	Women's Restroom	Tan Mastic behind Gray Cove Base	
T1-10-03	7481538	Pilot Lounge 106	Tan Mastic behind Gray Cove Base	
T1-11-01	7481539	Office behind reception	Yellow Mastic under Blue Carpet	
T1-11-02	7481540	Office behind reception	Yellow Mastic under Blue Carpet	
T1-11-03	7481541	Pilot Lounge 106	Yellow Mastic under Blue Carpet	
T1-12-01	7481542	Mechanical room with entrance from the lobby	Yellow with Brown Specks Vinyl Floor Tile with Yellow Mastic	
T1-12-02	7481543	Mechanical room with entrance from the lobby	Yellow with Brown Specks Vinyl Floor Tile with Yellow Mastic	
T1-13-01	7481544	Mechanical room with entrance from the lobby	Gray Mastic on Exterior of HVAC Joints	
T1-13-02	7481545	Mechanical room with entrance from the lobby	Gray Mastic on Exterior of HVAC Joints	
T1-14-01	7481546	Wall behind Reception	White Tape behind Wood	
T1-14-02	7481547	Wall behind Reception	White Tape behind Wood	
T1-15-01	7481548	Conference Room	Green Sealant on Styrofoam above Ceiling	
T1-16-01	7481549	Mechanical Room in the hangar	Gray Door Jam Putty	
T1-16-02	7481550	Mechanical Room in the hangar	Gray Door Jam Putty	
T1-17-01	7481551	Men's restroom in Hangar	Tan Mastic behind Brown Cove Base	
T1-17-02	7481552	Men's restroom in Hangar	Tan Mastic behind Brown Cove Base	

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Auxano Environmental LLC
4222 Lantana Dr.
Lebanon OH 45036

Client: AUX916

Report Date: 8/29/2022
Report No.: 667274 - PLM
Project: Greene County Airport Terminal Renovation
Project No.: 2592

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 7481513
Client No.: T1-01-01
Analyst Observation: White/Tan Drywall
Client Description: Drywall With White Tape And White Joint Compound
Location: Lobby
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	20 Cellulose	80

Lab No.: 7481513(L2)
Client No.: T1-01-01
Analyst Observation: White Joint Compound
Client Description: Drywall With White Tape And White Joint Compound
Location: Lobby
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Lab No.: 7481513(L3)
Client No.: T1-01-01
Analyst Observation: Composite
Client Description: Drywall With White Tape And White Joint Compound
Location: Lobby
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	19 Cellulose	81

Lab No.: 7481514
Client No.: T1-01-02
Analyst Observation: White Joint Compound
Client Description: Drywall With White Tape And White Joint Compound
Location: Entry To The Airfield From Lobby
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Note: Drywall not present.

Lab No.: 7481515
Client No.: T1-01-03
Analyst Observation: White/Tan Drywall
Client Description: Drywall With White Tape And White Joint Compound
Location: Women's Restroom
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	40 Cellulose	60

Lab No.: 7481515(L2)
Client No.: T1-01-03
Analyst Observation: White Joint Compound
Client Description: Drywall With White Tape And White Joint Compound
Location: Women's Restroom
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/22/2022
Date Analyzed: 08/29/2022
Signature: Becky Hargrove
Analyst: Rebecca Hargrove

Approved By: Frank Ehrenfeld
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Auxano Environmental LLC
4222 Lantana Dr.
Lebanon OH 45036

Client: AUX916

Report Date: 8/29/2022
Report No.: 667274 - PLM
Project: Greene County Airport Terminal Renovation
Project No.: 2592

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 7481515(L3)
Client No.: T1-01-03
Analyst Observation: Composite
Client Description: Drywall With White Tape And White Joint Compound
Location: Women's Restroom
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	35 Cellulose	65

Lab No.: 7481516
Client No.: T1-01-04
Analyst Observation: White Joint Compound
Client Description: Drywall With White Tape And White Joint Compound
Location: Mechanical Room With Entrance From Lobby
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Note: Insufficient drywall provided for analysis.

Lab No.: 7481517
Client No.: T1-01-05
Analyst Observation: Tan/White Drywall
Client Description: Drywall With White Tape And White Joint Compound
Location: Conference Room
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	50 Cellulose	50

Lab No.: 7481517(L2)
Client No.: T1-01-05
Analyst Observation: White Joint Compound
Client Description: Drywall With White Tape And White Joint Compound
Location: Conference Room
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Lab No.: 7481517(L3)
Client No.: T1-01-05
Analyst Observation: Composite
Client Description: Drywall With White Tape And White Joint Compound
Location: Conference Room
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	48 Cellulose	52

Lab No.: 7481518
Client No.: T1-02-01
Analyst Observation: Grey/White Ceiling Tile
Client Description: Acoustical Ceiling Tile 2x4ft
Location: Lobby
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	50 Fibrous Glass 30 Cellulose	20

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/22/2022
Date Analyzed: 08/29/2022
Signature: Becky Hargrove
Analyst: Rebecca Hargrove

Approved By: Frank Ehrenfeld
Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Auxano Environmental LLC
4222 Lantana Dr.
Lebanon OH 45036

Client: AUX916

Report Date: 8/29/2022
Report No.: 667274 - PLM
Project: Greene County Airport Terminal Renovation
Project No.: 2592

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 7481519
Client No.: T1-02-02

Analyst Observation: Grey/White Ceiling Tile
Client Description: Acoustical Ceiling Tile 2x4ft

Location: Women's Restroom
Facility: Greene County Airport Terminal

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
75 Cellulose
5 Fibrous Glass

Percent Non-Fibrous Material:
20

Lab No.: 7481520
Client No.: T1-03-01

Analyst Observation: Black Floor Tile
Client Description: Black Vinyl Floor Tile With Tan Mastic

Location: Main Entryway
Facility: Greene County Airport Terminal

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 7481520(L2)
Client No.: T1-03-01

Analyst Observation: Tan Mastic
Client Description: Black Vinyl Floor Tile With Tan Mastic

Location: Main Entryway
Facility: Greene County Airport Terminal

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 7481521
Client No.: T1-03-02

Analyst Observation: Black Floor Tile
Client Description: Black Vinyl Floor Tile With Tan Mastic

Location: Main Entryway
Facility: Greene County Airport Terminal

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 7481521(L2)
Client No.: T1-03-02

Analyst Observation: Tan Mastic
Client Description: Black Vinyl Floor Tile With Tan Mastic

Location: Main Entryway
Facility: Greene County Airport Terminal

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 7481522
Client No.: T1-04-01

Analyst Observation: Tan Mastic
Client Description: Beige Mastic On Black Cove Base

Location: Main Entryway
Facility: Greene County Airport Terminal

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/22/2022
Date Analyzed: 08/29/2022
Signature: Becky Hargrove
Analyst: Rebecca Hargrove

Approved By: Frank Ehrenfeld
Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Auxano Environmental LLC
4222 Lantana Dr.
Lebanon OH 45036

Client: AUX916

Report Date: 8/29/2022
Report No.: 667274 - PLM
Project: Greene County Airport Terminal Renovation
Project No.: 2592

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 7481523
Client No.: T1-04-02

Analyst Observation: Tan Mastic
Client Description: Beige Mastic On Black Cove Base

Location: Main Entryway
Facility: Greene County Airport Terminal

Percent Asbestos: *None Detected*
Percent Non-Asbestos Fibrous Material: None Detected
Percent Non-Fibrous Material: 100

Lab No.: 7481524
Client No.: T1-05-01

Analyst Observation: White Caulk
Client Description: White Window Caulking

Location: Lobby
Facility: Greene County Airport Terminal

Percent Asbestos: *None Detected*
Percent Non-Asbestos Fibrous Material: None Detected
Percent Non-Fibrous Material: 100

Lab No.: 7481525
Client No.: T1-05-02

Analyst Observation: White Caulk
Client Description: White Window Caulking

Location: Lobby
Facility: Greene County Airport Terminal

Percent Asbestos: *None Detected*
Percent Non-Asbestos Fibrous Material: None Detected
Percent Non-Fibrous Material: 100

Lab No.: 7481526
Client No.: T1-05-03

Analyst Observation: White Caulk
Client Description: White Window Caulking

Location: Conference Room
Facility: Greene County Airport Terminal

Percent Asbestos: *None Detected*
Percent Non-Asbestos Fibrous Material: None Detected
Percent Non-Fibrous Material: 100

Lab No.: 7481527
Client No.: T1-05-04

Analyst Observation: White Caulk
Client Description: White Window Caulking

Location: Front Office, Closest To Reception
Facility: Greene County Airport Terminal

Percent Asbestos: *None Detected*
Percent Non-Asbestos Fibrous Material: None Detected
Percent Non-Fibrous Material: 100

Lab No.: 7481528
Client No.: T1-06-01

Analyst Observation: Tan/Grey Mastic/Leveling Compound
Client Description: Yellow Carpet Mastic Under Multicolored Carpet

Location: Lobby
Facility: Greene County Airport Terminal

Percent Asbestos: *None Detected*
Percent Non-Asbestos Fibrous Material: None Detected
Percent Non-Fibrous Material: 100

Layers not separable.

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/22/2022
Date Analyzed: 08/29/2022
Signature: Becky Hargrove
Analyst: Rebecca Hargrove

Approved By: Frank Ehrenfeld
Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Auxano Environmental LLC
4222 Lantana Dr.
Lebanon OH 45036

Client: AUX916

Report Date: 8/29/2022
Report No.: 667274 - PLM
Project: Greene County Airport Terminal Renovation
Project No.: 2592

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 7481529
Client No.: T1-06-02
Analyst Observation: Tan/Grey Mastic/Leveling Compound
Client Description: Yellow Carpet Mastic Under Multicolored Carpet
Location: Lobby
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Layers not separable.

Lab No.: 7481530
Client No.: T1-07-01
Analyst Observation: Green Vinyl Sheet Flooring
Client Description: Subfloor Below Multicolored Carpet
Location: Lobby
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	20 Cellulose 2 Fibrous Glass	78

Lab No.: 7481531
Client No.: T1-07-02
Analyst Observation: Green Vinyl Sheet Flooring
Client Description: Subfloor Below Multicolored Carpet
Location: Lobby
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	20 Cellulose 2 Fibrous Glass	78

Lab No.: 7481532
Client No.: T1-08-01
Analyst Observation: Tan Mastic
Client Description: Leveling Compound Beneath Subfloor Below Multicolored Carpet
Location: Lobby
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Lab No.: 7481532(L2)
Client No.: T1-08-01
Analyst Observation: Grey Leveling Compound
Client Description: Leveling Compound Beneath Subfloor Below Multicolored Carpet
Location: Lobby
Facility: Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/22/2022
Date Analyzed: 08/29/2022
Signature: Becky Hargrove
Analyst: Rebecca Hargrove

Approved By: Frank Ehrenfeld
Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Auxano Environmental LLC
4222 Lantana Dr.
Lebanon OH 45036

Client: AUX916

Report Date: 8/29/2022
Report No.: 667274 - PLM
Project: Greene County Airport Terminal Renovation
Project No.: 2592

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 7481533 | **Analyst Observation:** Tan Mastic | **Location:** Lobby
Client No.: T1-08-02 | **Client Description:** Leveling Compound Beneath Subfloor Below Multicolored Carpet | **Facility:** Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Lab No.: 7481533(L2) | **Analyst Observation:** Grey Leveling Compound | **Location:** Lobby
Client No.: T1-08-02 | **Client Description:** Leveling Compound Beneath Subfloor Below Multicolored Carpet | **Facility:** Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Lab No.: 7481534 | **Analyst Observation:** Grey Floor Tile | **Location:** Women's Restroom
Client No.: T1-09-01 | **Client Description:** Gray Vinyl Floor Tile With Yellow Mastic | **Facility:** Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Note: Insufficient mastic provided for analysis.

Lab No.: 7481535 | **Analyst Observation:** Grey Floor Tile | **Location:** Women's Restroom
Client No.: T1-09-02 | **Client Description:** Gray Vinyl Floor Tile With Yellow Mastic | **Facility:** Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Lab No.: 7481535(L2) | **Analyst Observation:** Tan Mastic | **Location:** Women's Restroom
Client No.: T1-09-02 | **Client Description:** Gray Vinyl Floor Tile With Yellow Mastic | **Facility:** Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Insufficient material provided to verify results.

Lab No.: 7481536 | **Analyst Observation:** Off-White Mastic | **Location:** Women's Restroom
Client No.: T1-10-01 | **Client Description:** Tan Mastic Behind Gray Cove Base | **Facility:** Greene County Airport Terminal

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/22/2022
Date Analyzed: 08/29/2022
Signature: Becky Hargrove
Analyst: Rebecca Hargrove

Approved By: Frank Ehrenfeld
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Auxano Environmental LLC
4222 Lantana Dr.
Lebanon OH 45036

Client: AUX916

Report Date: 8/29/2022
Report No.: 667274 - PLM
Project: Greene County Airport Terminal Renovation
Project No.: 2592

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 7481537
Client No.: T1-10-02

Analyst Observation: Off-White Mastic
Client Description: Tan Mastic Behind Gray Cove Base

Location: Women's Restroom
Facility: Greene County Airport Terminal

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 7481538
Client No.: T1-10-03

Analyst Observation: Tan Mastic
Client Description: Tan Mastic Behind Gray Cove Base

Location: Pilot Lounge 106
Facility: Greene County Airport Terminal

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 7481539
Client No.: T1-11-01

Analyst Observation: Tan Mastic
Client Description: Yellow Mastic Under Blue Carpet

Location: Office Behind Reception
Facility: Greene County Airport Terminal

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 7481540
Client No.: T1-11-02

Analyst Observation: Tan Mastic
Client Description: Yellow Mastic Under Blue Carpet

Location: Office Behind Reception
Facility: Greene County Airport Terminal

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 7481541
Client No.: T1-11-03

Analyst Observation: Tan Mastic
Client Description: Yellow Mastic Under Blue Carpet

Location: Pilot Lounge 106
Facility: Greene County Airport Terminal

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 7481542
Client No.: T1-12-01

Analyst Observation: Brown/Off-White Floor Tile
Client Description: Yellow With Brown Specks Vinyl Floor Tile With Yellow Mastic

Location: Mechanical Room With Entrance From The Lobby
Facility: Greene County Airport Terminal

Percent Asbestos:
PC 6.7 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
93.3

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/22/2022
Date Analyzed: 08/29/2022
Signature: Becky Hargrove
Analyst: Rebecca Hargrove

Approved By: Frank Ehrenfeld
Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Auxano Environmental LLC
4222 Lantana Dr.
Lebanon OH 45036

Client: AUX916

Report Date: 8/29/2022
Report No.: 667274 - PLM
Project: Greene County Airport Terminal Renovation
Project No.: 2592

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 7481542(L2)
Client No.: T1-12-01

Percent Asbestos:
None Detected

Analyst Observation: Tan Mastic
Client Description: Yellow With Brown Specks Vinyl Floor Tile With Yellow Mastic

Percent Non-Asbestos Fibrous Material:
None Detected

Location: Mechanical Room With Entrance From The Lobby
Facility: Greene County Airport Terminal

Percent Non-Fibrous Material:
100

Lab No.: 7481543
Client No.: T1-12-02

Percent Asbestos:
PC 6.3 *Chrysotile*

Analyst Observation: Brown/Off-White Floor Tile
Client Description: Yellow With Brown Specks Vinyl Floor Tile With Yellow Mastic

Percent Non-Asbestos Fibrous Material:
None Detected

Location: Mechanical Room With Entrance From The Lobby
Facility: Greene County Airport Terminal

Percent Non-Fibrous Material:
93.7

Lab No.: 7481543(L2)
Client No.: T1-12-02

Percent Asbestos:
None Detected

Analyst Observation: Tan Mastic
Client Description: Yellow With Brown Specks Vinyl Floor Tile With Yellow Mastic

Percent Non-Asbestos Fibrous Material:
None Detected

Location: Mechanical Room With Entrance From The Lobby
Facility: Greene County Airport Terminal

Percent Non-Fibrous Material:
100

Lab No.: 7481544
Client No.: T1-13-01

Percent Asbestos:
None Detected

Analyst Observation: Grey Mastic
Client Description: Gray Mastic On Exterior Of HVAC Joints

Percent Non-Asbestos Fibrous Material:
None Detected

Location: Mechanical Room With Entrance From The Lobby
Facility: Greene County Airport Terminal

Percent Non-Fibrous Material:
100

Lab No.: 7481545
Client No.: T1-13-02

Percent Asbestos:
None Detected

Analyst Observation: Grey Mastic
Client Description: Gray Mastic On Exterior Of HVAC Joints

Percent Non-Asbestos Fibrous Material:
None Detected

Location: Mechanical Room With Entrance From The Lobby
Facility: Greene County Airport Terminal

Percent Non-Fibrous Material:
100

Lab No.: 7481546
Client No.: T1-14-01

Percent Asbestos:
None Detected

Analyst Observation: Lt Green Wall Cover
Client Description: White Tape Behind Wood

Percent Non-Asbestos Fibrous Material:
35 Synthetic

Location: Wall Behind Reception
Facility: Greene County Airport Terminal

Percent Non-Fibrous Material:
65

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/22/2022
Date Analyzed: 08/29/2022
Signature: Becky Hargrove
Analyst: Rebecca Hargrove

Approved By: Frank Ehrenfeld
Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Auxano Environmental LLC
4222 Lantana Dr.
Lebanon OH 45036

Client: AUX916

Report Date: 8/29/2022
Report No.: 667274 - PLM
Project: Greene County Airport Terminal Renovation
Project No.: 2592

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 7481547
Client No.: T1-14-02

Analyst Observation: Lt Green Wall Cover
Client Description: White Tape Behind Wood

Location: Wall Behind Reception
Facility: Greene County Airport Terminal

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
35 Synthetic

Percent Non-Fibrous Material:
65

Lab No.: 7481548
Client No.: T1-15-01

Analyst Observation: Green Sealant
Client Description: Green Sealant On Styrofoam Above Ceiling

Location: Conference Room
Facility: Greene County Airport Terminal

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 7481549
Client No.: T1-16-01

Analyst Observation: Grey Putty
Client Description: Gray Door Jam Putty

Location: Mechanical Room In The Hangar
Facility: Greene County Airport Terminal

Percent Asbestos:
15 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
85

Lab No.: 7481550
Client No.: T1-16-02

Analyst Observation: Grey Putty
Client Description: Gray Door Jam Putty

Location: Mechanical Room In The Hangar
Facility: Greene County Airport Terminal

Percent Asbestos:
15 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
85

Lab No.: 7481551
Client No.: T1-17-01

Analyst Observation: Off-White Mastic
Client Description: Tan Mastic Behind Brown Cove Base

Location: Men's Restroom In Hangar
Facility: Greene County Airport Terminal

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 7481552
Client No.: T1-17-02

Analyst Observation: Off-White Mastic
Client Description: Tan Mastic Behind Brown Cove Base

Location: Men's Restroom In Hangar
Facility: Greene County Airport Terminal

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/22/2022
Date Analyzed: 08/29/2022
Signature: Becky Hargrove
Analyst: Rebecca Hargrove

Approved By: Frank Ehrenfeld
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client:	Auxano Environmental LLC	Report Date:	8/29/2022
	4222 Lantana Dr.	Report No.:	667274 - PLM
	Lebanon OH 45036	Project:	Greene County Airport Terminal Renovation
		Project No.:	2592
Client:	AUX916		

Appendix to Analytical Report

Customer Contact: Nichole Lashley
Method: 40 CFR Appendix E to Subpart E of Part 763, interim method for the Determination of Asbestos in Bulk Insulation Samples, USEPA 600, R93-116 and NYSDOH ELAP 198.1 as needed.

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

iATL Customer Service: customerservice@iatl.com
iATL Office Manager: wchampion@iatl.com
iATL Account Representative: Shirley Clark
Sample Login Notes: See Batch Sheet Attached
Sample Matrix: Bulk Building Materials
Exceptions Noted: See Following Pages

General Terms, Warrants, Limits, Qualifiers:

General information about iATL capabilities and client/laboratory relationships and responsibilities are spelled out in iATL policies that are listed at www.iATL.com and ir our Quality Assurance Manual per ISO 17025 standard requirements. The information therein is a representation of iATL definitions and policies for turnaround times, sample submittal, collection media, blank definitions, quantification issues and limit of detection, analytical methods and procedures, sub-contracting policies, results reporting options, fees, terms, and discounts, confidentiality, sample archival and disposal, and data interpretation.

iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA LAP LLC, or any agency of local, state or province governments nor of any agency of the U.S. government.

Information Pertinent to this Report:

Analysis by US EPA 600 93-116: Determination of Asbestos in Bulk Building Materials by Polarized Light Microscopy (PLM).

Certifications:

- NIST-NVLAP No. 101165-0
- NYSDOH-ELAP No. 11021
- AIHA-LAP, LLC No. 100188

Quantification at <0.25% by volume is possible with this method. (PC) Indicates Stratified Point Count Method performed. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. PC Trace represents a <0.25% amount. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed (ex. analyze until positive instructions). Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, PLM is not consistently reliable in detecting asbestos in non-friable organically bound (NOB) materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can pronounce materials as non-asbestos containing.

Analytical Methodology Alternatives: Your initial request for analysis may not have accounted for recent advances in regulatory requirements or advances in technology that are routinely used in similar situations for other qualified projects. You may have the option to explore additional analysis for further information. Below are a few options, listed as the matrix followed by the appropriate methodology. Also included are links to more information on our website.

Bulk Building Materials that are Non-Friable Organically Bound (NOB) by Gravimetric Reduction techniques employing PLM and TEM: ELAP 198.6 (PLM-NOB), ELAP 198.4 (TEM-NOB) See additional information at the end of this appendix.

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client:	Auxano Environmental LLC	Report Date:	8/29/2022
	4222 Lantana Dr.	Report No.:	667274 - PLM
	Lebanon OH 45036	Project:	Greene County Airport Terminal Renovation
		Project No.:	2592
Client:	AUX916		

Loose Fill Vermiculite Insulation, Attic Insulation, Zonolite (copyright), etc.: US EPA 600 R-4/004 (multi-tiered analytical process)
Sprayed On Insulation/Fireproofing with Vermiculite (SOF-V): ELAP 198.8 (PLM-SOF-V)

Soil, sludge, sediment, aggregate, and like materials analyzed for asbestos or other elongated mineral particles (ex. erionite, etc.): ASTM D7521, CARB 435, and other options available

Asbestos in Surface Dust according to one of ASTM's Methods (very dependent on sampling collection technique – by TEM): ASTM D 5755, D5756, or D6480

Various other asbestos matrices (air, water, etc.) and analytical methods are available.

Disclaimers / Qualifiers:

There may be some samples in this project that have a "NOTE:" associated with a sample result. We use added disclaimers or qualifiers to inform the client about something that requires further explanation. Here is a list with highlighted disclaimers that may be pertinent to this project. For a full explanation of these and other disclaimers, please inquire at **customerservice@iatl.com**.

1) Note: No mastic provided for analysis.
2) Note: Insufficient mastic provided for analysis.
3) Note: Insufficient material provided for analysis.
4) Note: Insufficient sample provided for QC reanalysis.
5) Note: Different material than indicated on Sample Log / Description.
6) Note: Sample not submitted.
7) Note: Attached to asbestos containing material.
8) Note: Received wet.
9) Note: Possible surface contamination.
10) Note: Not building material. 1% threshold may not apply.
11) Note: Recommend TEM-NOB analysis as per EPA recommendations.
12) Note: Asbestos detected but not quantifiable.
13) Note: Multiple identical samples submitted, only one analyzed.
14) Note: Analyzed by EPA 600/R-93/116. Point Counting detection limit at 0.080%.
15) Note: Analyzed by EPA 600/R-93/116. Point Counting detection limit at 0.125%.
16) Note: This sample contains >10% vermiculite mineral. See Appendix for Recommendations for Vermiculite Analysis.

Recommendations for Vermiculite Analysis:

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).Please contact your client representative for pricing and turnaround time options available.

iATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004).

For New York State customers, NYSDOH requires disclaimers and qualifiers for various vermiculite containing samples that direct analysis via ELAP198.6 and ELAP198.8 for samples that contain >10% vermiculite mineral where ELAP198.6 may be used to evaluate the asbestos content of the material. However, any test result using ELAP198.6 will be reported with the following disclaimer: “ELAP198.6 method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing >10% vermiculite.”

Further information on this method and other vermiculite and asbestos issues can be found at the following: Agency for Toxic Substances and Disease Registry (ATSDR) www.atsdr.cdc.gov, United States Geological Survey (USGS) www.minerals.usgs.gov/minerals/, US EPA www.epa.gov/asbestos. The USEPA also has an informative brochure "Current Best Practices for Vermiculite Attic Insulation" EPA 747F03001 May 2003, that may assist the health and remediation professional. NYS customers please follow current NYSDOH ELAP requirements per policy on subject of surfacing and vermiculite, May 6, 2016, Testing Requirements for Surfacing Material Containing Vermiculite (https://www.wadsworth.org/sites/default/files/WebDoc/I198_8_02_2.pdf)

The following is a summary of the analytical process outlines in the EPA 600/R-04/004 Method:

1)**Analytical Step/Method:** Initial Screening by PLM, EPA 600R-93/116
Requirements/Comments: Minimum of 0.1 g of sample. ~0.25% for most samples.

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client:	Auxano Environmental LLC	Report Date:	8/29/2022
	4222 Lantana Dr.	Report No.:	667274 - PLM
	Lebanon OH 45036	Project:	Greene County Airport Terminal Renovation
		Project No.:	2592
Client:	AUX916		

2)**Analytical Step/Method:** Wet Separation by PLM Gravimetric Technique, EPA R-04/004
Requirements/Comments: Minimum 50g** of dry sample. Analysis of "Sinks" only.

3)**Analytical Step/Method:** Wet Separation by PLM Gravimetric Technique, EPA R-04/004
Requirements/Comments: Minimum 50g** of dry sample. Analysis of "Floats" only.

4)**Analytical Step/Method:** Wet Separation by TEM Gravimetric Technique, EPA R-04/004
Requirements/Comments: Minimum 50g** of dry sample. Analysis of "Sinks" only.

5)**Analytical Step/Method:** Wet Separation by TEM Gravimetric Technique, EPA R-04/004
Requirements/Comments: Minimum 50g** of dry sample. Analysis of "Suspension" only.
*With advance notice and confirmation by the laboratory.
**Approximately 1 Liter of sample in double-bagged container (~9x6 inch bag of sample).

New York State Department of Health requires that samples originating from NYS that they categorize as Non-friable Organically Bound materials can only be confirmed as None Detected for asbestos by method 198.4. See the table below for a list of those materials. (ENVIRONMENTAL LABORATORY APPROVAL PROGRAM CERTIFICATION MANUAL - ITEM No. 198.1, Revision Date 5/6/16)

*Asphalt Shingles, Caulking, Ceiling Tiles with Cellulose, Duct Wrap, Glazing, Mastic, Paint Chips, Resilient Floor Tiles, Rubberized Asbestos Gaskets, Siding Shingles, Vinyl Asbestos Tile, NOB materials (other that SM-V) with <10% vermiculite, Any material (Friable or NOB other than SM-V) with >10% vermiculite.

Statistically derived uncertainty with any measure should be taken into consideration when reviewing and interpreting all reported data and results. A more comprehensive listing of accuracy, precision, and uncertainty as it impacts this method is available upon request.

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449 Email: customerservice@iatl.com

Chain of Custody

AAS - Metals

Contact Information

Client Company:	Auxano Environmental LLC	**Project Number:**	2592
Office Address:	4222 Lantana Dr.	**Project Name:**	Greene County Airport
City, State, Zip:	Lebanon, OH 45036	**Primary Contact:**	Nichole Lashley
Fax Number:		**Office Phone:**	9372711226
Email Address:	auxanoenvironmental@outlook.com	**Cell Phone:**	9372711226

iATL is accredited by the National Lead Laboratory Accreditation Program (NLLAP) to perform analytical testing of environmental samples for lead (Pb). The accreditation is through AIHA-LAP, LLC and several other nationally recognized state programs.

Matrix/Method

- [x] Paint by AAS: ASTM D3335-85a, 2009
- [ ] Wipe/Dust by AAS: SW 846: 3050B: 700B, 2010
- [ ] Air by AAS: NIOSH 7082, 1994
- [ ] Soil by AAS: EPA SW 846 (Soil)
- [ ] Water by AAS-GF: ASTM D3559-03D, US EPA 200.9
- [ ] Other Metals (Cd, Zn, Cr) by AAS
- [ ] Toxicity Characteristic Leaching Procedure (TCLP) by AAS: US EPA 1311
- [ ] Other _____

Special Instructions:

Turnaround Time

Preliminary Results Requested Date: 8/30/2022 5:00:00 PM (Specific date/time)

- [x] Email
- [ ] Hard Copy
- [x] Portal
- [ ] Verbal

*** End of next business day unless otherwise specified. ** Matrix Dependent. *** Please notify the lab before shipping *****

Chain of Custody

Relinquished (Name/Organization):	Stu Jenning ASC Group	Date:	8/23/2022	Time:	RECEIVED
Received (Name/iATL):		Date:		Time:	
Sample Login (Name/iATL):		Date:		Time:	
Analysis (Name(s)/iATL):	CN 8/31/22	Date:		Time:	
QA/QC Review (Name/iATL):	8/31/22	Date:		Time:	AUG 25 2022
Archived/Released: _____	Archived/Released: _____	Date:		Time:	

iATL - By

☐ 6 Hour ☐ 12 Hour ☐ 1 Day ☐ 2 Day ☐ 3 Day ☐ 4 Day ☑ 5 Day ☐ 10 Day

INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B Mt. Laurel, New Jersey 08054
Telephone: 8562319449 Email: customerservice@iatl.com

Sample Log

Client: Auxano Environmental LLC

Project: 2592 Greene County Airport

Sample Log				
Client Sample #	**IATL #**	**Location**	**Description**	**Notes**
L1	7483958	Ent/Ext. to Terminal	White Paint Flake	Entry Foyer from parking lot
L2	7483959	Ent/Ext. to Flight Line	White Paint Flake	Entry Foyer from Flt.Line
L3	7483960	Pipe Plumbing	Yellow putty under sink	Pipes under Kitchenette
L4	7483961	Women's RR	Lavender Paint Flake	Paint on Walls
L5	7483962	Women's RR	Lavender Paint Scrape	From Metal Stall Door
L6	7483963	Men's RR	Yellow Paint Flake	From Dry wall
L7	7483964	Men's RR	Yellow Paint Scrape	From Metal Door
L8	7483965	Men's RR	Green Paint Scrape	From Metal Door
L9	7483966	Men's RR	Yellow Paint Flake	Metal Stall Door
L10	7483967	Computer Room	Beige Paint Flake	From Dry wall
L11	7483968	Utility Closet	Yellow Paint Flake	From Concrete
L12	7483969	Utility Closet	Beige Paint Scrape	From Metal Door
L13	7483970	Utility Closet	White Paint Flake	Wood Door
L14	7483971	Pilot Lounge	Brown Paint Scrape	Metal Door
L15	7483972	Pilot Lounge	White Paint Flake	Dry wall
L16	7483973	Conf. Room Window	Cream Paint flake	Window Sill
L17	7483974	Conf. Room Door	Gray Paint Scrape	Metal Door
L18	7483975	Conf. Room Wainscotting	Beige Paint Flake	Wood Wainscotting
L19	7483976	Hangar Mainten. Closet	White Paint Scrape	Metal Door
L20	7483977	Hangar RR	Multi-Layer Paint scrape	Metal Door - Red Paint in layer
L21	7483978	Hangar RR	White Paint Flake	Cinder Block Wall
L22	7483979	Hanger RR	Cream Paint Scrape	Bathroom Stall Door
L23	7483980	Door to Hangar	Multi Layer Paint scrape	Metal door from Terminal to Hanger

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Auxano Environmental LLC
4222 Lantana Dr.
Lebanon OH 45036

Client: AUX916

Report Date: 8/31/2022
Report No.: 667527 - Lead Paint
Project: Greene County Airport
Project No.: 2592

LEAD PAINT SAMPLE ANALYSIS SUMMARY

Lab No.: 7483958 **Description:** White Paint Flake **Result (% by Weight):** <0.010
Client No.: L1 **Location:** Ent/Ext. to Terminal **Result (ppm):** <100
Comments:

Lab No.: 7483959 **Description:** White Paint Flake **Result (% by Weight):** <0.0077
Client No.: L2 **Location:** Ent/Ext. to Flight Line **Result (ppm):** <77
Comments: ***

Lab No.: 7483960 **Description:** Yellow Putty Under sink **Result (% by Weight):** <0.0084
Client No.: L3 **Location:** Pipe Plumbing **Result (ppm):** <84
Comments: ***

Lab No.: 7483961 **Description:** Lavender Paint Flake **Result (% by Weight):** <0.0076
Client No.: L4 **Location:** Women's RR **Result (ppm):** <76
Comments: ***

Lab No.: 7483962 **Description:** Lavender Paint Scrape **Result (% by Weight):** <Void
Client No.: L5 **Location:** Women's RR **Result (ppm):** <Void
Comments: **

Lab No.: 7483963 **Description:** Yellow Paint Flake **Result (% by Weight):** <0.0064
Client No.: L6 **Location:** Men's RR **Result (ppm):** <64
Comments: ***

Lab No.: 7483964 **Description:** Yellow Paint Scrape **Result (% by Weight):** <Void
Client No.: L7 **Location:** Men's RR **Result (ppm):** <Void
Comments: **

Lab No.: 7483965 **Description:** Green Paint Scrape **Result (% by Weight):** <Void
Client No.: L8 **Location:** Men's RR **Result (ppm):** <Void
Comments: **

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/25/2022
Date Analyzed: 08/31/2022
Signature:
Analyst: Chad Shaffer

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

Dated : 8/31/2022 2:37:07

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Auxano Environmental LLC
4222 Lantana Dr.
Lebanon OH 45036

Client: AUX916

Report Date: 8/31/2022
Report No.: 667527 - Lead Paint
Project: Greene County Airport
Project No.: 2592

LEAD PAINT SAMPLE ANALYSIS SUMMARY

Lab No.:	7483966	**Description:**	Yellow Paint Flake	**Result (% by Weight):**	<Void
Client No.:	L9	**Location:**	Men's RR	**Result (ppm):**	<Void
				Comments:	**
Lab No.:	7483967	**Description:**	Beige Paint Flake	**Result (% by Weight):**	<0.0070
Client No.:	L10	**Location:**	Computer Room	**Result (ppm):**	<70
				Comments:	***
Lab No.:	7483968	**Description:**	Yellow Paint Flake	**Result (% by Weight):**	<0.0066
Client No.:	L11	**Location:**	Utility Closet	**Result (ppm):**	<66
				Comments:	***
Lab No.:	7483969	**Description:**	Beige Paint Scrape	**Result (% by Weight):**	<Void
Client No.:	L12	**Location:**	Utility Closet	**Result (ppm):**	<Void
				Comments:	**
Lab No.:	7483970	**Description:**	White Paint Flake	**Result (% by Weight):**	<Void
Client No.:	L13	**Location:**	Utility Closet	**Result (ppm):**	<Void
				Comments:	**
Lab No.:	7483971	**Description:**	Brown Paint Scrape	**Result (% by Weight):**	<Void
Client No.:	L14	**Location:**	Pilot Lounge	**Result (ppm):**	<Void
				Comments:	**
Lab No.:	7483972	**Description:**	White Paint Flake	**Result (% by Weight):**	<0.0099
Client No.:	L15	**Location:**	Pilot Lounge	**Result (ppm):**	<99
				Comments:	***
Lab No.:	7483973	**Description:**	Cream Paint Flake	**Result (% by Weight):**	<0.0078
Client No.:	L16	**Location:**	Conf. Room Window	**Result (ppm):**	<78
				Comments:	

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/25/2022
Date Analyzed: 08/31/2022
Signature:
Analyst: Chad Shaffer

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Auxano Environmental LLC
4222 Lantana Dr.
Lebanon OH 45036

Client: AUX916

Report Date: 8/31/2022
Report No.: 667527 - Lead Paint
Project: Greene County Airport
Project No.: 2592

LEAD PAINT SAMPLE ANALYSIS SUMMARY

Lab No.: 7483974 **Description:** Gray Paint Scrape **Result (% by Weight):** <Void
Client No.: L17 **Location:** Conf. Room Door **Result (ppm):** <Void
Comments: **

Lab No.: 7483975 **Description:** Beige Paint Flake **Result (% by Weight):** <Void
Client No.: L18 **Location:** Conf. Room Wainscotting **Result (ppm):** <Void
Comments: **

Lab No.: 7483976 **Description:** White Paint Scrape **Result (% by Weight):** <Void
Client No.: L19 **Location:** Hangar Mainten. Closet **Result (ppm):** <Void
Comments: **

Lab No.: 7483977 **Description:** Multi-Layer Paint Scrape **Result (% by Weight):** <Void
Client No.: L20 **Location:** Hangar RR **Result (ppm):** <Void
Comments: **

Lab No.: 7483978 **Description:** White Paint Flake **Result (% by Weight):** <Void
Client No.: L21 **Location:** Hangar RR **Result (ppm):** <Void
Comments: **

Lab No.: 7483979 **Description:** Cream Paint Scrape **Result (% by Weight):** <Void
Client No.: L22 **Location:** Hanger RR **Result (ppm):** <Void
Comments: **

Lab No.: 7483980 **Description:** Multi Layer Paint Scrape **Result (% by Weight):** 0.038
Client No.: L23 **Location:** Door to Hangar **Result (ppm):** 380
Comments:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/25/2022
Date Analyzed: 08/31/2022
Signature:
Analyst: Chad Shaffer

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client:	Auxano Environmental LLC	Report Date:	8/31/2022
	4222 Lantana Dr.	Report No.:	667527 - Lead Paint
	Lebanon OH 45036	Project:	Greene County Airport
		Project No.:	2592
Client:	AUX916		

Appendix to Analytical Report:

Customer Contact: Nichole Lashley
Method: ASTM D3335-85a, US EPA SW846 3050B:7000B

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

iATL Customer Service: customerservice@iatl.com
iATL Office Manager:wchampion@iatl.com
iATL Account Representative: Shirley Clark
Sample Login Notes: See Batch Sheet Attached
Sample Matrix: Paint
Exceptions Noted: See Following Pages

General Terms, Warrants, Limits, Qualifiers:

General information about iATL capabilities and client/laboratory relationships and responsibilities are spelled out in iATL policies that are listed at www.iATL.com and ir our Quality Assurance Manual per ISO 17025 standard requirements. The information therein is a representation of iATL definitions and policies for turnaround times, sample submittal, collection media, blank definitions, quantification issues and limit of detection, analytical methods and procedures, sub-contracting policies, results reporting options, fees, terms, and discounts, confidentiality, sample archival and disposal, and data interpretation.

iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA LAP LLC, or any agency of local, state or province governments nor of any agency of the U.S. government.

Information Pertinent to this Report:

Analysis by ASTM D3335-85a by AAS

Certification:
- National Lead Laboratory Program (NLLAP): AIHA-LAP, LLC No. 100188
- NYSDOH-ELAP No. 11021

This report meets the standards set forth in the EPA's National Lead Laboratory Accreditation Program (NLLAP) through the Laboratory Quality System Requirements (LQSR) Revision 3.0 November 5, 2007. All Environmental Lead Proficiency Analytical Testing (ELPAT) is through the AIHA-PAT established program.

Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation.
All results are based on the samples as received at the lab. iATL assumes that appropriate sampling methods have been used and that the data upon which these results are based have been accurately supplied by the client.
Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Apendix B.
Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies.
LSD=0.2 ppm MDL=0.006% by weight. RL= 0.010% by weight (based upon 100 mg sampled).

Disclaimers / Qualifiers:

There may be some samples in this project that have a "NOTE:" associated with a sample result. We use added disclaimers or qualifiers to inform the client about something that requires further explanation. Here is a complete list with highlighted disclaimers pertinent to this project. For a full explanation of these and other disclaimers, please inquire at **customerservice@iatl.com.**

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client:	Auxano Environmental LLC	Report Date:	8/31/2022
	4222 Lantana Dr.	Report No.:	667527 - Lead Paint
	Lebanon OH 45036	Project:	Greene County Airport
		Project No.:	2592
Client:	AUX916		

* Insufficient sample provided to perform QC reanalysis (<200 mg)
** Not enough sample provided to analyze (<50 mg)
*** Matrix / substrate interference possible.

< less than sign, signifies none-detected below the empirical value based upon sub-sampled mass. This is often below the Reporting Limit (see above).

APPENDIX E INVENTORY OF ACM AND UNIVERSAL WASTE

INVENTORY OF ASBESTOS CONTAINING MATERIALS
Greene County Municipal Airport - Xenia, OH
Terminal Renovation

Functional Space	Homogeneous Area	Asbestos Containing Materials (ACM)	ACM Quantity (1)	Condition	Confirmed/Assumed	NEHSAP Category (2)	Photo Reference (Appendix F)	Anticipated To Be Impacted via Renovation
Mechanical room with entrance from the lobby	12	Yellow with Brown Specks Vinyl Floor Tile with Yellow Mastic	81 s.f.	Intact	Confirmed	Category I	Photo #2	2, 3
Mechanical room in the hangar, Men's restroom in the hangar, Entrance to the hangar	16	Gray Door Jam Putty	15 s.f.	Intact	Confirmed	Category II	Photo #3	2, 4
Kitchenette in Lobby	N/A	Assumed ACM Gray Spray-On Coating on underside of sink	4 s.f.	Intact	Assumed	Category I	N/A	4

Notes:

1 Quantity of ACM estimated based upon assessor's understanding of scope of work is not necessarily inclusive of all ACM Homogenous Area quantities throughout the entire functional space.

2 **NESHAP** - National Emissions Standard for Hazardous Air Pollutants

Category I non-friable ACM - any asbestos-containing packing, gasket, resilient floor covering or asphalt roofing product which contains more than 1 percent asbestos as determined using PLM according to the method specified in Appendix A, Subpart F, 40 CFR Part 763 (Section 61.141)

Category II non-friable ACM - any material, excluding Category I non-friable ACM, containing more than 1 percent asbestos as determined using PLM according to the method specified in Appendix A, Subpart F, 40 CFR Part 763 (Section 61.141), that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure

3 Scope of work directly impacts ACM; abatement of ACM must occur prior to impact or disturbance via renovation work practices (ACM removal is included within scope of work and cost estimate).

4 Scope of work does not appear to require removal of ACM; however, Contractors performing renovation work within the area should be made aware of the presence and locations of these ACM (ACM removal is not included within scope of work and cost estimate).

5 Scope of work does not directly require removal of ACM; however, based upon renovation work occurring ACM should be abated to eliminate any potential disturbance and exposure to ACM during renovation work practices (ACM removal is included within scope of work and cost estimate).

6 Quantity of component includes removal of VAV Box, which contains ACM White Adhesive and ACM Gray Caulk.

7 ACM Floor Tile and Mastic may be present beneath walls and was not included within the quantity listed for this ACM. Asbestos Abatement Contractor should account for this material being present and remove this material accordingly in selected areas where walls are scheduled for removal. Walls scheduled for demolition should be removed by the Asbestos Abatement Contractor in the event that walls cannot be demolished without disturbing any underlying presumed ACM Flooring Materials. Quantity for this ACM is listed separately on this table as "Wall Partition Demolition Areas".

8 Material contains less than 1% asbestos and is not considered an ACM per OSHA and EPA definitions; however, is a material still regulated by OSHA because it contains asbestos content.

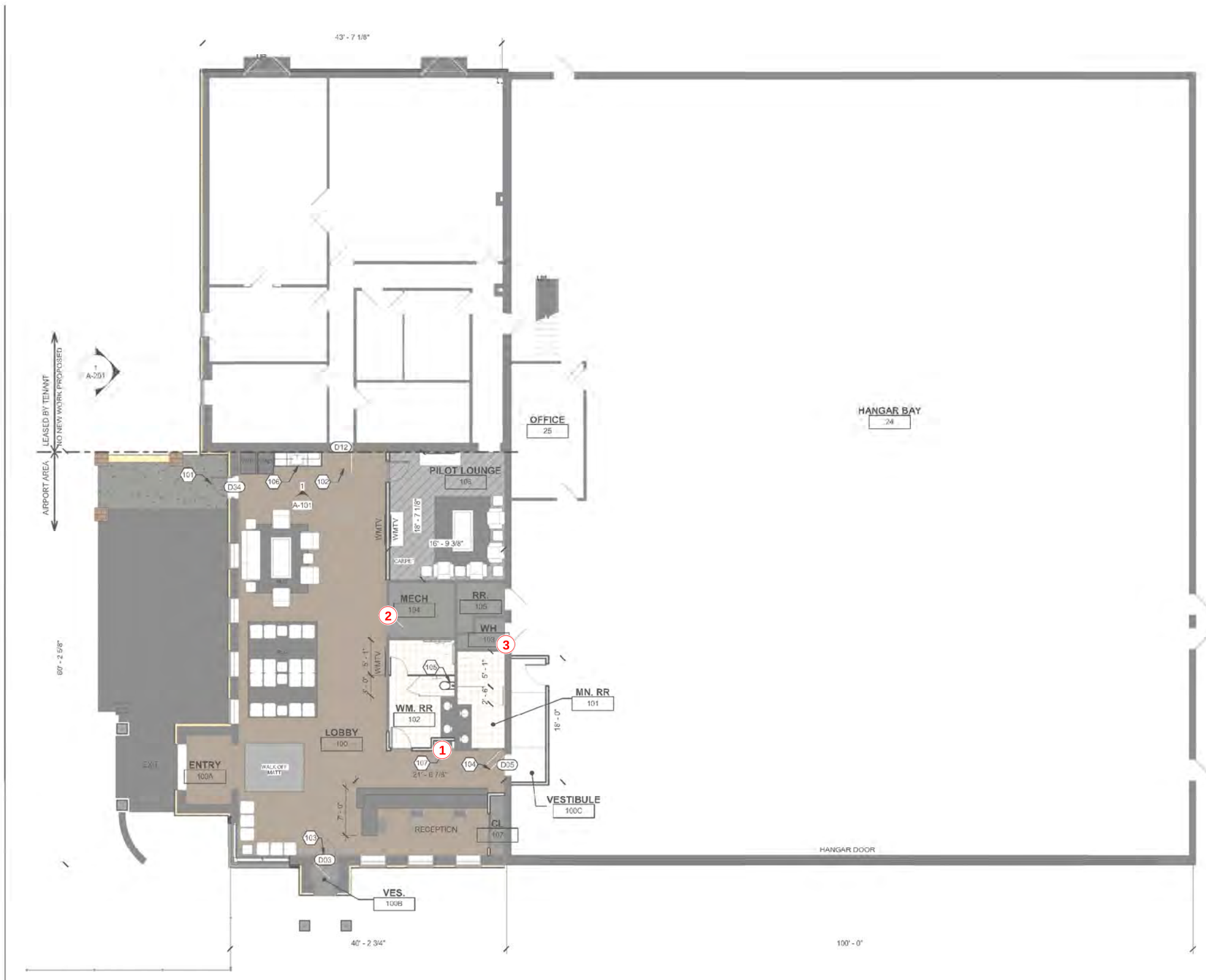
LEGEND:

ACM	Asbestos Containing Material
NAD	No Asbestos Detected
EPA	Environmental Protection Agency
l.f.	linear feet
OSHA	Occupational Health and Safety Administration
s.f.	Square Feet
VAV	Variable Air Volume
PLM	Polarized Light Microscopy

UNIVERSAL WASTE INVENTORY REPORT
Greene County Municipal Airport - Xenia, OH
Terminal Renovation

Room	Non-PCB Light Ballast	Fluorescent Lamps (FL)
Lobby	9	25
Entry to the airfield from lobby		2
Women’s restroom	2	4
Men’s restroom	2	4
Conference Room/Front Office, Closest to reception	8	16
Main Entryway		2
Pilot Lounge 106	6	12
Mechanical room with entrance from the lobby		1
Mechanical room in the hangar		1
Men’s restroom in the hangar	1	2
Reception	2	4
Total	**30**	**73**

APPENDIX F PHOTOGRAPH DOCUMENTATION



Photograph location - no direction (assumed or confirmed ACM sample)

0 2.5 5 7.5 10 Meters

0 5 10 15 20 25 30 Feet

N

Appendix F

Photo Location Diagram

ASC GROUP, INC.
CULTURAL • ENVIRONMENTAL • HAZARDOUS
EVALUATION & CONSULTING

Greene County Municipal Airport Terminal Renovation

Photo #1 **Date: 8/16/2022** **Location: Kitchenette in lobby** **Description: Assumed ACM, Gray Spray-On Coating on the underside of the sink.**	

Photo #2 **Date: 8/16/2022** **Location: Mechanical room with entrance from the lobby** **Description: Laboratory Confirmed ACM, Yellow with Brown Specks Vinyl Floor Tile with Yellow Mastic.**	

ASC GROUP, INC.
CULTURAL • ENVIRONMENTAL • HAZARDOUS
EVALUATION & CONSULTING

Greene County Municipal Airport Terminal Renovation

Photo #3	
Date: 8/16/2022	
Location: Mechanical room in hangar	
Description: Laboratory Confirmed ACM, Gray Door Jam Putty around door frames in the hangar.	

APPENDIX G ASBESTOS MATERIALS LOCATION DIAGRAM

Assumed ACM Gray Spray-On Coating on underside of sink (~4 SF)

Gray door jam putty (~15 SF)

Yellow with brown specks vinyl floor tile with yellow mastic (~81 SF)

0 2.5 5 7.5 10 Meters

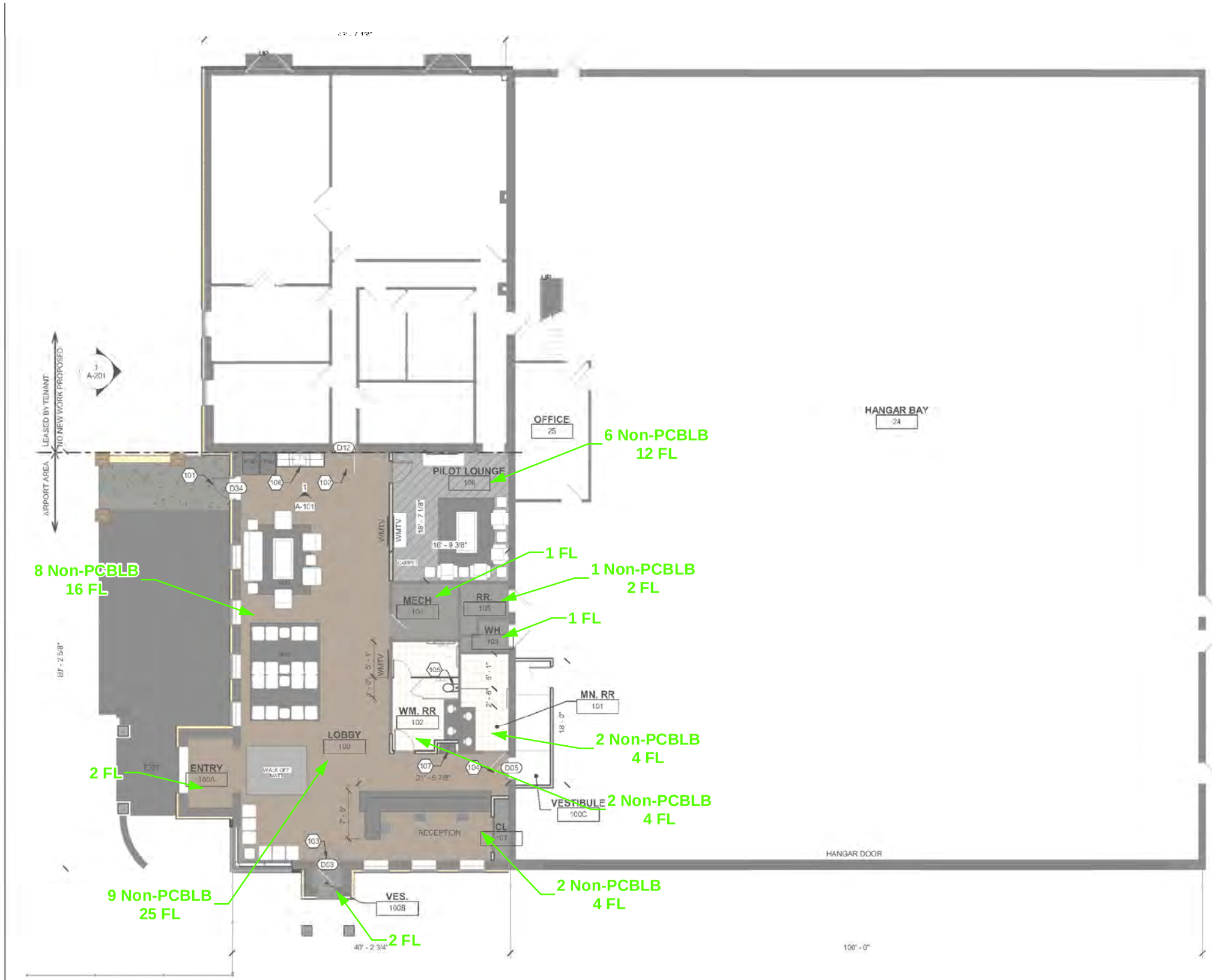
0 5 10 15 20 25 30 Feet

N

Appendix G

Asbestos Containing Material (ACM) Location Diagram

APPENDIX H UNIVERSAL WASTE LOCATION DIAGRAM



FL	Fluorescent Lamp
NON-PCBLB	Non-Polychlorinated Biphenyls (PCB) Light Ballast

0 2.5 5 7.5 10 Meters

0 5 10 15 20 25 30 Feet

N

Appendix H

Universal Waste Location Diagram

DOCUMENT 000200 - INVITATION TO BIDDERS

1. GENERAL

A. The Greene County Airport Board will receive bids for Construction Services for the Lewis A. Jackson Airport Terminal Interior Renovation Project, located in Xenia Ohio, until **1:00 PM, (EST), on March 22, 2023.**

B. The Sponsor and Owner is the Greene County - Lewis A. Jackson Regional Airport Authority, Ohio. The contract, when awarded, will be between the successful bidder and the Owner. The **contract** will be awarded on or about **April 27 - April 30, 2023. An Administrative Notice of Award will be issued approximately May 1, 2023.** However, a **Construction Notice to Proceed date** will not be provided until approximately **AUGUST 1, 2023** for the start of construction. Contractor may proceed with the development of pre-construction document submittals in accordance with the applicable sections of the contract documents upon contract execution. Construction completion including construction punch list items prior shall be **December 1, 2023**. The bid prices included in the bidder's proposal shall be in effect for the duration of the construction contract with no allowable increases to unit contract prices due to the actual project start or completion schedule.

C. **Completion Date:** The Plans contain specific project time restrictions for each phase of the work included in the project documents; however, as mentioned above, construction completion must be prior to **December 1, 2023**. Completion time beyond the time restrictions provided is subject to liquidated damages per the Contractor Documents – General Provisions, Section 80-08.

D. Bids to be mailed shall be addressed to the Greene County - Lewis A. Jackson Regional Airport, Attn: Dave Kushner, 140 North Valley Road, Xenia, Ohio, 45385, and will be clearly marked **"Sealed Bids, DO NOT OPEN"**. Bids may also be hand delivered to the same address provided prior to the bid cutoff time.

2. PRE-BID SITE MEETING:

A voluntary Pre-bid conference will be held at the Greene County - Lewis A. Jackson Regional Airport Terminal Building, at **10:00 AM, local time, on the 14th day of March, 2023**.

3. REQUIREMENTS OF A RESPONSIVE BID PROPOSAL

To be considered responsive, Bid Proposals shall conform to the following:

A. Bid Proposals shall meet the format and contain all the requested information as included in the contract document book entitled "Greene County Regional Airport Authority Bid Proposal";
B. In accordance with ORC Section 153.54, Bid Proposals shall include either a "Performance Bond" for the full amount of the bid, or a certified check; cashier's check; or letter of credit payable to the Greene County Airport Authority, Xenia, Ohio, equal to ten percent (10%) of the bid;
C. Bid Proposals shall include evidence of competency and financial responsibility;
D. Bidders shall complete and sign a Non-Collusion Affidavit as part of the Bid Proposal;
E. Bid Proposal shall be signed in ink by the individual owner, if the Bidder is a proprietorship, or by an officer, authorized representative, or agent if the Bidder is a corporation, partnership, limited liability company, or other entity. The Bidder's complete name, business address, and telephone number shall be shown;
F. Acknowledgement of the receipt of any and all addendums shall be shown on the identified page of the Bid Proposal.

G. Bidders' attention is directed to the Contract General Provisions. These sections contain the conditions for submitting the proposal and award and execution of the contract.

4. REJECTION OF BIDS AND QUANTITY ALTERATIONS

Bidders are hereby notified that all bids may be rejected if the lowest responsive bid received exceeds the Owner's ability to fund the project(s). The Owner retains the right to remove or alter project items as necessary to obtain a fundable project based on Section 40 of the Contract Documents – General Provisions. The lowest responsive bidder will be determined based on the contract unit price per fundable project items, not necessarily the exact bid proposal project items.

Bidders are hereby notified that the project funds available at the time of this bid are limited. If the project exceeds the available funds, the project quantities will either be altered, or additional funds will be required with no certainty of success.

5. CONTRACT GENERAL PROVISIONS

The Contract Documents contain General Provisions that define the legal responsibilities of the Owner, Engineer, and Bidder (Contractor) for the contract procurement, contract award, contract execution, and contract remedies associated with the Bid Proposal scope of work.

6. STATEMENT OF PERSONNEL PROPERTY TAX LIABILITY

In accordance with R.C. § 5719.042, within fifteen (15) calendar days of notification of being apparent low bidder, the Bidder shall submit to the Greene County Regional Airport Authority a statement affirmed under oath that the person with whom the contract is to be made was not charged at the time of the Bid Proposal submission with any delinquent personal property taxes on the general tax list of personal property of any county in which the taxing district has territory or that such person was charged with delinquent personal taxes on any such tax list, in which case the statement shall also set forth the amount of such due and unpaid delinquent taxes and any due and unpaid penalties and interest thereon. If the statement indicates that the taxpayer was charged with any such taxes, all of the following shall apply:

a. The fiscal officer of the Greene County Regional Airport Authority will transmit a copy of the statement to the county treasurer within thirty (30) calendar days of the date it is submitted;
b. A copy of the statement will be incorporated into the contract;
No payment will be made with respect to any contract to which this section applies unless that statement has been incorporated as required under Division (b) of this section.

7. CONTRACT LUMP SUM PRICE

The contract Lump Sum price set forth in bid proposal shall be the prices to be paid for all materials, services, and equipment to be furnished under the contract irrespective of the time of shipment or delivery. Prices shall include all costs associated with ordering, preparation, delivery, certifications, and installation of materials, services and equipment. No increases in prices will be allowed under any circumstances and any bid to which escalator clauses of price renegotiation provisions are added or appended by the bidder will rejected as being informal.

Materials purchased for use or consumption in connection with the Bid Proposal scope of work may be exempt from state sales tax as provided for in Section 5739.02 of the Ohio Revised Code and also from the State of Ohio Use Tax, Section 5741.02. Bidders are required to certify the amount of materials included in their proposal which then may be considered as the amount of exemption claimed under this provision. Purchases by the Contractor of expendable items such as form lumber, tools, oils, greases, fuel, or equipment rentals may be subject to the application of the Ohio Sales and Use tax. The Contractor shall complete an updated IRS W-9 form matching records on file with the IRS.

8. REQUIREMENTS FOR CONSTRUCTION BONDS AND INSURANCE

Bidders' attention is invited to Section 30-05 of the Contract Documents - General Provisions. This section provides the requirement for the successful bidder to provide the Sponsor project Performance and Payment bonds. If after contract award, the bidder does not provide such bonds, the Sponsor reserves the right to either terminate or suspend the contract or any portion thereof or withhold any progress payment or other monies payable under the contract. In addition, the bidder will be determined to be non-responsive in the award of future Sponsor contracts.

Similarly, the successful bidder shall provide suitable evidence to the Owner and Engineer that he/she is adequately protected by public liability and property damage insurance. To do so, the successful bidder shall submit a Certificate of Insurance with the Owner and Engineer named as additional insured parties prior to the start of construction.

9. DOCUMENTS

The Contract is made of the following documents:

a. Addenda (if issued)
b. Notice to Bidders
c. Instruction to Bidders
d. General Provisions
e. Standard Specifications
f. Bid Proposal
g. Construction Contract
h. Detailed construction plans approved by the Greene County - Lewis A. Jackson Regional Airport Authority
i. Contractor Provided Evidence of Competency and Financial Responsibility
j. Pre-Bid and Pre-Construction Conference Minutes
k. Payment and Performance Bonds
l. Public Liability and Property Damage Insurance
m. Contractor's Personal Property Tax Affidavit

10. PLAN and SPECIFICATION SETS FOR CONSTRUCTION

Copies of the Contract Documents including the Plans may be obtained from the office of ARC, 424 East Third St. Dayton, OH 45402. Send email to dayton.digital@e-arc.com requesting the documents. Bidders shall pay reproduction/transmittal costs of documents.

Bid document information may also be viewed at the Greene County website at Greene County, OH - Official Website (greenecountyohio.gov).

11. In the event of inconsistency between drawings and specifications or within either document itself, the cost for the better quality or greater quantity of work shall be included in the proposal. It shall be the Contractors responsibility to call the matter to the Architects attention for clarification.

In the event that the drawings call for some work not covered by the specification; the work called for by the drawings shall be included in the work under the contract.

12. QUESTIONS

A. Submit all questions about the Bidding Documents to Dave Gotschall, Woolpert Project Manager, in writing via e-mail, at **dave.gotschall@woolpert.com.** Reply will be issued to all bidders of record as Addenda to the Drawings and Specifications and will become part of the Contract. The Architect and Owner will not be responsible for oral clarification. Questions received less than seventy-two (72) hours before the bid opening cannot be answered.

13. PROJECT SCHEDULE

A. The anticipated date of contract award is May 1, 2023. Work is to be 100% complete by December 1, 2023. Contractor will need to seek permission from the Airport Manager to work on Saturdays or Sundays during the project. Request should be made by 4:00 pm, Wednesday before weekend.

14. ADDENDA (If required)

A. Addenda may be issued to clarify an item or for other purposes.
B. Addenda issued prior to the bid date shall be included in the proposal and will become a part of the contract documents.

C. Addenda's will be issued by email to contact information provided when plans are purchased or downloaded.

D. Addenda issued after the receipt of bids will be negotiated with the contractor to determine if any extra or credit will result, changing the contract sum. If the contract sum and/or the completion date is altered by issuance of Addenda, the Architect will issue a Change Order for same.

E. Bidders shall acknowledge receipt of Addenda on the bid form.

15. COMPLIANCE WITH LAWS

A. In general, the Owner desires to comply with all applicable rules and regulations, established by governments.

B. All work shall be done in full compliance with City, County, State and Federal laws.

C. All costs of permits, fees, inspections and taxes shall be paid by the contractor, and included in his bid as a part of the contract sum.

16. RESERVATIONS

A. The Owner reserves the right to accept or reject any or all bids or parts of bids, to waive informalities in bidding, and to accept the bid which they deem to be in their best interest

B. The Owner shall have ninety (90) days to consider the bids before making an Award of Contract.

17. OWNER'S PROTECTIVE BOND

A. Owner's Protective Bond in NOT required for this project.

18. SALES TAX

A. Contractor is responsible for all project sales tax.

19. PREVAILING WAGE

A. Prevailing wage rates are a requirement for this project. Please refer to SECTION 001000 for the FEDERAL WAGE RATES.

20. The Contractor shall and will, in good workmanlike manner, do and perform all work and furnish all supplies, materials, machinery, equipment, facilities and means, except otherwise expressly specified, necessary or proper to perform and complete all work required by this Contract within the time herein specified, in accordance with the provisions of the Contract, in accordance with and intent of the drawings and specifications, and in accordance with the directions of the Project Manager as given from time to time during the progress of work.

21. Contractor shall provide and pay all costs associated with his work, such as permits, telephone calls, transportation and unloading, storage in safe protected areas, use of tools, power driven equipment, portable commode units, dumpsters, etc. Thus, the contract sum shall cover ALL costs of doing business associated with this project.

22. In accordance with ORC Section 153.54, bids shall include either a "Performance Bond" for the full amount of the bid, or a certified check; cashier's check; or letter of credit payable to the Greene County Airport Authority, Xenia, Ohio, equal to ten percent (10%) of the bid.
Award of the work, if awarded, will be made to the lowest responsive and responsible bidder. The Greene County Regional Airport Authority, Xenia, Ohio, reserves the right to waive any informalities in bidding if such waiver is in the best interests of the Owner and conforms to local laws pertaining to the letting of construction contracts and to reject any and all bids.
The Owner is cognizant of the time limitation for awarding contracts; therefore, the Owner will have 90-calendar days from the date bids are opened to award and execute the proposed construction contract with the lowest responsive and responsible bidder.

END OF SECTION 000200

DOCUMENT 000600 - GENERAL PROVISIONS

TABLE OF CONTENTS

SECTION 100 CONTRACTOR QUALITY CONTROL PROGRAM

General Provisions - Section 10 Definition of Terms

Whenever the following terms are used in these specifications, in the contract, or in any documents or other instruments pertaining to construction where these specifications govern, the intent and meaning shall be interpreted as follows:

10-01 AASHTO. The American Association of State Highway and Transportation Officials, the successor association to AASHO.

10-02 Access road. The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public highway.

10-03 Advertisement. A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.

10-04 Airport Improvement Program (AIP). A grant-in-aid program, administered by the Federal Aviation Administration (FAA).

10-05 Air operations area (AOA). For the purpose of these specifications, the term air operations area (AOA) shall mean any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operation area shall include such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway, or apron.

10-06 Airport. Airport means an area of land or water which is used or intended to be used for the landing and takeoff of aircraft; an appurtenant area used or intended to be used for airport buildings or other airport facilities or rights of way; and airport buildings and facilities located in any of these areas, and includes a heliport.

10-07 ASTM International (ASTM). Formerly known as the American Society for Testing and Materials (ASTM).

10-08 Award. The Owner's notice to the successful bidder of the acceptance of the submitted bid.

10-09 Bidder. Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.

10-10 Building area. An area on the airport to be used, considered, or intended to be used for airport buildings or other airport facilities or rights-of-way together with all airport buildings and facilities located thereon.

10-11 Calendar day. Every day shown on the calendar.

10-12 Change order. A written order to the Contractor covering changes in the plans, specifications, or proposal quantities and establishing the basis of payment and contract time adjustment, if any, for the work affected by such changes. The work, covered by a change order, must be within the scope of the contract.

10-13 Contract. The written agreement covering the work to be performed. The awarded contract shall include, but is not limited to: Advertisement, Contract Form, Proposal, Performance Bond, Payment Bond, any required insurance certificates, Specifications, Plans, and any addenda issued to bidders.

10-14 Contract item (pay item). A specific unit of work for which a price is provided in the contract.

10-15 Contract time. The number of calendar days or working days, stated in the proposal, allowed for completion of the contract, including authorized time extensions. If a calendar date of completion is stated in the proposal, in lieu of a number of calendar or working days, the contract shall be completed by that date.

10-16 Contractor. The individual, partnership, firm, or corporation primarily liable for the acceptable performance of the work contracted and for the payment of all legal debts pertaining to the work who acts directly or through lawful agents or employees to complete the contract work.

10-17 Contractor's laboratory. The Contractor's quality control organization in accordance with the Contractor Quality Control Program.

10-18 Construction Safety and Phasing Plan (CSPP). The overall plan for safety and phasing of a construction project developed by the airport operator or developed by the airport operator's consultant and approved by the airport operator. It is included in the invitation for bids and becomes part of the project specifications.

10-19 Drainage system. The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.

10-20 Engineer. The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for engineering observation of the contract work and acting directly or through an authorized representative.

10-21 Equipment. All machinery, together with the necessary supplies for upkeep and maintenance, and also all tools and apparatus necessary for the proper construction and acceptable completion of the work.

10-22 Extra work. An item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, but which is found by the Engineer to be necessary to complete the work within the intended scope of the contract as previously modified.

10-23 FAA. The Federal Aviation Administration of the U.S. Department of Transportation. When used to designate a person, FAA shall mean the Administrator or his or her duly authorized representative.

10-24 Federal specifications. The Federal Specifications and Standards, Commercial Item Descriptions, and supplements, amendments, and indices thereto are prepared and issued by the General Services Administration of the Federal Government.

10-25 Force account. Force account work is planning, engineering, or construction work done by the Sponsor's employees.

10-26 Inspector. An authorized representative of the Engineer assigned to make all necessary observations and observation of tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.

10-27 Intention of terms. Whenever, in these specifications or on the plans, the words "directed," "required," "permitted," "ordered," "designated," "prescribed," or words of like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Engineer is intended; and similarly, the words "approved," "acceptable," "satisfactory," or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer, subject in each case to the final determination of the Owner.

Any reference to a specific requirement of a numbered paragraph of the contract specifications or a cited standard shall be interpreted to include all general requirements of the entire section, specification item, or cited standard that may be pertinent to such specific reference.

10-28 Laboratory. The official testing laboratories of the Owner or such other laboratories as may be designated by the Engineer. Also referred to as "Engineer's Laboratory" or "quality assurance laboratory."

10-29 Lighting. A system of fixtures providing or controlling the light sources used on or near the airport or within the airport buildings. The field lighting includes all luminous signals, markers, floodlights, and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or taxiing on the airport surface.

10-30 Major and minor contract items. A major contract item shall be any item that is listed in the proposal, the total cost of which is equal to or greater than 20% of the total amount of the award contract. All other items shall be considered minor contract items.

10-31 Materials. Any substance specified for use in the construction of the contract work.

10-32 Notice to Proceed (NTP). A written notice to the Contractor to begin the actual contract work on a previously agreed to date. If applicable, the Notice to Proceed shall state the date on which the contract time begins.

10-33 Owner. The term "Owner" shall mean the party of the first part or the contracting agency signatory to the contract. Where the term "Owner" is capitalized in this document, it shall mean airport Sponsor only.

10-34 Passenger Facility Charge (PFC). Per 14 CFR Part 158 and 49 USC § 40117, a PFC is a charge imposed by a public agency on passengers enplaned at a commercial service airport it controls."

10-35 Pavement. The combined surface course, base course, and subbase course, if any, considered as a single unit.

10-36 Payment bond. The approved form of security furnished by the Contractor and his or her surety as a guaranty that the Contractor will pay in full all bills and accounts for materials and labor used in the construction of the work.

10-37 Performance bond. The approved form of security furnished by the Contractor and his or her surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.

10-38 Plans. The official drawings or exact reproductions which show the location, character, dimensions and details of the airport and the work to be done and which are to be considered as a part of the contract, supplementary to the specifications.

10-39 Project. The agreed scope of work for accomplishing specific airport development with respect to a particular airport.

10-40 Proposal. The written offer of the bidder (when submitted on the approved proposal form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.

10-41 Proposal guaranty. The security furnished with a proposal to guarantee that the bidder will enter into a contract if his or her proposal is accepted by the Owner.

10-42 Runway. The area on the airport prepared for the landing and takeoff of aircraft.

10-43 Specifications. A part of the contract containing the written directions and requirements for completing the contract work. Standards for specifying materials or testing which are cited in the contract specifications by reference shall have the same force and effect as if included in the contract physically.

10-44 Sponsor. A Sponsor is defined in 49 USC § 47102(24) as a public agency that submits to the FAA for an AIP grant; or a private Owner of a public-use airport that submits to the FAA an application for an AIP grant for the airport.

10-45 Structures. Airport facilities such as bridges; culverts; catch basins, inlets, retaining walls, cribbing; storm and sanitary sewer lines; water lines; underdrains; electrical ducts, manholes, handholes, lighting fixtures and bases; transformers; flexible and rigid pavements; navigational aids; buildings; vaults; and, other manmade features of the airport that may be encountered in the work and not otherwise classified herein.

10-46 Subgrade. The soil that forms the pavement foundation.

10-47 Superintendent. The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the Engineer, and who shall supervise and direct the construction.

10-48 Supplemental agreement. A written agreement between the Contractor and the Owner covering (1) work that would increase or decrease the total amount of the awarded contract, or any major contract item, by more than 25%, such increased or decreased work being within the scope of the originally awarded contract; or (2) work that is not within the scope of the originally awarded contract.

10-49 Surety. The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the Owner by the Contractor.

10-50 Taxiway. For the purpose of this document, the term taxiway means the portion of the air operations area of an airport that has been designated by competent airport authority for movement of aircraft to and from the airport's runways, aircraft parking areas, and terminal areas.

10-51 Work. The furnishing of all labor, materials, tools, equipment, and incidentals necessary or convenient to the Contractor's performance of all duties and obligations imposed by the contract, plans, and specifications.

10-52 Working day. A working day shall be any day other than a legal holiday, Saturday, or Sunday on which the normal working forces of the Contractor may proceed with regular work for at least six (6) hours toward completion of the contract. When work is suspended for causes beyond the Contractor's control, it will not be counted as a working day. Saturdays, Sundays and holidays on which the Contractor's forces engage in regular work will be considered as working days.

END OF SECTION 10

Section 20 Proposal Requirements and Conditions

20-01 Advertisement (Notice to Bidders). The Owner shall publish the advertisement at such places and at such times as are required by local law or ordinances. The published advertisement shall state the time and place for submitting sealed proposals; a description of the proposed work; instructions to bidders as to obtaining proposal forms, plans, and specifications; proposal guaranty required; and the Owner's right to reject any and all bids.

20-02 Qualification of bidders. Each bidder shall furnish the Owner satisfactory evidence of his or her competency to perform the proposed work. Such evidence of competency, unless otherwise specified, shall consist of statements covering the bidder's past experience on similar work, a list of equipment that would be available for the work, and a list of key personnel that would be available. In addition, each bidder shall furnish the Owner satisfactory evidence of his or her financial responsibility. Such evidence of financial responsibility, unless otherwise specified, shall consist of a confidential statement or report of the bidder's financial resources and liabilities as of the last calendar year or the bidder's last fiscal year. Such statements or reports shall be certified by a public accountant. At the time of submitting such financial statements or reports, the bidder shall further certify whether his or her financial responsibility is approximately the same as stated or reported by the public accountant. If the bidder's financial responsibility has changed, the bidder shall qualify the public accountant's statement or report to reflect the bidder's true financial condition at the time such qualified statement or report is submitted to the Owner.

Unless otherwise specified, a bidder may submit evidence that he or she is prequalified with the State Highway Division and is on the current "bidder's list" of the state in which the proposed work is located.

Such evidence of State Highway Division prequalification may be submitted as evidence of financial responsibility in lieu of the certified statements or reports specified above.

Each bidder shall submit "evidence of competency" and "evidence of financial responsibility" to the Owner at the time of bid opening.

20-03 Contents of proposal forms. The Owner shall furnish bidders with proposal forms. All papers bound with or attached to the proposal forms are necessary parts and must not be detached.

The plans, specifications, and other documents designated in the proposal form shall be considered a part of the proposal whether attached or not.

20-04 Issuance of proposal forms. The Owner reserves the right to refuse to issue a proposal form to a prospective bidder should such bidder be in default for any of the following reasons:

a. Failure to comply with any prequalification regulations of the Owner, if such regulations are cited, or otherwise included, in the proposal as a requirement for bidding.

b. Failure to pay, or satisfactorily settle, all bills due for labor and materials on former contracts in force with the Owner at the time the Owner issues the proposal to a prospective bidder.

c. Documented record of Contractor default under previous contracts with the Owner.

d. Documented record of unsatisfactory work on previous contracts with the Owner.

20-05 Interpretation of estimated proposal quantities. An estimate of quantities of work to be done and materials to be furnished under these specifications is given in the proposal. It is the result of careful calculations and is believed to be correct. It is given only as a basis for comparison of proposals and the award of the contract. The Owner does not expressly, or by implication, agree that the actual quantities involved will correspond exactly therewith; nor shall the bidder plead misunderstanding or deception because of such estimates of quantities, or of the character, location, or other conditions pertaining to the work. Payment to the Contractor will be made only for the actual quantities of work performed or materials furnished in accordance with the plans and specifications. It is understood that the quantities may be increased or decreased as hereinafter provided in the subsection 40-02 titled ALTERATION OF WORK AND QUANTITIES of Section 40 without in any way invalidating the unit bid prices.

20-06 Examination of plans, specifications, and site. The bidder is expected to carefully examine the site of the proposed work, the proposal, plans, specifications, and contract forms. Bidders shall satisfy themselves as to the character, quality, and quantities of work to be performed, materials to be furnished, and as to the requirements of the proposed contract. The submission of a proposal shall be prima facie evidence that the bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work and as to the requirements of the proposed contract, plans, and specifications.

If the contract documents contain boring logs and other records of subsurface investigations and tests for inspection of bidders, it is understood and agreed that such subsurface information, whether included in the plans, specifications, or otherwise made available to the bidder, was obtained and is intended for the Owner's design and estimating purposes only. Such information has been made available for the convenience of all bidders. It is further understood and agreed that each bidder is solely responsible for all assumptions, deductions, or conclusions which the bidder may make or obtain from his or her examination of the boring logs and other records of subsurface investigations and tests that are furnished by the Owner.

20-07 Preparation of proposal. The bidder shall submit his or her proposal on the forms furnished by the Owner. All blank spaces in the proposal forms must be correctly filled in where indicated for each and every item for which a quantity is given. The bidder shall state the price (written in ink or typed) both in words and numerals for which they propose to do for each pay item furnished in the proposal. In case of conflict between words and numerals, the words, unless obviously incorrect, shall govern.

The bidder shall sign the proposal correctly and in ink. If the proposal is made by an individual, his or her name and post office address must be shown. If made by a partnership, the name and post office address of each member of the partnership must be shown. If made by a corporation, the person signing the proposal shall give the name of the state under the laws of which the corporation was chartered and the name, titles, and business address of the president, secretary, and the treasurer. Anyone signing a proposal as an agent shall file evidence of his or her authority to do so and that the signature is binding upon the firm or corporation.

20-08 Responsive and responsible bidder. A responsive bid conforms to all significant terms and conditions contained in the Sponsor's invitation for bid. It is the Sponsor's responsibility to decide if the exceptions taken by a bidder to the solicitation are material or not and the extent of deviation it is willing to accept.

A responsible bidder has the ability to perform successfully under the terms and conditions of a proposed procurement, as defined in 49 CFR § 18.36(b)(8). This includes such matters as Contractor integrity, compliance with public policy, record of past performance, and financial and technical resources.

20-09 Irregular proposals. Proposals shall be considered irregular for the following reasons:

a. If the proposal is on a form other than that furnished by the Owner, or if the Owner's form is altered, or if any part of the proposal form is detached.

b. If there are unauthorized additions, conditional or alternate pay items, or irregularities of any kind that make the proposal incomplete, indefinite, or otherwise ambiguous.

c. If the proposal does not contain a unit price for each pay item listed in the proposal, except in the case of authorized alternate pay items, for which the bidder is not required to furnish a unit price.

d. If the proposal contains unit prices that are obviously unbalanced.

e. If the proposal is not accompanied by the proposal guaranty specified by the Owner.

The Owner reserves the right to reject any irregular proposal and the right to waive technicalities if such waiver is in the best interest of the Owner and conforms to local laws and ordinances pertaining to the letting of construction contracts.

20-10 Bid guarantee. Each separate proposal shall be accompanied by a certified check, or other specified acceptable collateral, in the amount specified in the proposal form. Such check, or collateral, shall be made payable to the Owner.

20-11 Delivery of proposal. Each proposal submitted shall be placed in a sealed envelope plainly marked with the project number, location of airport, and name and business address of the bidder on the outside. When sent by mail, preferably registered, the sealed proposal, marked as indicated above, should be enclosed in an additional envelope. No proposal will be considered unless received at the place specified in the advertisement or as modified by Addendum before the time specified for opening all bids. Proposals received after the bid opening time shall be returned to the bidder unopened.

20-12 Withdrawal or revision of proposals. A bidder may withdraw or revise (by withdrawal of one proposal and submission of another) a proposal provided that the bidder's request for withdrawal is received by the Owner in writing, fax, or e-mail before the time specified for opening bids. Revised proposals must be received at the place specified in the advertisement before the time specified for opening all bids.

20-13 Public opening of proposals. Proposals shall be opened, and read, publicly at the time and place specified in the advertisement. Bidders, their authorized agents, and other interested persons are invited to attend. Proposals that have been withdrawn (by written or telegraphic request) or received after the time specified for opening bids shall be returned to the bidder unopened.

20-14 Disqualification of bidders. A bidder shall be considered disqualified for any of the following reasons:

a. Submitting more than one proposal from the same partnership, firm, or corporation under the same or different name.

b. Evidence of collusion among bidders. Bidders participating in such collusion shall be disqualified as bidders for any future work of the Owner until any such participating bidder has been reinstated by the Owner as a qualified bidder.

c. If the bidder is considered to be in "default" for any reason specified in the subsection 20-04 titled ISSUANCE OF PROPOSAL FORMS of this section.

END OF SECTION 20

Section 30 Award and Execution of Contract

30-01 Consideration of proposals. After the proposals are publicly opened and read, they will be compared on the basis of the summation of the products obtained by multiplying the estimated quantities shown in the proposal by the unit bid prices. If a bidder's proposal contains a discrepancy between unit bid prices written in words and unit bid prices written in numbers, the unit price written in words shall govern.

Until the award of a contract is made, the Owner reserves the right to reject a bidder's proposal for any of the following reasons:

a. If the proposal is irregular as specified in the subsection 20-09 titled IRREGULAR PROPOSALS of Section 20.

b. If the bidder is disqualified for any of the reasons specified in the subsection 20-14 titled DISQUALIFICATION OF BIDDERS of Section 20.

In addition, until the award of a contract is made, the Owner reserves the right to reject any or all proposals, waive technicalities, if such waiver is in the best interest of the Owner and is in conformance with applicable state and local laws or regulations pertaining to the letting of construction contracts; advertise for new proposals; or proceed with the work otherwise. All such actions shall promote the Owner's best interests.

30-02 Award of contract. The award of a contract, if it is to be awarded, shall be made within 90-calendar days of the date specified for publicly opening proposals, unless otherwise specified herein.

Award of the contract shall be made by the Owner to the lowest, qualified bidder whose proposal conforms to the cited requirements of the Owner. No award of the contract shall be made by the Owner until the FAA has concurred with the Owner's recommendation to make such award and has approved the Owner's proposed construction contract to the extent that such concurrence and approval are required by 49 CFR Part 18.

30-03 Cancellation of award. The Owner reserves the right to cancel the award without liability to the bidder, except return of proposal guaranty, at any time before a contract has been fully executed by all parties and is approved by the Owner in accordance with the subsection 30-07 titled APPROVAL OF CONTRACT of this section.

30-04 Return of proposal guaranty. All proposal guaranties, except those of the two lowest bidders, will be returned immediately after the Owner has made a comparison of bids as specified in the subsection 30-

01 titled CONSIDERATION OF PROPOSALS of this section. Proposal guaranties of the two lowest bidders will be retained by the Owner until such time as an award is made, at which time, the unsuccessful bidder's proposal guaranty will be returned. The successful bidder's proposal guaranty will be returned as soon as the Owner receives the contract bonds as specified in the subsection 30-05 titled REQUIREMENTS OF CONTRACT BONDS of this section.

30-05 Requirements of contract bonds. At the time of the execution of the contract, the successful bidder shall furnish the Owner a surety bond or bonds that have been fully executed by the bidder and the surety guaranteeing the performance of the work and the payment of all legal debts that may be incurred by reason of the Contractor's performance of the work. The surety and the form of the bond or bonds shall be acceptable to the Owner. Unless otherwise specified in this subsection, the surety bond or bonds shall be in a sum equal to the full amount of the contract.

30-06 Execution of contract. The successful bidder shall sign (execute) the necessary agreements for entering into the contract and return the signed contract to the Owner, along with the fully executed surety bond or bonds specified in the subsection 30-05 titled REQUIREMENTS OF CONTRACT BONDS of this section, within 15 calendar days from the date mailed or otherwise delivered to the successful bidder.

30-07 Approval of contract. Upon receipt of the contract and contract bond or bonds that have been executed by the successful bidder, the Owner shall complete the execution of the contract in accordance with local laws or ordinances, and return the fully executed contract to the Contractor. Delivery of the fully executed contract to the Contractor shall constitute the Owner's approval to be bound by the successful bidder's proposal and the terms of the contract.

30-08 Failure to execute contract. Failure of the successful bidder to execute the contract and furnish an acceptable surety bond or bonds within the 15 calendar day period specified in the subsection 30-06 titled EXECUTION OF CONTRACT of this section shall be just cause for cancellation of the award and forfeiture of the proposal guaranty, not as a penalty, but as liquidation of damages to the Owner.

END OF SECTION 30

Section 40 Scope of Work

40-01 Intent of contract. The intent of the contract is to provide for construction and completion, in every detail, of the work described. It is further intended that the Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work in accordance with the plans, specifications, and terms of the contract.

40-02 Alteration of work and quantities. The Owner reserves and shall have the right to make such alterations in the work as may be necessary or desirable to complete the work originally intended in an acceptable manner. Unless otherwise specified herein, the Engineer shall be and is hereby authorized to make such alterations in the work as may increase or decrease the originally awarded contract quantities, provided that the aggregate of such alterations does not change the total contract cost or the total cost of any major contract item by more than 25% (total cost being based on the unit prices and estimated quantities in the awarded contract). Alterations that do not exceed the 25% limitation shall not invalidate the contract nor release the surety, and the Contractor agrees to accept payment for such alterations as if the altered work had been a part of the original contract. These alterations that are for work within the general scope of the contract shall be covered by "Change Orders" issued by the Engineer. Change orders for altered work

shall include extensions of contract time where, in the Engineer's opinion, such extensions are commensurate with the amount and difficulty of added work.

Should the aggregate amount of altered work exceed the 25% limitation hereinbefore specified, such excess altered work shall be covered by supplemental agreement. If the Owner and the Contractor are unable to agree on a unit adjustment for any contract item that requires a supplemental agreement, the Owner reserves the right to terminate the contract with respect to the item and make other arrangements for its completion.

Supplemental agreements shall be approved by the FAA and shall include all applicable Federal contract provisions for procurement and contracting required under AIP. Supplemental agreements shall also require consent of the Contractor's surety and separate performance and payment bonds.

40-03 Omitted items. The Engineer may, in the Owner's best interest, omit from the work any contract item, except major contract items. Major contract items may be omitted by a supplemental agreement. Such omission of contract items shall not invalidate any other contract provision or requirement.

Should a contract item be omitted or otherwise ordered to be non-performed, the Contractor shall be paid for all work performed toward completion of such item prior to the date of the order to omit such item. Payment for work performed shall be in accordance with the subsection 90-04 titled PAYMENT FOR OMITTED ITEMS of Section 90.

40-04 Extra work. Should acceptable completion of the contract require the Contractor to perform an item of work for which no basis of payment has been provided in the original contract or previously issued change orders or supplemental agreements, the same shall be called "Extra Work." Extra Work that is within the general scope of the contract shall be covered by written change order. Change orders for such Extra Work shall contain agreed unit prices for performing the change order work in accordance with the requirements specified in the order, and shall contain any adjustment to the contract time that, in the Engineer's opinion, is necessary for completion of such Extra Work.

When determined by the Engineer to be in the Owner's best interest, the Engineer may order the Contractor to proceed with Extra Work as provided in the subsection 90-05 titled PAYMENT FOR EXTRA WORK of Section 90. Extra Work that is necessary for acceptable completion of the project, but is not within the general scope of the work covered by the original contract shall be covered by a Supplemental Agreement as defined in the subsection 10-48 titled SUPPLEMENTAL AGREEMENT of Section 10.

Any claim for payment of Extra Work that is not covered by written agreement (change order or supplemental agreement) shall be rejected by the Owner.

40-05 Maintenance of traffic. It is the explicit intention of the contract that the safety of aircraft, as well as the Contractor's equipment and personnel, is the most important consideration.

a. It is understood and agreed that the Contractor shall provide for the free and unobstructed movement of aircraft in the air operations areas (AOAs) of the airport with respect to his or her own operations and the operations of all subcontractors as specified in the subsection 80-04 titled LIMITATION OF OPERATIONS of Section 80. It is further understood and agreed that the Contractor shall provide for the uninterrupted operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft while operating to, from, and upon the airport as specified in the subsection 70-15 titled CONTRACTOR'S RESPONSIBILITY FOR UTILITY SERVICE AND FACILITIES OF OTHERS in Section 70.

b. With respect to his or her own operations and the operations of all subcontractors, the Contractor shall provide marking, lighting, and other acceptable means of identifying personnel, equipment, vehicles, storage areas, and any work area or condition that may be hazardous to the operation of aircraft, fire-rescue equipment, or maintenance vehicles at the airport.

c. When the contract requires the maintenance of vehicular traffic on an existing road, street, or highway during the Contractor's performance of work that is otherwise provided for in the contract, plans, and specifications, the Contractor shall keep such road, street, or highway open to all traffic and shall provide such maintenance as may be required to accommodate traffic. The Contractor shall be responsible for the repair of any damage caused by the Contractor's equipment and personnel. The Contractor shall furnish, erect, and maintain barricades, warning signs, flag person, and other traffic control devices in reasonable conformity with the Manual on Uniform Traffic Control Devices (MUTCD) (http://mutcd.fhwa.dot.gov/), unless otherwise specified. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways. Unless otherwise specified herein, the Contractor will not be required to furnish snow removal for such existing road, street, or highway.

40-06 Removal of existing structures. All existing structures encountered within the established lines, grades, or grading sections shall be removed by the Contractor, unless such existing structures are otherwise specified to be relocated, adjusted up or down, salvaged, abandoned in place, reused in the work or to remain in place. The cost of removing such existing structures shall not be measured or paid for directly, but shall be included in the various contract items.

Should the Contractor encounter an existing structure (above or below ground) in the work for which the disposition is not indicated on the plans, the Engineer shall be notified prior to disturbing such structure. The disposition of existing structures so encountered shall be immediately determined by the Engineer in accordance with the provisions of the contract.

Except as provided in the subsection 40-07 titled RIGHTS IN AND USE OF MATERIALS FOUND IN THE WORK of this section, it is intended that all existing materials or structures that may be encountered (within the lines, grades, or grading sections established for completion of the work) shall be used in the work as otherwise provided for in the contract and shall remain the property of the Owner when so used in the work.

40-07 Rights in and use of materials found in the work. Should the Contractor encounter any material such as (but not restricted to) sand, stone, gravel, slag, or concrete slabs within the established lines, grades, or grading sections, the use of which is intended by the terms of the contract to be either embankment or waste, the Contractor may at his or her option either:

a. Use such material in another contract item, providing such use is approved by the Engineer and is in conformance with the contract specifications applicable to such use; or,

b. Remove such material from the site, upon written approval of the Engineer; or

c. Use such material for the Contractor's own temporary construction on site; or,

d. Use such material as intended by the terms of the contract.

Should the Contractor wish to exercise option a., b., or c., the Contractor shall request the Engineer's approval in advance of such use.

Should the Engineer approve the Contractor's request to exercise option a., b., or c., the Contractor shall be paid for the excavation or removal of such material at the applicable contract price. The Contractor shall replace, at his or her own expense, such removed or excavated material with an agreed equal volume of material that is acceptable for use in constructing embankment, backfills, or otherwise to the extent that such replacement material is needed to complete the contract work. The Contractor shall not be charged for use of such material used in the work or removed from the site.

Should the Engineer approve the Contractor's exercise of option a., the Contractor shall be paid, at the applicable contract price, for furnishing and installing such material in accordance with requirements of the contract item in which the material is used.

It is understood and agreed that the Contractor shall make no claim for delays by reason of his or her exercise of option a., b., or c.

The Contractor shall not excavate, remove, or otherwise disturb any material, structure, or part of a structure which is located outside the lines, grades, or grading sections established for the work, except where such excavation or removal is provided for in the contract, plans, or specifications.

40-08 Final cleanup. Upon completion of the work and before acceptance and final payment will be made, the Contractor shall remove from the site all machinery, equipment, surplus and discarded materials, rubbish, temporary structures, and stumps or portions of trees. The Contractor shall cut all brush and woods within the limits indicated and shall leave the site in a neat and presentable condition. Material cleared from the site and deposited on adjacent property will not be considered as having been disposed of satisfactorily, unless the Contractor has obtained the written permission of such property Owner.

END OF SECTION 40

Section 50 Control of Work

50-01 Authority of the Engineer. The Engineer shall decide any and all questions which may arise as to the quality and acceptability of materials furnished, work performed, and as to the manner of performance and rate of progress of the work. The Engineer shall decide all questions that may arise as to the interpretation of the specifications or plans relating to the work. The Engineer shall determine the amount and quality of the several kinds of work performed and materials furnished which are to be paid for the under contract.

The Engineer does not have the authority to accept pavements that do not conform to FAA specification requirements.

50-02 Conformity with plans and specifications. All work and all materials furnished shall be in reasonably close conformity with the lines, grades, grading sections, cross-sections, dimensions, material requirements, and testing requirements that are specified (including specified tolerances) in the contract, plans or specifications.

If the Engineer finds the materials furnished, work performed, or the finished product not within reasonably close conformity with the plans and specifications but that the portion of the work affected will, in his or her opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the Owner, the Engineer will advise the Owner of his or her determination that the affected work be accepted and remain in place. In this event, the Engineer will document the determination and recommend to the Owner a basis of acceptance that will provide for an adjustment in the contract price for the affected portion of the work. The Engineer's determination and recommended contract price adjustments will be based on sound engineering judgment and such tests or retests of the affected work as are, in the Engineer's opinion, needed. Changes in the contract price shall be covered by contract change order or supplemental agreement as applicable.

If the Engineer finds the materials furnished, work performed, or the finished product are not in reasonably close conformity with the plans and specifications and have resulted in an unacceptable finished product, the affected work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the Engineer's written orders.

For the purpose of this subsection, the term "reasonably close conformity" shall not be construed as waiving the Contractor's responsibility to complete the work in accordance with the contract, plans, and specifications. The term shall not be construed as waiving the Engineer's responsibility to insist on strict compliance with the requirements of the contract, plans, and specifications during the Contractor's execution of the work, when, in the Engineer's opinion, such compliance is essential to provide an acceptable finished portion of the work.

For the purpose of this subsection, the term "reasonably close conformity" is also intended to provide the Engineer with the authority, after consultation with the FAA, to use sound engineering judgment in his or her determinations as to acceptance of work that is not in strict conformity, but will provide a finished product equal to or better than that intended by the requirements of the contract, plans and specifications.

The Engineer will not be responsible for the Contractor's means, methods, techniques, sequences, or procedures of construction or the safety precautions incident thereto.

50-03 Coordination of contract, plans, and specifications. The contract, plans, specifications, and all referenced standards cited are essential parts of the contract requirements. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy, calculated dimensions will govern over scaled dimensions; contract technical specifications shall govern over contract general provisions, plans, cited standards for materials or testing, and cited advisory circulars (ACs); contract general provisions shall govern over plans, cited standards for materials or testing, and cited ACs; plans shall govern over cited standards for materials or testing and cited ACs. If any paragraphs contained in the Special Provisions conflict with General Provisions or Technical Specifications, the Special Provisions shall govern.

From time to time, discrepancies within cited testing standards occur due to the timing of the change, edits, and/or replacement of the standards. If the Contractor discovers any apparent discrepancy within standard test methods, the Contractor shall immediately ask the Engineer for an interpretation and decision, and such decision shall be final.

50-04 Cooperation of Contractor. The Contractor will be supplied with one (1) copy each of the plans and specifications. The Contractor shall have available on the work at all times one copy each of the plans and specifications. Additional copies of plans and specifications may be obtained by the Contractor for the cost of reproduction.

The Contractor shall give constant attention to the work to facilitate the progress thereof, and shall cooperate with the Engineer and his or her inspectors and with other contractors in every way possible. The Contractor shall have a competent superintendent on the work at all times who is fully authorized as his or her agent on the work. The superintendent shall be capable of reading and thoroughly understanding the plans and specifications and shall receive and fulfill instructions from the Engineer or his or her authorized representative.

50-05 Cooperation between contractors. The Owner reserves the right to contract for and perform other or additional work on or near the work covered by this contract.

When separate contracts are let within the limits of any one project, each Contractor shall conduct the work so as not to interfere with or hinder the progress of completion of the work being performed by other Contractors. Contractors working on the same project shall cooperate with each other as directed.

Each Contractor involved shall assume all liability, financial or otherwise, in connection with his or her contract and shall protect and save harmless the Owner from any and all damages or claims that may arise because of inconvenience, delays, or loss experienced because of the presence and operations of other Contractors working within the limits of the same project.

The Contractor shall arrange his or her work and shall place and dispose of the materials being used so as not to interfere with the operations of the other Contractors within the limits of the same project. The Contractor shall join his or her work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

50-06 Construction layout and stakes. The Engineer shall establish horizontal and vertical control only. The Contractor must establish all layout required for the construction of the work. Such stakes and markings as the Engineer may set for either their own or the Contractor's guidance shall be preserved by the Contractor. In case of negligence on the part of the Contractor, or their employees, resulting in the destruction of such stakes or markings, an amount equal to the cost of replacing the same may be deducted from subsequent estimates due the Contractor at the discretion of the Engineer.

The Contractor will be required to furnish all lines, grades and measurements from the control points necessary for the proper execution and control of the work contracted for under these specifications.

T**50-07 Automatically controlled equipment**. Whenever batching or mixing plant equipment is required to be operated automatically under the contract and a breakdown or malfunction of the automatic controls occurs, the equipment may be operated manually or by other methods for a period 48 hours following the breakdown or malfunction, provided this method of operations will produce results which conform to all other requirements of the contract.

50-08 Authority and duties of inspectors. Inspectors shall be authorized to inspect all work done and all material furnished. Such inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. Inspectors are not authorized to revoke, alter, or waive any provision of the contract. Inspectors are not authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor.

Inspectors are authorized to notify the Contractor or his or her representatives of any failure of the work or materials to conform to the requirements of the contract, plans, or specifications and to reject such nonconforming materials in question until such issues can be referred to the Engineer for a decision.

50-09 Inspection of the work. All materials and each part or detail of the work shall be subject to inspection. The Engineer shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

If the Engineer requests it, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the specifications. Should the work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.

Any work done or materials used without supervision or inspection by an authorized representative of the Owner may be ordered removed and replaced at the Contractor's expense unless the Owner's representative failed to inspect after having been given reasonable notice in writing that the work was to be performed.

Should the contract work include relocation, adjustment, or any other modification to existing facilities, not the property of the (contract) Owner, authorized representatives of the Owners of such facilities shall have the right to inspect such work. Such inspection shall in no sense make any facility owner a party to the contract and shall in no way interfere with the rights of the parties to this contract.

50-10 Removal of unacceptable and unauthorized work. All work that does not conform to the requirements of the contract, plans, and specifications will be considered unacceptable, unless otherwise

determined acceptable by the Engineer as provided in the subsection 50-02 titled CONFORMITY WITH PLANS AND SPECIFICATIONS of this section.

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work, shall be removed immediately and replaced in an acceptable manner in accordance with the provisions of the subsection 70-14 titled CONTRACTOR'S RESPONSIBILITY FOR WORK of Section 70.

No removal work made under provision of this subsection shall be done without lines and grades having been established by the Engineer. Work done contrary to the instructions of the Engineer, work done beyond the lines shown on the plans or as established by the Engineer, except as herein specified, or any extra work done without authority, will be considered as unauthorized and will not be paid for under the provisions of the contract. Work so done may be ordered removed or replaced at the Contractor's expense.

Upon failure on the part of the Contractor to comply with any order of the Engineer made under the provisions of this subsection, the Engineer will have authority to cause unacceptable work to be remedied or removed and replaced and unauthorized work to be removed and to deduct the costs incurred by the Owner from any monies due or to become due the Contractor.

50-11 Load restrictions. The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the work. A special permit will not relieve the Contractor of liability for damage that may result from the moving of material or equipment.

The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor shall be responsible for all damage done by his or her hauling equipment and shall correct such damage at his or her own expense.

If the on-site access roads and haul routes ability to support the construction equipment is questionable, the Contractor should take appropriate provisions to preserve or rehabilitation any access roads or haul routes. Various measures such as videotape or photographs may be required to document existing conditions prior to the start of construction. Construction traffic should be kept off airport pavements to the extent possible.

50-12 Maintenance during construction. The Contractor shall maintain the work during construction and until the work is accepted. Maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the work is maintained in satisfactory condition at all times.

In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations.

All costs of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various contract items, and the Contractor will not be paid an additional amount for such work.

50-13 Failure to maintain the work. Should the Contractor at any time fail to maintain the work as provided in the subsection 50-12 titled MAINTENANCE DURING CONSTRUCTION of this section, the Engineer shall immediately notify the Contractor of such noncompliance. Such notification shall specify a reasonable time within which the Contractor shall be required to remedy such unsatisfactory maintenance condition. The time specified will give due consideration to the exigency that exists.

Should the Contractor fail to respond to the Engineer's notification, the Owner may suspend any work necessary for the Owner to correct such unsatisfactory maintenance condition, depending on the exigency that exists. Any maintenance cost incurred by the Owner, shall be deducted from monies due or to become due the Contractor.

50-14 Partial acceptance. If at any time during the execution of the project the Contractor substantially completes a usable unit or portion of the work, the occupancy of which will benefit the Owner, the Contractor may request the Engineer to make final inspection of that unit. If the Engineer finds upon inspection that the unit has been satisfactorily completed in compliance with the contract, the Engineer may accept it as being complete, and the Contractor may be relieved of further responsibility for that unit. Such partial acceptance and beneficial occupancy by the Owner shall not void or alter any provision of the contract.

50-15 Final acceptance. Upon due notice from the Contractor of presumptive completion of the entire project, the Engineer and Owner will make an inspection. If all construction provided for and contemplated by the contract is found to be complete in accordance with the contract, plans, and specifications, such inspection shall constitute the final inspection. The Engineer shall notify the Contractor in writing of final acceptance as of the date of the final inspection.

If, however, the inspection discloses any work, in whole or in part, as being unsatisfactory, the Engineer will give the Contractor the necessary instructions for correction of same and the Contractor shall immediately comply with and execute such instructions. Upon correction of the work, another inspection will be made which shall constitute the final inspection, provided the work has been satisfactorily completed. In such event, the Engineer will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

50-16 Claims for adjustment and disputes. If for any reason the Contractor deems that additional compensation is due for work or materials not clearly provided for in the contract, plans, or specifications or previously authorized as extra work, the Contractor shall notify the Engineer in writing of his or her intention to claim such additional compensation before the Contractor begins the work on which the Contractor bases the claim. If such notification is not given or the Engineer is not afforded proper opportunity by the Contractor for keeping strict account of actual cost as required, then the Contractor hereby agrees to waive any claim for such additional compensation. Such notice by the Contractor and the fact that the Engineer has kept account of the cost of the work shall not in any way be construed as proving or substantiating the validity of the claim. When the work on which the claim for additional compensation is based has been completed, the Contractor shall, within 10 calendar days, submit a written claim to the Engineer who will present it to the Owner for consideration in accordance with local laws or ordinances.

Nothing in this subsection shall be construed as a waiver of the Contractor's right to dispute final payment based on differences in measurements or computations.

END OF SECTION 50

Section 60 Control of Materials

60-01 Source of supply and quality requirements. The materials used in the work shall conform to the requirements of the contract, plans, and specifications. Unless otherwise specified, such materials that are manufactured or processed shall be new (as compared to used or reprocessed).

In order to expedite the inspection and testing of materials, the Contractor shall furnish complete statements to the Engineer as to the origin, composition, and manufacture of all materials to be used in the work. Such

statements shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.

At the Engineer's option, materials may be approved at the source of supply before delivery is stated. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other sources.

60-02 Samples, tests, and cited specifications. Unless otherwise designated, all materials used in the work shall be inspected, tested, and approved by the Engineer before incorporation in the work. Any work in which untested materials are used without approval or written permission of the Engineer shall be performed at the Contractor's risk. Materials found to be unacceptable and unauthorized will not be paid for and, if directed by the Engineer, shall be removed at the Contractor's expense.

Unless otherwise designated, quality assurance tests in accordance with the cited standard methods of ASTM, American Association of State Highway and Transportation Officials (AASHTO), Federal Specifications, Commercial Item Descriptions, and all other cited methods, which are current on the date of advertisement for bids, will be made by and at the expense of the Engineer.

The testing organizations performing on-site quality assurance field tests shall have copies of all referenced standards on the construction site for use by all technicians and other personnel, including the Contractor's representative at his or her request. Unless otherwise designated, samples for quality assurance will be taken by a qualified representative of the Engineer. All materials being used are subject to inspection, test, or rejection at any time prior to or during incorporation into the work. Copies of all tests will be furnished to the Contractor's representative at their request after review and approval of the Engineer.

The Contractor shall employ a testing organization to perform all Contractor required Quality Control tests. The Contractor shall submit to the Engineer resumes on all testing organizations and individual persons who will be performing the tests. The Engineer will determine if such persons are qualified. All the test data shall be reported to the Engineer after the results are known. A legible, handwritten copy of all test data shall be given to the Engineer daily, along with printed reports, in an approved format, on a weekly basis. After completion of the project, and prior to final payment, the Contractor shall submit a final report to the Engineer showing all test data reports, plus an analysis of all results showing ranges, averages, and corrective action taken on all failing tests.

60-03 Certification of compliance. The Engineer may permit the use, prior to sampling and testing, of certain materials or assemblies when accompanied by manufacturer's certificates of compliance stating that such materials or assemblies fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer. Each lot of such materials or assemblies delivered to the work must be accompanied by a certificate of compliance in which the lot is clearly identified.

Materials or assemblies used on the basis of certificates of compliance may be sampled and tested at any time and if found not to be in conformity with contract requirements will be subject to rejection whether in place or not.

The form and distribution of certificates of compliance shall be as approved by the Engineer.

When a material or assembly is specified by "brand name or equal" and the Contractor elects to furnish the specified "brand name," the Contractor shall be required to furnish the manufacturer's certificate of compliance for each lot of such material or assembly delivered to the work. Such certificate of compliance shall clearly identify each lot delivered and shall certify as to:

a. Conformance to the specified performance, testing, quality or dimensional requirements; and,

b. Suitability of the material or assembly for the use intended in the contract work.

Should the Contractor propose to furnish an "or equal" material or assembly, the Contractor shall furnish the manufacturer's certificates of compliance as hereinbefore described for the specified brand name

material or assembly. However, the Engineer shall be the sole judge as to whether the proposed "or equal" is suitable for use in the work.

The Engineer reserves the right to refuse permission for use of materials or assemblies on the basis of certificates of compliance.

60-04 Plant inspection. The Engineer or his or her authorized representative may inspect, at its source, any specified material or assembly to be used in the work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the work and to obtain samples required for acceptance of the material or assembly.

Should the Engineer conduct plant inspections, the following conditions shall exist:

a. The Engineer shall have the cooperation and assistance of the Contractor and the producer with whom the Engineer has contracted for materials.

b. The Engineer shall have full entry at all reasonable times to such parts of the plant that concern the manufacture or production of the materials being furnished.

c. If required by the Engineer, the Contractor shall arrange for adequate office or working space that may be reasonably needed for conducting plant inspections. Office or working space should be conveniently located with respect to the plant.

It is understood and agreed that the Owner shall have the right to retest any material that has been tested and approved at the source of supply after it has been delivered to the site. The Engineer shall have the right to reject only material which, when retested, does not meet the requirements of the contract, plans, or specifications.

60-05 Engineer's field office. The Contractor shall furnish for the duration of the project one building for the use of the field Engineers and inspectors, as a field office. This facility shall be an approved weatherproof building meeting the current State Highway Specifications (for example, Class I Field Office or Type C Structure). This building shall be located conveniently near to the construction and shall be separate from any building used by the Contractor. The Contractor shall furnish facsimile (FAX) machine, photocopy machine, water, sanitary facilities, heat, air conditioning, and electricity. The Contractor and the Contractor's superintendent shall provide all reasonable facilities to enable to the Engineer to inspect the workmanship and materials used into the work.

60-06 Storage of materials. Materials shall be so stored as to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located to facilitate their prompt inspection. The Contractor shall coordinate the storage of all materials with the Engineer. Materials to be stored on airport property shall not create an obstruction to air navigation nor shall they interfere with the free and unobstructed movement of aircraft. Unless otherwise shown on the plans, the storage of materials and the location of the Contractor's plant and parked equipment or vehicles shall be as directed by the Engineer. Private property shall not be used for storage purposes without written permission of the Owner or lessee of such property. The Contractor shall make all arrangements and bear all expenses for the storage of materials on private property. Upon request, the Contractor shall furnish the Engineer a copy of the property Owner's permission.

All storage sites on private or airport property shall be restored to their original condition by the Contractor at his or her entire expense, except as otherwise agreed to (in writing) by the Owner or lessee of the property.

60-07 Unacceptable materials. Any material or assembly that does not conform to the requirements of the contract, plans, or specifications shall be considered unacceptable and shall be rejected. The Contractor shall remove any rejected material or assembly from the site of the work, unless otherwise instructed by the Engineer.

Rejected material or assembly, the defects of which have been corrected by the Contractor, shall not be returned to the site of the work until such time as the Engineer has approved its use in the work.

60-08 Owner furnished materials. The Contractor shall furnish all materials required to complete the work, except those specified, if any, to be furnished by the Owner. Owner-furnished materials shall be made available to the Contractor at the location specified.

All costs of handling, transportation from the specified location to the site of work, storage, and installing Owner-furnished materials shall be included in the unit price bid for the contract item in which such Owner-furnished material is used.

After any Owner-furnished material has been delivered to the location specified, the Contractor shall be responsible for any demurrage, damage, loss, or other deficiencies that may occur during the Contractor's handling, storage, or use of such Owner-furnished material. The Owner will deduct from any monies due or to become due the Contractor any cost incurred by the Owner in making good such loss due to the Contractor's handling, storage, or use of Owner-furnished materials.

END OF SECTION 60

Section 70 Legal Regulations and Responsibility to Public

70-01 Laws to be observed. The Contractor shall keep fully informed of all Federal and state laws, all local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. The Contractor shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall protect and indemnify the Owner and all his or her officers, agents, or servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by the Contractor or the Contractor's employees.

70-02 Permits, licenses, and taxes. The Contractor shall procure all permits and licenses, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful execution of the work.

70-03 Patented devices, materials, and processes. If the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, the Contractor shall provide for such use by suitable legal agreement with the Patentee or Owner. The Contractor and the surety shall indemnify and hold harmless the Owner, any third party, or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright, and shall indemnify the Owner for any costs, expenses, and damages which it may be obliged to pay by reason of an infringement, at any time during the execution or after the completion of the work.

70-04 Restoration of surfaces disturbed by others. The Owner reserves the right to authorize the construction, reconstruction, or maintenance of any public or private utility service, FAA or National Oceanic and Atmospheric Administration (NOAA) facility, or a utility service of another government agency at any time during the progress of the work. To the extent that such construction, reconstruction, or maintenance has been coordinated with the Owner, such authorized work (by others) is indicated on the construction plans.

Except as listed above, the Contractor shall not permit any individual, firm, or corporation to excavate or otherwise disturb such utility services or facilities located within the limits of the work without the written permission of the Engineer.

Should the Owner of public or private utility service, FAA, or NOAA facility, or a utility service of another government agency be authorized to construct, reconstruct, or maintain such utility service or facility during the progress of the work, the Contractor shall cooperate with such Owners by arranging and performing the work in this contract to facilitate such construction, reconstruction or maintenance by others whether or not such work by others is listed above. When ordered as extra work by the Engineer, the Contractor shall make all necessary repairs to the work which are due to such authorized work by others, unless otherwise provided for in the contract, plans, or specifications. It is understood and agreed that the Contractor shall not be entitled to make any claim for damages due to such authorized work by others or for any delay to the work resulting from such authorized work.

70-05 Federal aid participation. For Airport Improvement Program (AIP) contracts, the United States Government has agreed to reimburse the Owner for some portion of the contract costs. Such reimbursement is made from time to time upon the Owner's request to the FAA. In consideration of the United States Government's (FAA's) agreement with the Owner, the Owner has included provisions in this contract pursuant to the requirements of Title 49 of the USC and the Rules and Regulations of the FAA that pertain to the work.

As required by the USC, the contract work is subject to the inspection and approval of duly authorized representatives of the FAA Administrator, and is further subject to those provisions of the rules and regulations that are cited in the contract, plans, or specifications.

No requirement of the USC, the rules and regulations implementing the USC, or this contract shall be construed as making the Federal Government a party to the contract nor will any such requirement interfere, in any way, with the rights of either party to the contract.

70-06 Sanitary, health, and safety provisions. The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of his or her employees as may be necessary to comply with the requirements of the state and local Board of Health, or of other bodies or tribunals having jurisdiction.

Attention is directed to Federal, state, and local laws, rules and regulations concerning construction safety and health standards. The Contractor shall not require any worker to work in surroundings or under conditions that are unsanitary, hazardous, or dangerous to his or her health or safety.

70-07 Public convenience and safety. The Contractor shall control his or her operations and those of his or her subcontractors and all suppliers, to assure the least inconvenience to the traveling public. Under all circumstances, safety shall be the most important consideration.

The Contractor shall maintain the free and unobstructed movement of aircraft and vehicular traffic with respect to his or her own operations and those of his or her subcontractors and all suppliers in accordance with the subsection 40-05 titled MAINTENANCE OF TRAFFIC of Section 40 hereinbefore specified and shall limit such operations for the convenience and safety of the traveling public as specified in the subsection 80-04 titled LIMITATION OF OPERATIONS of Section 80 hereinafter.

70-08 Barricades, warning signs, and hazard markings. The Contractor shall furnish, erect, and maintain all barricades, warning signs, and markings for hazards necessary to protect the public and the work. When used during periods of darkness, such barricades, warning signs, and hazard markings shall be suitably illuminated. Unless otherwise specified, barricades, warning signs, and markings for hazards that are in the air operations area (AOAs) shall be a maximum of 18 inches (0.5 m) high. Unless otherwise specified, barricades shall be spaced not more than 4 feet (1.2 m) apart. Barricades, warning signs, and markings shall be paid for under subsection 40-05.

For vehicular and pedestrian traffic, the Contractor shall furnish, erect, and maintain barricades, warning signs, lights and other traffic control devices in reasonable conformity with the Manual on Uniform Traffic Control Devices.

When the work requires closing an air operations area of the airport or portion of such area, the Contractor shall furnish, erect, and maintain temporary markings and associated lighting conforming to the requirements of advisory circular (AC) 150/5340-1, Standards for Airport Markings.

The Contractor shall furnish, erect, and maintain markings and associated lighting of open trenches, excavations, temporary stock piles, and the Contractor's parked construction equipment that may be hazardous to the operation of emergency fire-rescue or maintenance vehicles on the airport in reasonable conformance to AC 150/5370-2, Operational Safety on Airports During Construction.

The Contractor shall identify each motorized vehicle or piece of construction equipment in reasonable conformance to AC 150/5370-2.

The Contractor shall furnish and erect all barricades, warning signs, and markings for hazards prior to commencing work that requires such erection and shall maintain the barricades, warning signs, and markings for hazards until their removal is directed by the Engineer.

Open-flame type lights shall not be permitted.

70-09 Use of explosives. When the use of explosives is necessary for the execution of the work, the Contractor shall exercise the utmost care not to endanger life or property, including new work. The Contractor shall be responsible for all damage resulting from the use of explosives.

All explosives shall be stored in a secure manner in compliance with all laws and ordinances, and all such storage places shall be clearly marked. Where no local laws or ordinances apply, storage shall be provided satisfactory to the Engineer and, in general, not closer than 1,000 feet (300 m) from the work or from any building, road, or other place of human occupancy.

The Contractor shall notify each property Owner and public utility company having structures or facilities in proximity to the site of the work of his or her intention to use explosives. Such notice shall be given sufficiently in advance to enable them to take such steps as they may deem necessary to protect their property from injury.

The use of electrical blasting caps shall not be permitted on or within 1,000 feet (300 m) of the airport property.

70-10 Protection and restoration of property and landscape. The Contractor shall be responsible for the preservation of all public and private property, and shall protect carefully from disturbance or damage all land monuments and property markers until the Engineer has witnessed or otherwise referenced their location and shall not move them until directed.

The Contractor shall be responsible for all damage or injury to property of any character, during the execution of the work, resulting from any act, omission, neglect, or misconduct in manner or method of executing the work, or at any time due to defective work or materials, and said responsibility shall not be released until the project has been completed and accepted.

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof by the Contractor, the Contractor shall restore, at his or her own expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, or otherwise restoring as may be directed, or the Contractor shall make good such damage or injury in an acceptable manner.

70-11 Responsibility for damage claims. The Contractor shall indemnify and save harmless the Engineer and the Owner and their officers, and employees from all suits, actions, or claims, of any character, brought because of any injuries or damage received or sustained by any person, persons, or property on account of the operations of the Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act," or any other law, ordinance, order, or decree. Money due the Contractor under and by virtue of his or her contract considered necessary by the Owner for such purpose may be retained for the use of the Owner or, in case no money is due, his or her surety may be held until such suits, actions, or claims for injuries or damages shall have been settled and suitable evidence to that effect furnished to the Owner, except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that he or she is adequately protected by public liability and property damage insurance.

70-12 Third party beneficiary clause. It is specifically agreed between the parties executing the contract that it is not intended by any of the provisions of any part of the contract to create for the public or any member thereof, a third party beneficiary or to authorize anyone not a party to the contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of the contract.

70-13 Opening sections of the work to traffic. Should it be necessary for the Contractor to complete portions of the contract work for the beneficial occupancy of the Owner prior to completion of the entire contract, such "phasing" of the work shall be specified herein and indicated on the plans. When so specified, the Contractor shall complete such portions of the work on or before the date specified or as otherwise specified. The Contractor shall make his or her own estimate of the difficulties involved in arranging the work to permit such beneficial occupancy by the Owner **as described in the construction plans, Construction Safety Phase Plan sheets.**

Upon completion of any portion of the work listed above, such portion shall be accepted by the Owner in accordance with the subsection 50-14 titled PARTIAL ACCEPTANCE of Section 50.

No portion of the work may be opened by the Contractor for public use until ordered by the Engineer in writing. Should it become necessary to open a portion of the work to public traffic on a temporary or intermittent basis, such openings shall be made when, in the opinion of the Engineer, such portion of the work is in an acceptable condition to support the intended traffic. Temporary or intermittent openings are considered to be inherent in the work and shall not constitute either acceptance of the portion of the work so opened or a waiver of any provision of the contract. Any damage to the portion of the work so opened that is not attributable to traffic which is permitted by the Owner shall be repaired by the Contractor at his or her expense.

The Contractor shall make his or her own estimate of the inherent difficulties involved in completing the work under the conditions herein described and shall not claim any added compensation by reason of delay or increased cost due to opening a portion of the contract work.

Contractor shall be required to conform to safety standards contained AC 150/5370-2 (see Special Provisions).

Contractor shall refer to the approved Construction Safety Phasing Plan (CSPP) to identify barricade requirements and other safety requirements prior to opening up sections of work to traffic.

70-14 Contractor's responsibility for work. Until the Engineer's final written acceptance of the entire completed work, excepting only those portions of the work accepted in accordance with the subsection 50-14 titled PARTIAL ACCEPTANCE of Section 50, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part due to the action of the elements or

from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except damage to the work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God such as earthquake, tidal wave, tornado, hurricane or other cataclysmic phenomenon of nature, or acts of the public enemy or of government authorities.

If the work is suspended for any cause whatever, the Contractor shall be responsible for the work and shall take such precautions necessary to prevent damage to the work. The Contractor shall provide for normal drainage and shall erect necessary temporary structures, signs, or other facilities at his or her expense. During such period of suspension of work, the Contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established planting, seeding, and sodding furnished under the contract, and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.

70-15 Contractor's responsibility for utility service and facilities of others. As provided in the subsection 70-04 titled RESTORATION OF SURFACES DISTURBED BY OTHERS of this section, the Contractor shall cooperate with the Owner of any public or private utility service, FAA or NOAA, or a utility service of another government agency that may be authorized by the Owner to construct, reconstruct or maintain such utility services or facilities during the progress of the work. In addition, the Contractor shall control their operations to prevent the unscheduled interruption of such utility services and facilities.

To the extent that such public or private utility services, FAA, or NOAA facilities, or utility services of another governmental agency are known to exist within the limits of the contract work, the approximate locations have been indicated on the plans and the Owners are indicated as follows:

Refer to the construction plans.

It is understood and agreed that the Owner does not guarantee the accuracy or the completeness of the location information relating to existing utility services, facilities, or structures that may be shown on the plans or encountered in the work. Any inaccuracy or omission in such information shall not relieve the Contractor of the responsibility to protect such existing features from damage or unscheduled interruption of service.

It is further understood and agreed that the Contractor shall, upon execution of the contract, notify the Owners of all utility services or other facilities of his or her plan of operations. Such notification shall be in writing addressed to THE PERSON TO CONTACT as provided in this subsection and subsection 70-04 titled RESTORATION OF SURFACES DISTURBED BY OTHERS of this section. A copy of each notification shall be given to the Engineer.

In addition to the general written notification provided, it shall be the responsibility of the Contractor to keep such individual Owners advised of changes in their plan of operations that would affect such Owners.

Prior to beginning the work in the general vicinity of an existing utility service or facility, the Contractor shall again notify each such Owner of their plan of operation. If, in the Contractor's opinion, the Owner's assistance is needed to locate the utility service or facility or the presence of a representative of the Owner is desirable to observe the work, such advice should be included in the notification. Such notification shall be given by the most expeditious means to reach the utility owner's PERSON TO CONTACT no later than two normal business days prior to the Contractor's commencement of operations in such general vicinity. The Contractor shall furnish a written summary of the notification to the Engineer.

The Contractor's failure to give the two days' notice shall be cause for the Owner to suspend the Contractor's operations in the general vicinity of a utility service or facility.

Where the outside limits of an underground utility service have been located and staked on the ground, the Contractor shall be required to use hand excavation methods within 3 feet (1 m) of such outside limits at such points as may be required to ensure protection from damage due to the Contractor's operations.

Should the Contractor damage or interrupt the operation of a utility service or facility by accident or otherwise, the Contractor shall immediately notify the proper authority and the Engineer and shall take all reasonable measures to prevent further damage or interruption of service. The Contractor, in such events, shall cooperate with the utility service or facility owner and the Engineer continuously until such damage has been repaired and service restored to the satisfaction of the utility or facility owner.

The Contractor shall bear all costs of damage and restoration of service to any utility service or facility due to their operations whether due to negligence or accident. The Owner reserves the right to deduct such costs from any monies due or which may become due the Contractor, or his or her surety.

70-16 Furnishing rights-of-way. The Owner will be responsible for furnishing all rights-of-way upon which the work is to be constructed in advance of the Contractor's operations.

70-17 Personal liability of public officials. In carrying out any of the contract provisions or in exercising any power or authority granted by this contract, there shall be no liability upon the Engineer, his or her authorized representatives, or any officials of the Owner either personally or as an official of the Owner. It is understood that in such matters they act solely as agents and representatives of the Owner.

70-18 No waiver of legal rights. Upon completion of the work, the Owner will expeditiously make final inspection and notify the Contractor of final acceptance. Such final acceptance, however, shall not preclude or stop the Owner from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the Owner be precluded or stopped from recovering from the Contractor or his or her surety, or both, such overpayment as may be sustained, or by failure on the part of the Contractor to fulfill his or her obligations under the contract. A waiver on the part of the Owner of any breach of any part of the contract shall not be held to be a waiver of any other or subsequent breach.

The Contractor, without prejudice to the terms of the contract, shall be liable to the Owner for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the Owner's rights under any warranty or guaranty.

70-19 Environmental protection. The Contractor shall comply with all Federal, state, and local laws and regulations controlling pollution of the environment. The Contractor shall take necessary precautions to prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, bitumens, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

70-20 Archaeological and historical findings. Unless otherwise specified in this subsection, the Contractor is advised that the site of the work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior.

Should the Contractor encounter, during his or her operations, any building, part of a building, structure, or object that is incongruous with its surroundings, the Contractor shall immediately cease operations in that location and notify the Engineer. The Engineer will immediately investigate the Contractor's finding and the Owner will direct the Contractor to either resume operations or to suspend operations as directed.

Should the Owner order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such shall be covered by an appropriate contract change order or supplemental agreement as provided in the subsection 40-04 titled EXTRA WORK of Section 40 and the subsection 90-05 titled PAYMENT FOR EXTRA WORK of Section 90. If appropriate, the contract change order or supplemental agreement shall include an extension of contract

time in accordance with the subsection 80-07 titled DETERMINATION AND EXTENSION OF CONTRACT TIME of Section 80.

END OF SECTION 70

Section 80 Execution and Progress

80-01 Subletting of contract. The Owner will not recognize any subcontractor on the work. The Contractor shall at all times when work is in progress be represented either in person, by a qualified superintendent, or by other designated, qualified representative who is duly authorized to receive and execute orders of the Engineer.

The Contractor shall provide copies of all subcontracts to the Engineer. The Contractor shall perform, with his organization, an amount of work equal to at least 25-percent of the total contract cost.

Should the Contractor elect to assign his or her contract, said assignment shall be concurred in by the surety, shall be presented for the consideration and approval of the Owner, and shall be consummated only on the written approval of the Owner.

80-02 Notice to proceed. The notice to proceed shall state the date on which it is expected the Contractor will begin the construction and from which date contract time will be charged. The Contractor shall begin the work to be performed under the contract within 10 days of the date set by the Engineer in the written notice to proceed, but in any event, the Contractor shall notify the Engineer at least 24 hours in advance of the time actual construction operations will begin. The Contractor shall not commence any actual construction prior to the date on which the notice to proceed is issued by the Owner.

80-03 Execution and progress. Unless otherwise specified, the Contractor shall submit their progress schedule for the Engineer's approval within 10 days after the effective date of the notice to proceed. The Contractor's progress schedule, when approved by the Engineer, may be used to establish major construction operations and to check on the progress of the work. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the project in accordance with the plans and specifications within the time set forth in the proposal.

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the Engineer's request, submit a revised schedule for completion of the work within the contract time and modify their operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the execution of the work be discontinued for any reason, the Contractor shall notify the Engineer at least 24 hours in advance of resuming operations.

The Contractor shall not commence any actual construction prior to the date on which the notice to proceed is issued by the Owner.

80-04 Limitation of operations. The Contractor shall control his or her operations and the operations of his or her subcontractors and all suppliers to provide for the free and unobstructed movement of aircraft in the air operations areas (AOA) of the airport.

When the work requires the Contractor to conduct his or her operations within an AOA of the airport, the work shall be coordinated with airport operations (through the Engineer) at least 48 hours prior to commencement of such work. The Contractor shall not close an AOA until so authorized by the Engineer and until the necessary temporary marking and associated lighting is in place as provided in the subsection 70-08 titled BARRICADES, WARNING SIGNS, AND HAZARD MARKINGS of Section 70.

When the contract work requires the Contractor to work within an AOA of the airport on an intermittent basis (intermittent opening and closing of the AOA), the Contractor shall maintain constant

communications as specified; immediately obey all instructions to vacate the AOA; immediately obey all instructions to resume work in such AOA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the AOA until the satisfactory conditions are provided. The following AOA cannot be closed to operating aircraft to permit the Contractor's operations on a continuous basis and will therefore be closed to aircraft operations intermittently as follows:

Refer to the Construction Safety Phasing Plan (CSPP) sheets of the construction plans.

As shown in the construction plans, these AOA are not anticipated to be impacted by construction operations and shall not be closed or used by construction equipment and vehicles.

Contractor shall be required to conform to safety standards contained in AC 150/5370-2, Operational Safety on Airports During Construction (see Special Provisions).

80-04.1 Operational safety on airport during construction. All Contractors' operations shall be conducted in accordance with the project Construction Safety and Phasing Plan (CSPP) and the provisions set forth within the current version of AC 150/5370-2. The CSPP included within the contract documents conveys minimum requirements for operational safety on the airport during construction activities. The Contractor shall prepare and submit a Safety Plan Compliance Document that details how it proposes to comply with the requirements presented within the CSPP.

The Contractor shall implement all necessary safety plan measures prior to commencement of any work activity. The Contractor shall conduct routine checks to assure compliance with the safety plan measures.

The Contractor is responsible to the Owner for the conduct of all subcontractors it employs on the project. The Contractor shall assure that all subcontractors are made aware of the requirements of the CSPP and that they implement and maintain all necessary measures.

No deviation or modifications may be made to the approved CSPP unless approved in writing by the Owner or Engineer.

80-05 Character of workers, methods, and equipment. The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the work to full completion in the manner and time required by the contract, plans, and specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.

Any person employed by the Contractor or by any subcontractor who violates any operational regulations or operational safety requirements and, in the opinion of the Engineer, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the Engineer, be removed forthwith by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without approval of the Engineer.

Should the Contractor fail to remove such persons or person, or fail to furnish suitable and sufficient personnel for the proper execution of the work, the Engineer may suspend the work by written notice until compliance with such orders.

All equipment that is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the work shall be such that no injury to previously completed work, adjacent property, or existing airport facilities will result from its use.

When the methods and equipment to be used by the Contractor in accomplishing the work are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the work in conformity with the requirements of the contract, plans, and specifications.

When the contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless others are authorized by the Engineer. If the Contractor desires to use a method or type of equipment other than specified in the contract, the Contractor may request authority from the Engineer to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the Engineer determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the Engineer may direct. No change will be made in basis of payment for the contract items involved nor in contract time as a result of authorizing a change in methods or equipment under this subsection.

80-06 Temporary suspension of the work. The Owner shall have the authority to suspend the work wholly, or in part, for such period or periods as the Owner may deem necessary, due to unsuitable weather, or such other conditions as are considered unfavorable for the execution of the work, or for such time as is necessary due to the failure on the part of the Contractor to carry out orders given or perform any or all provisions of the contract.

In the event that the Contractor is ordered by the Owner, in writing, to suspend work for some unforeseen cause not otherwise provided for in the contract and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the Engineer's order to suspend work to the effective date of the Engineer's order to resume the work. Claims for such compensation shall be filed with the Engineer within the time period stated in the Engineer's order to resume work. The Contractor shall submit with his or her claim information substantiating the amount shown on the claim. The Engineer will forward the Contractor's claim to the Owner for consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather, for suspensions made at the request of the Owner, or for any other delay provided for in the contract, plans, or specifications.

If it should become necessary to suspend work for an indefinite period, the Contractor shall store all materials in such manner that they will not become an obstruction nor become damaged in any way. The Contractor shall take every precaution to prevent damage or deterioration of the work performed and provide for normal drainage of the work. The Contractor shall erect temporary structures where necessary to provide for traffic on, to, or from the airport.

80-07 Determination and extension of contract time. The number of calendar or working days allowed for completion of the work shall be stated in the proposal and contract and shall be known as the CONTRACT TIME.

Should the contract time require extension for reasons beyond the Contractor's control, it shall be adjusted as follows:

a. CONTRACT TIME based on WORKING DAYS shall be calculated weekly by the Engineer. The Engineer will furnish the Contractor a copy of his or her weekly statement of the number of working days charged against the contract time during the week and the number of working days currently specified for completion of the contract (the original contract time plus the number of working days, if any, that have

been included in approved CHANGE ORDERS or SUPPLEMENTAL AGREEMENTS covering EXTRA WORK).

The Engineer shall base his or her weekly statement of contract time charged on the following considerations:

(1) No time shall be charged for days on which the Contractor is unable to proceed with the principal item of work under construction at the time for at least six (6) hours with the normal work force employed on such principal item. Should the normal work force be on a double-shift, 12 hours shall be used. Should the normal work force be on a triple-shift, 18 hours shall apply. Conditions beyond the Contractor's control such as strikes, lockouts, unusual delays in transportation, temporary suspension of the principal item of work under construction or temporary suspension of the entire work which have been ordered by the Owner for reasons not the fault of the Contractor, shall not be charged against the contract time.

(2) The Engineer will not make charges against the contract time prior to the effective date of the notice to proceed.

(3) The Engineer will begin charges against the contract time on the first working day after the effective date of the notice to proceed.

(4) The Engineer will not make charges against the contract time after the date of final acceptance as defined in the subsection 50-15 titled FINAL ACCEPTANCE of Section 50.

(5) The Contractor will be allowed one (1) week in which to file a written protest setting forth his or her objections to the Engineer's weekly statement. If no objection is filed within such specified time, the weekly statement shall be considered as acceptable to the Contractor.

The contract time (stated in the proposal) is based on the originally estimated quantities as described in the subsection 20-05 titled INTERPRETATION OF ESTIMATED PROPOSAL QUANTITIES of Section 20. Should the satisfactory completion of the contract require performance of work in greater quantities than those estimated in the proposal, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in contract time shall not consider either the cost of work or the extension of contract time that has been covered by change order or supplemental agreement and shall be made at the time of final payment.

b. Contract Time based on calendar days shall consist of the number of calendar days stated in the contract counting from the effective date of the notice to proceed and including all Saturdays, Sundays, holidays, and non-work days. All calendar days elapsing between the effective dates of the Owner's orders to suspend and resume all work, due to causes not the fault of the Contractor, shall be excluded.

At the time of final payment, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in the contract time shall not consider either cost of work or the extension of contract time that has been covered by a change order or supplemental agreement. Charges against the contract time will cease as of the date of final acceptance.

c. When the contract time is a specified completion date, it shall be the date on which all contract work shall be substantially complete.

If the Contractor finds it impossible for reasons beyond his or her control to complete the work within the contract time as specified, or as extended in accordance with the provisions of this subsection, the Contractor may, at any time prior to the expiration of the contract time as extended, make a written request to the Owner for an extension of time setting forth the reasons which the Contractor believes will justify the granting of his or her request. Requests for extension of time on calendar day projects, caused by inclement weather, shall be supported with National Weather Bureau data showing the actual amount of

inclement weather exceeded what could normally be expected during the contract period. The Contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the supporting documentation justify the work was delayed because of conditions beyond the control and without the fault of the Contractor, the Owner may extend the time for completion by a change order that adjusts the contract time or completion date. The extended time for completion shall then be in full force and effect, the same as though it were the original time for completion.

80-08 Failure to complete on time. For each calendar day or working day, as specified in the contract, that any work remains uncompleted after the contract time (including all extensions and adjustments as provided in the subsection 80-07 titled DETERMINATION AND EXTENSION OF CONTRACT TIME of this Section) the sum specified in the contract and proposal as liquidated damages will be deducted from any money due or to become due the Contractor or his or her surety. Such deducted sums shall not be deducted as a penalty but shall be considered as liquidation of a reasonable portion of damages including but not limited to additional engineering services that will be incurred by the Owner should the Contractor fail to complete the work in the time provided in their contract.

Allowed contract time will be 123 calendar days. Liquidated Damages will be assessed $250 per day beyond the allotted 123 calendar days.

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a wavier on the part of the Owner of any of its rights under the contract.

80-09 Default and termination of contract. The Contractor shall be considered in default of his or her contract and such default will be considered as cause for the Owner to terminate the contract for any of the following reasons if the Contractor:

a. Fails to begin the work under the contract within the time specified in the Notice to Proceed, or

b. Fails to perform the work or fails to provide sufficient workers, equipment and/or materials to assure completion of work in accordance with the terms of the contract, or

c. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or

d. Discontinues the execution of the work, or

e. Fails to resume work which has been discontinued within a reasonable time after notice to do so, or

f. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or

g. Allows any final judgment to stand against the Contractor unsatisfied for a period of 10 days, or

h. Makes an assignment for the benefit of creditors, or

i. For any other cause whatsoever, fails to carry on the work in an acceptable manner.

Should the Engineer consider the Contractor in default of the contract for any reason above, the Engineer shall immediately give written notice to the Contractor and the Contractor's surety as to the reasons for considering the Contractor in default and the Owner's intentions to terminate the contract.

If the Contractor or surety, within a period of 10 days after such notice, does not proceed in accordance therewith, then the Owner will, upon written notification from the Engineer of the facts of such delay, neglect, or default and the Contractor's failure to comply with such notice, have full power and authority without violating the contract, to take the execution of the work out of the hands of the Contractor. The Owner may appropriate or use any or all materials and equipment that have been mobilized for use in the work and are acceptable and may enter into an agreement for the completion of said contract according to

the terms and provisions thereof, or use such other methods as in the opinion of the Engineer will be required for the completion of said contract in an acceptable manner.

All costs and charges incurred by the Owner, together with the cost of completing the work under contract, will be deducted from any monies due or which may become due the Contractor. If such expense exceeds the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay to the Owner the amount of such excess.

80-10 Termination for national emergencies. The Owner shall terminate the contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction contract as a direct result of an Executive Order of the President with respect to the execution of war or in the interest of national defense.

When the contract, or any portion thereof, is terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed at the contract price or as mutually agreed for items of work partially completed or not started. No claims or loss of anticipated profits shall be considered.

Reimbursement for organization of the work, and other overhead expenses, (when not otherwise included in the contract) and moving equipment and materials to and from the job will be considered, the intent being that an equitable settlement will be made with the Contractor.

Acceptable materials, obtained or ordered by the Contractor for the work and that are not incorporated in the work shall, at the option of the Contractor, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the Engineer.

Termination of the contract or a portion thereof shall neither relieve the Contractor of his or her responsibilities for the completed work nor shall it relieve his or her surety of its obligation for and concerning any just claim arising out of the work performed.

80-11 Work area, storage area and sequence of operations. The Contractor shall obtain approval from the Engineer prior to beginning any work in all areas of the airport. No operating runway, taxiway, or air operations area (AOA) shall be crossed, entered, or obstructed while it is operational. The Contractor shall plan and coordinate his or her work in such a manner as to ensure safety and a minimum of hindrance to flight operations. All Contractor equipment and material stockpiles shall be stored a minimum of 250-feet from the centerline of an active runway. No equipment will be allowed to park within the approach area of an active runway at any time. No equipment shall be within 250-feet of an active runway at any time.

END OF SECTION 80

Section 90 Payment

90-01 Not used

90-02 Scope of payment. The Contractor shall receive and accept compensation provided for in the contract as full payment for furnishing all materials, for performing all work under the contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature of the work or the execution thereof, subject to the provisions of the subsection 70-18 titled NO WAIVER OF LEGAL RIGHTS of Section 70.

When the “basis of payment” subsection of a technical specification requires that the contract price (price bid) include compensation for certain work or material essential to the item, this same work or material will

not also be measured for payment under any other contract item which may appear elsewhere in the contract, plans, or specifications.

90-03 Compensation for altered quantities. When the accepted quantities of work vary from the quantities in the proposal, the Contractor shall accept as payment in full, so far as contract items are concerned, payment at the original contract price for the accepted quantities of work actually completed and accepted. No allowance, except as provided for in the subsection 40-02 titled ALTERATION OF WORK AND QUANTITIES of Section 40 will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly from such alterations or indirectly from his or her unbalanced allocation of overhead and profit among the contract items, or from any other cause.

90-04 Payment for omitted items. As specified in the subsection 40-03 titled OMITTED ITEMS of Section 40, the Engineer shall have the right to omit from the work (order nonperformance) any contract item, except major contract items, in the best interest of the Owner.

Should the Engineer omit or order nonperformance of a contract item or portion of such item from the work, the Contractor shall accept payment in full at the contract prices for any work actually completed and acceptable prior to the Engineer's order to omit or non-perform such contract item.

Acceptable materials ordered by the Contractor or delivered on the work prior to the date of the Engineer's order will be paid for at the actual cost to the Contractor and shall thereupon become the property of the Owner.

In addition to the reimbursement hereinbefore provided, the Contractor shall be reimbursed for all actual costs incurred for the purpose of performing the omitted contract item prior to the date of the Engineer's order. Such additional costs incurred by the Contractor must be directly related to the deleted contract item and shall be supported by certified statements by the Contractor as to the nature the amount of such costs.

90-05 Payment for extra work. Extra work, performed in accordance with the subsection 40-04 titled EXTRA WORK of Section 40, will be paid for at the contract prices or agreed prices specified in the change order or supplemental agreement authorizing the extra work.

90-06 Partial payments. Partial payments will be made to the Contractor at least once each month as the work progresses. Said payments will be based upon estimates, prepared by the Engineer, of the value of the work performed and materials complete and in place, in accordance with the contract, plans, and specifications. Such partial payments may also include the delivered actual cost of those materials stockpiled and stored in accordance with the subsection 90-07 titled PAYMENT FOR MATERIALS ON HAND of this section. No partial payment will be made when the amount due to the Contractor since the last estimate amounts to less than five hundred dollars.

RETAINAGE: The Contractor is required to pay all subcontractors for satisfactory performance of their contracts no later than 30 days after the Contractor has received a partial payment. The Owner must ensure prompt and full payment of retainage from the prime Contractor to the subcontractor within 30 days after the subcontractor's work is satisfactorily completed. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required by the Owner. When the Owner has made an incremental acceptance of a portion of a prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.

From the total of the amount determined to be payable on a partial payment, ten-percent (10%) of such total amount will be deducted and retained by the Owner (or Contractor) until the final payment is made, except as may be provided (at the Contractor's option) in the subsection 90-08 titled PAYMENT OF WITHHELD FUNDS of this section. The balance of the amount payable, less all previous payments, shall be certified for payment. Should the Contractor exercise his or her option,

as provided in the subsection 90-08 titled PAYMENT OF WITHHELD FUNDS of this section, no such percent retainage shall be deducted.

When at least 95% of the work has been completed, the Engineer shall, at the Owner's discretion and with the consent of the surety, prepare estimates of both the contract value and the cost of the remaining work to be done.

The Owner may retain an amount not less than twice the contract value or estimated cost, whichever is greater, of the work remaining to be done. The remainder, less all previous payments and deductions, will then be certified for payment to the Contractor.

It is understood and agreed that the Contractor shall not be entitled to demand or receive partial payment based on quantities of work in excess of those provided in the proposal or covered by approved change orders or supplemental agreements, except when such excess quantities have been determined by the Engineer to be a part of the final quantity for the item of work in question.

No partial payment shall bind the Owner to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in the subsection 90-09 titled ACCEPTANCE AND FINAL PAYMENT of this section.

The Contractor shall deliver to the Owner a complete release of all claims for labor and material arising out of this contract before the final payment is made. If any subcontractor or supplier fails to furnish such a release in full, the Contractor may furnish a bond or other collateral satisfactory to the Owner to indemnify the Owner against any potential lien or other such claim. The bond or collateral shall include all costs, expenses, and attorney fees the Owner may be compelled to pay in discharging any such lien or claim.

90-07 Payment for materials on hand. Partial payments may be made to the extent of the delivered cost of materials to be incorporated in the work, provided that such materials meet the requirements of the contract, plans, and specifications and are delivered to acceptable sites on the airport property or at other sites in the vicinity that are acceptable to the Owner. Such delivered costs of stored or stockpiled materials may be included in the next partial payment after the following conditions are met:

a. The material has been stored or stockpiled in a manner acceptable to the Engineer at or on an approved site.

b. The Contractor has furnished the Engineer with acceptable evidence of the quantity and quality of such stored or stockpiled materials.

c. The Contractor has furnished the Engineer with satisfactory evidence that the material and transportation costs have been paid.

d. The Contractor has furnished the Owner legal title (free of liens or encumbrances of any kind) to the material so stored or stockpiled.

e. The Contractor has furnished the Owner evidence that the material so stored or stockpiled is insured against loss by damage to or disappearance of such materials at any time prior to use in the work.

It is understood and agreed that the transfer of title and the Owner's payment for such stored or stockpiled materials shall in no way relieve the Contractor of his or her responsibility for furnishing and placing such materials in accordance with the requirements of the contract, plans, and specifications.

In no case will the amount of partial payments for materials on hand exceed the contract price for such materials or the contract price for the contract item in which the material is intended to be used.

No partial payment will be made for stored or stockpiled living or perishable plant materials.

The Contractor shall bear all costs associated with the partial payment of stored or stockpiled materials in accordance with the provisions of this subsection.

90-08 Payment of withheld funds. At the Contractor's option, if an Owner withholds retainage in accordance with the methods described in subsection 90-06 PARTIAL PAYMENTS, the Contractor may request that the Owner deposit the retainage into an escrow account. The Owner's deposit of retainage into an escrow account is subject to the following conditions:

a. The Contractor shall bear all expenses of establishing and maintaining an escrow account and escrow agreement acceptable to the Owner.

b. The Contractor shall deposit to and maintain in such escrow only those securities or bank certificates of deposit as are acceptable to the Owner and having a value not less than the retainage that would otherwise be withheld from partial payment.

c. The Contractor shall enter into an escrow agreement satisfactory to the Owner.

d. The Contractor shall obtain the written consent of the surety to such agreement.

90-09 Acceptance and final payment. When the contract work has been accepted in accordance with the requirements of the subsection 50-15 titled FINAL ACCEPTANCE of Section 50, the Engineer will prepare the final estimate of the items of work actually performed. The Contractor shall approve the Engineer's final estimate or advise the Engineer of the Contractor's objections to the final estimate which are based on disputes in measurements or computations of the final quantities to be paid under the contract as amended by change order or supplemental agreement. The Contractor and the Engineer shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within 30 calendar days of the Contractor's receipt of the Engineer's final estimate. If, after such 30-day period, a dispute still exists, the Contractor may approve the Engineer's estimate under protest of the quantities in dispute, and such disputed quantities shall be considered by the Owner as a claim in accordance with the subsection 50-16 titled CLAIMS FOR ADJUSTMENT AND DISPUTES of Section 50.

After the Contractor has approved, or approved under protest, the Engineer's final estimate, and after the Engineer's receipt of the project closeout documentation required in subsection 90-11 Project Closeout, final payment will be processed based on the entire sum, or the undisputed sum in case of approval under protest, determined to be due the Contractor less all previous payments and all amounts to be deducted under the provisions of the contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

If the Contractor has filed a claim for additional compensation under the provisions of the subsection 50-16 titled CLAIMS FOR ADJUSTMENTS AND DISPUTES of Section 50 or under the provisions of this subsection, such claims will be considered by the Owner in accordance with local laws or ordinances. Upon final adjudication of such claims, any additional payment determined to be due the Contractor will be paid pursuant to a supplemental final estimate.

90-10 Construction warranty.

a. In addition to any other warranties in this contract, the Contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, workmanship, or design furnished, or performed by the Contractor or any subcontractor or supplier at any tier.

b. This warranty shall continue for a period of one year from the date of final acceptance of the work. If the Owner takes possession of any part of the work before final acceptance, this warranty shall continue for a period of one year from the date the Owner takes possession. However, this will not relieve the Contractor from corrective items required by the final acceptance of the project work.

c. The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Owner real or personal property, when that damage is the result of:

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, workmanship, or design furnished by the Contractor.

d. The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for one year from the date of repair or replacement.

e. The Owner will notify the Contractor, in writing, within 30-calendar days after the discovery of any failure, defect, or damage.

f. If the Contractor fails to remedy any failure, defect, or damage within 30-days after receipt of notice, the Owner shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

g. With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall: (1) Obtain all warranties that would be given in normal commercial practice; (2) Require all warranties to be executed, in writing, for the benefit of the Owner, as directed by the Owner, and (3) Enforce all warranties for the benefit of the Owner.

h. This warranty shall not limit the Owner's rights with respect to latent defects, gross mistakes, or fraud.

90-11 Project closeout. Approval of final payment to the Contractor is contingent upon completion and submittal of the items listed below. The final payment will not be approved until the Engineer approves the Contractor's final submittal. The Contractor shall:

a. Provide two (2) copies of all manufacturer's warranties for materials, equipment, and installations.

b. Complete final cleanup in accordance with subsection 40-08, FINAL CLEANUP.

c. Complete all punch list items identified during the Final Inspection.

d. Provide complete release of all claims for labor and material arising out of the Contract.

e. When applicable per state requirements, return copies of sales tax completion forms.

f. Manufacturer's certifications for all items incorporated in the work.

g. All required record drawings, as-built drawings or as-constructed drawings.

h. Security for Construction Warranty.

END OF SECTION 90

Section 100 Contractor Quality Control Program

100-01 General. When the specification requires a Contractor Quality Control Program, the Contractor shall establish, provide, and maintain an effective Quality Control Program that details the methods and procedures that will be taken to assure that all materials and completed construction required by this contract conform to contract plans, technical specifications and other requirements, whether manufactured by the

Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified here and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose.

The intent of this section is to enable the Contractor to establish a necessary level of control that will:

a. Adequately provide for the production of acceptable quality materials.

b. Provide sufficient information to assure both the Contractor and the Engineer that the specification requirements can be met.

c. Allow the Contractor as much latitude as possible to develop his or her own standard of control.

The Contractor shall be prepared to discuss and present, at the preconstruction conference, their understanding of the quality control requirements. The Contractor shall not begin any construction or production of materials to be incorporated into the completed work until the Quality Control Program has been reviewed and accepted by the Engineer. No partial payment will be made for materials subject to specific quality control requirements until the Quality Control Program has been reviewed.

The quality control requirements contained in this section and elsewhere in the contract technical specifications are in addition to and separate from the acceptance testing requirements. Acceptance testing requirements are the responsibility of the Engineer.

Paving projects over $500,000 shall have a Quality Control (QC)/Quality Assurance (QA) workshop with the Engineer, Contractor, subcontractors, testing laboratories, and Owner's representative at start of construction. The workshop shall address QC and QA requirements of the project specifications. The Contractor shall coordinate with the Airport and the Engineer on time and location of the QC/QA workshop.

100-02 Description of program.

a. General description. The Contractor shall establish a Quality Control Program to perform quality control inspection and testing of all items of work required by the technical specifications, including those performed by subcontractors. This Quality Control Program shall ensure conformance to applicable specifications and plans with respect to materials, workmanship, construction, finish, and functional performance. The Quality Control Program shall be effective for control of all construction work performed under this Contract and shall specifically include surveillance and tests required by the technical specifications, in addition to other requirements of this section and any other activities deemed necessary by the Contractor to establish an effective level of quality control.

b. Quality Control Program. The Contractor shall describe the Quality Control Program in a written document that shall be reviewed and approved by the Engineer prior to the start of any production, construction, or off-site fabrication. The written Quality Control Program shall be submitted to the Engineer for review and approval at least 5-calendar days before the Pre-Construction meeting. The Contractor's Quality Control Plan and Quality Control testing laboratory must be approved in writing by the Engineer prior to the Notice to Proceed (NTP).

The Quality Control Program shall be organized to address, as a minimum, the following items:

a. Quality control organization

b. Project progress schedule

c. Submittals schedule

d. Inspection requirements

e. Quality control testing plan

f. Documentation of quality control activities

g. Requirements for corrective action when quality control and/or acceptance criteria are not met

The Contractor is encouraged to add any additional elements to the Quality Control Program that is deemed necessary to adequately control all production and/or construction processes required by this contract.

100-03 Quality control organization. The Contractor Quality Control Program shall be implemented by the establishment of a separate quality control organization. An organizational chart shall be developed to show all quality control personnel and how these personnel integrate with other management/production and construction functions and personnel.

The organizational chart shall identify all quality control staff by name and function, and shall indicate the total staff required to implement all elements of the Quality Control Program, including inspection and testing for each item of work. If necessary, different technicians can be used for specific inspection and testing functions for different items of work. If an outside organization or independent testing laboratory is used for implementation of all or part of the Quality Control Program, the personnel assigned shall be subject to the qualification requirements of paragraph 100-03a and 100-03b. The organizational chart shall indicate which personnel are Contractor employees and which are provided by an outside organization.

The quality control organization shall, as a minimum, consist of the following personnel:

a. Program Administrator. The Program Administrator shall be a full-time employee of the Contractor, or a consultant engaged by the Contractor. The Program Administrator shall have a minimum of five (5) years of experience in interior renovation construction and shall have had prior quality control experience on a project of comparable size and scope as the contract.

The Program Administrator shall have full authority to institute any and all actions necessary for the successful implementation of the Quality Control Program to ensure compliance with the contract plans and technical specifications. The Program Administrator shall report directly to a responsible officer of the construction firm. The Program Administrator may supervise the Quality Control Program on more than one project provided that person can be at the job site within two (2) hours after being notified of a problem.

b. Quality control technicians. A sufficient number of quality control technicians necessary to adequately implement the Quality Control Program shall be provided. These personnel shall be either Engineers, engineering technicians, or experienced craftsman with qualifications in the appropriate field equivalent to NICET Level II or higher construction materials technician or highway construction technician and shall have a minimum of two (2) years of experience in their area of expertise.

The quality control technicians shall report directly to the Program Administrator and shall perform the following functions:

(1) Inspection of all materials, construction, plant, and equipment for conformance to the technical specifications, and as required by subsection 100-06.

(2) Performance of all quality control tests as required by the technical specifications and subsection 100-07.

(3) Performance of density tests for the Engineer when required by the technical specifications.

Certification at an equivalent level, by a state or nationally recognized organization will be acceptable in lieu of NICET certification.

c. Staffing levels. The Contractor shall provide sufficient qualified quality control personnel to monitor each work activity at all times. Where material is being produced in a plant for incorporation into the work, separate plant and field technicians shall be provided at each plant and field placement location. The scheduling and coordinating of all inspection and testing must match the type and pace of work activity. The Quality Control Program shall state where different technicians will be required for different work elements.

100-04 Project progress schedule. The Contractor shall submit a coordinated construction schedule for all work activities. The schedule shall be prepared as a network diagram in Critical Path Method (CPM), Program Evaluation and Review Technique (PERT), or other format, or as otherwise specified in the contract. As a minimum, it shall provide information on the sequence of work activities, milestone dates, and activity duration.

The Contractor shall maintain the work schedule and provide an update and analysis of the progress schedule on a twice monthly basis, or as otherwise specified in the contract. Submission of the work schedule shall not relieve the Contractor of overall responsibility for scheduling, sequencing, and coordinating all work to comply with the requirements of the contract.

100-05 Submittals schedule. The Contractor shall submit a detailed listing of all submittals (for example, mix designs, material certifications) and shop drawings required by the technical specifications. The listing can be developed in a spreadsheet format and shall include:

a. Specification item number

b. Item description

c. Description of submittal

d. Specification paragraph requiring submittal

e. Scheduled date of submittal

100-06 Inspection requirements. Quality control inspection functions shall be organized to provide inspections for all definable features of work, as detailed below. All inspections shall be documented by the Contractor as specified by subsection 100-07.

Inspections shall be performed daily to ensure continuing compliance with contract requirements until completion of the particular feature of work. These shall include the following minimum requirements:

a. During plant operation for material production, quality control test results and periodic inspections shall be used to ensure the quality of aggregates and other mix components, and to adjust and control mix proportioning to meet the approved mix design and other requirements of the technical specifications. All equipment used in proportioning and mixing shall be inspected to ensure its proper operating condition. The Quality Control Program shall detail how these and other quality control functions will be accomplished and used.

b. During field operations, quality control test results and periodic inspections shall be used to ensure the quality of all materials and workmanship. All equipment used in placing, finishing, and compacting shall be inspected to ensure its proper operating condition and to ensure that all such operations are in conformance to the technical specifications and are within the plan dimensions, lines, grades, and tolerances specified. The Program shall document how these and other quality control functions will be accomplished and used.

100-07 Quality control testing plan. As a part of the overall Quality Control Program, the Contractor shall implement a quality control testing plan, as required by the technical specifications. The testing plan shall include the minimum tests and test frequencies required by each technical specification Item, as well as any additional quality control tests that the Contractor deems necessary to adequately control production and/or construction processes.

The testing plan can be developed in a spreadsheet fashion and shall, as a minimum, include the following:

a. Specification item number (for example, P-401)

b. Item description (for example, Plant Mix Bituminous Pavements)

c. Test type (for example, gradation, grade, asphalt content)

d. Test standard (for example, ASTM or American Association of State Highway and Transportation Officials (AASHTO) test number, as applicable)

e. Test frequency (for example, as required by technical specifications or minimum frequency when requirements are not stated)

f. Responsibility (for example, plant technician)

g. Control requirements (for example, target, permissible deviations)

The testing plan shall contain a statistically-based procedure of random sampling for acquiring test samples in accordance with ASTM D3665. The Engineer shall be provided the opportunity to witness quality control sampling and testing.

All quality control test results shall be documented by the Contractor as required by subsection 100-08.

100-08 Documentation. The Contractor shall maintain current quality control records of all inspections and tests performed. These records shall include factual evidence that the required inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejection, etc.; proposed remedial action; and corrective actions taken.

These records must cover both conforming and defective or deficient features, and must include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the contract. Legible copies of these records shall be furnished to the Engineer daily. The records shall cover all work placed subsequent to the previously furnished records and shall be verified and signed by the Contractor's Program Administrator.

Specific Contractor quality control records required for the contract shall include, but are not necessarily limited to, the following records:

a. Daily inspection reports. Each Contractor quality control technician shall maintain a daily log of all inspections performed for both Contractor and subcontractor operations. These technician's daily reports shall provide factual evidence that continuous quality control inspections have been performed and shall, as a minimum, include the following:

(1) Technical specification item number and description

(2) Compliance with approved submittals

(3) Proper storage of materials and equipment

(4) Proper operation of all equipment

(5) Adherence to plans and technical specifications

(6) Review of quality control tests

(7) Safety inspection.

The daily inspection reports shall identify inspections conducted, results of inspections, location and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed.

The daily inspection reports shall be signed by the responsible quality control technician and the Program Administrator. The Engineer shall be provided at least one copy of each daily inspection report on the work day following the day of record.

b. Daily test reports. The Contractor shall be responsible for establishing a system that will record all quality control test results. Daily test reports shall document the following information:

(1) Technical specification item number and description

(2) Test designation

(3) Location

(4) Date of test

(5) Control requirements

(6) Test results

(7) Causes for rejection

(8) Recommended remedial actions

(9) Retests

Test results from each day's work period shall be submitted to the Engineer prior to the start of the next day's work period. When required by the technical specifications, the Contractor shall maintain statistical quality control charts. The daily test reports shall be signed by the responsible quality control technician and the Program Administrator.

100-09 Corrective action requirements. The Quality Control Program shall indicate the appropriate action to be taken when a process is deemed, or believed, to be out of control (out of tolerance) and detail what action will be taken to bring the process into control. The requirements for corrective action shall include both general requirements for operation of the Quality Control Program as a whole, and for individual items of work contained in the technical specifications.

The Quality Control Program shall detail how the results of quality control inspections and tests will be used for determining the need for corrective action and shall contain clear sets of rules to gauge when a process is out of control and the type of correction to be taken to regain process control.

When applicable or required by the technical specifications, the Contractor shall establish and use statistical quality control charts for individual quality control tests. The requirements for corrective action shall be linked to the control charts.

100-10 Surveillance by the Engineer. All items of material and equipment shall be subject to surveillance by the Engineer at the point of production, manufacture or shipment to determine if the Contractor, producer, manufacturer or shipper maintains an adequate quality control system in conformance with the requirements detailed here and the applicable technical specifications and plans. In addition, all items of materials, equipment and work in place shall be subject to surveillance by the Engineer at the site for the same purpose.

Surveillance by the Engineer does not relieve the Contractor of performing quality control inspections of either on-site or off-site Contractor's or subcontractor's work.

100-11 Noncompliance.

a. The Engineer will notify the Contractor of any noncompliance with any of the foregoing requirements. The Contractor shall, after receipt of such notice, immediately take corrective action. Any notice, when delivered by the Engineer or his or her authorized representative to the Contractor or his or her authorized representative at the site of the work, shall be considered sufficient notice.

b. In cases where quality control activities do not comply with either the Contractor Quality Control Program or the contract provisions, or where the Contractor fails to properly operate and maintain an effective Quality Control Program, as determined by the Engineer, the Engineer may:

(1) Order the Contractor to replace ineffective or unqualified quality control personnel or subcontractors.

(2) Order the Contractor to stop operations until appropriate corrective actions are taken.

END OF SECTION 100

DOCUMENT 000900 - BID PROPOSAL

GREENE COUNTY REGIONAL AIRPORT AUTHORITY

The undersigned having familiarized **themselves**, with local conditions affecting the cost of the work and with the contract documents, including Advertisement for Bids, General Provisions, Form of Proposal, Form of Contract, Specifications, Addenda and Exhibits issued and attached to the Specifications on file at the Greene County - Lewis A. Jackson Regional Airport, Greene County, Ohio, hereby propose to perform everything required to be performed, and to provide and furnish all of the labor, materials, necessary tools, equipment and all utility and transportation services necessary to perform and complete in a workmanlike manner, as specified in the instructions to bidders, all work required for the construction and completion of the project, all in accordance with the contract documents and Addendums issued hereto for the following prices, to-wit:

The project is located at the Greene County - Lewis A. Jackson Regional Airport, 140 North Valley Road, Xenia, Ohio, 45385, and consists of:

BASE BID: The project is located at the Lewis A. Jackson Regional Airport (I-19) Terminal in Xenia, Ohio (Greene County) and is a renovation of the existing interior of the terminal building. The improvements are to include interior deomotion; asbestos removal (Testing report included); replacement of Terminal HVAC Unit including duct and controls; new restrooms; new lay-in ceiling; lighting; electrical panel; flooring and other interior finishes. Work does not include improvements to the attached hangar area of the building, with the exception of a new adjoining vestibule.

BID TABULATION		
ITEM	**NUMERIC AMOUNT**	**AMOUNT IN WORDS**
BASE BID (Lump Sum)		

By signing and submitting this bid proposal, the undersigned hereby agrees to procure and conduct the work according to the requirements set forth in the applicable Contract Documents. The undersigned **expressly certifies** they are not debarred or suspended from procuring work in the State of Ohio or other state in which the bidder is located.

The undersigned hereby designates as his office to which Notice of Acceptance may be delivered or mailed.

_____

_____

_____

If awarded a contract under this proposal, the undersigned hereby agrees to sign, acknowledge and deliver said contract and all bonds required thereunder within 10 days after Notification of Acceptance.

Accompanying this proposal is a (Performance Bond) (Bid Bond) (Certified Check) (Bank Draft) (Cashier's Check) (Money Order) (Line of Credit) in the amount of:

_____

Dollars ($_____)

payable to the Greene County Regional Airport Authority, Greene County, Ohio, as required by the Advertisement for Bids:

In submitting this bid, it is understood that the right is reserved by the Authority to reject any and all bids. The Owner is cognizant of the time limitation for awarding contracts and giving Notice to Proceed. It is anticipated that the contract cannot be finally executed and Notice to Proceed be given until **90 days** following the opening of the bids.

The receipt of Addenda Nos. ____, ____, ____ is hereby acknowledged.

Date: _____ FIRM NAME _____

By _____

_____

NOTE: (Bidders should not add any conditions or qualifying statements to this bid as otherwise the bid may be declared irregular as being not responsive to the Advertisement of Bids).

NON-COLLUSION AFFIDAVIT

STATE OF _____)

COUNTY OF _____)

The undersigned bidder or agent, being duly sworn, on oath, says that he has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting, nor to prevent any person from bidding nor to induce anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding in any way or manner whatever.

BY_____
(Signature)

_____
(Title)

FOR_____
(Firm or Corporation)

Subscribed and sworn to before me this _____ day of _____, 2017.

My commission expires: _____

_____ _____
(County of Residence) (Notary Signature)

END OF SECTION 00900

DOCUMENT 001000 - FEDERAL WAGE RATES

"General Decision Number: OH20230001 02/03/2023

Superseded General Decision Number: OH20220001

State: Ohio

Construction Types: Heavy and Highway

Counties: Ohio Statewide.

Heavy and Highway Construction Projects

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	Executive Order 14026 generally applies to the contract. The contractor must pay all covered workers at least $16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	Executive Order 13658 generally applies to the contract. The contractor must pay all covered workers at least $12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at

http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/06/2023
1	02/03/2023

BROH0001-001 06/01/2021

DEFIANCE, FULTON (Excluding Fulton, Amboy & Swan Creek Townships), HENRY (Excluding Monroe, Bartlow, Liberty, Washington, Richfield, Marion, Damascus & Townships & that part of Harrison Township outside corporate limits of city of Napoleon), PAULDING, PUTNAM and WILLIAMS COUNTIES

	Rates	Fringes
Bricklayer, Stonemason	$ 30.40	17.55

BROH0001-004 06/01/2021

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 30.40	17.55

BROH0003-002 06/01/2021

FULTON (Townships of Amboy, Swan Creek & Fulton), HENRY (Townships of Washington, Damascus, Richfield, Bartlow, Liberty, Harrison, Monroe, & Marion), LUCAS and WOOD (Townships of Perrysburg, Ross, Lake, Troy, Freedom, Montgomery, Webster, Center, Portage, Middleton, Plain, Liberty, Henry, Washington, Weston, Milton, Jackson & Grand Rapids) COUNTIES

	Rates	Fringes
Bricklayer, Stonemason	$ 30.40	17.55

BROH0005-003 06/01/2020

CUYAHOGA, LORAIN & MEDINA (Hinckley, Granger, Brunswick, Liverpool, Montville, York, Homer, Harrisville, Chatham, Litchfield & Spencer Townships and the city of Medina)

	Rates	Fringes
BRICKLAYER		
BRICKLAYERS; CAULKERS; CLEANERS; POINTERS; & STONEMASONS	$ 36.64	17.13
SANDBLASTERS	$ 36.39	17.13
SEWER BRICKLAYERS & STACK BUILDERS	$ 36.64	17.13
SWING SCAFFOLDS	$ 37.14	17.13

BROH0006-005 05/01/2022

CARROLL, COLUMBIANA (Knox, Butler, West & Hanover Townships), STARK & TUSCARAWAS

	Rates	Fringes
Bricklayer, Stonemason	$ 30.76	19.07

BROH0007-002 06/01/2021

LAWRENCE

	Rates	Fringes
Bricklayer, Stonemason	$ 30.40	17.55

BROH0007-005 06/01/2021

PORTAGE & SUMMIT

	Rates	Fringes
BRICKLAYER	$ 30.40	17.55

BROH0007-010 06/01/2017

PORTAGE & SUMMIT

	Rates	Fringes
MASON - STONE	$ 28.65	14.55

BROH0008-001 06/01/2021

COLUMBIANA (Salem, Perry, Fairfield, Center, Elk Run, Middleton, & Unity Townships and the city of New Waterford), MAHONING & TRUMBULL

	Rates	Fringes
BRICKLAYER	$ 30.40	17.55

BROH0009-002 06/01/2021

BELMONT & MONROE COUNTIES and the Townships of Warren & Mt. Pleasant and the Village of Dillonvale in JEFFERSON COUNTY

	Rates	Fringes
Bricklayer, Stonemason	$ 30.40	17.55
Refractory	$ 31.45	19.01

BROH0010-002 06/01/2021

COLUMBIANA (St. Clair, Madison, Wayne, Franklin, Washington, Yellow Creek & Liverpool Townships) & JEFFERSON (Brush Creek & Saline Townships)

	Rates	Fringes
Bricklayer, Stonemason.....	$ 30.40	17.55

BROH0014-002 06/01/2021

HARRISON & JEFFERSON (Except Mt. Pleasant, Warren, Brush Creek, Saline & Salineville Townships & the Village of Dillonvale)

	Rates	Fringes
Bricklayer, Stonemason.....	$ 30.40	17.55

BROH0016-002 06/01/2021

ASHTABULA, GEAUGA, and LAKE COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	$ 30.40	17.55

BROH0018-002 06/01/2021

BROWN, BUTLER, CLERMONT, HAMILTON, PREBLE (Gasper, Dixon, Israel, Lanier, Somers & Gratis Townships) & WARREN COUNTIES:

	Rates	Fringes
Bricklayer, Stonemason.....	$ 30.40	17.55

BROH0022-004 06/01/2021

CHAMPAIGN, CLARK, CLINTON, DARKE, GREENE, HIGHLAND, LOGAN, MIAMI, MONTGOMERY, PREBLE (Jackson, Monroe, Harrison, Twin, Jefferson & Washington Townships) and SHELBY COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	$ 30.40	17.55

BROH0032-001 06/01/2021

GALLIA & MEIGS

	Rates	Fringes
Bricklayer, Stonemason.....	$ 30.40	17.55

BROH0035-002 06/01/2021

ALLEN, AUGLAIZE, MERCER and VAN WERT COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	$ 30.40	17.55

BROH0039-002 06/01/2021

ADAMS & SCIOTO

	Rates	Fringes
Bricklayer, Stonemason.....	$ 30.40	17.55

BROH0040-003 06/01/2021

ASHLAND, CRAWFORD, HARDIN, HOLMES, MARION, MORROW, RICHLAND, WAYNE and WYANDOT (Except Crawford, Ridge, Richland & Tymochtee Townships) COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	$ 31.93	22.54

FOOTNOTE: Layout Man and Sawman rate: $1.00 per hour above journeyman rate.
Free standing stack work ground level to top of stack; Sandblasting and laying of carbon masonry material in swing stage and/or scaffold; Ramming and spading of plastics and gunniting: $1.50 per hour above journeyman rate.
""Hot"" work: $2.50 above journeyman rate.

BROH0044-002 06/01/2021

	Rates	Fringes
Bricklayer, Stonemason COSHOCTON, FAIRFIELD, GUERNSEY, HOCKING, KNOX, KICKING, MORGAN, MUSKINGUM, NOBLE (Beaver, Buffalo, Seneca & Wayne Townships) & PERRY COUNTIES:.....	$ 30.40	17.55

BROH0045-002 06/01/2021

FAYETTE, JACKSON, PIKE, ROSS and VINTON COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	$ 30.40	17.66

BROH0046-002 06/01/2021

ERIE, HANCOCK, HURON, OTTAWA, SANDUSKY, SENECA, WOOD (Perry & Bloom Townships) and WYANDOT (Tymochtee, Crawford, Ridge & Richland Townships) COUNTIES & the Islands of Lake Erie north of Sandusky

	Rates	Fringes
Bricklayer, Stonemason.....	$ 30.40	17.55

FOOTNOTE: Layout Man and Sawman rate: $1.00 per hour above journeyman rate.
Free standing stack work ground level to top of stack; Sandblasting and laying of carbon masonry material in swing stage and/or scaffold; Ramming and spading of plastics and gunniting: $1.50 per hour above journeyman rate.
""Hot"" work: $2.50 above journeyman rate.

BROH0052-001 06/01/2021

ATHENS COUNTY

	Rates	Fringes
Bricklayer, Stonemason.....	$ 30.40	17.55

BROH0052-003 06/01/2021

NOBLE (Brookfield, Noble, Center, Sharon, Olive, Enoch, Stock, Jackson, Jefferson & Elk Townships) and WASHINGTON COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	$ 30.40	17.55

BROH0055-003 06/01/2021

DELAWARE, FRANKLIN, MADISON, PICKAWAY and UNION COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	$ 30.40	17.55

CARP0003-004 05/01/2017

MAHONING & TRUMBULL

	Rates	Fringes
CARPENTER.....	$ 26.20	17.42

CARP0069-003 05/01/2017

CARROLL, STARK, TUSCARAWAS & WAYNE

	Rates	Fringes
CARPENTER	$ 25.98	15.98

CARP0069-006 05/01/2017

COSHOCTON, HOLMES, KNOX & MORROW

	Rates	Fringes
CARPENTER	$ 24.04	15.29

CARP0171-002 05/01/2019

BELMONT, COLUMBIANA, HARRISON, JEFFERSON & MONROE

	Rates	Fringes
CARPENTER	$ 27.37	20.02

CARP0200-002 05/01/2021

ADAMS, ATHENS, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA, GUERNSEY, HIGHLAND, HOCKING, JACKSON, LAWRENCE, LICKING, MADISON, MARION, MEIGS, MORGAN, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, ROSS, SCIOTO, UNION, VINTON and WASHINGTON COUNTIES

	Rates	Fringes
CARPENTER	$ 30.28	20.08
Diver	$ 39.41	10.40
PILEDRIVERMAN	$ 30.28	20.08

CARP0248-005 07/01/2008

LUCAS & WOOD

	Rates	Fringes
CARPENTER	$ 27.27	14.58

CARP0248-008 07/01/2008

	Rates	Fringes
CARPENTER		
DEFIANCE, FULTON, HANCOCK, HENRY, PAULDING & WILLIAMS COUNTIES	$ 23.71	13.28

CARP0254-002 05/01/2017

ASHTABULA, CUYAHOGA, GEAUGA & LAKE

	Rates	Fringes
CARPENTER	$ 32.40	16.97

CARP0372-002 05/01/2016

ALLEN, AUGLAIZE, HARDIN, MERCER, PUTNAM & VAN WERT

	Rates	Fringes
CARPENTER	$ 24.54	18.21

CARP0639-003 05/01/2017

MEDINA, PORTAGE & SUMMIT

	Rates	Fringes
CARPENTER	$ 30.42	16.99

CARP0735-002 05/01/2019

ASHLAND, ERIE, HURON, LORAIN & RICHLAND

	Rates	Fringes
CARPENTER	$ 26.30	17.91

CARP1311-001 05/01/2017

BROWN, BUTLER, CHAMPAIGN, CLARK, CLERMONT, CLINTON, DARKE, GREENE, HAMILTON, LOGAN, MIAMI, MONTGOMERY, PREBLE, SHELBY & WARREN

	Rates	Fringes
Carpenter & Piledrivermen	$ 29.34	15.95
Diver	$ 40.58	9.69

CARP1393-002 07/01/2008

CRAWFORD, DEFIANCE, FULTON, HANCOCK, HENRY, LUCAS, OTTAWA, PAULDING, SANDUSKY, SENECA, WILLIAMS & WOOD

	Rates	Fringes
Piledrivermen & Diver's Tender	$ 27.30	16.05

DIVERS - $250.00 per day

CARP1393-003 07/01/2008

ALLEN, AUGLAIZE, HARDIN, MERCER, PUTNAM, VAN WERT & WYANDOT

	Rates	Fringes
Piledrivermen & Diver's Tender	$ 25.15	15.92

DIVERS - $250.00 per day

CARP1871-006 05/01/2017

BELMONT, HARRISON, & MONROE

	Rates	Fringes
Diver, Wet	$ 48.11	17.33
Piledrivermen; Diver, Dry	$ 32.07	17.33

CARP1871-008 05/01/2017

ASHLAND, ASHTABULA, CUYAHOGA, ERIE, GEAUGA, HURON, LAKE, LORAIN, MEDINA, PORTAGE, RICHLAND & SUMMIT

	Rates	Fringes
Diver, Wet	$ 45.80	18.84
Piledrivermen; Diver, Dry	$ 30.53	18.84

CARP1871-014 05/01/2017

CARROLL, STARK, TUSCARAWAS & WAYNE

	Rates	Fringes
Diver, Wet	$ 38.34	16.95
Piledrivermen; Diver, Dry	$ 25.56	16.95

CARP1871-015 05/01/2017

COSHOCTON, HOLMES, KNOX & MORROW

	Rates	Fringes
Diver, Wet	$ 37.34	16.07
Piledrivermen; Diver, Dry	$ 24.89	16.07

CARP1871-017 05/01/2017

MAHONING & TRUMBULL

	Rates	Fringes
Diver, Wet	$ 40.65	17.62
Piledrivermen; Diver, Dry	$ 27.10	17.62

CARP2235-012 01/01/2014

COLUMBIANA & JEFFERSON

	Rates	Fringes
PILEDRIVERMAN	$ 31.74	16.41

CARP2239-001 07/01/2008

CRAWFORD, OTTAWA, SANDUSKY, SENECA & WYANDOT

	Rates	Fringes
CARPENTER	$ 23.71	13.28

ELEC0008-002 05/23/2022

DEFIANCE, FULTON, HANCOCK, HENRY, LUCAS, OTTAWA, PAULDING, PUTNAM, SANDUSKY, SENECA, WILLIAMS & WOOD

	Rates	Fringes
CABLE SPLICER	$ 38.98	18.96
ELECTRICIAN	$ 44.79	4.5%+21.61

---

* ELEC0032-003 12/05/2022

ALLEN, AUGLAIZE, HARDIN, LOGAN, MERCER, SHELBY, VAN WERT & WYANDOT (Crawford, Jackson, Marseilles, Mifflin, Ridgeland, Ridge & Salem Townships)

	Rates	Fringes
ELECTRICIAN	$ 34.67	21.48

ELEC0038-002 04/25/2022

CUYAHOGA, GEAUGA (Bainbridge, Chester & Russell Townships) & LORAIN (Columbia Township)

	Rates	Fringes
ELECTRICIAN		
Excluding Sound & Communications Work	$ 40.88	22.75

FOOTNOTES;
a. 6 Paid Holidays: New Year's Day; Memorial Day; July 4th; Labor Day; Thanksgiving Day; & Christmas Day
b. 1 week's paid vacation for 1 year's service; 2 weeks' paid vacation for 2 or more years' service

---

ELEC0038-008 04/25/2022

CUYAHOGA, GEAUGA (Bainbridge, Chester & Russell Townships) &

LORAIN (Columbia Township)

	Rates	Fringes
Sound & Communication Technician		
Communications Technician	$ 29.30	13.29
Installer Technician	$ 28.05	13.25

FOOTNOTES;
a. 6 Paid Holidays: New Year's Day; Memorial Day; July 4th; Labor Day; Thanksgiving Day; & Christmas Day
b. 1 week's paid vacation for 1 year's service; 2 weeks' paid vacation for 2 or more years' service

---

ELEC0064-003 11/28/2022

COLUMBIANA (Butler, Fairfield, Perry, Salem & Unity Townships) MAHONING (Austintown, Beaver, Berlin, Boardman, Canfield, Ellsworth, Coitsville, Goshen, Green, Jackson, Poland, Springfield & Youngstown Townships), & TRUMBULL (Hubbard & Liberty Townships)

	Rates	Fringes
ELECTRICIAN	$ 36.10	18.91

ELEC0071-001 01/01/2019

ASHLAND, CHAMPAIGN, CLARK, COSHOCTON, CRAWFORD, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GUERNSEY, HIGHLAND, HOCKING, JACKSON (Coal, Jackson, Liberty, Milton, Washington & Wellston Townships), KNOX, LICKING, MADISON, MARION, MONROE, MORGAN, MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE (Beaver, Benton, Jackson, Mifflin, Pebble, Peepee, Perry & Seal Townships), RICHLAND, ROSS, TUSCARAWAS (Auburn, Bucks, Clay, Jefferson, Oxford, Perry, Salem, Rush, Washington & York Townships), UNION, VINTON (Clinton, Eagle, Elk, Harrison, Jackson, Richland & Swan Townships), and WASHINGTON COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operators	$ 33.62	13.40
Groundmen	$ 24.17	11.32
Linemen & Cable Splicers	$ 38.27	14.42

ELEC0071-004 01/01/2019

AUGLAIZE, CLINTON, DARKE, GREENE, LOGAN, MERCER, MIAMI, MONTGOMERY, PREBLE, and SHELBY COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operator	$ 33.62	13.40
Groundman	$ 24.17	11.32
Lineman & Cable Splicers	$ 38.27	14.42

ELEC0071-005 12/31/2018

ASHTABULA, CUYAHOGA, GEAUGA, LAKE & LORAIN

	Rates	Fringes
LINE CONSTRUCTION: Equipment Operator		
DOT/Traffic Signal & Highway Lighting Projects	$ 32.44	14.10
Municipal Power/Transit Projects	$ 40.10	16.42
LINE CONSTRUCTION: Groundman		
DOT/Traffic Signal & Highway Lighting Projects	$ 25.06	12.26
Municipal Power/Transit Projects	$ 31.19	14.11
LINE CONSTRUCTION: Linemen/Cable Splicer		
DOT/Traffic Signal & Highway Lighting Projects	$ 36.13	15.03
Municipal Power/Transit Projects	$ 44.56	17.58

ELEC0071-008 01/01/2019

COLUMBIANA, MAHONING, and TRUMBULL COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operator	$ 33.62	13.40
Groundman	$ 24.17	11.32
Lineman & Cable Splicers	$ 38.27	14.42

ELEC0071-010 01/01/2019

BELMONT, CARROLL, HARRISON, HOLMES, JEFFERSON, MEDINA, PORTAGE, STARK, SUMMIT, and WAYNE COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operator	$ 33.62	13.40
Groundman	$ 24.17	11.32
Lineman & Cable Splicers	$ 38.27	14.42

ELEC0071-013 01/01/2019

BROWN, BUTLER, CLERMONT, HAMILTON, and WARREN COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operator	$ 33.62	13.40
Groundman	$ 24.17	11.32
Lineman & Cable Splicers	$ 38.27	14.42

ELEC0071-014 01/01/2019

ADAMS, ATHENS, GALLIA, JACKSON (Bloomfield, Franklin, Hamilton, Lick, Jefferson, Scioto & Madison Townships), LAWRENCE, MEIGS, PIKE (Camp Creek, Marion, Newton, Scioto, Sunfish & Union Townships), SCIOTO & VINTON (Brown, Knox, Madison, Vinton & Wilkesville Townships)

	Rates	Fringes
Line Construction		
Equipment Operator	$ 33.62	13.40
Groundman	$ 24.17	11.32
Lineman & Cable Splicers	$ 38.27	14.42

---

* ELEC0082-002 12/05/2022

CLINTON, DARKE, GREENE, MIAMI, MONTGOMERY, PREBLE & WARREN (Wayne, Clear Creek & Franklin Townships)

	Rates	Fringes
ELECTRICIAN	$ 34.25	21.26

---

* ELEC0082-006 11/29/2021

CLINTON, DARKE, GREENE, MIAMI, MONTGOMERY, PREBLE & WARREN (Wayne, Clear Creek & Franklin Townships)

	Rates	Fringes
Sound & Communication Technician		
Cable Puller	$ 12.98 **	3.89
Installer/Technician	$ 25.95	12.27

ELEC0129-003 02/28/2022

LORAIN (Except Columbia Township) & MEDINA (Litchfield & Liverpool Townships)

	Rates	Fringes
ELECTRICIAN	$ 37.00	18.23

ELEC0129-004 02/28/2022

ERIE & HURON (Lyme, Ridgefield, Norwalk, Townsend, Wakeman, Sherman, Peru, Bronson, Hartland, Clarksfield, Norwich, Greenfield, Fairfield, Fitchville & New London Townships)

	Rates	Fringes
ELECTRICIAN	$ 37.00	18.23

ELEC0141-003 09/01/2019

BELMONT COUNTY

	Rates	Fringes
CABLE SPLICER	$ 30.63	25.87
ELECTRICIAN	$ 30.38	25.87

ELEC0212-003 11/26/2018

BROWN, CLERMONT & HAMILTON

	Rates	Fringes
Sound & Communication Technician	$ 24.35	10.99

ELEC0212-005 06/06/2022

BROWN, CLERMONT, and HAMILTON COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 33.29	21.15

ELEC0245-001 08/29/2022

ALLEN, HARDIN, VAN WERT & WYANDOT (Crawford, Jackson, Marseilles, Mifflin, Richland, Ridge & Salem Townships)

	Rates	Fringes
Line Construction		
Equipment Operator	$ 32.37	26.5%+7.25
Groundman Truck Driver	$ 19.35	7.00+27.25%
Lineman	$ 44.22	7.00+27.25%

FOOTNOTE: a. Half day's Paid Holiday: The last 4 hours of the workday prior to Christmas or New Year's Day

---

ELEC0245-003 08/29/2022

DEFIANCE, FULTON, HANCOCK, HENRY, HURON, LUCAS, OTTAWA,
PAULDING, PUTNAM, SANDUSKY, SENECA, WILLIAMS, and WOOD COUNTIES

	Rates	Fringes
Line Construction		
Cable Splicer	$ 50.85	7.00+27.25%
Groundman/Truck Driver	$ 19.35	7.00+27.25%
Heli-arc Welding	$ 40.76	7.00+27.25%
Lineman	$ 44.22	7.00+27.25%
Operator - Class 1	$ 35.38	7.00+27.25%
Operator - Class 2	$ 28.32	7.00+27.25%
Traffic Signal & Lighting Technician	$ 39.80	7.00+27.25%

FOOTNOTE: a. 6 Observed Holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; & Christmas Day. Employees who work on a holiday shall be paid at a rate of double their applicable classified straight-time rates for the work performed on such holiday.

ELEC0245-004 08/29/2022

ERIE COUNTY

	Rates	Fringes
Line Construction		
Cable Splicer	$ 49.14	26.75%+6.75
Cablesplicer	$ 50.85	7.00+27.25%
Groundman/Truck Driver	$ 19.35	7.00+27.25%
Lineman	$ 44.22	7.00+27.25%
Operator - Class 1	$ 35.38	7.00+27.25%
Operator - Class 2	$ 28.32	7.00+27.25%

FOOTNOTE: a. 6 Observed Holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; & Christmas Day. Employees who work on a holiday shall be paid at a rate of double their applicable classified straight-time rates for the work performed on such holiday.

ELEC0246-001 11/01/2021

	Rates	Fringes
ELECTRICIAN	$ 39.50	77%+31.62

FOOTNOTE: a. 1 1/2 Paid Holidays: The last scheduled workday prior to Christmas & 4 hours on Good Friday.

ELEC0306-005 05/28/2018

MEDINA (Brunswick, Chatham, Granger, Guilford, Harrisville,

Hinckley, Homer, Lafayette, Medina, Montville, Sharon, Spencer, Wadsworth, Westfield & York Townships), PORTAGE (Atwater, Aurora, Brimfield, Deerfield, Franklin, Mantua, Randolph, Ravenna, Rootstown, Shalersville, Streetsboro & Suffield Townships), SUMMIT & WAYNE (Baughman, Canaan, Chester, Chippewa, Congress, Green, Milton, & Wayne Townships)

	Rates	Fringes
CABLE SPLICER	$ 36.87	16.56
ELECTRICIAN	$ 34.54	5%+18.06

ELEC0317-002 05/30/2022

GALLIA & LAWRENCE

	Rates	Fringes
CABLE SPLICER	$ 32.68	18.13
ELECTRICIAN	$ 35.85	28.25

ELEC0540-005 12/27/2021

CARROLL (Northern half, including Fox, Harrison, Rose & Washington Townhships), COLUMBIANA (Knox Township), HOLMES, MAHONING (Smith Township), STARK, TUSCARAWAS (North of Auburn, Clay, Rush & York Townships), and WAYNE (South of Baughman, Chester, Green & Wayne Townships) COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 35.28	22.63

---

* ELEC0573-003 11/28/2022

ASHTABULA (Colebrook, Wayne, Williamsfield, Orwell & Windsor Townships), GEAUGA (Auburn, Middlefield, Parkman & Troy Townships), MAHONING (Milton Township), PORTAGE (Charlestown, Edinburg, Freedom, Hiram, Nelson, Palmyra, Paris & Windham Townships), and TRUMBULL (Except Liberty & Hubbard Townships)

	Rates	Fringes
ELECTRICIAN	$ 38.70	20.94

ELEC0575-001 11/29/2021

ADAMS, FAYETTE, HIGHLAND, HOCKING, JACKSON (Bloomfield, Franklin, Hamilton, Jefferson, Lick, Madison, Scioto, Coal, Jackson, Liberty, Milton & Washington Townships), PICKAWAY (Deer Creek, Perry, Pickaway, Salt Creek & Wayne Townships), PIKE (Beaver, Benton, Jackson, Mifflin, Pebble, PeePee, Perry, Seal, Camp Creek, Newton, Scioto, Sunfish, Union & Marion Townships), ROSS, SCIOTO & VINTON (Clinton, Eagle, Elk,

Harrison, Jackson, Richland & Swan Townships)

	Rates	Fringes
ELECTRICIAN	$ 35.00	19.76

ELEC0648-001 08/29/2022

BUTLER and WARREN COUNTIES (Deerfield, Hamilton, Harlan, Massie, Salem, Turtle Creek, Union & Washington Townships)

	Rates	Fringes
CABLE SPLICER	$ 30.50	18.23
ELECTRICIAN	$ 33.00	21.44

ELEC0673-004 05/30/2022

ASHTABULA (Excluding Orwell, Colebrook, Williamsfield, Wayne & Windsor Townships), GEAUGA (Burton, Chardon, Claridon, Hambden, Huntsburg, Montville, Munson, Newbury & Thompson Townships) and LAKE COUNTIES

	Rates	Fringes
CABLE SPLICER	$ 33.81	21.47
ELECTRICIAN	$ 34.71	23.36

ELEC0683-002 05/30/2022

CHAMPAIGN, CLARK, DELAWARE, FAIRFIELD, FRANKLIN, MADISON, PICKAWAY (Circleville, Darby, Harrison, Jackson, Madison, Monroe, Muhlenberg, Scioto, Walnut & Washington Townships), and UNION COUNTIES

	Rates	Fringes
CABLE SPLICER	$ 37.50	23.15
ELECTRICIAN	$ 36.50	23.15

ELEC0688-003 05/30/2022

ASHLAND, CRAWFORD, HURON (Richmond, New Haven, Ripley & Greenwich Townships), KNOX (Liberty, Clinton, Union, Howard, Monroe, Middleberry, Morris, Wayne, Berlin, Pike, Brown & Jefferson Townships), MARION, MORROW, RICHLAND and WYANDOT (Sycamore, Crane, Eden, Pitt, Antrim & Tymochtee Townships) COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 32.30	21.83

ELEC0972-002 06/01/2021

ATHENS, MEIGS, MONROE, MORGAN, NOBLE, VINTON (Brown, Knox, Madison, Vinton & Wilkesville Townships), and WASHINGTON COUNITES

	Rates	Fringes
CABLE SPLICER	$ 37.35	27.81
ELECTRICIAN	$ 34.30	27.62

ELEC1105-001 05/30/2022

COSHOCTON, GUERNSEY, KNOX (Jackson, Clay, Morgan, Miller, Milford, Hilliar, Butler, Harrison, Pleasant & College Townships), LICKING, MUSKINGUM, PERRY, and TUSCARAWAS (Auburn, York, Clay, Jefferson, Rush, Oxford, Washington, Salem, Perry & Bucks Townships) COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 35.25	22.18

ENGI0018-003 05/01/2019

ASHTABULA, CUYAHOGA, ERIE, GEAUGA, LAKE, LORAIN, MEDINA, PORTAGE, and SUMMIT COUNTIES

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1	$ 38.63	15.20
GROUP 2	$ 38.53	15.20
GROUP 3	$ 37.49	15.20
GROUP 4	$ 36.27	15.20
GROUP 5	$ 30.98	15.20
GROUP 6	$ 38.88	15.20
GROUP 7	$ 39.13	15.20

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - Air Compressor on Steel Erection; Barrier Moving Machine; Boiler Operator on Compressor or Generator when mounted on a Rig; Cableway; Combination Concrete Mixer & Tower; Concrete Plant (over 4 yd. Capacity); Concrete Pump; Crane (All Types, Including Boom Truck, Cherry Picker); Crane-Compact, Track or Rubber over 4,000 lbs. capacity; Cranes-Self Erecting, Stationary, Track or Truck (All Configurations); Derrick; Dragline; Dredge (Dipper, Clam or Suction); Elevating Grader or Euclid Loader; Floating Equipment (All Types); Gradall; Helicopter Crew (Operator-Hoist or Winch); Hoe (all types); Hoisting Engine on Shaft or Tunnel Work; Hydraulic Gantry (Lifting System);

Industrial-Type Tractor; Jet Engine Dryer (D8 or D9) Diesel Tractor; Locomotive (Standard Gauge); Maintenance Operator Class A; Mixer, Paving (Single or Double Drum); Mucking Machine; Multiple Scraper; Piledriving Machine (All Types); Power Shovel; Prentice Loader; Quad 9 (Double Pusher); Rail Tamper (with auto lifting & aligning device); Refrigerating Machine (Freezer Operation); Rotary Drill, on Caisson work; Rough Terrain Fork Lift with Winch/Hoist; Side-Boom; Slip-Form Paver; Tower Derrick; Tree Shredder; Trench Machine (Over 24"" wide); Truck Mounted Concrete Pump; Tug Boat; Tunnel Machine and/or Mining Machine; Wheel Excavator; and Asphalt Plant Engineer (Cleveland District Only).

GROUP 2 - Asphalt Paver; Automatic Subgrader Machine, Self-Propelled (CMI Type); Bobcat Type and/or Skid Steer Loader with Hoe Attachment Greater than 7,000 lbs.; Boring Machine More than 48""; Bulldozer; Endloader; Horizontal Directional Drill (Over 50,000 ft lbs thrust); Hydro Milling Machine; Kolman-type Loader (production type-Dirt); Lead Greaseman; Lighting & Traffic Signal Installation Equipment (includes all groups or classifications); Material Transfer Equipment (Shuttle Buggy) Asphalt; Pettibone-Rail Equipment; Power Grader; Power Scraper; Push Cat; Rotomill (all), Grinders & Planers of All types; Trench Machine (24"" wide & under); Vermeer type Concrete Saw; and Maintenance Operators (Portage and Summit Counties Only).

GROUP 3 - A-Frame; Air Compressor on Tunnel Work (low pressure); Asphalt Plant Engineer (Portage and Summit Counties Only); Bobcat-type and/or Skid Steer Loader with or without Attachments; Highway Drills (all types); Locomotive (narrow gauge); Material Hoist/Elevator; Mixer, Concrete (more than one bag capacity); Mixer, one bag capacity (Side Loader); Power Boiler (Over 15 lbs. Pressure) Pump Operator installing & operating Well Points; Pump (4"" & over discharge); Roller, Asphalt; Rotovator (lime soil stabilizer); Switch & Tie Tampers (without lifting & aligning device); Utility Operator (Small equipment); Welding Machines; and Railroad Tie Inserter/Remover; Articulating/straight bed end dumps if assigned (minus $4.00 per hour.

GROUP 4 - Backfiller; Ballast Re-locator; Bars, Joint & Mesh Installing Machine; Batch Plant; Boring Machine Operator (48"" or less); Bull Floats; Burlap & Curing Machine; Concrete Plant (capacity 4 yd. & under); Concrete Saw (Multiple); Conveyor (Highway); Crusher; Deckhand; Farm-type Tractor with attachments (highway); Finishing Machine; Fireperson, Floating Equipment (all types); Forklift; Form Trencher; Hydro Hammer expect masonary; Hydro Seeder; Pavement Breaker; Plant Mixer; Post Driver; Post Hole Digger (Power Auger); Power Brush Burner; Power Form Handling Equipment; Road Widening Trencher; Roller (Brick, Grade & Macadam); Self-Propelled Power Spreader; Self-Propelled Power Subgrader; Steam Fireperson; Tractor

(Pulling Sheepfoot, Roller or Grader); and Vibratory Compactor with Integral Power.

GROUP 5 - Compressor (Portable, Sewer, Heavy & Highway); Drum Fireperson (Asphalt Plant); Generator; Masonry Fork Lift; Inboard-Outboard Motor Boat Launch; Oil Heater (asphalt plant); Oiler/Helper; Power Driven Heater; Power Sweeper & Scrubber; Pump (under 4"" discharge); Signalperson; Tire Repairperson; VAC/ALLS; Cranes - Compact, track or rubber under 4,000 pound capacity; fueling and greasing; and Chainmen.

GROUP 6 - Master Mechanic & Boom from 150 to 180.

GROUP 7 - Boom from 180 and over.

ENGI0018-004 05/01/2019

ADAMS, ALLEN, ASHLAND, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, LUCAS, MADISON, MARION, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WOOD, and YANDOT COUNTIES

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1	$ 37.14	15.20
GROUP 2	$ 37.02	15.20
GROUP 3	$ 35.98	15.20
GROUP 4	$ 34.80	15.20
GROUP 5	$ 29.34	15.20
GROUP 6	$ 37.39	15.20
GROUP 7	$ 37.64	15.20

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - Air Compressor on Steel Erection; Barrier Moving Machine; Boiler Operator on Compressor or Generator when mounted on a Rig; Cableway; Combination Concrete Mixer & Tower; Concrete Plant (over 4 yd. Capacity); Concrete Pump; Crane (All Types, Including Boom Truck, Cherry Picker); Crane-Compact, Track or Rubber over 4,000 lbs. capacity; Cranes-Self Erecting, Stationary, Track or Truck (All Configurations); Derrick; Dragline; Dredge (Dipper, Clam or Suction); Elevating Grader or Euclid Loader; Floating Equipment (All Types); Gradall; Helicopter Crew (Operator-Hoist or Winch); Hoe (all types); Hoisting Engine

on Shaft or Tunnel Work; Hydraulic Gantry (Lifting System); Industrial-Type Tractor; Jet Engine Dryer (D8 or D9) Diesel Tractor; Locomotive (Standard Gauge); Maintenance Operator Class A; Mixer, Paving (Single or Double Drum); Mucking Machine; Multiple Scraper; Piledriving Machine (All Types); Power Shovel; Prentice Loader; Quad 9 (Double Pusher); Rail Tamper (with auto lifting & aligning device); Refrigerating Machine (Freezer Operation); Rotary Drill, on Caisson work; Rough Terrain Fork Lift with Winch/Hoist; Side-Boom; Slip-Form Paver; Tower Derrick; Tree Shredder; Trench Machine (Over 24"" wide); Truck Mounted Concrete Pump; Tug Boat; Tunnel Machine and/or Mining Machine; and Wheel Excavator.

GROUP 2 - Asphalt Paver; Automatic Subgrader Machine, Self-Propelled (CMI Type); Bobcat Type and/or Skid Steer Loader with Hoe Attachment Greater than 7,000 lbs.; Boring Machine More than 48""; Bulldozer; Endloader; Hydro Milling Machine; Horizontal Directional Drill (over 50,000 ft. lbs. thrust);Kolman-type Loader (production type-Dirt); Lead Greaseman; Lighting & Traffic Signal Installation Equipment (includes all groups or classifications); Material Transfer Equipment (Shuttle Buggy) Asphalt; Pettibone-Rail Equipment; Power Grader; Power Scraper; Push Cat; Rotomill (all), Grinders & Planers of All types; Trench Machine (24"" wide & under); and Vermeer type Concrete Saw.

GROUP 3 - A-Frame; Air Compressor on Tunnel Work (low pressure); Asphalt Plant Engineer; Bobcat-type and/or Skid Steer Loader with or without Attachments; Highway Drills (all types); Locomotive (narrow gauge); Material Hoist/Elevator; Mixer, Concrete (more than one bag capacity); Mixer, one bag capacity (Side Loader); Power Boiler (Over 15 lbs. Pressure) Pump Operator installing & operating Well Points; Pump (4"" & over discharge); Railroad Tie Inserter/Remover; Roller, Asphalt; Rotovator (lime soil stabilizer); Switch & Tie Tampers (without lifting & aligning device); Utility Operator (Small equipment); and Welding Machines; Artiaculating/straight bed end dumps if assigned (minus $4.00 per hour.

GROUP 4 - Backfiller; Ballast Re-locator; Bars, Joint & Mesh Installing Machine; Batch Plant; Boring Machine Operator (48"" or less); Bull Floats; Burlap & Curing Machine; Concrete Plant (capacity 4 yd. & under); Concrete Saw (Multiple); Conveyor (Highway); Crusher; Deckhand; Farm-type Tractor with attachments (highway); Finishing Machine; Fireperson, Floating Equipment (all types); Fork Lift; Form Trencher; Hydro Hammer expect masonary; Hydro Seeder; Pavement Breaker; Plant Mixer; Post Driver; Post Hole Digger (Power Auger); Power Brush Burner; Power Form Handling Equipment; Road Widening Trencher; Roller (Brick, Grade & Macadam); Self-Propelled Power Spreader; Self-Propelled Power Subgrader; Steam Fireperson; Tractor (Pulling Sheepfoot, Roller or Grader); and Vibratory Compactor with Integral Power.

GROUP 5 - Compressor (Portable, Sewer, Heavy & Highway); Drum Fireperson (Asphalt Plant); Generator; Masonary Forklift; Inboard-Outboard Motor Boat Launch; Oil Heater (asphalt plant); Oiler/Helper; Power Driven Heater; Power Sweeper & Scrubber; Pump (under 4"" discharge); Signalperson; Tire Repairperson; VAC/ALLS; Cranes - Compact, track or rubber under 4,000 pound capacity; fueling and greasing; and Chainmen.

GROUP 6 - Master Mechanic & Boom from 150 to 180.

GROUP 7 - Boom from 180 and over.

ENGI0066-023 06/01/2017

COLUMBIANA, MAHONING & TRUMBULL COUNTIES

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
ASBESTOS; HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 1 - A & B	$ 39.23	19.66
ASBESTOS; HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 2 - A & B	$ 38.90	19.66
ASBESTOS; HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 3 - A & B	$ 34.64	19.66
ASBESTOS; HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 4 - A & B	$ 30.70	19.66
ASBESTOS; HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 5 - A & B	$ 27.30	19.66
HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 1 - C & D	$ 35.96	19.66
HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 2 - C & D	$ 35.66	19.66
HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 3 - C & D	$ 31.76	19.66
HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 4 - C & D	$ 28.14	19.66
HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 5 - C & D	$ 25.03	19.66
ALL OTHER WORK		
GROUP 1	$ 32.69	19.66
ALL OTHER WORK		
GROUP 2	$ 32.42	19.66
ALL OTHER WORK		
GROUP 3	$ 28.87	19.66

ALL OTHER WORK		
GROUP 4.....	$ 25.58	19.66
ALL OTHER WORK		
GROUP 5.....	$ 22.75	19.66

GROUP 1 - Rig, Pile Driver or Caisson Type; & Rig, Pile Hydraulic Unit Attached

GROUP 2 - Asphalt Heater Planer; Backfiller with Drag Attachment; Backhoe; Backhoe with Shear attached; Backhoe-Rear Pivotal Swing; Batch Plant-Central Mix Concrete; Batch Plant, Portable concrete; Berm Builder-Automatic; Boat Derrick; Boat-Tug; Boring Machine Attached to Tractor; Bullclam; Bulldozer; C.M.I. Road Builder & Similar Type; Cable Placer & Layer; Carrier-Straddle; Carryall-Scraper or Scoop; Chicago Boom; Compactor with Blade Attached; Concrete Saw (Vermeer or similar type); Concrete Spreader Finisher; Combination, Bidwell Machine; Crane; Crane-Electric Overhead; Crane-Rough Terrain; Crane-Side Boom; Crane-Truck; Crane-Tower; Derrick-Boom; Derrick-Car; Digger-Wheel (Not trencher or road widener); Double Nine; Drag Line; Dredge; Drill-Kenny or Similar Type; Easy Pour Median Barrier Machine (or similar type); Electromatic; Frankie Pile; Gradall; Grader; Gurry; Self-Propelled; Heavy Equipment Robotics Operator/Mechanic; Hoist-Monorail; Hoist-Stationary & Mobile Tractor; Hoist, 2 or 3 drum; Horizontal Directional Drill Operator; Jackall; Jumbo Machine; Kocal & Kuhlman; Land-Seagoing Vehicle; Loader, Elevating; Loader, Front End; Loader, Skid Steer; Locomotive; Mechanic/Welder; Metro Chip Harvester with Boom; Mucking Machine; Paver-Asphalt Finishing Machine; Paver-Road Concrete; Paver-Slip Form (C.M.I. or similar); Place Crete Machine with Boom; Post Driver (Carrier mounted); Power Driven Hydraulic Pump & Jack (When used in Slip Form or Lift Slab Construction); Pump Crete Machine; Regulator-Ballast; Hydraulic Power Unit not attached to Rig for Pile Drillings; Rigs-Drilling; Roto Mill or similar Full Lane (8' Wide & Over); Roto Mill or similar type (Under 8'); Shovel; Slip Form Curb Machine; Speedwing; Spikemaster; Stonecrusher; Tie Puller & Loader; Tie Tamper; Tractor-Double Boom; Tractor with Attachments; Truck-Boom; Truck-Tire; Trench Machine; Tunnel Machine (Mark 21 Java or similar); & Whirley (or similar type)

GROUP 3 - Asphalt Plant; Bending Machine (Pipeline or similar type); Boring machine, Motor Driven; Chip Harvester without Boom; Cleaning Machine, Pipeline Type; Coating Machine, Pipeline Type; Compactor; Concrete Belt Placer; Concrete Finisher; Concrete Planer or Asphalt; Concrete Spreader; Elevator; Fork Lift (Home building only); Fork lift & Lulls; Fork Lift Walk Behind (Hoisting over 1 buck high); Form Line Machine; Grease Truck operator; Grout Pump; Gunnite Machine; Horizontal Directional Drill Locator; Single Drum Hoist with or without Tower; Huck Bolting Machine; Hydraulic Scaffold (Hoisting building materials); Paving Breaker (Self-propelled or Ridden);

Pipe Dream; Pot Fireperson (Power Agitated); Refrigeration Plant; Road Widener; Roller; Sasgen Derrick; Seeding Machine; Soil Stabilizer (Pump type); Spray Cure Machine, Self-Propelled; Straw Blower Machine; Sub-Grader; Tube Finisher or Broom C.M.I. or similar type; & Tugger Hoist

GROUP 4 - Air Curtain Destructor & Similar Type; Batch Plant-Job Related; Boiler Operator; Compressor; Conveyor; Curb Builder, self-propelled; Drill Wagon; Generator Set; Generator-Steam; Heater-Portable Power; Hydraulic Manipulator Crane; Jack-Hydraulic Power driven; Jack-Hydraulic (Railroad); Ladavator; Minor Machine Operator; Mixer-Concrete; Mulching Machine; Pin Puller; Power Broom; Pulverizer; Pump; Road Finishing Machine (Pull Type); Saw-Concrete-Self-Propelled (Highway Work); Signal Person; Spray Cure Machine-Motor Powered; Stump Cutter; Tractor; Trencher Form; Water Blaster; Steam Jenny; Syphon; Vibrator-Gasoline; & Welding Machine

GROUP 5 - Brakeperson; Fireperson; & Oiler

IRON0017-002 05/01/2022

ASHTABULA (North of Route 6, starting at the Geauga County Line, proceeding east to State Route 45), CUYAHOGA, ERIE (Eastern 2/3), GEAUGA, HURON (East of a line drawn from the north border through Monroeville & Willard), LAKE, LORAIN, MEDINA (North of Old Rte. #224), PORTAGE (West of a line from Middlefield to Shalersville to Deerfield), and SUMMIT (North of Old Rte. #224, including city limits of Barberton) COUNTIES

	Rates	Fringes
IRONWORKER		
Ornamental, Reinforcing, & Structural	$ 34.33	27.51

IRON0017-010 05/01/2022

ASHTABULA (Eastern part from Lake Erie on the north to route #322 on the south to include Conneaut, Kingsville, Sheffield, Denmark, Dorset, Cherry Valley, Wayne, Monroe, Pierpont, Richmond, Andover & Williamsfield Townships)

	Rates	Fringes
IRONWORKER		
Structural, including metal building erection & Reinforcing	$ 34.33	27.51

IRON0044-001 06/01/2022

ADAMS (Western Part), BROWN, BUTLER (Southern Part), CLERMONT,

CLINTON (South of a line drawn from Blanchester to Lynchburg), HAMILTON, HIGHLAND (Excluding eastern one-fifth & portion of county inside lines drawn from Marshall to Lynchburg from the northern county line through E. Monroe to Marshall) and WARREN (South of a line drawn from Blanchester through Morrow to the west county line) COUNTIES

	Rates	Fringes
IRONWORKER, REINFORCING	$ 32.37	22.30
Beyond 30-mile radius of Hamilton County Courthouse	$ 28.67	21.20
Up to & including 30-mile radius of Hamilton County Courthouse	$ 27.60	20.70

IRON0044-002 06/01/2022

CLINTON (South of a line drawn from Blanchester to Lynchburg), HAMILTON, HIGHLAND (Excluding eastern one-fifth & portion of county inside lines drawn from Marshall to Lynchburg from the northern county line through E. Monroe to Marshall) & WARREN (South of a line drawn from Blanchester through Morrow to the west county line)

	Rates	Fringes
IRONWORKER		
Fence Erector	$ 30.28	22.30
Ornamental; Structural	$ 31.87	22.30

IRON0055-003 07/01/2021

CRAWFORD (Area Between lines drawn from where Hwy #598 & #30 meet through N. Liberty to the northern border & from said Hwy junction point due west to the border), DEFIANCE (S. of a line drawn from where Rte. #66 meets the northern line through Independence to the eastern county border), ERIE (Western 1/3), FULTON, HANCOCK, HARDIN (North of a line drawn from Maysville to a point 4 miles south of the northern line on the eastern line), HENRY, HURON (West of a line drawn from the northern border through Monroeville & Willard), LUCAS, OTTAWA, PUTNAM (East of a line drawn from the northern border down through Miller City to where #696 meets the southern border), SANDUSKY, SENECA, WILLIAMS (East of a line drawn from Pioneer through Stryker to the southern border), WOOD & WYANDOT (North of Rte. #30)

	Rates	Fringes
IRONWORKER		
Fence Erector	$ 21.30	20.92
Flat Road Mesh	$ 29.77	21.30
Tunnels & Caissons Under		

Pressure.....$ 29.77 21.30
All Other Work.....$ 31.25 26.90

IRON0147-002 06/01/2022

ALLEN (Northern half), DEFIANCE (Northern part, excluding south of a line drawn from where Rte. #66 meets the northern line through Independence to the eastern county border), MERCER (Northern half), PAULDING, PUTNAM (Western part, excluding east of a line drawn from the northern border down through Miller City to where #696 meets the southern border), VAN WERT, and WILLIAMS (Western part, excluding east of a line drawn from Pioneer through Stryker to the southern border) COUNTIES

	Rates	Fringes
IRONWORKER	$ 31.20	28.47

IRON0172-002 06/01/2022

CHAMPAIGN (Eastern one-third), CLARK (Eastern one-fourth), COSHOCTON (West of a line beginning at the northwestern county line going through Walhonding & Tunnel Hill to the southern county line), CRAWFORD (South of Rte. #30), DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, HARDIN (Excluding a line drawn from Roundhead to Maysville), HIGHLAND (Eastern one-fifth), HOCKING, JACKSON (Northern half), KNOX, LICKING, LOGAN (Eastern one-third), MADISON, MARION, MORROW, MUSKINGUM (West of a line starting at Adams Mill going to Adamsville & going from Adamsville through Blue Rock to the southern border), PERRY, PICKAWAY, PIKE (Northern half), ROSS, UNION, VINTON and WYANDOT (South of Rte. #30) COUNTIES

	Rates	Fringes
IRONWORKER	$ 33.27	21.20

IRON0207-004 06/01/2022

ASHTABULA (Southern part starting at the Geauga County line), COLUMBIANA (E. of a line from Damascus to Highlandtown), MAHONING (N. of Old Route #224), PORTAGE (E. of a line from Middlefield to Shalersville to Deerfield) & TRUMBULL

	Rates	Fringes
IRONWORKER		
Layout; Sheeter	$ 32.92	26.26
Ornamental; Reinforcing; Structural	$ 31.92	26.26
Ornamental; Reinforcing	$ 28.92	25.61

IRON0290-002 06/01/2022

ALLEN (Southern half), AUGLAIZE, BUTLER (North of a line drawn from east to the west county line going through Oxford, Darrtown & Woodsdale), CHAMPAIGN (Excluding east of a line drawn from Catawla to the point where #68 intersects the northern county line), CLARK (Western two-thirds), CLINTON (Excluding south of a line drawn from Blanchester to Lynchburg), DARKE, GREENE, HIGHLAND (Inside lines drawn from Marshall to Lynchburg & from the northern county line through East Monroe to Marshall), LOGAN (West of a line drawn from West Liberty to where the northern county line meets the western county line of Hardin), MERCER (Southern half), MIAMI, MONTGOMERY, PREBLE, SHELBY & WARREN (Excluding south of a line drawn from Blanchester through Morrow to the western county line) COUNTIES

	Rates	Fringes
IRONWORKER	$ 31.59	23.85

IRON0549-003 12/01/2022

BELMONT, GUERNSEY, HARRISON, JEFFERSON, MONROE & MUSKINGUM (Excluding portion west of a line starting at Adams Mill going to Adamsville and going from Adamsville through Blue Rock to the south border)

	Rates	Fringes
IRONWORKER	$ 35.19	25.66

IRON0550-004 05/01/2022

ASHLAND, CARROLL, COLUMBIANA (W. of a line from Damascus to Highlandtown), COSHOCTON (E. of a line beginning at NW Co. line going through Walhonding & Tunnel Hill to the South Co. line), HOLMES, HURON (S. of Old Rte. #224), MAHONING (S. of Old Rte. #224), MEDINA (S. of Old Rte. #224), PORTAGE (S. of Old Rte. #224), RICHLAND, STARK, SUMMIT (S. of Old Rte. #224, Excluding city limits of Barberton), TUSCARAWAS, & WAYNE

	Rates	Fringes
Ironworkers:Structural, Ornamental and Reinforcing	$ 30.97	21.69

IRON0769-004 06/01/2022

ADAMS (Eastern Half), GALLIA, JACKSON (Southern Half), LAWRENCE & SCIOTO

	Rates	Fringes
IRONWORKER	$ 33.71	27.69

IRON0787-003 06/01/2022

ATHENS, MEIGS, MORGAN, NOBLE, and WASHINGTON COUNTIES

	Rates	Fringes
IRONWORKER	$ 31.50	23.75

LABO0265-008 05/01/2022

	Rates	Fringes
LABORER		
ASHTABULA, ERIE, HURON, LORAIN, LUCAS, MAHONING, MEDINA, OTTAWA, PORTAGE, SANDUSKY, STARK, SUMMIT, TRUMBULL & WOOD COUNTIES		
GROUP 1	$ 34.95	12.10
GROUP 2	$ 35.12	12.10
GROUP 3	$ 35.45	12.10
GROUP 4	$ 35.90	12.10
CUYAHOGA AND GEAUGA COUNTIES ONLY: SEWAGE PLANTS, WASTE PLANTS, WATER TREATMENT FACILITIES, PUMPING STATIONS, & ETHANOL PLANTS		
CONSTRUCTION	$ 37.56	12.10
CUYAHOGA, GEAUGA & LAKE COUNTIES		
GROUP 1	$ 36.18	12.10
GROUP 2	$ 36.35	12.10
GROUP 3	$ 36.68	12.10
GROUP 4	$ 37.13	12.10
REMAINING COUNTIES OF OHIO		
GROUP 1	$ 34.52	12.10
GROUP 2	$ 34.69	12.10
GROUP 3	$ 35.02	12.10
GROUP 4	$ 35.47	12.10

LABORER CLASSIFICATIONS

GROUP 1 - Asphalt Laborer; Carpenter Tender; Concrete Curing Applicator; Dump Man (Batch Truck); Guardrail and Fence Installer; Joint Setter; Laborer (Construction); Landscape Laborer; Mesh Handlers & Placer; Right-of-way Laborer; Riprap Laborer & Grouter; Scaffold Erector; Seal Coating; Surface Treatment or Road Mix Laborer; Sign Installer; Slurry Seal; Utility Man; Bridge Man; Handyman; Waterproofing Laborer; Flagperson; Hazardous Waste (level D); Diver Tender; Zone Person & Traffic Control

GROUP 2 - Asphalt Raker; Concrete Puddler; Kettle Man Pipeline); Machine Driven Tools (Gas, Electric, Air); Mason Tender; Brick Paver; Mortar Mixer; Power Buggy or Power

Wheelbarrow; Paint Striper; Sheeting & Shoring Man; Surface Grinder Man; Plastic Fusing Machine Operator; Pug Mill Operator; & Vacuum Devices (wet or dry); Rodding Machine Operator; Diver; Screwman or Paver; Screed Person; Water Blast, Hand Held Wand; Pumps 4"" & Under (Gas, Air or Electric) & Hazardous Waste (level C); Air Track and Wagon Drill; Bottom Person; Cofferdam (below 25 ft. deep); Concrete Saw Person; Cutting with Burning Torch; Form Setter; Hand Spiker (Railroad); Pipelayer; Tunnel Laborer (without air) & Caisson; Underground Person (working in Sewer and Waterline, Cleaning, Repairing & Reconditioning); Sandblaster Nozzle Person; & Hazardous Waste (level B)

GROUP 3 - Blaster; Mucker; Powder Person; Top Lander; Wrencher (Mechanical Joints & Utility Pipeline); Yarner; Hazardous Waste (level A); Concrete Specialist; Concrete Crew in Tunnels (With Air-pressurized - $1.00 premium); Curb Setter & Cutter; Grade Checker; Utility Pipeline Tapper; Waterline; and Caulker

GROUP 4 - Miner (With Air-pressurized - $1.00 premium); & Gunite Nozzle Person

TUNNEL LABORER WITH AIR-PRESSURIZED ADD $1.00 TO BASE RATE

SIGNAL PERSON WILL RECEIVE THE RATE EQUAL TO THE RATE PAID THE LABORER CLASSIFICATION FOR WHICH HE OR SHE IS SIGNALING.

PAIN0006-002 05/01/2018

ASHTABULA, CUYAHOGA, GEAUGA, LAKE, LORAIN, PORTAGE (N. of the East-West Turnpike) & SUMMIT (N. of the East-West Turnpike)

	Rates	Fringes
PAINTER		
COMMERCIAL NEW WORK; REMODELING; & RENOVATIONS		
GROUP 1	$ 27.90	16.16
GROUP 2	$ 28.30	16.16
GROUP 3	$ 28.60	16.16
GROUP 4	$ 34.16	16.16
COMMERCIAL REPAINT		
GROUP 1	$ 26.40	16.16
GROUP 2	$ 26.80	16.16
GROUP 3	$ 27.10	16.16

PAINTER CLASSIFICATIONS - COMMERCIAL NEW WORK; REMODELING; & RENOVATIONS

GROUP 1 - Brush; & Roller

GROUP 2 - Sandblasting & Buffing

GROUP 3 - Spray Painting; Closed Steel Above 55 feet; Bridges

& Open Structural Steel; Tanks - Water Towers; Bridge Painters; Bridge Riggers; Containment Builders

GROUP 4 - Bridge Blaster

PAINTER CLASSIFICATIONS - COMMERCIAL REPAINT

GROUP 1 - Brush; & Roller

GROUP 2 - Sandblasting & Buffing

GROUP 3 - Spray Painting

PAIN0007-002 07/01/2021

FULTON, HENRY, LUCAS, OTTAWA (Excluding Allen, Bay, Bono, Catawba Island, Clay Center, Curtice, Danbury, Eagle Beach, Elliston, Elmore, Erie, Fishback, Gem Beach & Genova) & WOOD

	Rates	Fringes
PAINTER		
NEW COMMERCIAL WORK		
GROUP 1	$ 28.74	18.77
GROUP 2	$ 28.74	18.77
GROUP 3	$ 28.74	18.77
GROUP 4	$ 28.74	18.77
GROUP 5	$ 28.74	18.77
GROUP 6	$ 28.74	18.77
GROUP 7	$ 28.74	18.77
GROUP 8	$ 28.74	18.77
GROUP 9	$ 28.74	18.77

REPAINT IS 90% OF JR

PAINTER CLASSIFICATIONS

GROUP 1 - Brush; Spray & Sandblasting Pot Tender

GROUP 2 - Refineries & Refinery Tanks; Surfaces 30 ft. or over where material is applied to or labor performed on above ground level (exterior), floor level (interior)

GROUP 3 - Swing Stage & Chair

GROUP 4 - Lead Abatement

GROUP 5 - All Methods of Spray

GROUP 6 - Solvent-Based Catalized Epoxy Materials of 2 or More Component Materials, to include Solvent-Based Conversion Varnish (excluding water based)

GROUP 7 - Spray Solvent Based Material; Sand & Abrasive Blasting

GROUP 8 - Towers; Tanks; Bridges; Stacks Over 30 Feet

GROUP 9 - Epoxy Spray (excluding water based)

PAIN0012-008 05/01/2019

BUTLER COUNTY

	Rates	Fringes
PAINTER		
GROUP 1	$ 21.95	10.20
GROUP 2	$ 25.30	10.20
GROUP 3	$ 25.80	10.20
GROUP 4	$ 26.05	10.20
GROUP 5	$ 26.30	10.20

PAINTER CLASSIFICATIONS

GROUP 1: Bridge Equipment Tender; Bridge/Containment Builder

GROUP 2: Brush & Roller

GROUP 3: Spray

GROUP 4: Sandblasting; & Waterblasting

GROUP 5: Elevated Tanks; Steeplejack Work; Bridge; & Lead Abatement

---

PAIN0012-010 05/01/2019

BROWN, CLERMONT, CLINTON, HAMILTON & WARREN

	Rates	Fringes
PAINTER		
HEAVY & HIGHWAY BRIDGES-GUARDRAILS-LIGHTPOLES-STRIPING		
Bridge Equipment Tender and Containment Builder	$ 21.95	10.20
Bridges when highest point of clearance is 60 feet or more; & Lead Abatement Projects	$ 26.30	10.20
Brush & Roller	$ 25.30	10.20
Sandblasting & Hopper Tender; Water Blasting	$ 26.05	10.20
Spray	$ 25.80	10.20

PAIN0093-001 12/01/2018

ATHENS, GUERNSEY, HOCKING, MONROE, MORGAN, NOBLE and
WASHINGTON COUNTIES

	Rates	Fringes
PAINTER		
Bridges; Locks; Dams; Tension Towers; & Energized Substations	$ 34.04	18.50
Power Generating Facilities	$ 30.89	18.50

PAIN0249-002 06/01/2020

CLARK, DARKE, GREENE, MIAMI, MONTGOMERY & PREBLE

	Rates	Fringes
PAINTER		
GROUP 1 - Brush & Roller	$ 24.17	11.22
GROUP 2 - Swing, Scaffold Bridges; Structural Steel; Open Acid Tank; High Tension Electrical Equipment; & Hot Pipes	$ 24.17	11.22
GROUP 3 - Spray; Sandblast; Steamclean; Lead Abatement	$ 24.92	11.22
GROUP 4 - Steeplejack Work	$ 25.12	11.22
GROUP 5 - Coal Tar	$ 25.67	11.22
GROUP 6 - Bridge Equipment Tender & or Containment Builder	$ 32.88	11.22
GROUP 7 - Tanks, Stacks & Towers	$ 27.81	11.22
GROUP 8 - Bridge Blaster, Rigger	$ 35.88	11.22

PAIN0356-002 09/01/2009

KNOX, LICKING, MUSKINGUM, and PERRY

	Rates	Fringes
PAINTER		
Bridge Equipment Tenders and Containment Builders	$ 27.93	7.25
Bridges; Blasters; andRiggers	$ 34.60	7.25
Brush and Roller	$ 20.93	7.25
Sandblasting; Steam Cleaning; Waterblasting; and Hazardous Work	$ 25.82	7.25
Spray	$ 21.40	7.25
Structural Steel and Swing Stage	$ 25.42	7.25
Tanks; Stacks; and Towers	$ 28.63	7.25

PAIN0438-002 12/01/2021

BELMONT, HARRISON and JEFFERSON COUNTIES

	Rates	Fringes
PAINTER		
Bridges, Locks, Dams, Tension Towers & Energized Substations	$ 34.47	20.60
Power Generating Facilities	$ 29.65	17.68

PAIN0476-001 06/01/2021

COLUMBIANA, MAHONING, and TRUMBULL COUNITES

	Rates	Fringes
PAINTER		
GROUP 1	$ 25.79	15.81
GROUP 2	$ 33.10	15.81
GROUP 3	$ 26.00	15.81
GROUP 4	$ 27.12	15.81
GROUP 5	$ 27.79	15.81
GROUP 6	$ 26.69	15.81
GROUP 7	$ 27.79	15.81

PAINTER CLASSIFICATIONS:

GROUP 1: Painters, Brush & Roller

GROUP 2: Bridges

GROUP 3: Structural Steel

GROUP 4: Spray, Except Bar Joist/Deck

GROUP 5: Epoxy/Mastic; Spray- Bar Joist/Deck; Working Above 50 Feet; and Swingstages

GROUP 6: Tanks; Sandblasting

GROUP 7: Towers; Stacks

PAIN0555-002 06/01/2021

ADAMS, HIGHLAND, JACKSON, PIKE & SCIOTO

	Rates	Fringes
PAINTER		
GROUP 1	$ 31.95	17.05
GROUP 2	$ 33.47	17.05
GROUP 3	$ 34.99	17.05
GROUP 4	$ 37.97	17.05

PAINTER CLASSIFICATIONS

GROUP 1 - Containment Builder

GROUP 2 - Brush; Roller; Power Tools, Under 40 feet

GROUP 3 - Sand Blasting; Spray; Steam Cleaning; Pressure Washing; Epoxy & Two Component Materials; Lead Abatement; Hazardous Waste; Toxic Materials; Bulk & Storage Tanks of 25,000 Gallon Capacity or More; Elevated Tanks

GROUP 4 - Stacks; Bridges

PAIN0639-001 05/01/2011

	Rates	Fringes
Sign Painter & Erector.....	$ 20.61	3.50+a+b+c

FOOTNOTES: a. 7 Paid Holidays: New Year's Day; Memorial Day; July 4th; Labor Day; Thanksgiving Day; Christmas Day & 1 Floating Day
b. Vacation Pay: After 1 year's service - 5 days' paid vacation; After 2, but less than 10 years' service - 10 days' paid vacation; After 10, but less than 20 years' service - 15 days' paid vacation; After 20 years' service - 20 days' paid vacation
c. Funeral leave up to 3 days maximum paid leave for death of mother, father, brother, sister, spouse, child, mother-in-law, father-in-law, grandparent and inlaw provided employee attends funeral

---

PAIN0788-002 06/01/2022

ASHLAND, CRAWFORD, ERIE, HANCOCK, HURON, MARION, MORROW, OTTAWA (Allen, Bay, Bono, Catawba Island, Clay Center, Curtice, Danbury, Eagle Beach, Elliston, Elmore, Erie, Fishback, Gem Beach & Genoa), RICHLAND, SANDUSKY, SENECA & WYANDOT

	Rates	Fringes
PAINTER		
Brush & Roller.....	$ 25.08	16.72
Structural Steel.....	$ 26.68	16.72

WINTER REPAINT: Between December 1 to March 31 - 90%JR

$.50 PER HOUR SHALL BE ADDED TO THE RATE OF PAY FOR THE CLASSIFICATION OF WORK:

While working swingstage, boatswain chair, needle beam and horizontal cable. While operating sprayguns, sandblasting, cobblasting and high pressure waterblasting (4000psi).

$1.00 PER HOUR SHALL BE ADDED TO THE RATE OF PAY FOR THE CLASSIFICATION OF WORK:

For the application of catalized epoxy, including latex epoxy that is deemed hazardous, lead abatement, or for work or material where special precautions beyond normal work duties must be taken. For working on stacks, tanks, and towers over 40 feet in height.

PAIN0813-005 12/01/2008

GALLIA, LAWRENCE, MEIGS & VINTON

	Rates	Fringes
PAINTER		
Base Rate	$ 24.83	10.00
Bridges, Locks, Dams & Tension Towers	$ 27.83	10.00

PAIN0841-001 06/01/2018

MEDINA, PORTAGE (South of and including Ohio Turnpike), and SUMMIT (South of and including Ohio Turnpike) COUNTIES

	Rates	Fringes
Painters:		
GROUP 1	$ 25.75	14.35
GROUP 2	$ 26.40	14.35
GROUP 3	$ 26.50	14.35
GROUP 4	$ 26.60	14.35
GROUP 5	$ 27.00	14.35
GROUP 6	$ 39.20	11.75
GROUP 7	$ 27.00	14.35

PAINTER CLASSIFICATIONS:

GROUP 1 - Brush, Roller & Paperhanger

GROUP 2 - Epoxy Application

GROUP 3 - Swing Scaffold, Bosum Chair, & Window Jack

GROUP 4 - Spray Gun Operator of Any & All Coatings

GROUP 5 - Sandblast, Painting of Standpipes, etc. from Scaffolds, Bridge Work and/or Open Structural Steel, Standpipes and/or Water Towers

GROUP 6 - Public & Commerce Transportation, Steel or Galvanized, Bridges, Tunnels & Related Support Items (concrete)

GROUP 7 - Synthetic Exterior, Drywall Finisher and/or Taper, Drywall Finisher and Follow-up Man Using Automatic Tools

---

PAIN0841-002 06/01/2022

CARROLL, COSHOCTON, HOLMES, STARK, TUSCARAWAS & WAYNE

	Rates	Fringes
PAINTER		
Bridges; Towers, Poles & Stacks; Sandblasting Steel; Structural Steel & Metalizing	$ 23.50	15.45
Brush & Roller	$ 28.18	15.45
Spray; Tank Interior & Exterior	$ 23.50	15.45

PAIN1020-002 06/01/2022

ALLEN, AUGLAIZE, CHAMPAIGN, DEFIANCE, HARDIN, LOGAN, MERCER, PAULDING, PUTNAM, SHELBY, VAN WERT, and WILLIAMS COUNTIES

	Rates	Fringes
PAINTER		
Brush & Roller	$ 26.20	15.00
Drywall Finishing & Taping	$ 24.90	15.00
Lead Abatement	$ 27.95	15.00
Spray, Sandblasting Pressure Cleaning, & Refinery	$ 26.95	15.00
Swing Stage, Chair, Spiders, & Cherry Pickers	$ 25.47	15.00
Wallcoverings	$ 23.80	15.00

All surfaces 40 ft. or over where material is applied to or labor performed on, above ground level (exterior), floor level (interior) - $.50 premium

Applying Coal Tar Products - $1.00 premium

PAIN1275-002 06/01/2020

DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, MADISON, PICKAWAY, ROSS & UNION

	Rates	Fringes
PAINTER		
Bridges	$ 34.64	14.40
Brush; Roller	$ 25.16	14.40
Sandblasting;		

Steamcleaning;
Waterblasting (3500 PSI or
Over)& Hazardous Work.....$ 25.86 14.40
Spray.....$ 25.66 14.40
Stacks; Tanks; & Towers.....$ 28.67 14.40
Structural Steel & Swing
Stage.....$ 25.46 14.40

PLAS0109-001 05/01/2018

MEDINA, PORTAGE, STARK, and SUMMIT COUNTIES

	Rates	Fringes
PLASTERER	$ 28.86	17.11

PLAS0109-003 05/01/2018

CARROLL, HOLMES, TUSCARAWAS, and WAYNE COUNTIES

	Rates	Fringes
PLASTERER	$ 28.21	17.11

PLAS0132-002 06/01/2022

BROWN, BUTLER, CLERMONT, HAMILTON, HIGHLAND, WARREN COUNTIES

	Rates	Fringes
PLASTERER	$ 29.25	14.69

PLAS0404-002 05/01/2018

ASHTABULA, CUYAHOGA, GEAUGA, AND LAKE COUNTIES

	Rates	Fringes
PLASTERER	$ 29.63	17.11

PLAS0404-003 05/01/2018

LORAIN COUNTY

	Rates	Fringes
PLASTERER	$ 28.86	17.11

PLAS0526-022 05/01/2018

COLUMBIANA, MAHONING, and TRUMBULL COUNTIES

	Rates	Fringes
PLASTERER	$ 28.86	17.11

PLAS0526-023 05/01/2018

BELMONT, HARRISON, and JEFFERSON COUNTIES

	Rates	Fringes
PLASTERER	$ 28.21	17.11

PLAS0886-001 05/01/2018

FULTON, HANCOCK, HENRY, LUCAS, PUTNAM, and WOOD COUNTIES

	Rates	Fringes
PLASTERER	$ 29.63	17.11

PLAS0886-003 05/01/2018

DEFIANCE, ERIE, HURON, OTTAWA, PAULDING, SANDUSKY, and SENECA COUNTIES

	Rates	Fringes
PLASTERER	$ 28.86	17.11

PLAS0886-004 05/01/2018

ALLEN, AUGLAIZE, HARDIN, LOGAN, MERCER, and VAN WERT COUNTIES

	Rates	Fringes
PLASTERER	$ 28.21	17.11

PLUM0042-002 07/01/2022

ASHLAND, CRAWFORD, ERIE, HURON, KNOX, LORAIN, MORROW, RICHLAND & WYANDOT

	Rates	Fringes
Plumber, Pipefitter, Steamfitter	$ 34.42	25.47

PLUM0050-002 07/04/2022

DEFIANCE, FULTON, HANCOCK, HENRY, LUCAS, OTTAWA, PAULDING, PUTNAM, SANDUSKY, SENECA, WILLIAMS & WOOD

	Rates	Fringes
Plumber, Pipefitter, Steamfitter	$ 44.60	28.51

PLUM0055-003 05/01/2022

ASHTABULA, CUYAHOGA, GEAUGA, LAKE, MEDINA (N. of Rte. #18 & Smith Road) & SUMMIT (N. of Rte. #303, including the corporate limits of the city of Hudson)

	Rates	Fringes
PLUMBER	$ 40.00	28.43

PLUM0083-001 07/01/2017

BELMONT & MONROE (North of Rte. #78)

	Rates	Fringes
Plumber and Steamfitter	$ 32.16	31.51

PLUM0094-002 05/01/2022

CARROLL (Northen Half), STARK, and WAYNE COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER	$ 36.83	22.99

PLUM0120-002 05/02/2022

ASHTABULA, CUYAHOGA, GEAUGA, LAKE, LORAIN (the C.E.I. Power House in Avon Lake), MEDINA (N. of Rte. #18) & SUMMIT (N. of #303)

	Rates	Fringes
PIPEFITTER	$ 44.07	28.34

PLUM0162-002 06/01/2022

CHAMPAIGN, CLARK, CLINTON, DARKE, FAYETTE, GREENE, MIAMI, MONTGOMERY & PREBLE

	Rates	Fringes
Plumber, Pipefitter, Steamfitter	$ 36.47	26.80

PLUM0168-002 06/01/2022

MEIGS, MONROE (South of Rte. #78), MORGAN (South of Rte. #78) & WASHINGTON

	Rates	Fringes
PLUMBER/PIPEFITTER	$ 38.02	34.09

PLUM0189-002 06/01/2019

DELAWARE, FAIRFIELD, FRANKLIN, HOCKING, LICKING, MADISON, MARION, PERRY, PICKAWAY, ROSS & UNION

	Rates	Fringes
Plumber, Pipefitter, Steamfitter	$ 38.45	16.98

PLUM0219-002 06/01/2022

MEDINA (Rte. #18 from eastern edge of Medina Co., west to eastern corporate limits of the city of Medina, & on the county road from the west corporate limits of Medina running due west to and through community of Risley to the western edge of Medina County - All territory south of this line), PORTAGE, and SUMMIT (S. of Rte. #303) COUNTIES

	Rates	Fringes
Plumber and Steamfitter	$ 41.22	26.64

PLUM0392-002 06/01/2022

BROWN, BUTLER, CLERMONT, HAMILTON & WARREN

	Rates	Fringes
PLUMBER/PIPEFITTER	$ 36.71	24.89

---

* PLUM0396-001 06/01/2022

COLUMBIANA (Excluding Washington & Yellow Creek Townships & Liverpool Twp. - Secs. 35 & 36 - West of County Road #427), MAHONING and TRUMBULL COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER	$ 36.00	27.91

PLUM0495-002 06/01/2022

CARROLL (Rose, Monroe, Union, Lee, Orange, Perry & Loudon Townships), COLUMBIANA (Washington & Yellow Creek Townships & Liverpool Township, Secs. 35 & 36, West of County Rd. #427), COSHOCTON, GUERNSEY, HARRISON, HOLMES, JEFFERSON, MORGAN (South to State Rte. #78 & from McConnelsville west on State Rte. #37 to the Perry County line), MUSKINGUM, NOBLE, and TUSCARAWAS COUNTIES

	Rates	Fringes

Plumber, Pipefitter,
Steamfitter.....$ 31.24 34.34

PLUM0577-002 06/01/2022

ADAMS, ATHENS, GALLIA, HIGHLAND, JACKSON, LAWRENCE, PIKE, SCIOTO & VINTON

	Rates	Fringes
Plumber, Pipefitter, Steamfitter	$ 37.56	25.73

PLUM0776-002 07/01/2022

ALLEN, AUGLAIZE, HARDIN, LOGAN, MERCER, SHELBY and VAN WERT COUNTIES

	Rates	Fringes
Plumber, Pipefitter, Steamfitter	$ 39.33	27.68

TEAM0377-003 05/01/2021

STATEWIDE, EXCEPT CUYAHOGA, GEAUGA & LAKE

	Rates	Fringes
TRUCK DRIVER		
GROUP 1	$ 29.74	15.70
GROUP 2	$ 30.16	15.70

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Asphalt Distributor; Batch; 4- Wheel Service; 4-Wheel Dump; Oil Distributor & Tandem

GROUP 2 - Tractor-Trailer Combination: Fuel; Pole Trailer; Ready Mix; Semi-Tractor; & Asphalt Oil Spraybar Man When Operated From Cab; 5 Axles & Over; Belly Dump; End Dump; Articulated Dump; Heavy Duty Equipment; Low Boy; & Truck Mechanic

---

TEAM0436-002 05/01/2021

CUYAHOGA, GEAUGA & LAKE

	Rates	Fringes
TRUCK DRIVER		
GROUP 1	$ 30.65	16.95
GROUP 2	$ 31.15	16.95

GROUP 1: Straight & Dump, Straight Fuel

GROUP 2: Semi Fuel, Semi Tractor, Euclids, Darts, Tank, Asphalt Spreaders, Low Boys, Carry-All, Tourna-Rockers, Hi-Lifts, Extra Long Trailers, Semi-Pole Trailers, Double Hook-Up Tractor Trailers including Team Track & Railroad Siding, Semi-Tractor & Tri-Axle Trailer, Tandem Tractor & Tandem Trailer, Tag Along Trailer, Expandable Trailer or Towing Requiring Road Permits, Ready-Mix (Agitator or Non-Agitator), Bulk Concrete Driver, Dry Batch Truck, Articulated End Dump

---

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($16.20) or 13658 ($12.15). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular

rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of

each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor

200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========

END OF GENERAL DECISIO"

DOCUMENT 00300 - CONTRACT

THE CONTRACT made the _____ day of _____, 2023 by and between _____ hereinafter called the "Contractor", and the Greene County Regional Airport Authority called the "Owner".

WITNESSETH THAT the Contractor and the Owner for the consideration stated herein agree as follows:

ARTICLE I - SCOPE OF WORK

The Contractor shall perform everything required to be performed and shall provide and furnish all of the labor, necessary tools, incidentals, equipment, materials, utilities, and transportation services required for the delivery of the following:

LOCAL PROJECT:

GREENE COUNTY LEWIS A. JACKSON AIRPORT TERMINAL INTERIOR RENOVATION

Total:_____

including all incidental and appurtenant work, all as more particularly set out in the Contract Documents and the provisions set forth in this Contract, in connection with the Greene County Regional Airport Authority – Airport Improvements Project as the Owner in strict accordance with the Contract Documents including any and all addenda, prepared by Woolpert, Inc., acting as and referred to as the Engineer in the Contract Documents which are made a part of this Contract, and in strict compliance with the Contractor's proposal and other documents herein mentioned which are a part of this Contract; and the Contractor shall do everything required by this Contract and the other documents constituting a part hereof.

ARTICLE II - COMPENSATION TO BE PAID TO THE CONTRACTOR

In consideration of the completion of the work described herein and in fulfillment of all stipulations of this Contract to the satisfaction and acceptance of the Engineer and the Owner, the Owner shall pay and the said Contractor further agrees to receive and accept payment based on the contract price bid per unit for all material labor, as set forth in the conformed copy of Contractor's bid hereto attached, which prices shall agree with those in the accepted Contractor's bid, as filed with the Greene County Regional Airport Authority on this **22nd day of March, 2023** as full compensation for furnishing all the equipment, labor, incidentals, and materials, and for the costs

of all premiums on insurance and bonds and for doing all work contemplated and specified in this Contract; also for all loss or damage arising out of the nature of the work aforesaid, or from any unforeseen obstructions or difficulties which may be encountered in the prosecution of the same; and for all risks of every description connected with the work; and for well and faithfully completing the work and the whole thereof, in full compliance with the Contract Documents and the requirements of the Engineer under them.

Payments are to be made to the Contractor in accordance with and subject to the provisions embodied in the Contract documents hereto attached.

Inasmuch as this Contract is executed pursuant to the laws of the State of Ohio, pertaining to airports and payment of the contract unit price shall be made solely from special account established for this project.

ARTICLE III – CONTRACT COMPONENTS BY REFERENCE

This Contract consists of the following component parts by reference, all of which are as fully a part of this Contract as if herein set out verbatim:

1. Addenda (if issued)
2. Notice to Bidders
3. Instructions to Bidders
4. General Provisions
5. Standard Specifications
8. Pre-Bid and Pre-Construction Conference Minutes
9. Payment and Performance Bonds
10. Public Liability and Property Damage Insurance
11. Contractor's Personal Property Tax Affidavit

ARTICLE IV – CERTIFICATION OF OFFERER/BIDDER REGARDING DEBARMENT

By submitting a bid/proposal under this solicitation, the bidder or offeror certifies that neither it nor its principals are presently debarred or suspended by any State of Ohio department or agency.

ARTICLE V – RESPONSIBILITIES FOR CLAIMS AND LIABILITIES

The contractor shall indemnify and hold harmless the Owner, and its employees from and against all claims arising out of or resulting from the performance of the work by said Contractor, his/her subcontractors, agents, or employees.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in three (3) original counterparts the day and year first above written.

_____
CONTRACTOR

By _____

Attest:

_____ _____
TITLE

_____
TITLE

Greene County Regional Airport Authority
OWNER

By _____

Attest: President, Greene County Regional Airport Authority
TITLE

_____

_____

SECTION 024100
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of building elements for alteration purposes.

1.02 DEFINITIONS

A. Demolition: Dismantle, raze, destroy or wreck any building or structure or any part thereof.

B. Remove: Detach or dismantle items from existing construction and dispose of them off site, unless items are indicated to be salvaged or reinstalled.

C. Remove and Salvage: Detach or dismantle items from existing construction in a manner to prevent damage. Clean, package, label and deliver salvaged items to Owner in ready-for-reuse condition.

D. Remove and Reinstall: Detach or dismantle items from existing construction in a manner to prevent damage. Clean and prepare for reuse and reinstall where indicated.

E. Existing to Remain: Designation for existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

PART 3 EXECUTION

2.01 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   3. Provide, erect, and maintain temporary barriers and security devices.
   4. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   5. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction.
   6. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.
   7. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.

B. Do not begin removal until receipt of notification to proceed from Owner.

C. Protect existing structures and other elements to remain in place and not removed.
   1. Provide bracing and shoring.
   2. Prevent movement or settlement of adjacent structures.
   3. Stop work immediately if adjacent structures appear to be in danger.

D. Hazardous Materials:
   1. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCBs, and mercury.

2.02 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Existing construction and utilities indicated on drawings are based on casual field observation and existing record documents only.
   1. Verify construction and utility arrangements are as indicated.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Remove existing work as indicated and required to accomplish new work.
   1. Remove items indicated on drawings.

C. Services including, but not limited to, HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications: Remove existing systems and equipment as indicated.
   1. Maintain existing active systems to remain in operation, and maintain access to equipment and operational components.
   2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
   3. Verify that abandoned services serve only abandoned facilities before removal.
   4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings. Remove back to source of supply where possible, otherwise cap stub and tag with identification.

D. Protect existing work to remain.
   1. Prevent movement of structure. Provide shoring and bracing as required.
   2. Perform cutting to accomplish removal work neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.
   4. Patch to match new work.

2.03 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 028200 ASBESTOS REMEDIATION

PART 1 - GENERAL

1.1 DESCRIPTION OF THE WORK

A. Related Documents- "Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specifications, apply to this Section"."

B. Perform all planning, administration, execution, and cleaning necessary to safely remove asbestos-containing or contaminated materials. Approval of or acceptance by Owner's Project Monitor, Engineer, Architect or Owner of various construction activities or methods proposed by Contractor does not constitute an assumption of liability either by the Owner's Project Monitor, Engineer, Architect or Owner for inadequacy or adverse consequences of said activities or methods.

C. The work covered by this section includes the handling of asbestos-containing materials which are encountered during project and describes some of the resultant procedures and equipment required to protect workers and occupants of the building or area, or both, from contact with airborne asbestos fibers. Procedures for removal of these materials are located in Part 3 - Execution.

D. An asbestos inspection was performed. This report is attached for reference as Appendix A. Destructive activities such as breaking into walls, ceilings, or floors were not performed in order to obtain samples. Therefore, if during the work suspect asbestos containing materials are uncovered, the Contractor shall stop work until the materials are properly identified and addressed. Sampling documentation is available to the Contractor in the Bidder Information Section.

1.2 WORK INCLUDED

A. The project, Renovation/Demolition of the Greene County Lewis A. Jackson Regional Airport is located at 140 North Valley Road, Xenia, Ohio, 45385. Asbestos-containing materials, and estimated quantities to be removed include:

Greene County Lewis A. Jackson Regional Airport

1. Area A - Exterior Window Glazing Putty - 387 SF
2. Area A - Interior Window Glazing Putty - 1,906 LF
3. Area A - 12" Tan Floor Tile and Mastic - 7,634 CF
4. Area A - Aircell Pipe Insulation
5. Area A- 12" Red Floor Tile and Mastic
6. Area A- Roofing Mastics
7. Area B - 12" Tan Speckle Floor Tile and Mastic
8. Area B - White Window Frame Sealant - 1,508 LF
9. Area C - 12" Floor Tile and Mastic
10. Area C - 12" Brown Floor Tile and Mastic
11. Area C - Interior Black Window Frame Sealant
12. Area D - 12" Tan/Brown Floor Tile and Mastic
13. Area D - 12" Tan Floor Tile and Mastic
14. All Areas - Fire Rated Doors (Assumed)
15. All Areas - Mastic Pucks Behind Chalk Boards (Assumed)
16. Mechanical Room – Piping System Gaskets

B. Include all work listed in these specifications and incidentals thereto. Require that all phases of the work be executed by skilled craftsman experienced in their respective trades. Work to be performed includes but is not limited to:

1. Pre-Installation Meeting

a. Convene one week before starting work of this section.

b. Conduct conference at Project site to comply with requirements of Division 1 Section "Project Meetings."

2. Prior to the commencement of work, all work and work practices shall be approved by the Owner and the Architect.
3. Coordinate work with Owner and Owner's Project Monitor.
4. Coordinate work and phases with General Contractor and other trades.
5. Preparation of workspace as specified.
6. Remove asbestos-containing materials, package it for disposal and properly dispose in an EPA and state approved landfill.
7. Clean-up of the area as specified elsewhere.
8. Ensure that all services provided under this contract shall be performed by competent craft personnel and in a good workmanlike manner in accordance with the manufacturer's recommended procedures. Contractor's personnel shall conform to all Occupational Safety and Health Administration and Environmental Protection Agency guidelines and requirements for asbestos removal and employee monitoring.

C. Contractor may subcontract any phase or portion of the work. However, such subcontract shall not relieve Contractor from enforcing the use of all required health and safety equipment and procedures by subcontractor and its employees providing any phase of the work in contaminated areas. Require and verify that all materials and methods used by subcontractor are consistent with materials and methods for established and safe asbestos removal procedures and consistent with the Project Manual. Existing conditions are reflected correctly to the best of Owner's knowledge. Should minor conditions be encountered which are not exactly as indicated, modification to work shall be made as required at no additional expense to Owner. Contractor is advised that destructive activities, such as, breaking into walls, was not performed in order to locate asbestos-containing materials. Therefore, the Contractor is advised to proceed with caution in all phases of the work. Contractor is responsible for air monitoring required for the safety of its employees. Contractor is responsible for compliance with Project Manual, confirming and correlating all quantities dimensions, selecting fabrication processes and techniques "including means, methods, and sequencing" of construction, coordinating the work with that of all other trades and performance of the work in a safe satisfactory method. Unless provided for otherwise, the Contractor shall guarantee all work covered under this contract against defects resulting from the use of substandard materials, equipment, or workmanship for one year from the date of final acceptance by the Greene County Lewis A. Jackson Regional Airport. Any work which has to be corrected due to the Contractor's faulty workmanship, equipment, tools or materials shall be done at no additional expense to the Owner.

D. Contractor agrees to guarantee and hold harmless Owner, Owner's agents and employees, against any and all claims arising out of the infringement or alleged infringement by Contractor, or any of Contractor's agents, employees or subcontractors, of any rights secured under copyright, trademark or patent protection. In that regard, Contractor hereby represents, on behalf of itself, its agents, employees and/or subcontractors, that all necessary licenses for the use of any copyright, trademark or patent have been obtained, are in full force and effect at the time of execution of this contract, and shall remain in full force and effect during the term of this contract and any extension hereof.

E. The performance and execution of the work shall be monitored by a representative and/or representatives appointed by the Owner (Greene County Lewis A. Jackson Regional Airport) to

ensure full compliance with these specifications and all applicable regulations. The Owner will bear the cost in connection with the laboratory and inspection work required for initial final clearances and inspection in this specification: however, the cost of Contractor delays and subsequent visual inspections and laboratory analysis for personal and area samples taken because the limits specified were exceeded in the initial tests shall be borne by the Contractor.

F. The Owner and/or appointed representatives reserve the right to halt the project until hazardous or potentially hazardous conditions are corrected. It will be the responsibility of the Contractor to pay for the consultant services and costs involved to correct the non-compliance.

1.3 WORK NOT INCLUDED IN THE CONTRACT DOCUMENTS

A. Area air monitoring, visual inspections, clearance inspections, and clearance sampling for Owner by Owner's Project Monitor.

1.4 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI)

ANSI Z88.2	Respiratory Protection

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 732	Aging Effects of Artificial Weathering on Latex Sealants
ASTM D 552	Mandrel Band Test of Attached Organic Coatings
ASTM D 1331	Surface and Interfacial Tension of Solutions of Surface-Active Agents
ASTM D 2794	Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
ASTM E 84	Surface Burning Characteristics of Building Materials
ASTM E 96	Water Vapor Transmission of Material
ASTM E 119	Fire Tests of Building Construction and Materials
ASTM E 1368-90	Standard Practice for Visual Inspection of Asbestos Abatement Projects

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1926.103	Respiratory Protection
29 CFR 1926.51	Sanitation
29 CFR 1926.200	Accident Prevention Signs and Tags
29 CFR 1926.59	Hazard Communication

29 CFR 1926.1101	Asbestos, Tremolite, Anthophyllite, Actinolite
40 CFR 61, SUBPART A	General Provisions
40 CFR 61, SUBPART M	National Emission Standards for Hazardous Air Pollutants

ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 560/5-85-024	Guidance for Controlling Asbestos-Containing Materials in Buildings
EPA 40 CFR	Asbestos Hazard Emergency Response Act (AHERA)

UNDERWRITERS LABORATORIES INC. (UL)

UL 586 1985 (R 1988)	High-Efficiency, Particulate, Air Filter Units, Sixth Edition

1.5 DEFINITIONS

A. Airlock: System for permitting ingress or egress of personnel without permitting air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways at least three feet apart.

B. Amended Water: Water containing a wetting agent or surfactant with a surface tension tested in accordance with ASTM D 1331.

C. Architect: Architectural Firm or any individual employed by the firm providing architectural services for the project.

D. Area Sampling: Sampling of asbestos fiber concentrations within the asbestos control area and outside the asbestos control area which approximates the concentrations of airborne fibers in the theoretical breathing zone but is not actually collected in the breathing zone of an employee.

E. Asbestos: The term asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite and any of these minerals that has been chemically treated or altered. Materials are considered to contain asbestos if the asbestos content is more than one percent of the material by area.

F. Asbestos Control Area: That area where asbestos removal operations are performed which is isolated by physical boundaries to prevent unauthorized entry of personnel and to prevent the spread of asbestos dust, fibers, or debris. Two examples of an asbestos control area are: a full containment and a "glovebag."

G. Asbestos Fibers: Those fibers having an aspect ratio of at least 3:1 and longer than 5 micrometers as determined by National Institute for Occupational Safety and Health (NIOSH) Method 7400.

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

I. Background: The ambient airborne asbestos concentration in an uncontaminated area as measured prior to any asbestos hazard abatement efforts. Background concentrations for other (contaminated) areas are measured in similar but asbestos free locations.

J. Class I Asbestos Work: Activities defined by OSHA involving the removal of thermal system insulation (TSI) and surfacing ACM.

K. Class II Asbestos Work: Activities defined by OSHA involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos- containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic. Certain "incidental" roofing materials such as mastic, flashing and cements when they are still intact are excluded from Class II asbestos work. Removal of small amounts of these materials, which would fit into a glovebag, may be classified as a Class III job.

L. Class III Asbestos Work: Activities defined by OSHA that involve repair and maintenance operations, where ACM, including TSI and surfacing ACM, is likely to be disturbed. Operations may include drilling, abrading, cutting a hole, cable pulling, crawling through tunnels or attics and spaces above the ceiling, where asbestos is actively disturbed or asbestos-containing debris is actively disturbed.

M. Class IV Asbestos Work: Maintenance and custodial construction activities during which employees contact but do not disturb ACM and activities to clean-up dust, waste and debris resulting from Class I, II, and III activities. This may include dusting surfaces where ACM waste and debris and accompanying dust exists and cleaning up loose ACM debris from TSI or surfacing ACM following construction.

N. Clean Room: An uncontaminated area or room which is part of worker decontamination enclosure system, with provisions for storage of worker street clothes and protective equipment. Also known as the "Change Room."

O. Competent Person: One who is on the work site at the asbestos control area and capable of identifying existing asbestos; chrysotile, crocidolite, amosite, tremolite, anthophyllite, or actinolite hazards in the workplace and who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.1101. The duties of the competent person include at least the following: establishing the asbestos regulated work area, ensuring its integrity, and controlling entry to and exit from the asbestos regulated work area; supervising any employee exposure monitoring required by the standard; ensuring that all employees working within such an asbestos regulated work area wear the appropriate personal protective equipment, are trained in the use of appropriate methods of exposure control, and use the hygiene facilities and decontamination procedures specified in the standard; and ensuring that engineering controls in use are in proper operating condition and are functioning properly.

P. Contractor: The Contractor is that individual, or entity under contract to the Greene County Lewis A. Jackson Regional Airport to perform the herein listed work.

Q. Critical Barrier: Seal applied to openings connecting the abatement area with adjacent spaces that will not be included in the containment. Critical barriers shall not be exposed to the gross removal environment. Examples of openings requiring critical barriers include, but are not limited to: HVAC vents and diffusers, doorways, windows, floor, wall, and ceiling penetrations, and air plenums.

R. Curtained Doorway: A device to allow ingress or egress from the room to another while minimizing air movement between the rooms. Two curtained doorways spaced a minimum of three feet apart form an airlock.

S. Decontamination Enclosure System: A series of connected rooms, with airlocks between any two adjacent rooms, for the decontamination of workers or of materials and equipment. Decontamination systems shall be contiguous and adjacent to the enclosed asbestos control area.

T. Duct Tape: Utility grade laminated polyethylene/cloth tape with calendared adhesive system.

U. Encapsulants: Specific materials in various forms used to chemically entrap asbestos fibers in various configurations to prevent these fibers from becoming airborne. There are four types of encapsulants as follows that must comply with performance requirements as specified herein.

V. Removal Encapsulant (can be used as a wetting agent).

W. Bridging Encapsulant (used to provide a tough, durable surface coating to asbestos-containing material).

X. Penetrating Encapsulant (used to penetrate the asbestos-containing material down to substrate, encapsulating all asbestos-containing material down to substrate, encapsulating asbestos fibers).

Y. Lock-Down Encapsulant (used to seal off or "lock-down" minute asbestos fibers left on surfaces, after fine cleaning from which asbestos-containing material has been removed).

Z. Engineer: Individual employed by the Engineering Consulting Firm to design the project.

AA. Equipment Decontamination Enclosure System: A decontamination system for waste materials and equipment, typically consisting of a designated area of the work area, a washroom, and a holding area with airlocks between any two adjacent rooms. Not to be used for personnel entry/exit.

BB. Friable Asbestos Material: Material that contain more than one percent asbestos by area that can be crumbled, pulverized, or reduced to powder by hand pressure or which under normal use or maintenance emits or can be expected to emit asbestos fibers into the air.

CC. HEPA Filter Equipment: High efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall retain 99.97 percent of particles 0.3 microns or larger as indicated in UL 586.

DD. Lockdown: Lockdown is the procedure of applying a protective coating or sealant to a surface from which asbestos-containing material has been removed. Its primary function is to control and minimize airborne asbestos fiber generation that might result from any asbestos-containing residue on the substrate.

EE. Nonfriable Asbestos Material: Material that contains asbestos in which the fibers have been temporarily locked in 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 will be released under other conditions such as renovation or removal.

FF. Owner: Individual or representative employed by the Greene County Lewis A. Jackson Regional Airport.

GG. Personnel Decontamination Enclosure System: A decontamination system for personnel, consisting typically of a clean room, a shower room and an equipment room (dirty change room) with airlocks between any two adjacent rooms.

HH. Owner's Project Monitor: Individual on site who provides project monitor services (air monitoring, work observations, etc.) for compliance with the Project Manual, in the interest of the Owner.

II. Negative Pressure System: A system in which static pressure in an enclosed control area is lower than that of the environment outside the control area as specified herein.

JJ. Personal Sampling: Air sampling to determine airborne fiber concentrations within the breathing zone of a specific employee, perform in accordance with 29 CFR 1926.1101.

KK. Removal: The act of removing asbestos-containing or contaminated materials from the work area under properly controlled conditions to a suitable disposal site.

LL. Shower Room: A room constituting an airlock, between the clean room and the equipment room in the worker decontamination enclosure system, with hot and cold running water suitably arranged for complete showering during decontamination.

MM. Spray Glue: Fine liquid adhesive contained in an aerosol type can used for surface preparation and temporary bonding when hanging poly sheeting.

NN. Surfactant: A chemical wetting agent added to water to improve penetration. The surfactant shall be a 50/50 mixture of polyoxyethylene ether and polyoxyethylene ester, or equivalent, mixed in a proportion of one fluid ounce to 5 gallons of water or as specified by the manufacturer. An equivalent surfactant shall be understood to mean a material with a surface tension in accordance with ASTM D 1331.

OO. Time Weighted Average (TWA): The TWA is an 8-hour time weighted average airborne concentration of airborne fibers. TWA exposure may be established with one or more consecutive samples totaling at least 7 hours, but preferably the full 8 hours of the shift.

PP. Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with amended water and disposing of these cleaning tools as asbestos contaminated waste.

QQ. Wetting Agent: That specific agent used to reduce airborne asbestos levels by physically bonding asbestos fibers to material to be removed. An equivalent wetting agent must have a surface tension in accordance with ASTM D 1331.

1.6 SUBMITTALS

A. Instructions: Submit "Pre-Job Submittals" and "Post-Job Submittals" in accordance with Section 01300 to Architect for review. The work may not proceed until the complete pre-job submittal package has been reviewed by the Architect. Make submittals required by this specification and the Project Manual in a timely manner and at approximate times in the execution of the work to allow for sufficient and prompt review by the Architect. Revise and resubmit as necessary to establish compliance with the specified requirements. Requests for final payment will not be approved until the Post-Job Submittal package has been reviewed and accepted by Architect. Carefully review and coordinate all aspects of each item being submitted. Verify that each item and its appropriate submittal conform in all respects with the specified requirements. The submission of submittal packages is a formal process. Accordingly, each submittal package or elements of a submittal package shall be forwarded formally by letter. This forwarding letter shall be signed by an officer of the Contractor's company who has the authority to commit company resources. Any submittal packages or any subsequent element of a submittal package that is not formally forwarded as described will be rejected as non-conforming by the Architect. All items listed in this section are applicable. If in the opinion of the Contractor, an item listed is not applicable, the Contractor must

submit documentation substantiating his position. If a submittal is unavailable, the Contractor must submit documentation reconstructing the missing information as best as can be accomplished.

1. Identification of Submittals: Number consecutively and clearly identify all submittals. Show identification on at least the first page of each submittal, and elsewhere as necessary for positive identification of the submittal. Accompany each individual submittal with a letter of transmittal showing all information required for identification and checking. Make revisions when required and resubmit for review. Review is only for general conformance with the design of the project and general compliance with the information given in this specification and the Project Manual.
2. Timing of Submittals: Make submittals far enough in advance of scheduled dates of commencement, execution or installation to provide time required for reviews, for securing necessary approvals, for possible revisions and resubmittals, and for placing orders and securing delivery. Accept responsibility for delays resulting from incomplete submittal packages.

B. Pre-job Submittals:

1. Notification: Notice of impending commencement of asbestos removal work in writing to the appropriate agencies. Those listed below are for information only. The notifications must be made at least 20 days before work commences on the project. Include copy and acknowledgment of notification in submittal package and comply with the applicable notice period set forth in EPA 40 CFR 61.146. Include one copy of notifications in submittal package along with Certified Mail Receipt of Notification to aforementioned agencies. If the time from signing of the Contract to the scheduled start of work is less than the applicable notice period, seek a waiver (if applicable) of the notice period. Without written approval from all of said agencies, do not shorten the applicable notice period. It is the Contractor's responsibility to contact the correct agencies in sufficient time to support the work.
2. Insurance: Insurance certificate issued to Owner by Contractor's insurance carrier listing all coverages as specified in the General Conditions and include Owner and Owner's Project Monitor as additional insureds.
3. Employee Documentation: Provide the following documentation for each and every employee assigned to the project by contractor or subcontractor, regardless of their role on the Project. Submit this information as one package per employee, arranged alphabetically.

a. For each employee assigned to this project, provide documentation that shows the employee has received and understands instruction on the hazards of asbestos exposure, personal protective equipment usage, use of decontamination procedures, the procedure for entering and exiting the work areas, other topics described in 29 CFR 1926.1101 and on all aspects of the work procedures and protective measures to be used on this Project.
b. For each employee assigned to this project, provide a copy, certified to be a true copy by an officer in the company, of the Physician's most recent written opinion required by 29 CFR 1926.1101 and respirator fit test.
c. For each employee assigned to this project, provide a copy of their Ohio, worker/supervisor license and a valid government photo ID.

4. Permits: Submit any building permits as required by the State of Ohio for the asbestos abatement, construction, or renovation work required during

the progress of the work. If no permits are required, so state by means of a letter of explanation signed by a company officer.

5. Landfill Documentation: Submit written evidence that the proposed landfill for disposal is approved by the USEPA, State and local regulatory agency (s) to receive asbestos-containing waste.
6. Written Respiratory Program: Submit Contractor's written respiratory protection program as required by ANSI Z88.2, 29 CFR 1910.134 and 29 CFR 1926.1101.
7. Respirator Technical Data: Submit technical data on the different types of respirators to be used in accomplishing the work. Include model numbers and tested/certified (TC) numbers issued by NIOSH and MSHA.
8. A copy of the Negative Exposure Assessment must be submitted to Greene County Lewis A. Jackson Regional Airport for approval prior to the commencement of work. If a Negative Exposure Assessment is not available all work must begin in the maximum respiratory requirements as determined by all federal, state and local regulations.
9. Written Contractor Safety Program: Submit evidence of comprehension of this Safety Program by the employees assigned to this project. The program shall cover the requirements of OSHA regulations for Employee Training and Emergency Action Plan as per 29 CFR 1910.38, including the following items:

a. Fire and Heavy Smoke Conditions
b. Employee Injuries and Accidents
c. Emergency Exits and Evacuation
d. First Aid Training and Responsible Person on site.
e. Ladder and Scaffolding Safety
f. Electrical Safety Procedures
g. Heat and Heat Stress Hazards
h. Slip, Trip and Fall Hazards
i. Eye Hazards and Eye Protection
j. Overhead Hazards and Hardhats
k. Back Injuries and Prevention
l. Carbon Monoxide and other Toxic Poisonings

10. Manufacturer's Catalog Data:

a. Vacuums
b. Respirators
c. Amended water

11. MSDS: Submit manufacturer's certification or independent test reports confirming that materials to be utilized on this Project meet or exceed all performance criteria required by Specifications. Include certifications that replacement materials do not contain asbestos and are compatible with the substrates to which they will be applied. Include material safety data sheets (MSDS) for all materials to be used on the project.
12. Work Area: Written description and sketch of the asbestos removal procedures to determine if work will be an outside or inside asbestos removal project (AHERA regulations apply for all inside asbestos removal activities), site specific plans for sequencing of the work, construction of the enclosure, mini-enclosure, regulated work area, decontamination procedures, methods of complying with 40 CFR 61, and barriers in compliance with the Contract Documents.

13. Rental Equipment: In situations where rental equipment is utilized, provide a copy of the written notification to the rental company concerning the intended use of the equipment and the possibility of asbestos contamination of the equipment.
14. Sign In/ Sign Out: Provide a copy of the Sign In/Sign Out Log showing the following as a minimum: date, name, social security number, entering and leaving time, company or agency represented and reason for entry for all persons entering the work areas.
15. Personal Air Monitoring: Submit the qualifications of air monitoring testing lab to be used for personal air monitoring as required by OSHA Regulations. OSHA personal air sample results must be posted within 24 hours from the time the sample was collected. Personal air sampling will be conducted by Contractor. Submit the name, address, telephone number, and proof of current licensing by the Ohio Department of Professional and Occupational Regulation of the testing laboratory selected. Include certification verifying persons counting the samples have been judged proficient by successful participation within the last year in the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) Program.
16. Work Isolation & Emergency Evacuation: Submit a description of the plan for isolation of then work area and an emergency evacuation plan, for approval by Owner.
17. Trade Notification: Submit a notarized written statement from all trades, stating that they are aware of the dangers of asbestos exposure and are to avoid disturbing the asbestos-containing materials in anyway.
18. Citations: Submit a notarized written statement from an officer of the company verifying that the Contractor has not been cited for any major safety violations by Federal, State or Local Agencies, while conducting asbestos abatement.

C. Post-job Submittals:

1. Sign In/Sign Out: Submit a copy of the completed Sign In/Sign Out logs showing the following as a minimum: date, name, social security number, entering and leaving time, company or agency represented and reason for entry for all persons entering the work areas.
2. Personal Air Monitoring Results: A copy of employee personal air monitoring results taken in compliance with 29 CFR 1926.1101.
3. Waste Manifests: Submit receipts from landfill operator which acknowledge the Contractor's deliveries of asbestos containing/contaminated waste material. Receipts shall be provided within 3 days from the date which the waste left the work site. Receipts shall include: date, quantity and signature of authorized representative of the landfill.

1.7 HEALTH AND SAFETY TRAINING

A. Medical Surveillance: All employees working on the project shall be on a medical surveillance program in accordance with 29 CFR 1926.1101.

B. Training Course: Provide all employees working on the project with appropriate training in accordance with 29 CFR 1926.1101.

1.8 OWNER'S PROJECT MONITOR

A. Payment of Testing: Owner will provide and pay Owner's Project Monitor to perform routine and special testing of the work performed under the Contract Documents to determine general compliance.

B. Duties of Project Monitor: The Project Monitor will provide area sampling, perform on-site work site observation and documentation of work activities.

C. Contractor's Responsibility: Work performed by the Owner's Project Monitor shall not relieve the Contractor from providing its own air testing for compliance with all applicable codes, regulations, requirements and as specified in this Section and elsewhere in the Contract Documents.

D. Cooperation: Contractor will cooperate with Owner's Project Monitor, Owner, and Architect in all aspects of the testing and inspections to expedite testing and inspections and corresponding results.

E. Access: Contractor will provide Owner's Project Monitor, Owner, Architect access to the work at all times and in all locations requested as necessary.

F. Retesting: Contractor will pay for all testing and retesting subsequent to noncompliance with the Contract Documents. Contractor will pay for retesting and resampling by Owner's Project Monitor.

G. Results: Owner's Project Monitor will perform all testing and analysis promptly and issue results expeditiously in order to minimize any possible delay in the progress of the work.

PART 2 - PRODUCTS

2.1 ENCAPSULANTS

A. Shall conform to current USEPA requirements, shall contain no toxic or hazardous substances, no solvents and shall conform to the following performance requirements.

B. Removal Encapsulants:

Requirement	Test Standard
Flame Spread - 25, Smoke Emission – 50	ASTM E 84
Combustion Toxicity University of Zero Mortality	Pittsburgh Protocol
Life Expectancy - 20 years	ASTM C 732, Accelerated Aging Test
Permeability - Minimum 0.4 perms	ASTM E 96

C. Lock-down Encapsulant:

Flame Spread - 25, Smoke Emission – 50	ASTM E 84
Combustion Toxicity	

University of Pittsburgh Zero Mortality	Protocol
Life Expectancy - 20 years Accelerated Aging Test	ASTM C 732
Permeability - Minimum 0.4 perms	ASTM E 96
Fire Resistance - Negligible affect on fire resistance rating over 3 hour test (Tested with fireproofing over encapsulant applied directly to steel member)	ASTM E 119
Bond Strength - 100 pounds of force/ foot (Tests compatibility with cementitious and fibrous fire-proofing)	ASTM E 736

PART 3 - EXECUTION

3.1 GENERAL

A. Scheduling: The Contractor shall furnish qualified personnel within the specified time frame of receiving notice to proceed call from the Owner.

B. Storage: Site storage and access is limited. Coordinate storage and access with Owner.

C. Building Occupancy: The building will be unoccupied during the work.

D. Parking: Limited parking is available.

E. Building Security: Maintain personnel on the site at all times when the work areas are open or not properly secured. Secure work areas completely at the end of each working day. Coordinate with the General Contractor concerning security of building after normal hours.

F. Correction of Damage to Property: Consider any damage to building or property not identified in the pre-job damage survey as having resulted from execution of this Contract and correct at no additional expense to Owner.

G. Observations: Owner's Project Monitor will observe the work for completeness and general compliance with the requirements of this specification and the Project Manual. Notify Owner's Project Monitor at least 3 days in advance of the need and readiness for such observations. Should advance notice not be given to Owner's Project Monitor, Owner's Project Monitor will make reasonable effort to comply with time of requested observations. Do not proceed until such observations by Owner's Project Monitor are made. Any delay in the completion of the Project caused by lack of advance notice by Contractor to Owner's Project Monitor shall not be sufficient cause for any extension of time or extension of the Project completion deadline. Also, compensation for time spent by Owner's Project Monitor on the Project resulting from prearranged meetings at which the work has not progressed to the designated point shall be the responsibility of Contractor and will be deducted from future payments due to Contractor.

H. Sign In/ Sign Out Log: Maintain a Sign-In/ Sign Out Log in the immediate vicinity of the work. Maintain log from the time the first activity is performed involving the disturbance of asbestos-containing material until acceptance of the final air test results by Owner's Project Monitor. Require all persons entering the work areas, including the Contractor's workers, Owner's Project Monitor, Owner or agents of the Owner, and Architect to register each time upon entering and leaving work areas. Indicate name, social security number, time, company or agency represented and reason for entering work area.

I. Utilities: The cost of water and power consumed will be paid by the Contractor.

J. Clean Up: Leave all areas visibly clean at completion of work

3.2 EQUIPMENT

A. Make available to the Owner, Owner's Project Monitor, and Architect as many sets of personal protective equipment as required herein, for entry to the asbestos control area at all times for inspection of the asbestos control area.

B. Respirators: Provide personnel engaged in the removal of asbestos materials with the respiratory protection stated below. The use of any other type of respiratory protection must be requested in writing by the Contractor to the Owner. The request shall identify the specific type of respiratory protection requested and the reasoning behind the choice. A different request shall be filed for each type of operation. For removal of asbestos-containing materials, workers are required to wear a minimum of half face dual HEPA filtered cartridge respiratory protection. All respiratory protection shall comply with 29 CFR 1926.1101 and 29 CFR 1910.134.

C. Exterior Whole-Body Protection:

1. Protective Clothing: Provide personnel with disposable protective whole-body clothing, head coverings, rubber gloves, and eye protection for asbestos abatement work procedures. Provide disposable plastic or rubber gloves to protect hands. Make sleeves secure at the wrists; and make clothing secure at the neck by the use of tape.
2. Personal Decontamination Unit: Provide a three-stage personal decontamination unit. The decontamination unit shall be physically attached to the asbestos control area for the removal. The decontamination process shall consist of HEPA vacuuming to remove asbestos contamination from the outer layer of disposable clothing and place in disposable bag as contaminated waste. Respirators shall be worn while employees remove all gross contamination and debris from their work clothing using a HEPA vacuum. Employees shall remove their protective clothing in the equipment room and deposit the clothing in labeled impermeable bags or containers for disposal. Employees shall not remove their respirators in the equipment room. Employees shall shower prior to entering the clean room. Used shower water shall be collected and filtered to remove asbestos contamination. Filters and residue shall be disposed of as asbestos contaminated material. Filtered water shall be discharged to the sanitary system. Wastewater filters shall be installed in series with the first stage pore size of 20 microns and the second stage pore size of 5 microns. The floor of the decontamination unit's clean room shall be kept dry and clean at all times. Water from the shower shall not be allowed to wet the floor in the clean room. Surfaces of the clean room and shower shall be

wet-wiped 2 times after each shift change with a disinfectant solution. Proper housekeeping and hygiene requirements shall be maintained.

3. For removal of transite panels, duct sealer, sealants/mastics, chalkboard mastic, floor tile/mastic and black table tops, fire doors a detached decontamination unit may be used. Workers are required to "double suit" before entering the asbestos control area. The decontamination process shall consist of HEPA vacuuming to remove asbestos contamination from the outer layer of disposable clothing and place in disposable bag as contaminated waste. HEPA vacuum to remove any contamination from inner layer of protective clothing and while still wearing the inner layer of protective clothing and respiratory protection and proceed to the detached decontamination unit to complete decontamination. The detached decontamination unit shall not be more than 50' from the asbestos control area. Post decontamination procedures in Change Room for duration of project.

D. Warning Signs and Labels: Provide warning signs at all approaches to asbestos control areas containing concentrations of airborne asbestos fibers. Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Provide labels and affix to all asbestos materials, scrap, waste, debris, and other products contaminated with asbestos.

1. Warning Sign: Provide vertical format conforming to 29 CFR 1910.145(d)(4), AND 29 CFR 1926.1101 minimum 20 by 14 inches displaying the following legend in the lower panel:

Legend	Notation
DANGER	1-inch Sans Serif Gothic
ASBESTOS	1-inch Sans Serif Gothic
MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS	1/4-inch Sans Serif Gothic or Block
AUTHORIZED PERSONNEL ONLY	1/4-inch Gothic
WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA	1/4-inch Gothic

Spacing between lines shall be at least equal to the height of the upper of any two lines.

2. Warning labels: Provide labels conforming to 29 CFR 1926.1101 of sufficient size to be clearly legible, displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING ASBESTOS DUST MAY
CAUSE SERIOUS BODILY HARM

E. Tools: Vacuums shall be leak proof to the filter and equipped with HEPA filters. Filters on vacuums shall conform to ANSI Z9.2 and UL 586. Do not use power tools to remove asbestos-containing materials. Remove all residual asbestos from reusable tools prior to storage or reuse.

3.3 GENERAL WORK PROCEDURE

A. Perform asbestos related work in accordance with 29 CFR 1926.1101 and as specified herein. Personnel shall wear and utilize protective clothing and equipment as specified herein. Eating, smoking, drinking, chewing of tobacco, or applying cosmetics shall not be permitted in the asbestos work or control areas. Coordinate sequence of work area preparation throughout the building with Owner and other trades to properly segregate work areas from areas that must remain fully or partially operational or in which other construction is being performed. Personnel of other trades not engaged in the removal of asbestos shall not be exposed at any time to airborne concentrations of asbestos. Coordinate with Owner to shut down and isolate the heating, ventilating, and air conditioning system to the asbestos regulated areas, prior to the commencement of asbestos preparatory work. Disconnect electrical service prior to the commencement of asbestos preparatory work. Provide auxiliary electrical service as required using Ground Fault Interrupt (GFI) circuits. All electrical work shall be performed by a licensed electrical contractor. If an asbestos spill occurs outside of the asbestos control area, stop work immediately and follow the emergency procedures outlined herein.

B. Emergency Exits: The Contractor shall establish emergency and fire exits from the work area. Aid for a seriously injured worker will not be delayed for reasons of decontamination. Emergency procedures shall have priority.

C. Furnishings: Mobile objects such as chairs, equipment and furnishings located in the building will be removed by the Owner before asbestos work begins.

D. Class I Removal, Full Containment Negative Pressure Enclosure: Removal of asbestos containing pipe fittings and insulation including any residual materials and plaster ceilings will be performed under full containment, negative pressure enclosure. Block and seal openings in areas where the release of airborne asbestos fibers can be expected. Critical barriers shall be constructed of two layer of 6-mil plastic sheeting in areas where a permanent fixture does not exist. Seal all floor penetrations/openings before installation of plastic sheeting. Protective covering on all floors shall be constructed of 2 layers of reinforced continuous membrane 6-mil plastic sheeting, extending up walls a minimum of 12". Protective covering on all walls shall be constructed of two layers of continuous membrane 6-mil plastic sheeting and shall overlap the 12" extended floor plastic. Overlap all seams a minimum of 6 inches. Seal all joints and seams with duct tape and spray glue. Provide local exhaust system in the asbestos control area in accordance with ANSI Z9.2 and 29 CFR 1926.1101 that will provide at least four air changes per hour inside of the containment. Local exhaust shall be operated 24 hours per day, until the asbestos control area is removed and shall be leak proof to the filter and equipped with HEPA filters. Air purifying devices equipped with High Efficiency Particulate Absolute Filtration System (equal to "Micro-Trap") capable of collecting and retaining asbestos fibers. Filters shall have 99.9% efficiency for retaining fibers of 0.3 microns or larger. Contractor shall provide one backup HEPA filtered exhaust unit. Exhaust equipment shall be sufficient to maintain a minimum pressure differential of minus 0.02 inch of water column relative to adjacent, unsealed areas. Provide continuous 24-hour per day monitoring of the pressure differential with a pressure differential automatic recording instrument and an audible alarm system which activates when negative pressure is reduced below 0.02 inches of water column. In no case shall the building ventilation system be used as the local exhaust system for the asbestos control area. Filters on exhaust equipment shall conform to ANSI Z9.2 and UL 586. The local exhaust system shall terminate out of doors. Replace pre-filters a minimum of every 48 hours or as required to maintain the efficiency of the system. Replace filters as required to maintain the efficiency of the system. Notify the Owner's Project Monitor and Owner immediately of any variance in the pressure differential. In presence of Owner's Project Monitor, smoke test the full containment enclosure. If a leak is detected, reseal for approval by Owner's Project Monitor. The Contractor shall visually inspect and smoke test enclosures before each shift in accordance with 29 CFR 1926.1101. Any punctures or tears in the plastic sheeting shall be resealed immediately. Openings

for exhaust air shall be sealed around the negative air machines exhaust ducts. Contractor shall remove the plaster ceiling along the edges of the containment area in order to gain access. Once access is gained the area between the top of the CMU wall and the roof deck shall be sealed with 2 layers of 6-mil plastic sheeting.

E. Class I Removal, Glovebag: The glovebag system may be used to remove asbestos from piping, fittings and other connections. Glovebags utilized for fittings; such as elbows and tees, must be specifically manufactured for that fitting. Glovebags shall not be used on surfaces that have temperatures exceeding 150 degrees F. Before beginning the operation, loose and friable material adjacent to the glovebag operation shall be wrapped and sealed in 2 layers of plastic or otherwise rendered intact. The outside of the insulation is wet wiped and sprayed with an encapsulant prior to the bag being placed on the pipe. Place all necessary tools for removal operation in glovebag before attaching to pipe. Place at least one layer of cut tape around the pipe at each location where the glove bag will be attached to ensure an airtight seal. Secure glovebag to pipe with sufficient duct tape to ensure the bag does not pull loose during removal. Smoke test the glove bag prior to any abatement work. If a leak is detected reseal and retest the bag. Turn on the HEPA vacuum to clear the smoke and further test the seal. Each glovebag can only be used once and may not be moved. Utilize two workers per glovebag. One worker shall remove the insulation, the other shall operate the water sprayer and repair any leaks. Both workers are to wear proper protective clothing and respirators. At all times, keep the insulation thoroughly wet. Care shall be taken not to puncture the bag during removal. Gently remove insulation from the pipe, brush and wet clean pipe to remove residual material. Continue wet cleaning until the pipe surface is clean of visible material. Notify the Owner's Project Monitor for visual inspection. Encapsulate and double seal with duct tape ends of remaining pipe insulation. Spray the inside of the bag with amended water and remove the watering wand, taping the water sleeve closed. Using the HEPA vacuum, collapse the bag and seal off lower portion containing asbestos materials. HEPA vacuum and wet wipe remaining portion of glovebag and tools. Keep tools in one arm of glovebag which will be sealed off and removed for next glovebag. Encapsulate abated section of pipe.

F. Class I Removal, Mini-containment: In order to gain access above plaster ceilings, construct a double bulkhead containment or mini-containment (small walk-in enclosure). The mini containment shall be constructed of a rigid framed box with two layers of 6-mil plastic sheet for walls and floor. The frame of the mini- containment shall be erected to a height of roughly one inch below the ceiling surface. The plastic sheeting of the mini-containment walls shall extend up and out to attach to the ceiling. Seal all joints with tape. Air movement shall be directed away from the employee's breathing zone within the mini-containment. A large HEPA vacuum or small negative air machine can be used to provide negative pressure.

G. Class II Removal, Contained Area: Removal of asbestos containing floor tile and mastic is a Class II removal activity. Prepare regulated area as specified. Spread one layer of 6-mil plastic sheeting on the walls extending at least two feet up wall for a splash guard. Seal all critical barriers with two layers of 6-mil plastic sheeting.

H. Class II Removal, Regulated Area: Removal of ACM sealant/mastic, transite panels, HVAC duct mastic, chalkboard mastic, sink undercoat mastic, gaskets and fire doors are Class II removal activities. Establish designated limits for the asbestos regulated area with the use of red barrier tape, and maintain all other requirements for asbestos control area except local exhaust.

I. Class II Removal, Exterior Regulated Area: Removal of exterior asbestos containing caulks/sealants, glazing compounds and transite panels associated with windows and doors shall be performed as a Class II removal activity. These materials will be removed by creating an exterior regulated work area. Seal the interior side of the window and panels with two layers of 6-mil plastic sheeting to create an exterior work area. Spread two layers of 6-mil plastic sheeting on the

floor of the work area extending out in all directions. Establish designated limits for the asbestos regulated area with the use of red barrier tape, and maintain all other requirements for asbestos control area except local exhaust. If, at any time, the airborne fiber concentration of any worker exceeds background or 0.01 fibers per cubic centimeter, whichever is greater, stop work and immediately correct the situation.

J. Emergency Procedures: In the event of an asbestos spill outside the asbestos control area, stop work immediately. Notify the Owner and Owner's Project Monitor. Isolate the area where the spill has occurred with the use of red asbestos barrier tape and closing all means of access. The Owner shall determine the clean up requirements and if sampling performed by the Owner's Project Monitor is required to determine thoroughness of cleaning. The Contractor is responsible for all costs associated with clean up and sampling.

3.4 REMOVAL PROCEDURE

A. Wet asbestos material with a fine spray of amended water during removal or other handling so as to reduce the emission of airborne fibers. Spray the asbestos-containing material repeatedly during each work shift to maintain a wet condition but do not use excessive amounts of water that results in ponding of the water. Do not allow the material to dry out. As the material is removed, carefully place it in sealable plastic disposal bags of 6-mil minimum thickness. Bagged asbestos waste shall be placed under negative pressure with the use of a HEPA vacuum, goose neck and duck tape to seal the bag, washed to remove any visible contamination and place into a second 6-mil minimum thickness disposal bag. Asbestos containing material shall be containerized while wet. Lower and otherwise handle asbestos containing material as indicated in 40 CFR 61 – SUBPART M.

B. Removal of Residual Asbestos Pipe and Fitting Insulation (PFI): Create an NPE regulated area and block and seal all openings as required. Prior to cutting pipe, the asbestos-containing insulation must be wrapped with polyethylene and securely sealed with duct tape to prevent asbestos becoming airborne as a result of the cutting process. Cut pipe into manageable sections as required to be removed. Use techniques as indicated in 29 CFR 1926.1101. If the quantity of airborne asbestos fibers monitored exceeds background or 0.01 fibers per cubic centimeter whichever is greater, stop work, and immediately correct the situation.

C. Removal of Asbestos Pipe Fitting Insulation (PFI) Above Plaster Ceilings: Coordinate removal of all PFI with General Contractor. Prior to the disturbance of the entire plaster ceiling, the Contractor will visually access the area above. Determine the location of all existing PFI. Once the locations of PFI are determined, an access hole shall be created in the vicinity of the material to be removed. The access hole shall be created utilizing a mini containment. Perform glovebag/glovebox operations on all PFI within the work area. Use techniques as indicated in 29 CFR 1926.1101 for glovebag and glovebox. Establish a designated regulated work area as specified. Glovebags shall be a minimum of 6-mil thick plastic with seamless bottom. The negative pressure glovebag/glovebox used to remove asbestos-containing PFI shall be fitted with gloved apertures and a bagging outlet and constructed with rigid sides from metal or other material which can withstand the weight of the ACM and water used during removal. Spread one layer of 6-mil seamless plastic sheeting on the floor below the work area. Place all necessary tools for removal operation in glovebag before attaching to pipe. Place at least one layer of duct tape around the pipe at each location where the glove bag will be attached to ensure an airtight seal. Secure glovebag to pipe with sufficient duct tape to ensure the bag does not pull loose during removal. Smoke test the glove bag prior to any abatement work. If a leak is detected reseal and retest the bag. Each glovebag can only be used once and may not be moved. Utilize two workers per glovebag. One shall remove the insulation, the other shall operate the water sprayer and repair any leaks. Both workers are to wear proper protective clothing and respirators. At all times, keep the insulation thoroughly wet. Care shall be taken not to puncture the bag during removal. Gently remove insulation from the pipe, brush and wet clean pipe to remove residual material. Continue wet

cleaning until the pipe surface is clean of visible material. Notify the Owner's Project Monitor for visual inspection. Encapsulate and double seal with duct tape ends of remaining pipe insulation. Spray the inside of the bag with amended water and remove the watering wand, taping the water sleeve closed. Using the HEPA vacuum, collapse the bag and seal off lower portion containing asbestos materials. HEPA vacuum and wet wipe remaining portion of glovebag and tools. Keep tools in one arm of glovebag which will be sealed off and removed for next glovebag. Encapsulate abated section of pipe. If the quantity of airborne asbestos fibers monitored exceeds background or 0.01 fibers per cubic centimeter whichever is greater, stop work, and immediately correct the situation.

D. Removal of Asbestos-Containing Plaster Ceilings: Removal of asbestos-containing plaster ceilings shall be performed using a full containment work area. Prepare work area as previously specified. Remove asbestos containing materials in manageable sections and immediately place into 6-mil thickness disposal bag. Make every effort to keep the material from falling to the floor of the work area. Do not allow for dust or debris to accumulate on the floor or other surfaces of the work area. After removal of the material, brush and wet clean the exposed substrate ceiling to remove residual material. Bag any asbestos debris which has fallen to the floor as asbestos-containing debris. Continue wet cleaning until surfaces are free of visible debris. Use techniques as indicated in 29 CFR 1926.1101. If the quantity of airborne asbestos fibers monitored exceeds background or 0.01 fibers per cubic centimeter whichever is greater, stop work, and immediately correct the situation.

E. Removal of Asbestos-Containing Floor Tile and Mastic: Removal of asbestos-containing floor tile and mastic is a Class II contained area removal procedure. Prepare regulated work area as specified. During the removal of floor tiles make every effort to keep the materials from breaking. Pry up the corner of the tile with a broad blade scraper and slip the blade between the tile and the substrate while cutting the mastic bond. Remove all layers of floor tile and mastic to the subfloor. Asbestos floor tile mastic may be removed by the use of colorless and odorless liquid mastic removers. As floor tile and mastic are removed, place the material in sealable plastic bags of 6-mil thickness for disposal. Sanding and mechanical chipping of asbestos floor tile is prohibited. Use techniques as indicated in 29 CFR 1926.1101. If the quantity of airborne asbestos fibers monitored exceeds background or 0.01 fibers per cubic centimeter whichever is greater, stop work, and immediately correct the situation.

F. Removal of Asbestos-Containing Mastic on HVAC Duct Insulation: Removal of asbestos-containing mastic is a Class II removal procedure. Prepare regulated work area as previously specified. Spread one layer of 6-mil plastic sheeting on the ground of the work area extending out in all directions. Carefully remove insulation with mastic in manageable sections using a sharp blade knife, as it is removed place in 6-mil disposal bag. Make every effort to keep the asbestos mastic from falling to the work area floor below. Label bags for disposal. Use techniques as indicated in 29 CFR 1926.1101. If the quantity of airborne asbestos fibers monitored exceeds background or 0.01 fibers per cubic centimeter whichever is greater, stop work, and immediately correct the situation.

G. Removal of Asbestos-Containing Transite Panels: Removal of asbestos-containing transite panels is a Class II removal procedure. Prepare regulated work area as previously specified. Spread one layer of 6-mil plastic sheeting on the floor of the work area extending out in all directions. Carefully remove transite panels from frame, remove panels in sections and wrap in 2 layers of 6-mil plastic sheeting, label for disposal. Use techniques as indicated in 29 CFR 1926.1101. If the quantity of airborne asbestos fibers monitored exceeds background or 0.01 fibers per cubic centimeter whichever is greater, stop work, and immediately correct the situation.

H. Removal of Asbestos-Containing Chalkboard Mastic: Removal of asbestos-containing chalkboard mastic is a Class II removal procedure. Prepare regulated work area as previously specified. Spread one layer of 6-mil plastic sheeting on the ground of the work area extending out in all directions.

Carefully remove the chalkboard by removing fasteners and removing the chalkboard from wall. Remove asbestos mastic pucks using a flat scraper, as mastic is removed place in disposal bag. Make every effort to keep the asbestos mastic from falling to the work area floor below. All chalkboard panels with mastic intact must be disposed of ACM. Use techniques as indicated in 29 CFR 1926.1101. If the quantity of airborne asbestos fibers monitored exceeds background or 0.01 fibers per cubic centimeter whichever is greater, stop work, and immediately correct the situation.

I. Removal of Asbestos-Containing Fire Doors: Removal of asbestos-containing fire doors is a Class II removal procedure. Prepare regulated work area as previously specified. Spread one layer of 6-mil plastic sheeting on the floor of the work area extending out in all directions. Carefully unscrew hinges of door, remove door and wrap in 2 layers of 6-mil plastic sheeting, label for disposal. Use techniques as indicated in 29 CFR 1926.1101. If the quantity of airborne asbestos fibers monitored exceeds background or 0.01 fibers per cubic centimeter whichever is greater, stop work, and immediately correct the situation.

J. Removal of Asbestos-Containing Interior and Exterior Window Frame Sealants and Window Glazing Compounds – Removal of these materials is a Class II removal procedure. Prepare an exterior regulated area as previously specified. Spread two layers of 6-mil plastic sheeting on the ground of the work area extending out in all directions. Using adequately wet methods, carefully remove the ACM using manual methods, scrapers and knives. Place all debris in sealable 6-mil poly bags for disposal as required. Use techniques as indicated in 29 CFR 1926.1101. If the quantity of airborne asbestos fibers monitored exceeds background or 0.01 fibers per cubic centimeter whichever is greater, stop work, and immediately correct the situation.

K. Removal of Asbestos-Containing Sink Mastic – Removal of these materials is a Class II removal procedure. Prepare a regulated area as previously specified. Spread two layers of 6-mil plastic sheeting on the ground of the work area extending out in all directions. Carefully remove the whole sink with ACM mastic and wrap in 2 layers of 6-mil plastic sheeting, label for disposal. Use techniques as indicated in 29 CFR 1926.1101. If the quantity of airborne asbestos fibers monitored exceeds background or 0.01 fibers per cubic centimeter whichever is greater, stop work, and immediately correct the situation.

L. Removal of Asbestos-Containing Gaskets – Removal of these materials is a Class II removal procedure. Prepare a regulated area as previously specified. Spread two layers of 6-mil plastic sheeting on the ground of the work area extending out in all directions. Using adequately wet methods, carefully remove the ACM gasket using manual methods, scrapers and knives. Place all debris in sealable 6-mil poly bags for disposal as required. Use techniques as indicated in 29 CFR 1926.1101. If the quantity of airborne asbestos fibers monitored exceeds background or 0.01 fibers per cubic centimeter whichever is greater, stop work, and immediately correct the situation.

M. Bagged Asbestos Waste: All bagged asbestos waste shall be placed in the disposal vehicle from the bag out area. All workers are required to wear proper respiratory protection and protective clothing during bag out procedures.

N. Clean-Up: Provide general clean-up of work area concurrent with the removal of all asbestos-containing materials. Do not permit accumulation of debris on workspace floor. Clean all equipment (excluding that which is needed for further cleaning) used in the work area and remove from work area via decontamination unit. Wet clean and HEPA vacuum all surfaces in the work area. Remove outer layer of plastic sheeting. Replace all pre-filters in negative air machines. Upon completion of the final cleaning, the Owner's Project Monitor shall conduct a final visual inspection of the cleaned regulated area in accordance with ASTM E 1368. If the Owner's Project Monitor rejects the clean regulated area as not meeting final cleaning requirements, the Contractor

shall reclean as necessary. Recleaning and follow-up reinspection shall be at the Contractor's expense. Notify Owner's Project Monitor for visual inspection.

O. Lock Down: Once the work area has passed the visual inspection a post removal (lock down) encapsulant shall then be spray applied to the removal area. Maintain all asbestos regulated area. Wet clean and HEPA vacuum all surfaces in the work area. Proceed to paragraph "Sampling After Final Clean-Up" for final clearance.

P. Site Inspection: While performing asbestos removal work, the Contractor shall be subject to on-site inspection by the Owner and Owner's Representative who may be assisted by the Owner's Project Monitor. If the work is found to be in violation of this specification, the Owner or the Owner's representative will issue a stop work order to be in effect immediately and until the violation is resolved. Standby time required to resolve the violation shall be at the Contractor's expense.

Q. Air Sampling: Sampling performed in accordance with 29 CFR 1926.1101 shall be performed by the Contractor's Industrial Hygienist. Sampling performed for environmental and quality control reasons shall be performed by the Owner's Project Monitor. Unless otherwise specified, use NIOSH Method 7400 for sampling and analysis.

1. Sampling During Asbestos Work: The Contractor shall provide personal sampling as indicated in 29 CFR 1926.1101. At the same time the Owner's Project Monitor will provide area sampling. If sampling outside the work area shows airborne levels have exceeded background or 0.01 fibers per cubic centimeter, whichever is greater, stop all work, correct the condition(s) causing the increase, and notify the Contractor and Owner immediately.
2. AREAS TO BE DEMOLISHED - Sampling After Final Clean-Up (Clearance Sampling): Before final clearance sampling begins, the Owner's Project Monitor shall perform another visual inspection to ensure work area is visually clean. The Owner's Project Monitor will collect final clearance sampling using aggressive PCM air sampling techniques in accordance with current AHERA and NIOSH criteria for the full containment work area. The sampling and analytical method used will be Method 7400 (PCM). For EPA PCM sampling and analysis, using the EPA Method specified in 40 CFR 763, establish an airborne asbestos concentration of less than 0.01 fibers per cubic centimeter after final clean-up but before removal of the regulated work area. The Contractor shall continue cleaning the work area and any contaminated areas at no additional expense to the Owner until the final clearance criteria is meet. All costs associated with recleaning and resampling will be paid by the Contractor. If during the removal of asbestos-containing exterior materials, airborne fiber concentrations never exceed 0.01 fibers per cubic centimeter of air during the entire abatement process, final clearance sampling may be waived by the Owner's Project Monitor.
3. AREAS TO BE REOCCUPIED - Sampling After Final Clean-Up (Clearance Sampling): Before final clearance sampling begins, the Owner's Project Monitor shall perform another visual inspection to ensure work area is visually clean. The Owner's Project Monitor will collect final clearance sampling using aggressive TEM air sampling techniques in accordance with current AHERA and NIOSH criteria for the full containment work area. The sampling and analytical method used will be Method 7402 (TEM). For EPA TEM sampling and analysis, using the EPA Method specified in 40 CFR 763, establish an airborne asbestos concentration of less than 70 structures per square millimeter after final clean-up but before

removal of the regulated work area. The Contractor shall continue cleaning the work area and any contaminated areas at no additional expense to the Owner until the final clearance criteria is meet. All costs associated with recleaning and resampling will be paid by the Contractor.

4. For exterior regulated work areas, the Owner's Project Monitor will conduct final clearance air monitoring using non aggressive air sampling techniques as defined in EPA 560/5-85-024. The sampling and analytical method used will be NIOSH Method 7400 (PCM). Establish an airborne asbestos concentration of less than 0.01 fibers per cubic centimeter after final clean-up but before removal of the regulated work area. The Contractor shall continue cleaning the work area and any contaminated areas at no additional expense to the Owner until the final clearance criteria are meet. All costs associated with recleaning and resampling will be paid by the Contractor. If during the removal of asbestos-containing exterior materials, airborne fiber concentrations never exceed 0.01 fibers per cubic centimeter of air during the entire abatement process, final clearance sampling may be waived by the Owner's Project Monitor.

R. Preacceptance Criteria: Once clearance samples are analyzed and determine that the area is in compliance, the asbestos regulated work area shall be removed. A final check shall be carried out to ensure that no dust or debris remains on surfaces as a result of dismantling operations. All tools, equipment and materials from dismantling of the work site and all rubbish remaining upon completion of the work shall be removed by the Contractor. All temporary electrical and water connections shall be removed upon completion of the work. The site shall be left clean, neat and orderly and in the condition agreed upon by the Contractor and the Owner.

3.5 CLEAN-UP AND DISPOSAL

A. Housekeeping: Essential parts of asbestos dust control are housekeeping and cleanup procedures. Maintain surfaces of the asbestos control area free of accumulations of asbestos fibers. Give meticulous attention to restricting the spread of dust and debris; keep waste from being distributed over the general area. Use HEPA filtered vacuum cleaners. Do not blow down the space with compressed air.

B. Title to Materials: All materials resulting from asbestos work, except as specified otherwise, shall become the property of the contractor and shall be disposed of as specified in applicable local, state, and Federal regulations and herein.

C. Disposal of Asbestos:

1. Procedure for Disposal: 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. double plastic bags 6 mils thick, cartons, drums or cans). Wastes within the containers must be wetted to ensure the security of the material in case of container breaching. Affix a warning, Department of Transportation (DOT) label and Project/Contractor information in accordance with 40 CFR Part 61 and 29 CFR 1910.1001 to each bag or use at least 6 mil minimum thickness bags with the approved warnings and DOT labeling preprinted on the bag. The name of the waste generator and the location at which the waste was generated shall be clearly indicated on the outside of each container. Prevent contamination of the transport vehicle (especially if the transport vehicle is a rented truck likely to be used

in the future for non-asbestos purposes). These precautions include lining the vehicle cargo area with plastic sheeting (similar to work area enclosure) and thorough cleaning of the cargo area after transport and unloading of asbestos debris is complete. Dispose of waste asbestos material at an Environmental Protection Agency (EPA) or State-approved asbestos landfill. Contractor is required to coordinate with Owner disposal procedures. If temporary storage is utilized the area and container must first be approved by the Owner.

2. Asbestos Disposal Quantity Report: The Contractor shall record and report, to the Architect, Engineer and Owner, the amount of asbestos-containing material removed and released for disposal. Deliver the report for the previous day at the beginning of each day shift with amounts of material removed during the previous day reported in linear feet or square feet as described initially in this specification and in cubic feet for the amount of asbestos-containing material released for disposal. Allow the Owner's Project Monitor to inspect, record and report the amount of asbestos-containing material removed and released for disposal on a daily basis.

END OF SECTION 02 82 00

SECTION 064100
ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Specially fabricated cabinet units.

B. Countertops.

C. Hardware.

D. Factory finishing.

E. Preparation for installing utilities.

1.02 RELATED REQUIREMENTS

A. Section 123600 - Countertops.

1.03 REFERENCE STANDARDS

A. ANSI A208.1 - American National Standard for Particleboard 2022.

B. ANSI A208.2 - Medium Density Fiberboard (MDF) for Interior Applications 2022.

C. AWI (QCP) - Quality Certification Program Current Edition.

D. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition 2014, with Errata (2016).

E. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards 2021, with Errata.

F. BHMA A156.9 - Cabinet Hardware 2020.

G. NEMA LD 3 - High-Pressure Decorative Laminates 2005.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
   1. Scale of Drawings: 1-1/2 inch to 1 foot (125 mm to 1 m), minimum.
   2. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).
   3. Include certification program label.

C. Product Data: Provide data for hardware accessories.

D. Samples: Submit actual samples of architectural cabinet construction, minimum 12 inches (300 mm) square, illustrating proposed cabinet, countertop, and shelf unit substrate and finish.

E. Samples: Submit actual sample items of proposed pulls, hinges, shelf standards, and locksets, demonstrating hardware design, quality, and finish.

F. Certificate: Submit labels and certificates required by quality assurance and quality control programs.

1.05 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
   1. Company with at least one project in the past 5 years with value of woodwork within 20 percent of cost of woodwork for this Project.
   2. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.
   3. Single Source Responsibility: Provide and install this work from single fabricator.

B. Quality Certification:
   1. Comply with AWI (QCP) woodwork association quality certification service/program in accordance with requirements for work specified in this section: www.awiqcp.org.

2. Provide labels or certificates indicating that the installed work complies with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade or grades specified.
3. Provide designated labels on shop drawings as required by certification program.
4. Provide designated labels on installed products as required by certification program.
5. Submit certifications upon completion of installation that verifies this work is in compliance with specified requirements.
6. Replace, repair, or rework all work for which certification is refused.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect units from moisture damage.

1.07 FIELD CONDITIONS

A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

PART 2 PRODUCTS

2.01 CABINETS

A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

B. Plastic Laminate Faced Cabinets: Custom grade.

C. Cabinets:
1. Door and Drawer Front Edge Profiles: Square edge with thin applied band.
2. Casework Construction Type: Type A - Frameless.
3. Layout for Cabinet and Door Fronts: Flush panel.
   a. Custom Grade: Doors, drawer fronts and false fronts wood grain to run and match vertically within each cabinet unit.
4. Adjustable Shelf Loading: 40 psf (19.5 gm/sq cm).
   a. Deflection: L/144.
5. Cabinet Style: Flush overlay.
6. Cabinet Doors and Drawer Fronts: Flush style.
7. Drawer Side Construction: Multiple-dovetailed.
8. Drawer Construction Technique: Dovetail joints.

2.02 WOOD-BASED COMPONENTS

A. Wood fabricated from old growth timber is not permitted.

2.03 PANEL CORE MATERIALS

A. Particleboard: Composite panel composed of cellulosic particles, additives, and bonding system; comply with ANSI A208.1.
1. Grade: M-2; moisture resistance: MR10.
2. Panel Thickness: 1/2 inch (12.7 mm).

B. Medium Density Fiberboard (MDF): Composite panel composed of cellulosic fibers, additives, and bonding system; cured under heat and pressure; comply with ANSI A208.2.
1. Grade: 115; moisture resistance: MR10.
2. Panel Thickness: 1 inch (25.4 mm).

2.04 LAMINATE MATERIALS

A. Manufacturers:
1. Wilsonart LLC: www.wilsonart.com.
2. Formica Corporation: www.formica.com.
3. Panolam Industries International, Inc: www.panolam.com.

B. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications.

C. Provide specific types as indicated.

1. Horizontal Surfaces: HGS, 0.048 inch (1.22 mm) nominal thickness, through color, colors as indicated, finish as indicated.

2.05 COUNTERTOPS

A. Countertops: See Section 123600.

2.06 ACCESSORIES

A. Adhesive: Type recommended by AWI/AWMAC to suit application.

B. Plastic Edge Banding: Extruded PVC, convex shaped; smooth finish; self locking serrated tongue; of width to match component thickness.
   1. Color: As selected by Architect from manufacturer's standard range.
   2. Use at all exposed plywood edges.
   3. Use at all exposed shelf edges.

C. Fasteners: Size and type to suit application.

D. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.

E. Concealed Joint Fasteners: Threaded steel.

2.07 HARDWARE

A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.

B. Metal Z-Shaped Wall Cabinet Support Clips: Paired, cleated, structural anchorage components applied to back of cabinets and walls for wall cabinet mounting.

C. Adjustable Shelf Supports: Standard side-mounted system using recessed metal shelf standards and coordinated self rests, polished chrome finish, for nominal 1 inch (25 mm) spacing adjustments.

D. Vanity Brackets: Fixed, ADA-compliant, face-of-stud mounting.
   1. Material and Shape: Steel; formed compound shapes.
      a. Finish: Manufacturer's standard, factory-applied, textured powder coat.
      b. Color: White.
   2. Height: 18 inches (460 mm).
   3. Support Length: 21-1/2 inches (546 mm).
   4. Products:
      a. A&M Hardware, Inc; ADA Vanity Brackets: www.aandmhardware.com.
      b. Rakks/Rangine Corporation; ADA Compliant EHV Vanity Supports: www.rakks.com.

E. Drawer and Door Pulls: Extruded aluminum pull, full width of drawer, satin finish.

F. Keyed Cabinet Locks: Keyed cylinder, two keys per lock, master keyed, steel with satin finish.

G. Cabinet Catches and Latches:
   1. Type: Magnetic catch.

H. Drawer Slides:
   1. Type: Full extension.
   2. Static Load Capacity: Commercial grade.
   3. Mounting: Side mounted.
   4. Stops: Integral type.
   5. Features: Provide self closing/stay closed type.

I. Hinges: European style concealed self-closing, steel with satin finish.

2.08 FABRICATION

A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.

B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.

C. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.

D. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners.
   1. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
   2. Cap exposed plastic laminate finish edges with material of same finish and pattern.

E. Provide cutouts for plumbing fixtures. Verify locations of cutouts from on-site dimensions. Prime paint cut edges.

2.09 SHOP FINISHING

A. Sand work smooth and set exposed nails and screws.

B. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:
   1. Transparent:
      a. Sheen: Flat.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of backing and support framing.

B. Verify location and sizes of utility rough-in associated with work of this section.

3.02 INSTALLATION

A. Install work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.

B. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

C. Use fixture attachments in concealed locations for wall mounted components.

D. Use concealed joint fasteners to align and secure adjoining cabinet units.

E. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch (0.79 mm). Do not use additional overlay trim for this purpose.

F. Secure cabinets to floor using appropriate angles and anchorages.

G. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

3.03 ADJUSTING

A. Test installed work for rigidity and ability to support loads.

B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING

A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

SECTION 081113
HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-fire-rated hollow metal doors and frames.

1.02 RELATED REQUIREMENTS

A. Section 087100 - Door Hardware.

B. Section 099113 - Exterior Painting: Field painting.

C. Section 099123 - Interior Painting: Field painting.

1.03 ABBREVIATIONS AND ACRONYMS

A. ANSI: American National Standards Institute.

B. ASCE: American Society of Civil Engineers.

C. HMMA: Hollow Metal Manufacturers Association.

D. NAAMM: National Association of Architectural Metal Manufacturers.

E. NFPA: National Fire Protection Association.

F. SCIF: Sensitive Compartmented Information Facility.

G. SDI: Steel Door Institute.

H. UL: Underwriters Laboratories.

1.04 REFERENCE STANDARDS

A. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames 2020.

B. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100) 2017.

C. NAAMM HMMA 840 - Guide Specifications For Receipt, Storage and Installation of Hollow Metal Doors and Frames 2017.

D. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames 2014.

E. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.

F. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames 2019.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.

C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.

D. Manufacturer's Qualification Statement.

E. Installer's Qualification Statement.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience and approved by manufacturer.

C. Maintain at project site copies of reference standards relating to installation of products specified.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.

B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 HOLLOW METAL FRAMES

A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.

B. Frame Finish: Factory primed and field finished.

C. Interior Door Frames, Non-Fire Rated: Full profile/continuously welded type.
   1. Terminated Stops: Provide at interior doors; closed end stop terminated 6 inch (150 mm), maximum, above floor at 45 degree angle.
   2. Frame Metal Thickness: 16 gauge, 0.053 inch (1.3 mm), minimum.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 INSTALLATION

A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.

B. Install fire rated units in accordance with NFPA 80.

C. Coordinate frame anchor placement with wall construction.

D. Install door hardware as specified in Section 087100.
   1. Comply with recommended practice for hardware placement of doors and frames in accordance with ANSI/SDI A250.6 or NAAMM HMMA 861.

E. Coordinate installation of electrical connections to electrical hardware items.

F. Touch up damaged factory finishes.

3.03 TOLERANCES

A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.

B. Maximum Diagonal Distortion: 1/16 inch (1.6 mm) measured with straight edge, corner to corner.

3.04 ADJUSTING

A. Adjust for smooth and balanced door movement.

3.05 SCHEDULE

A. Refer to Door and Frame Schedule on the drawings.

END OF SECTION

SECTION 081116
ALUMINUM DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Glazed aluminum doors.

B. Aluminum frames.

C. Glazing.

1.02 RELATED REQUIREMENTS

A. Section 087100 - Door Hardware: Hardware for aluminum doors.

1.03 SUBMITTALS

A. Product Data: Manufacturer's descriptive literature for each type of door; include information on fabrication methods.

B. Shop Drawings: Include elevations of each opening type.

1.04 WARRANTY

A. Correct defective Work within a five year period after Date of Substantial Completion.

B. Manufacturer Warranty: Provide 10-year manufacturer warranty for defects in workmanship and materials. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Glazed Aluminum Doors:
   1. Andersen; Inswing Aluminum Pivot Door: www.andersenwindows.com/#sle.
   2. Avalon International Aluminum LLC; Eagle Universal System: www.avalonint.com/#sle.
   3. Manko Window Systems, Inc: www.mankowindows.com/#sle.
   4. Terra Universal, Inc; Pre-Hung Manual Swing Doors, Aluminum: www.terrauniversal.com/#sle.
   5. Wilson Partitions: www.wilsonpart.com/#sle.

B. Aluminum Frames:
   1. Arcadia, Inc: www.arcadiainc.com/#sle.
   2. Avalon International Aluminum LLC; Eagle Series Door Frames and Sidelights: www.avalonint.com/#sle.
   3. Cline Aluminum Doors, Inc: www.clinedoors.com/#sle.
   4. Wilson Partitions: www.wilsonpart.com/#sle.

2.02 DOORS AND FRAMES

A. Accessibility: Comply with ICC A117.1 and ADA Standards.

B. Glazed Aluminum Doors: Extruded aluminum tube frame, full glazed, with middle rail; factory glazed.
   1. Thickness: 1-3/4 inches (44 mm), nominal.
   2. Stile Width: As indicated on drawings.
   3. Finish: Class I - Natural anodized.
   4. Texture: Smooth.
   5. Seals: Manufacturer's standard.
   6. Glazing, Interior Doors: Clear, 1/4 inch (6 mm) thick fully tempered glass.
   7. Manufacturer's Door Hardware: Manufacturer's standard.

C. Aluminum Frames for Doors, Sidelights, or Transoms: Extruded aluminum, non-thermally broken hollow or C-shaped sections; no steel components.
   1. Frame Depth: To fit wall thicknesses as indicated on drawings.
   2. Finish: Same as doors.

3. Sidelight/Transom Glazing: Clear, single pane of 1/4 inch (6 mm) thick fully tempered glass.

D. Dimensions and Shapes: As indicated on drawings; dimensions indicated are nominal.
   1. Provide the following clearances:
      a. Hinge and Lock Stiles: 1/8 inch (3.2 mm).
      b. Between Meeting Stiles: 1/4 inch (6.4 mm).
      c. At Top Rail and Bottom Rail: 1/8 inch (3.2 mm).

2.03 COMPONENTS

A. Frames: Extruded aluminum shapes, not less than 0.062 inch (1.6 mm) thick, reinforced at hinge and strike locations.
   1. Corner Brackets: Extruded aluminum, fastened with stainless steel screws.
   2. Trim: Extruded aluminum, not less than 0.062 inch (1.6 mm) thick, removable snap-in type without exposed fasteners.

B. Additional Door Hardware: See Section 087100.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that wall surfaces and openings are ready to receive frames and are within tolerances specified in manufacturer's instructions.

B. Verify that frames installed by other trades for installation of doors of this section are in strict accordance with recommendations and approved shop drawings and within tolerances specified in manufacturer's instructions.

3.02 PREPARATION

A. Perform cutting, fitting, forming, drilling, and grinding of frames as required for project conditions.

B. Replace components with damage to exposed finishes.

C. Separate dissimilar metals to prevent electrolytic action between metals.

3.03 INSTALLATION

A. Install doors and frames in accordance with manufacturer's instructions and approved shop drawings.

B. Set frames plumb, square, level, and aligned to receive doors. Anchor frames to adjacent construction in strict accordance with manufacturer's recommendations and within specified tolerances.

C. Where aluminum surfaces contact metals other than stainless steel, zinc, or small areas of white bronze, protect from direct contact by painting dissimilar metal with heavy coating of bituminous paint.

D. Hang doors and adjust hardware to achieve specified clearances and proper door operation.

E. Install door hardware. See Section 087100.

F. Install glazing; set glazing stops and glazing gaskets flush with face of door or frame.

3.04 FIELD QUALITY CONTROL

A. Provide services of aluminum door manufacturer's field representative to observe for proper installation of system and submit report.

B. Provide field testing of installed aluminum doors by independent laboratory in accordance with AAMA 502 and AAMA/WDMA/CSA 101/I.S.2/A440 during construction process and before installation of interior finishes.
   1. Field test for water penetration in accordance with ASTM E1105 using Procedure B - cyclic static air pressure difference; test pressure shall not be less than 1.9 psf (91 Pa).
   2. Field test for air leakage in accordance with ASTM E783 with uniform static air pressure difference of 6.27 psf (300 Pa).

C. Repair or replace fenestration components that have failed designated field testing, and retest to verify performance complies with specified requirements.

3.05 CLEANING

A. Upon completion of installation, thoroughly clean door and frame surfaces in accordance with AAMA 609 & 610.

B. Do not use abrasive, caustic, or acid cleaning agents.

3.06 PROTECTION

A. Protect products of this section from damage caused by subsequent construction until Date of Substantial Completion.

B. Replace damaged or defective components that cannot be repaired to a condition indistinguishable from undamaged components.

END OF SECTION

SECTION 081416
FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flush wood doors; flush and flush glazed configuration; fire-rated, non-rated, and acoustical.

1.02 RELATED REQUIREMENTS

A. Section 081113 - Hollow Metal Doors and Frames.

B. Section 087100 - Door Hardware.

C. Section 088000 - Glazing.

1.03 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials Current Edition.

B. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.

C. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements 2009 (Reapproved 2016).

D. ASTM E413 - Classification for Rating Sound Insulation 2022.

E. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition 2014, with Errata (2016).

F. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards 2021, with Errata.

G. NEMA LD 3 - High-Pressure Decorative Laminates 2005.

H. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.

I. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives 2022.

J. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies Current Edition, Including All Revisions.

K. UL 1784 - Standard for Air Leakage Tests of Door Assemblies Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.

C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.

D. Certificate: Submit labels and certificates required by quality assurance and quality control programs.

E. Manufacturer's qualification statement.

F. Installer's qualification statement.

G. Specimen warranty.

H. Warranty, executed in Owner's name.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section, with not less than three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Package, deliver and store doors in accordance with specified quality standard.

B. Accept doors on site in manufacturer's packaging, and inspect for damage.

C. Protect doors with resilient packaging sealed with heat shrunk plastic; do not store in damp or wet areas or areas where sunlight might bleach veneer; seal top and bottom edges with tinted sealer if stored more than one week, and break seal on site to permit ventilation.

1.07 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide manufacturer's warranty on interior doors for 2 years. Complete forms in Owner's name and register with manufacturer.
   1. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS

2.01 DOORS AND PANELS

A. Doors: See drawings for locations and additional requirements.
   1. Quality Standard: Custom Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
   2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
   3. High Pressure Decorative Laminate (HPDL) Faced Doors: 5-ply unless otherwise indicated.

B. Interior Doors: 1-3/4 inches (44 mm) thick unless otherwise indicated; flush construction.
   1. Provide solid core doors at each location.
   2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with UL 10C - Positive Pressure; Underwriters Laboratories Inc (UL) or Intertek/Warnock Hersey (WHI) labeled without any visible seals when door is open.
   3. Smoke and Draft Control Doors: In addition to required fire rating, provide door assemblies tested in accordance with UL 1784 with maximum air leakage of 3.0 cfm per sq ft (0.01524 cu m/s/sq m) of door opening at 0.10 inch wg (24.9 Pa) pressure at both ambient and elevated temperatures for "S" label; if necessary, provide additional gasketing or edge sealing.
   4. Sound-Rated Doors: Minimum STC as indicated on drawings, calculated in accordance with ASTM E413, tested in accordance with ASTM E90.

2.02 DOOR AND PANEL CORES

A. Fire-Rated Doors: Mineral core type, with fire resistant composite core (FD), plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware without through-bolting.

B. Sound-Rated Doors: Equivalent to type, with particleboard core (PC) construction as required to achieve STC rating specified; plies and faces as indicated above.

C. Hollow Core Doors: Type - Standard (FSHC); plies and faces as indicated above.

2.03 DOOR FACINGS

A. Veneer Facing for Transparent Finish: Select White Maple, veneer grade in accordance with quality standard indicated, plain sliced (flat cut), with book match between leaves of veneer, running match of spliced veneer leaves assembled on door or panel face.
   1. Vertical Edges: Any option allowed by quality standard for grade.
   2. "Running Match" each pair of doors and doors in close proximity to each other.

B. High Pressure Decorative Laminate (HPDL) Facing for Fire Doors: NEMA LD 3, SGF; color(s) as indicated; textured, low gloss finish.

C. High Pressure Decorative Laminate (HPDL) Facing for Non-Fire-Rated Doors: NEMA LD 3, HGS; color(s) as indicated; textured, low gloss finish.

D. Facing Adhesive: Type II - water resistant.

2.04 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.

B. Cores Constructed with stiles and rails:
   1. Provide solid blocks at lock edge for hardware reinforcement.
   2. Provide solid blocking for other throughbolted hardware.

C. Glazed Openings: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.

D. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

E. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.

F. Provide edge clearances in accordance with the quality standard specified.

2.05 ACCESSORIES

A. Hollow Metal Door Frames: See Section 081113.

B. Glazed Openings:
   1. Heat-Strengthened and Fully Tempered Glass: ASTM C1048.
   2. Fire-Protection-Rated Glass: Safety Certification, 16 CFR 1201, Category II.
   3. Glazing: Single vision units, 1/4 inch (6.4 mm) thick glass.
   4. Tint: Clear.

C. Door Window Frames: Door window frames with glazing securely fastened within door opening.
   1. Size: As indicated on drawings.
   2. Frame Material: 18 gauge, 0.0478 inch (1.21 mm), galvanized steel.
   3. Metal Finish: to match door frames polyester powder coating.

D. Glazing Stops: Rolled steel channel shape, butted corners; prepared for countersink style tamper proof screws.

E. Door Hardware: See Section 087100.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.
   1. Install fire-rated doors in accordance with NFPA 80 requirements.
   2. Install smoke and draft control doors in accordance with NFPA 105 requirements.

B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.

C. Use machine tools to cut or drill for hardware.

D. Coordinate installation of doors with installation of frames and hardware.

E. Coordinate installation of glazing.

F. Install door louvers plumb and level.

3.03 TOLERANCES

A. Comply with specified quality standard for fit and clearance tolerances.

B. Comply with specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

A. Adjust doors for smooth and balanced door movement.
B. Adjust closers for full closure.

END OF SECTION

SECTION 087100
DOOR HARDWARE

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
   1. Mechanical and electrified hardware for swinging doors.
   2. Field verification, preparation and modification of existing doors and frames to receive new door hardware.

B. Section excludes:
   1. Windows.
   2. Casework, including cabinet locks.
   3. Signage
   4. Toilet accessories.
   5. Overhead doors.

1.02 RELATED REQUIREMENTS

A. Section 080671 - Door Hardware Schedule: Schedule of door hardware sets.

B. Section 081113 - Hollow Metal Doors and Frames.

C. Section 081116 - Aluminum Doors and Frames.

D. Section 081416 - Flush Wood Doors.

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.

B. BHMA (CPD) - Certified Products Directory Current Edition.

C. BHMA A156.1 - Standard for Butts and Hinges 2021.

D. BHMA A156.2 - Bored and Preassembled Locks and Latches 2017.

E. BHMA A156.4 - Door Controls - Closers 2019.

F. BHMA A156.6 - Standard for Architectural Door Trim 2021.

G. BHMA A156.13 - Mortise Locks & Latches Series 1000 2017.

H. BHMA A156.16 - Auxiliary Hardware 2018.

I. BHMA A156.21 - Thresholds 2019.

J. BHMA A156.28 - Standard for Recommended Practices for Mechanical Keying Systems 2018.

K. DHI (H&S) - Sequence and Format for the Hardware Schedule 2019.

L. DHI (KSN) - Keying Systems and Nomenclature 2019.

M. DHI (LOCS) - Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames 2004.

N. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.

O. ITS (DIR) - Directory of Listed Products Current Edition.

P. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

Q. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.

R. NFPA 101 - Life Safety Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

S. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives 2022.

T. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies 2022.

U. UL (DIR) - Online Certifications Directory Current Edition.

V. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies Current Edition, Including All Revisions.

W. UL 437 - Standard for Key Locks Current Edition, Including All Revisions.

X. UL 1784 - Standard for Air Leakage Tests of Door Assemblies Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. General:
   1. Submit in accordance with Conditions of Contract and Division 01 Submittal Procedures.
   2. Prior to forwarding submittal:
      a. Comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, "EXAMINATION" article, herein.
      b. Review drawings and Sections from related trades to verify compatibility with specified hardware.
      c. Highlight, encircle, or otherwise specifically identify on submittals: deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.

B. Action Submittals:
   1. Product Data: Submit technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
   2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:
      a. Wiring Diagrams: For power, signal, and control wiring and including:
         1) Details of interface of electrified door hardware and building safety and security systems.
         2) Schematic diagram of systems that interface with electrified door hardware.
         3) Point-to-point wiring.
         4) Risers.
   3. Samples for Verification: If requested by Architect, submit production sample of requested door hardware unit in finish indicated and tagged with full description for coordination with schedule.
      a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.
   4. Door Hardware Schedule:
      a. Submit concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work critical in Project construction schedule.
      b. Submit under direct supervision of a Door Hardware Institute (DHI) certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule published by DHI.
      c. Indicate complete designations of each item required for each opening, include:
         1) Door Index: door number, heading number, and Architect's hardware set number.
         2) Quantity, type, style, function, size, and finish of each hardware item.
         3) Name and manufacturer of each item.
         4) Fastenings and other pertinent information.
         5) Location of each hardware set cross-referenced to indications on Drawings.
         6) Explanation of all abbreviations, symbols, and codes contained in schedule.
         7) Mounting locations for hardware.
         8) Door and frame sizes and materials.

9) Degree of door swing and handing.
10) Operational Description of openings with electrified hardware covering egress, ingress (access), and fire/smoke alarm connections.

5. Key Schedul
   a. After Keying Conference, provide keying schedule that includes levels of keying, explanations of key system's function, key symbols used, and door numbers controlled.
   b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
   c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
   d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
   e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion. Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
   f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.
6. Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory or shop prepared for door hardware installation.

C. Informational Submittals:
   1. Provide Qualification Data for Supplier, Installer and Architectural Hardware Consultant.
   2. Provide Product Data:
      a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
      b. Include warranties for specified door hardware.

D. Closeout Submittals:
   1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:
      a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
      b. Catalog pages for each product.
      c. Factory order acknowledgement numbers (for warranty and service)
      d. Name, address, and phone number of local representative for each manufacturer.
      e. Parts list for each product.
      f. Final approved hardware schedule edited to reflect conditions as-installed.
      g. Final keying schedule
      h. Copies of floor plans with keying nomenclature
      i. Copy of warranties including appropriate reference numbers for manufacturers to identify project.
      j. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.

E. Inspection and Testing:
   1. Submit a written report of the results of functional testing and inspection for fire door assemblies, in compliance with NFPA 80.
      a. Written report to be provided to the Owner and be made available to the Authority Having Jurisdiction (AHJ).
      b. Report to include the door number for each fire door assembly, door location, door and frame material, fire rating, and summary of deficiencies.
   2. Submit a written report of the results of functional testing and inspection for required egress door assemblies, in compliance with NFPA 101.
      a. Written report to be provided to the Owner and be made available to the Authority Having Jurisdiction (AHJ).

b. Report to include the door number for each required egress door assembly, door location, door and frame material, fire rating, and summary of deficiencies.

1.05 QUALITY ASSURANCE

A. Qualifications and Responsibilities:
   1. Supplier: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
      a. Warehousing Facilities: In Project's vicinity.
      b. Scheduling Responsibility: Preparation of door hardware and keying schedules.
      c. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
      d. Coordination Responsibility: Assist in coordinating installation of electronic security hardware with Architect and electrical engineers and provide installation and technical data to Architect and other related subcontractors.
      e. Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.
   2. Installer: Qualified tradesperson skilled in the application of commercial grade hardware with experience installing door hardware similar in quantity, type, and quality as indicated for this Project.
   3. Architectural Hardware Consultant: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
      a. For door hardware: DHI certified AHC or DHC.
      b. Can provide installation and technical data to Architect and other related subcontractors.
      c. Can inspect and verify components are in working order upon completion of installation.
      d. Capable of producing wiring diagram and coordinating installation of electrified hardware with Architect and electrical engineers.
   4. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

B. Certifications:
   1. Fire-Rated Door Openings:
      a. Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction.
      b. Provide only items of door hardware that are listed products tested by Underwriters Laboratories, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.
   2. Smoke and Draft Control Door Assemblies:
      a. Provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
      b. Comply with the maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.
   3. Electrified Door Hardware
      a. Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.
   4. Accessibility Requirements:
      a. Comply with governing accessibility regulations cited in “REFERENCES” article, herein for door hardware on doors in an accessible route.

C. Pre-Installation Meetings
   1. Keying Conference
      a. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
         1) Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
         2) Preliminary key system schematic diagram.
         3) Requirements for key control system.
         4) Requirements for access control.
         5) Address for delivery of keys.
   2. Pre-installation Conference
      a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
      b. Inspect and discuss preparatory work performed by other trades.
      c. Inspect and discuss electrical roughing-in for electrified door hardware.
      d. Review sequence of operation for each type of electrified door hardware.
      e. Review required testing, inspecting, and certifying procedures.
      f. Review questions or concerns related to proper installation and adjustment of door hardware.
   3. Electrified Hardware Coordination Conference
      a. Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site. Promptly replace products damaged during shipping.

B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package. Deliver each article of hardware in manufacturer's original packaging.

C. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.

D. Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.

E. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

F. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.07 COORDINATION

A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.

B. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

E. Existing Openings: Where existing doors, frames and/or hardware are to remain, field verify existing functions, conditions and preparations and coordinate to suit opening conditions and to provide proper door operation.

1.08 WARRANTY

A. Manufacturer's Warranty: Provide warranty against defects in material and workmanship for period indicated. Complete forms in Owner's name and register with manufacturer.
   1. Mechanical Warranty
      a. Closers: 20 years, minimum.
      b. Grade 1 Locks: 10 years
      c. Mechanical Exit Devices: 3 years
      d. Automatic Operators: 2 years
      e. Mortise Locksets: Limited Lifetime
   2. Electrical Warranty
      a. Exit Devices: 1 year, minimum.
      b. Locks: 1 year, minimum.
      c. Electric Strikes: 1 year, minimum.

1.09 MAINTENANCE

A. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

B. Turn over unused materials to Owner for maintenance purposes.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Approval of manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category shall be in accordance with QUALITY ASSURANCE article, herein.

B. Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.

C. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.02 MATERIALS

A. Fasteners
   1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
   2. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
   3. Provide concealed fasteners for hardware units exposed when door is closed except when no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless thru-bolts are required to fasten hardware securely. Review door specification and advise Architect if thru-bolts are required.
   4. Install hardware with fasteners provided by hardware manufacturer.

B. Modification and Preparation of Existing Doors: Where existing door hardware is indicated to be removed and reinstalled.
   1. Provide necessary fillers, Dutchmen, reinforcements, and fasteners, compatible with existing materials, as required for mounting new opening hardware and to cover existing door and frame preparations.
   2. Use materials which match materials of adjacent modified areas.
   3. When modifying existing fire-rated openings, provide materials permitted by NFPA 80 as required to maintain fire-rating.

C. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.
   1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

2.03 CONTINUOUS HINGES

A. Manufacturers:
   1. Basis of Design: Ives.
   2. Hager Companies; [_____]: www.hagerco.com/#sle.
   3. Stanley, dormakaba Group; [_____]: www.stanleyhardwarefordoors.com/#sle.
   4. ABH
   5. Select.

B. Requirements:
   1. Provide aluminum geared continuous hinges conforming to ANSI/BHMA A156.26, Grade 1.
   2. Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum.
   3. Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
   4. Provide hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.
   5. On fire-rated doors, provide aluminum geared continuous hinges classified for use on rated doors by testing agency acceptable to authority having jurisdiction.
   6. Provide aluminum geared continuous hinges with electrified option scheduled in the hardware sets. Provide with sufficient number and wire gage to accommodate electric function of specified hardware.
   7. Provide hinges 1 inch (25 mm) shorter in length than nominal height of door, unless otherwise noted or door details require shorter length and with symmetrical hole pattern.

2.04 CYLINDERS

A. Manufacturers:
   1. Basis of Design: Schlage, an Allegion brand.
   2. Hager Companies: www.hagerco.com/#sle.
   3. Stanley, dormakaba Group: www.stanleyhardwarefordoors.com/#sle.

B. Requirements:
   1. Provide cylinders/cores, from the same manufacturer of locksets, compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset, manufacturer's series as indicated. Refer to "KEYING" article, herein.
   2. Provide cylinders in the below-listed configuration(s), distributed throughout the Project as indicated.
      a. Conventional Open: cylinder with small format interchangeable core (SFIC) core with open keyway

C. Construction Keying:
   1. Temporary Construction Cylinder Keying.
      a. Provide construction cores that permit voiding construction keys without cylinder removal, furnished in accordance with the following requirements.
         1) Split Key or Lost Ball Construction Keying System.
         2) 3 construction control keys, and extractor tools or keys as required to void construction keying.
         3) 12 construction change (day) keys.
      b. Owner or Owner's Representative will void operation of temporary construction keys.

2.05 CYLINDRICAL LOCKS - GRADE 1

A. Manufacturers:
   1. Basis of Design: Schlage, an Allegion brand.
   2. Hager Companies; [_____]: www.hagerco.com/#sle.

3. Stanley, dormakaba Group; [_____]: www.stanleyhardwarefordoors.com/#sle.

B. Requirements:
1. Provide cylindrical locks conforming to ANSI/BHMA A156.2 Series 4000, Grade 1, and UL Listed for 3 hour fire doors.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with 1/2 inch latch throw. Provide proper latch throw for UL listing at pairs.
4. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
5. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
7. Provide electrified options as scheduled in the hardware sets.
8. Lever Trim: Solid cast levers without plastic inserts and wrought roses on both sides.
   a. Lever Design: Schlage Rhodes (Basis of Design)
   b. Finish: To match lock or latch.

2.06 DOOR TRIM

A. Manufacturers:
1. Basis of Design: Ives, an Allegion brand: www.allegion.com/us/#sle.
2. Rockwood; an Assa Abloy Group company: www.assaabloydss.com/#sle.
3. Trimco: www.trimcohardware.com/#sle.

B. Requirements:
1. Provide push plates, push bars, pull plates, and pulls with diameter and length as scheduled.

2.07 DOOR CLOSERS

A. Manufacturers:
1. Basis of Design: LCN, an Allegion brand.
2. Hager Companies; [_____]: www.hagerco.com/#sle.
3. Pamex, Inc; [_____]: www.pamexinc.com/#sle.
4. Stanley, dormakaba Group; [_____]: www.stanleyhardwarefordoors.com/#sle.

B. Requirements:
1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closer on each exterior door.
3. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
8. Pressure Relief Valve (PRV) Technology: Not permitted.
9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.08 PROTECTION PLATES

A. Manufacturers:
   1. Basis of Design: Ives, an Allegion brand: www.allegion.com/us/#sle.
   2. Rockwood; an Assa Abloy Group company: www.assaabloydss.com/#sle.
   3. Trimco: www.trimcohardware.com/#sle.

B. Requirements:
   1. Provide protection plates with a minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
   2. Sizes plates 2 inches (51 mm) less width of door on single doors, pairs of doors with a mullion, and doors with edge guards. Size plates 1 inch (25 mm) less width of door on pairs without a mullion or edge guards.
   3. At fire rated doors, provide protection plates over 16 inches high with UL label.

2.09 DOOR STOPS AND HOLDERS

A. Manufacturers:
   1. Basis of Design: Ives, an Allegion brand: www.allegion.com/us/#sle.
   2. Rockwood; an Assa Abloy Group company[<>]: www.assaabloydss.com/#sle.
   3. Trimco: www.trimcohardware.com/#sle.

B. Provide door stops at each door leaf:
   1. Provide wall stops wherever possible. Provide concave type where lockset has a push button or thumbturn.
   2. Where a wall stop cannot be used, provide universal floor stops.
   3. Where wall or floor stop cannot be used, provide overhead stop.
   4.

2.10 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:
   1. Basis of Design: National Guard: www.ngpinc.com/#sle..
   2. Pemko; an Assa Abloy Group company: www.assaabloydss.com/#sle.
   3. Hager Companies: www.hagerco.com/#sle.
   4. Reese Enterprises, Inc: www.reeseusa.com/#sle.
   5. Zero International, Inc: www.zerointernational.com/#sle.

B. Requirements:
   1. Provide thresholds, weather-stripping, and gasketing systems as specified and per architectural details. Match finish of other items.
   2. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies
   3. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.
   4. Size thresholds 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width unless otherwise specified in the hardware sets or detailed in the drawings.

2.11 KEYING

A. Provide a factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

B. Provide cylinders/cores keyed into Owner's existing factory registered keying system. Comply with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

C. Requirements:
   1. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
      a. Master Keying system as directed by the Owner.
   2. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements will be cause for replacement of cylinders/cores involved at no additional cost to Owner.
   3. Provide keys with the following features:

a. Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
b. Patent Protection: Keys and blanks protected by one or more utility patent(s)
c. Geographically Exclusive: Where High Security or Security cylinders/cores are indicated, provide nationwide, geographically exclusive key system complying with the following restrictions.

4. Identification:
   a. Mark permanent cylinders/cores and keys with applicable blind code for identification. Do not provide blind code marks with actual key cuts.
   b. Identification stamping provisions must be approved by the Architect and Owner.
   c. Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.
   d. Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.
   e. Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.
5. Quantity: Furnish in the following quantities.
   a. Change (Day) Keys: 3 per cylinder/core.
   b. Master Keys: 6.

2.12 FINISHES

A. Finish: BHMA 626/652 (US26D); except:
   1. Continuous Hinges: BHMA 628 (US28)
   2. Push Plates, Pulls, and Push Bars: BHMA 630 (US32D)
   3. Protection Plates: BHMA 630 (US32D)
   4. Door Closers: Powder Coat to Match
   5.
   6. Weatherstripping: Clear Anodized Aluminum
   7. Thresholds: Mill Finish Aluminum

PART 3 EXECUTION

3.01 EXAMINATION

A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance. Verify doors, frames, and walls have been properly reinforced for hardware installation.

B. Field verify existing doors and frames receiving new hardware and existing conditions receiving new openings. Verify that new hardware is compatible with existing door and frame preparation and existing conditions.

C. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

D. Submit a list of deficiencies in writing and proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Where on-site modification of doors and frames is required:
   1. Carefully remove existing door hardware and components being reused. Clean, protect, tag, and store in accordance with storage and handling requirements specified herein.
   2. Field modify and prepare existing doors and frames for new hardware being installed.
   3. When modifications are exposed to view, use concealed fasteners, when possible.
   4. Prepare hardware locations and reinstall in accordance with installation requirements for new door hardware and with:
      a. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.

b. Wood Doors: DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."
c. Doors in rated assemblies: NFPA 80 for restrictions on on-site door hardware preparation.

3.03 INSTALLATION

A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.
   1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
   2. Custom Steel Doors and Frames: HMMA 831.
   3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

B. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

C. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.

D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

F. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.

G. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated.

H. Wiring: Coordinate with Division 26, ELECTRICAL sections for:
   1. Conduit, junction boxes and wire pulls.
   2. Connections to and from power supplies to electrified hardware.
   3. Connections to fire/smoke alarm system and smoke evacuation system.
   4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
   5. Testing and labeling wires with Architect's opening number.

I. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

J. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.

K. Closer/Holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.

L. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.

M. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."

N. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.

O. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

P. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

Q. Door Bottoms and Sweeps: Apply to bottom of door, forming seal with threshold when door is closed.

R. Install hardware on fire-rated doors and frames in accordance with applicable codes and NFPA 80.

S. Install hardware for smoke and draft control doors in accordance with NFPA 105.

3.04 FIELD QUALITY CONTROL

A. Inspection and Testing:
   1. Provide functional testing and inspection of fire door assemblies by a qualified person in accordance with NFPA 80.
      a. Schedule fire door assembly inspection within 90 days of Substantial Completion of the Project.
      b. Submit a signed, written final report as specified in Paragraph 1.03.E.1.
      c. Correct all deficiencies and schedule a reinspection of fire door assemblies noted as deficient on the inspection report.
      d. Inspector to reinspect fire door assemblies after repairs are made.
   2. Provide inspection of required egress door assemblies by a qualified person in accordance with NFPA 101.
      a. Schedule egress door assembly inspection within 90 days of Substantial Completion of the Project for the required openings.
      b. Submit a signed, written final report as specified in Paragraph 1.03.E.2.
      c. Correct all deficiencies and schedule a reinspection of egress door assemblies noted as deficient on the inspection report.
      d. Inspector to reinspect required egress door assemblies after repairs are made.

3.05 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
   1. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
   2.

B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

3.06 CLEANING AND PROTECTION

A. Clean operating items per manufacturer's instructions to restore proper function and finish.

B. Clean adjacent surfaces soiled by hardware installation.

C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.07 DOOR HARDWARE SCHEDULE

A. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.

B. Discrepancies, conflicting hardware, and missing items are to be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application.

C. Hardware items are referenced in the following hardware schedule. Refer to the above specifications for special features, options, cylinders/keying, and other requirements.

D. Hardware Sets:

Set 01 - Opening: 100A

2 ea	Cont. Hinge	112HD	628	Ives

2 ea	Push/Pull Bar Set	9190EZHD 10"	630	Ives
2 ea	Closer	1460-SCUSH	689	LCN
1 ea	Threshold	425HD	689	NGP
2 ea	Sweep	200NA	689	NGP

* Provide closer drop plates, spacers, brackets, or supports as required.
* Gasketing by aluminum door manufacturer.

Set 02 - Opening: 100B

1 ea	Cont. Hinge	112HD	628	Ives
1 ea	Push/Pull Bar Set	9190EZHD 10"	630	Ives
1 ea	Closer	1460-SCUSH	689	LCN
1 ea	Threshold	425HD	689	NGP
1 ea	Sweep	200NA	689	NGP

* Provide closer drop plates, spacers, brackets, or supports as required.
* Gasketing by aluminum door manufacturer.

Set 03 - Opening: 100C.1

1 ea	Cont. Hinge	224HD	628	Ives
1 ea	Passage Set	ND10S	626	Schlage
1 ea	Closer	1460-SCUSH	689	LCN
1 ea	Kickplate	8400 8" x 2" LDW	630	Ives
1 ea	Threshold	425HD	719	NGP
1 ea	Sweep	200NA	628	NGP
1 set	Weatherstripping	9700A	628	NGP

Set 04 - Opening: 100C.2

1 ea	Cont. Hinge	224HD	628	Ives
1 ea	Passage Set	ND10S	626	Schlage
1 ea	Closer	1460	689	LCN
1 ea	Kickplate	8400 8" x 2" LDW	630	Ives
1 ea	Wall Stop	WS406/407CVX	630	Ives
1 ea	Threshold	425HD	719	NGP
1 ea	Sweep	200NA	628	NGP
1 set	Weatherstripping	9700A	628	NGP

Set 05 - Openings: 101A,104

1 ea	Cont. Hinge	224HD	628	Ives
1 ea	Storeroom Lock	ND80JD	626	Schlage
1 ea	FSIC Core	20-030	626	Schlage
1 ea	Closer	1460	689	LCN
1 ea	Kickplate	8400 8" x 2" LDW	630	Ives
1 ea	Wall Stop	WS406/407CVX	630	Ives

Set 06 - Openings: 102,103

1 ea	Cont. Hinge	224HD	628	Ives
1 ea	Passage Set	ND10S	626	Schlage
1 ea	Closer	1460	689	LCN

1 ea	Kickplate	8400 8” x 2” LDW	630	Ives
1 ea	Wall Stop	WS406/407CVX	630	Ives
1 ea	Threshold	896S-ADJ	689	NGP
1 ea	Auto. Door Bottom	423NA	689	NGP
1 set	Perimeter Seal	107NA	689	NGP

1.

Set 07 - Opening: 105

* All door hardware by STC Assembly Manufacturer.

END OF SECTION

SECTION 092116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Performance criteria for gypsum board assemblies.

B. Metal channel ceiling framing.

C. Acoustic insulation.

D. Cementitious backing board.

E. Gypsum wallboard.

F. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Building framing and sheathing.

B. Section 061000 - Rough Carpentry: Wood blocking product and execution requirements.

C. Section 072100 - Thermal Insulation: Acoustic insulation.

D. Section 078400 - Firestopping: Top-of-wall assemblies at fire-resistance-rated walls.

E. Section 079200 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

1.03 REFERENCE STANDARDS

A. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units 2019.

B. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board 2017 (Reapproved 2022).

C. ASTM C514 - Standard Specification for Nails for the Application of Gypsum Board 2004 (Reapproved 2020).

D. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members 2018.

E. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing 2017.

F. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products 2020.

G. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board 2020.

H. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness 2022.

I. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs 2022.

J. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base 2019.

K. ASTM C1325 - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units 2022.

L. ASTM C1396/C1396M - Standard Specification for Gypsum Board 2017.

M. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber 2021.

N. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.

O. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements 2009 (Reapproved 2016).

P. ASTM E413 - Classification for Rating Sound Insulation 2022.

Q. GA-216 - Application and Finishing of Gypsum Panel Products 2021.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Shop Drawings: Indicate special details associated with fireproofing and acoustic seals.

C. Product Data: Provide data on gypsum board, accessories, joint finishing system, and acoustical insulation.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing, with minimum five years of experience.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.
   1. See PART 3 for finishing requirements.

B. Interior Partitions, Indicated as Sound-Rated: Provide completed assemblies with the following characteristics:
   1. Acoustic Attenuation: STC as indicated calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.

C. Smoke-Resistance-Rated Assemblies: Provide completed assemblies UL listed assembly as indicated

2.02 METAL FRAMING MATERIALS

A. Non-structural Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf (L/120 at 240 Pa).
   1. Studs: C-shaped with knurled or embossed faces.
   2. Paired Studs for Sound-Rated Assemblies: Engineered single-piece assemblies comprised of paired studs coupled by sound isolators, designed to replace conventional side-by-side, parallel, double-wall partition framing.
      a. Widths: As indicated on drawings.
   3. Runners: U shaped, sized to match studs.
   4. Resilient Furring Channels: Single or double leg configuration; 1/2 inch (12 mm) channel depth.
   5. Resilient Sound Isolation Clips: Steel resilient clips with molded rubber isolators, attaches to framing; improves noise isolation performance of wall and floor-ceiling assemblies.

B. Non-structural Framing Accessories:
   1. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.

C. Grid Suspension Systems: Steel grid system of main tees and support bars connected to structure using hanging wire.

2.03 BOARD MATERIALS

A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
   2. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
   3. Thickness:
      a. Vertical Surfaces: 5/8 inch (16 mm).
      b. Ceilings: 5/8 inch (16 mm).
      c. Multi-Layer Assemblies: Thicknesses as indicated on drawings.

B. Backing Board For Wet Areas: One of the following products:

1. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
2. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.
    a. Thickness: 1/2 inch (12.7 mm).

C. Backing Board For Non-Wet Areas: Water-resistant gypsum backing board as defined in ASTM C1396/C1396M; sizes to minimum joints in place; ends square cut.
1. Application: Vertical surfaces behind thinset tile, except in wet areas.
2. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
3. Type: Regular and Type X, in locations indicated.
4. Type X Thickness: 5/8 inch (16 mm).
5. Type C Thickness: 5/8 inch (19 mm).
6. Regular Board Thickness: 1/2 inch (13 mm).
7. Edges: Tapered.

2.04 GYPSUM BOARD ACCESSORIES

A. Acoustic Insulation: ASTM C665; preformed mineral-fiber, friction fit type, unfaced; thickness 3-1/2 inch (89 mm).

B. Sound Isolation Tape: Elastomeric foam tape for sound decoupling.
1. Surface Burning Characteristics: Provide assemblies with flame spread index of 75 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
2. Tape Thickness: 1/4 inch (6 mm).

C. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.

D. Finishing Accessories: ASTM C1047, extruded aluminum alloy (6063 T5) or galvanized steel sheet ASTM A924/A924M G90, unless noted otherwise.
1. Types: As detailed or required for finished appearance.
2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead at exposed panel edges.

E. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
1. Fiberglass Tape: 2 inch (50 mm) wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
2. Paper Tape: 2 inch (50 mm) wide, creased paper tape for joints and corners, except as otherwise indicated.
3. Joint Compound: Drying type, vinyl-based, ready-mixed.
4. Joint Compound: Setting type, field-mixed.

F. Finishing Compound: Surface coat and primer, takes the place of skim coating.

G. High Build Drywall Surfacer: Vinyl acrylic latex-based coating for spray application, designed to take the place of skim coating and separate paint primer in achieving Level 5 finish.

H. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches (0.84 mm) in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.

I. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch (0.84 to 2.84 mm) in Thickness: ASTM C954; steel drill screws, corrosion-resistant.

J. Nails for Attachment to Wood Members: ASTM C514.

K. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.

B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
   1. Level ceiling system to a tolerance of 1/1200.
   2. Laterally brace entire suspension system.

C. Acoustic Furring: Install resilient channels at maximum 24 inches (600 mm) on center. Locate joints over framing members.

D. Blocking: Install wood blocking for support of:
   1. Framed openings.
   2. Wall-mounted cabinets.
   3. Plumbing fixtures.
   4. Toilet partitions.
   5. Wall-mounted door hardware.

3.03 ACOUSTIC ACCESSORIES INSTALLATION

A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

B. Sound Isolation Tape: Apply to vertical studs and top and bottom tracks/runners in accordance with manufacturer's instructions.

C. Acoustic Sealant: Install in accordance with manufacturer's instructions.
   1. Place one bead continuously on substrate before installation of perimeter framing members.
   2. Place continuous bead at perimeter of each layer of gypsum board.
   3. Seal around all penetrations by conduit, pipe, ducts, and rough-in boxes, except where firestopping is provided.

3.04 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.

C. Double-Layer, Nonrated: Use gypsum board for first layer, placed parallel to framing or furring members, with ends and edges occurring over firm bearing. Use glass mat faced gypsum board at exterior walls and at other locations as indicated. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.

D. Fire-Resistance-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.

E. Exposed Gypsum Board in Interior Wet Areas: Seal joints, cut edges, and holes with water-resistant sealant.

3.05 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
   1. Not more than 30 feet (10 meters) apart on walls and ceilings over 50 feet (16 meters) long.

B. Corner Beads: Install at external corners, using longest practical lengths.

C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.06 JOINT TREATMENT

A. Paper Faced Gypsum Board: Use paper joint tape, embed with drying type joint compound and finish with drying type joint compound.

B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:

1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
2. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
3. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.

C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
1. Feather coats of joint compound so that camber is maximum 1/32 inch (0.8 mm).
2. Taping, filling, and sanding are not required at surfaces behind adhesive applied ceramic tile and fixed cabinetry.
3. Taping, filling, and sanding are not required at base layer of double-layer applications.

D. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.

E. Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

3.07 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet (3 mm in 3 m) in any direction.

END OF SECTION

SECTION 093000
TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tile for wall applications.

B. Cementitious backer board as tile substrate.

C. Ceramic accessories.

D. Ceramic trim.

E. Non-ceramic trim.

1.02 RELATED REQUIREMENTS

A. Section 079200 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.

B. Section 079513 - Expansion Joint Cover Assemblies: Expansion joint components.

1.03 REFERENCE STANDARDS

A. ANSI A108/A118/A136 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium) 2019.

B. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar 2017.

C. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar 2017.

D. ANSI A108.1c - Contractor's Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar 1999 (Reaffirmed 2021).

E. ANSI A108.2 - American National Standard General Requirements: Materials, Environmental and Workmanship 2019.

F. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesive or Water Cleanable Tile-Setting Epoxy Adhesive 2019.

G. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar 2021.

H. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grout Epoxy 1999 (Reaffirmed 2019).

I. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout 1999 (Reaffirmed 2019).

J. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout 1999 (Reaffirmed 2019).

K. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework 2017.

L. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units 2018.

M. ANSI A108.12 - American National Standard for Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar 1999 (Reaffirmed 2019).

N. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone 2005 (Reaffirmed 2021).

O. ANSI A108.19 - American National Standard Specifications for Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with

Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar 2020.

P. ANSI A108.20 - American National Standard Specifications for Exterior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs 2020.

Q. ANSI A118.4 - American National Standard Specifications for Modified Dry-Set Cement Mortar 2019.

R. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation 2019.

S. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units 2019.

T. ANSI A137.1 - American National Standard Specifications for Ceramic Tile 2022.

U. ASTM C373 - Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products 2018.

V. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation 2022.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.

D. Samples: Mount tile and apply grout on two plywood panels, minimum 18 by 18 inches (457 by 457 mm) in size illustrating pattern, color variations, and grout joint size variations.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Master Grade Certificate: Submit for each type of tile, signed by the tile manufacturer and tile installer.

G. Installer's Qualification Statement:
   1. Submit documentation of National Tile Contractors Association (NTCA) or Tile Contractors' Association of America (TCAA) accreditation.
   2. Submit documentation of completion of apprenticeship and certification programs.
   3. Submit documentation of Natural Stone Institute Accreditation.

H. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.

I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Tile: 10 square feet (1 square meters) of each size, color, and surface finish combination.

1.05 QUALITY ASSURANCE

A. Maintain one copy of ANSI A108/A118/A136 and TCNA (HB) on site.

B. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum five years of documented experience.

C. Installer Qualifications:
   1. Company specializing in performing tile installation, with minimum of five years of documented experience.
      a. Accredited Five-Star member of the National Tile Contractors Association (NTCA) or Trowel of Excellence member of the Tile Contractors' Association of America (TCAA).
   2. Installer Certification:
      a. Ceramic Tile Education Foundation (CTEF): Certified Tile Installer (CTI).

b. Apprenticeship Program: Installer has achieved Journeyworker status through an apprenticeship from the International Union of Bricklayers and Allied Craftworkers (IUBAC) or a U.S. Department of Labor (DOL)-recognized program.
c. Advanced Certifications for Tile Installers (ACT): Certification in the installation of membranes, large format tile, gauged porcelain tile/panels/slabs, and grouts.
d. International Masonry Training and Education Foundation (IMTEF): Supervisor Certification Program (SCP).

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Do not install solvent-based products in an unventilated environment.

B. Maintain ambient and substrate temperature above 50 degrees F (10 degrees C) and below 100 degrees F (38 degrees C) during installation and curing of setting materials.

PART 2 PRODUCTS

2.01 TILE

A. Manufacturers: All products of each type by the same manufacturer.
1. Dal-Tile Corporation: www.daltile.com
2. Florida Tile: www.floridatile.com.
3. American Olean Corporation: www.americanolean.com

B. Glazed Wall Tile: Type PT1. ANSI A137.1 standard grade.
1. Moisture Absorption: 7.0 to 20.0 percent as tested in accordance with ASTM C373.
2. Size: 6 by 18 inch (10.91 by 32.77 cm), nominal.
3. Edges: Cushioned.
4. Surface Finish: Matte glaze.
5. Color(s): As indicated on drawings.
6. Pattern: As indicated on drawings.
7. Trim Units: Matching bead and bullnose shapes in sizes coordinated with field tile.

C. Natural Stone Tile Mosaic: Type MT1
1. Mesh-Mounted Tiles:
a. Size and Shape: 2 by 6 inch straight stack tiles on 18 by 12-3/16 inch nominal mesh backing.
b. Thickness: 5/16 inch.
2. Face: Smooth.
3. Surface Finish: Honed.
4. Edges: Square.
5. Moisture Absorption: 0 to 0.3 percent, maximum.
6. Color(s): As indicated on drawings.

2.02 TRIM AND ACCESSORIES

A. Ceramic Trim: Matching bullnose, double bullnose, cove base, and cove ceramic shapes in sizes coordinated with field tile.
1. Applications:
a. Open Edges: Bullnose.
b. Inside Corners: Jointed.
c. Floor to Wall Joints: Cove base.
2. Manufacturers: Same as for tile.

B. Non-Ceramic Trim: Satin natural anodized extruded aluminum, style and dimensions to suit application, for setting using tile mortar or adhesive.
1. Applications:
a. Thresholds at door openings.
b. Expansion and control joints, floor and wall.
c. Borders and other trim as indicated on drawings.

2.03 SETTING MATERIALS

A. Provide setting and grout materials from same manufacturer.

B. Manufacturers:
   1. Custom Building Products: www.custombuildingproducts.com.
   2. H.B. Fuller Construction Products, Inc: www.tecspecialty.com.
   3. LATICRETE International, Inc: www.laticrete.com/#sl.

C. Latex-Portland Cement Mortar Bond Coat: ANSI A118.4.
   1. Applications: Use this type of bond coat for thin set applications.
   2. Products:
      a. Custom Building Products; ProLite Premium Rapid Setting Large Format Tile Mortar, with Multi-Surface Bonding Primer: www.custombuildingproducts.com
      b. H.B. Fuller Construction Products, Inc; TEC TotalFlex 110 Universal Mortar: www.tecspecialty.com
      c. LATICRETE International, Inc; 257 TITANIUM: www.laticrete.com

2.04 GROUTS

A. Provide setting and grout materials from same manufacturer.

B. Manufacturers:
   1. Custom Building Products: www.custombuildingproducts.com
   2. H.B. Fuller Construction Products, Inc: www.tecspecialty.com
   3. LATICRETE International, Inc: www.laticrete.com

C. High Performance Polymer Modified Grout: ANSI A118.7 polymer modified cement grout.
   1. Applications: Use this type of grout where indicated and where no other type of grout is indicated.
   2. Use sanded grout for joints 1/8 inch (3.2 mm) wide and larger; use unsanded grout for joints less than 1/8 inch (3.2 mm) wide and for glazed tile.
   3. Color(s): As indicated on drawings.
   4. Products:
      a. Custom Building Products; Prism Color Consistent Grout: www.custombuildingproducts.com
      b. H.B. Fuller Construction Products, Inc; TEC AccuColor Plus Grout: www.tecspecialty.com
      c. LATICRETE International, Inc; LATICRETE PERMACOLOR Grout: www.laticrete.com

2.05 MAINTENANCE MATERIALS

A. Tile Sealant: Gunnable, silicone, siliconized acrylic, or urethane sealant; moisture and mildew resistant type.
   1. Applications: Between tile and plumbing fixtures.
   2. Color(s): As selected by Architect from manufacturer's full line.
   3. Products:
      a. Custom Building Products; Commercial 100% Silicone Caulk: www.custombuildingproducts.com
      b. LATICRETE International, Inc; LATICRETE LATASIL: www.laticrete.com
      c. Merkrete, by Parex USA, Inc; Merkrete Colored Caulking: www.merkrete.com

B. Tile Sealer: Stain protection for natural stone tile.
   1. Products:
      a. Custom Building Products; Aqua Mix Enrich 'N' Seal: www.custombuildingproducts.com.
      b. Rust-Oleum Corporation; Miracle Sealants 511 Impregnator Natural Looking Penetrating Sealer: www.rustoleum.com.
      c. STONETECH, a division of LATICRETE international, Inc; STONETECH Heavy Duty Stone Sealer: www.laticrete.com.

2.06 ACCESSORY MATERIALS

A. Backer Board: Cementitious type complying with ANSI A118.9; high density, glass fiber reinforced, 7/16 inch (11 mm) thick; 2 inch (51 mm) wide coated glass fiber tape for joints and corners.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Vacuum clean surfaces and damp clean.

C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

D. Install backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of setting material to a feather edge.

E. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.03 INSTALLATION - GENERAL

A. Install tile and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.20, manufacturer's instructions, and TCNA (HB) recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners neatly. Align wall joints.

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

E. Form internal angles square and external angles bullnosed.

F. Install ceramic accessories rigidly in prepared openings.

G. Install non-ceramic trim in accordance with manufacturer's instructions.

H. Install thresholds where indicated.

I. Sound tile after setting. Replace hollow sounding units.

J. Keep control and expansion joints free of mortar, grout, and adhesive.

K. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

L. Grout tile joints unless otherwise indicated.

M. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.04 INSTALLATION - WALL TILE

A. Over cementitious backer units on studs, install in accordance with TCNA (HB) Method W244, using membrane at toilet rooms.

3.05 CLEANING

A. Clean tile and grout surfaces.

END OF SECTION

SECTION 095100
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.

B. Acoustical units.

1.02 REFERENCE STANDARDS

A. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2021a.

B. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings 2022.

C. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels 2019.

D. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions 2022.

E. ASTM E1264 - Standard Classification for Acoustical Ceiling Products 2022.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.

B. Do not install acoustical units until after interior wet work is dry.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Shop Drawings: Indicate grid layout and related dimensioning, junctions with other ceiling finishes, and mechanical and electrical items installed in the ceiling.

C. Product Data: Provide data on suspension system components and acoustical units.

D. Evaluation Service Reports: Show compliance with specified requirements.

E. Samples: Submit two samples 6 by 6 inches in size illustrating material and finish of acoustical units.

F. Samples: Submit two samples each, 6 inches long, of suspension system main runner, cross runner, and perimeter molding.

G. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

H. Designer's qualification statement.

I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Acoustical Units: Quantity equal to 5 percent of total installed.

1.05 QUALITY ASSURANCE

A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.06 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F (16 degrees C), and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acoustic Tiles/Panels:
   1. Armstrong World Industries, Inc: www.armstrongceilings.com
   2. CertainTeed Corporation: www.certainteed.com/ceilings-and-walls
   3. USG Corporation: www.usg.com/ceilings

B. Suspension Systems:
   1. Same as for acoustical units.

2.02 ACOUSTICAL UNITS

A. Acoustical Units - General: ASTM E1264, Class A.

B. Acoustical Panels, Type APC1: Mineral fiber with membrane-faced overlay, with the following characteristics:
   1. Classification: ASTM E1264 Type IV.
      a. Form: 2, water felted.
      b. Pattern: "E" - lightly textured.
   2. Size: 24 by 24 inches (610 by 610 mm).
   3. Thickness: 3/4 inch (19 mm).
   4. Light Reflectance: 88 percent, determined in accordance with ASTM E1264.
   5. NRC: 0.75 in accordance with ASTM E1264.
   6. Ceiling Attenuation Class (CAC): 35, determined in accordance with ASTM E1264.
   7. Panel Edge: Beveled tegular
   8. Color: As indicated on drawings.
   9. Suspension System: Exposed grid.
   10. Products:
      a. Armstrong World Industries, Inc; Ultima: www.armstrongceilings.com

2.03 SUSPENSION SYSTEM(S)

A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.
   1. Materials:
      a. Aluminum Grid: Aluminum sheet, ASTM B209/B209M.

B. Exposed Suspension System: Aluminum grid and cap; factory-applied closed-cell foam gaskets.
   1. Structural Classification: Light-duty, when tested in accordance with ASTM C635/C635M.
   2. Profile: Tee; 15/16 inch (24 mm) face width.
   3. Finish: Baked enamel.

2.04 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.

B. Hanger Wire: 12 gauge, 0.08 inch (2 mm) galvanized steel wire.

C. Hold-Down Clips: Manufacturer's standard clips to suit application.

D. Perimeter Moldings: Same metal and finish as grid.
   1. Size: As required for installation conditions.
   2. Angle Molding: L-shaped, for mounting at same elevation as face of grid.
   3. Channel Molding: U-shaped, for hold-down type installations.
   4. Acoustical Sealant For Perimeter Moldings: Non-hardening, non-skinning, for use in conjunction with suspended ceiling system.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers will not interfere with other work.

3.02 PREPARATION

A. Install after major above-ceiling work is complete.

B. Coordinate the location of hangers with other work.

C. Provide hanger clips during steel deck erection. Provide additional hangers and inserts as required.

3.03 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions and as supplemented in this section.

B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

C. Lay out system to a balanced grid design with edge units no less than 50 percent of acoustical unit size.

D. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
   1. Use longest practical lengths.
   2. Miter corners.

E. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

F. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

H. Support fixture loads using supplementary hangers located within 6 inches (152 mm) of each corner, or support components independently.

I. Do not eccentrically load system or induce rotation of runners.

J. Form expansion joints as detailed. Form to accommodate plus or minus 1 inch (25 mm) movement. Maintain visual closure.

3.04 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

E. Cutting Acoustical Units:
   1. Make field cut edges of same profile as factory edges.

F. Install hold-down clips on panels within 20 ft (6 m) of an exterior door.

3.05 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet (3 mm in 3 m).

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

3.06 CLEANING

A. See Section 017000 - Execution and Closeout Requirements for additional requirements.

B. Clean surfaces.

C. Replace damaged or abraded components.

END OF SECTION

SECTION 096500
RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient tile flooring: Luxury Vinyl Tile

B. Resilient base: Rubber Base

C. Installation accessories.

1.02 RELATED REQUIREMENTS

A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.

B. Section 033000 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors to receive adhesive-applied resilient flooring.

C. Section 090561 - Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.

D. Section 090561 - Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing and remediation procedures.

1.03 REFERENCE STANDARDS

A. ASTM D6329 - Standard Guide for Developing Methodology for Evaluating the Ability of Indoor Materials to Support Microbial Growth Using Static Environmental Chambers 1998 (Reapproved 2015).

B. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements 2009 (Reapproved 2016).

C. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source 2019a, with Editorial Revision (2020).

D. ASTM E2179 - Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors 2021.

E. ASTM F150 - Standard Test Method for Electrical Resistance of Conductive and Static Dissipative Resilient Flooring 2006 (Reapproved 2018).

F. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2022.

G. ASTM F970 - Standard Test Method for Measuring Recovery Properties of Floor Coverings after Static Loading 2022.

H. ASTM F1700 - Standard Specification for Solid Vinyl Floor Tile 2020.

I. ASTM F1861 - Standard Specification for Resilient Wall Base 2021.

J. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2022.

K. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.

L. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source 2023.

M. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings 2011.

N. UL 2824 - GREENGUARD Certification Program Method for Measuring Microbial Resistance From Various Sources Using Static Environmental Chambers Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

C. Shop Drawings: Include floor tile layouts, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts. Show details of special patterns.

D. Verification Samples: Submit full-size units illustrating color and pattern for each resilient flooring product specified.

E. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.

F. Certification: Prior to installation of flooring, submit written certification by flooring manufacturer and adhesive manufacturer that condition of subfloor is acceptable.

G. Manufacturer's Qualification Statement.

H. Installer's Qualification Statement.

I. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

J. Maintenance Materials: Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents. Extra Flooring Material: Furnish one box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed. Extra Wall Base: Furnish 10 linear feet for every 500 linear feet or fraction thereof, of each type, color, pattern, and size of resilient product installed.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum three years documented experience.

B. Installer Qualifications: Company specializing in installing specified flooring with minimum three years documented experience.

C. Testing Agency Qualifications: Independent firm specializing in performing concrete slab moisture testing and inspections of the type specified in this section.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.

B. Store all materials off of the floor in an acclimatized, weather-tight space.

C. Maintain temperature in storage area between 55 degrees F (13 degrees C) and 90 degrees F (72 degrees C).

D. Protect roll materials from damage by storing on end.

E. Do not double stack pallets.

1.07 FIELD CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F (21 deg C) or more than 95 deg F (35 deg C), in spaces to receive floor tile during the following periods: 48 hours before installation, during installation, and 48 hours after installation.

B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 50 deg F (13 deg C) or more than 95 deg F (35 deg C).

C. Close spaces to traffic during floor tile installation.

D. Close spaces to traffic for 48 hours after floor tile installation.

E. Install floor tile after other finishing operations, including painting, have been completed.

PART 2 PRODUCTS

2.01 TILE FLOORING

A. Luxury Vinyl Tile - LVT1 and LVT2: Printed film type, with transparent or translucent wear layer; acoustic interlayer or backing.
   1. Manufacturers:
      a. Tarkett; Luxury Vinyl Flooring: www.commercial.tarkett.com.
      b. Patcraft; Luxury Vinyl Flooring: www.patcraft.com
      c. Shaw Commercial; Luxury Vinyl Flooring: www.shawcontract.com
   2. Minimum Requirements: Comply with ASTM F1700, Class III.
   3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648.
   4. Plank Tile Size: 12 by 36 inch.
   5. Wear Layer Thickness: 32 MIL.
   6. Total Thickness: 3.05 mm.
   7. Tile Edge: Square.
   8. Pattern: As indicated on drawings.
   9. Color: As indicated on drawings.

B. Feature Strips: Of same material as tile, [____] inch ([____] mm) wide.

2.02 RESILIENT BASE

A. Resilient Base - RB1: ASTM F1861, Type TS rubber, vulcanized thermoset; style as scheduled.
   1. Manufacturers:
      a. Johnsonite, a Tarkett Company; Baseworks Thermoset Wall Base: www.johnsonite.com
      b. Roppe Corporation; Contours Profiled Wall Base System: www.roppe.com.
      c. Armstrong Flooring; Wall Base: www.armstrongflooring.com
   2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
   3. Height: As indicated on drawings.
   4. Thickness: 0.125 inch (3.2 mm).
   5. Length: 4 foot (1.2 m) sections.
   6. Length: Roll.
   7. Color: As indicated on drawings.
   8. Accessories: Premolded external corners and internal corners.

2.03 ACCESSORIES

A. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.

B. Moldings, Transition and Edge Strips: Same material as flooring and metal edge strips constructed of extruded aluminum with mill finish

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.

C. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
   1. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Remove existing resilient flooring and flooring adhesives; follow the recommendations of RFCI (RWP).

B. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

C. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.

D. Prohibit traffic until filler is fully cured.

E. Clean substrate.

3.03 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install in accordance with manufacturer's written instructions.

C. Adhesive-Applied Installation:
   1. Spread only enough adhesive to permit installation of materials before initial set.
   2. Fit joints and butt seams tightly.
   3. Set flooring in place, press with heavy roller to attain full adhesion.

D. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.

E. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
   1. Metal Strips: Attach to substrate before installation of flooring using stainless steel screws.
   2. Resilient Strips: Attach to substrate using adhesive.

F. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

3.04 INSTALLATION - TILE FLOORING

A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.

B. Lay flooring with joints and seams parallel to building lines to produce symmetrical pattern.

3.05 INSTALLATION - RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches (45 mm) between joints.

B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.

C. Install base on solid backing. Bond tightly to wall and floor surfaces.

D. Scribe and fit to door frames and other interruptions.

3.06 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean in accordance with manufacturer's written instructions.

3.07 PROTECTION

A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

SECTION 096700
FLUID-APPLIED FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fluid-applied flooring and base.

1.02 RELATED REQUIREMENTS

A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.

B. Section 079200 - Joint Sealants: Sealing joints between fluid-applied flooring and adjacent construction and fixtures.

C. Section 090561 - Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.

D. Section 090561 - Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing and remediation procedures.

1.03 REFERENCE STANDARDS

A. ANSI/ESD STM7.1 - The Protection of Electrostatic Discharge Susceptible Items Flooring Systems Resistive Characterization 2021.

B. ICRI 310.2R - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair 2013.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns and colors available.

C. Samples: Submit two samples, 3 by 3 inches in size illustrating color and pattern for each floor material for each color specified.

D. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.

E. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and application rate for each coat.

F. Manufacturer's Qualification Statement.

G. Applicator's Qualification Statement.

H. Maintenance Data: Include maintenance procedures, recommended maintenance materials, procedures for stain removal, repairing surface, and suggested schedule for cleaning.

I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Top Coat Materials: 2 gallons (8 liters).

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the work of this section.
   1. Approved by manufacturer.

C. Supervisor Qualifications: Trained by product manufacturer , under direct full time supervision of manufacturer's own foreman.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store resin materials in a dry, secure area.

B. Store materials for three days prior to installation in area of installation to achieve temperature stability.

1.07 FIELD CONDITIONS

A. Maintain minimum temperature in storage area of 55 degrees F (13 degrees C).

B. Store materials in area of installation for minimum period of 24 hours prior to installation.

C. Maintain ambient temperature required by manufacturer 72 hours prior to, during, and 24 hours after installation of materials.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Fluid-Applied Flooring:
   1. Dur-A-Flex: www.dur-a-flex.com
   2. Elite Crete Systems: www.elitecrete.com.
   3. Sherwin-Williams Company: www.protective.sherwin-williams.com.

2.02 FLUID-APPLIED FLOORING SYSTEMS

A. Fluid-Applied Flooring Type EPX1 and EPXB1: Epoxy base coat(s), with broadcast aggregate.
   1. Aggregate: Quartz granules.
   2. Top Coat: Polyurethane.
   3. System Thickness: 1/8 inch (3.2 mm), nominal, dry film thickness (DFT).
   4. Texture: Slip resistant.
   5. Sheen: Matte.
   6. Color: As indicated on drawings.

2.03 ACCESSORIES

A. Base Caps: Extruded anodized aluminum with projecting base of 1/8 inch (3 mm).

B. Cant Strips: Molded of flooring resin material.

C. Subfloor Filler: Type recommended by fluid-applied flooring manufacturer.

D. Primer: Type recommended by fluid-applied flooring manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive flooring.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive flooring.

C. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of materials to subfloor surfaces.

D. Cementitious Subfloor Surfaces: Verify that substrates are ready for fluid-applied flooring installation by testing for moisture and alkalinity (pH).
   1. Test in accordance with Section 090561.
   2. Obtain instructions if test results are not within limits recommended by fluid-applied flooring manufacturer.
   3. Follow moisture and alkalinity remediation procedures in Section 090561.

E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Remove subfloor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with subfloor filler.

B. Prepare concrete surfaces according to ICRI 310.2R.

C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Grind irregularities above the surface level. Prohibit traffic until filler is cured.

D. Vacuum clean substrate.

E. Apply primer to surfaces required by flooring manufacturer.

3.03 INSTALLATION - ACCESSORIES

A. Install cant strips at base of walls where flooring is to be extended up wall as base.

B. Install terminating cap strip at top of base; attach securely to wall substrate.

3.04 INSTALLATION - FLOORING

A. Apply in accordance with manufacturer's instructions.

B. Apply each coat to minimum thickness required by manufacturer.

C. Finish to smooth level surface.

D. Cove at vertical surfaces.

3.05 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for additional requirements.

B. Test installed floor surface in accordance with ANSI/ESD STM7.1 .

3.06 PROTECTION

A. Prohibit traffic on floor finish for 48 hours after installation.

B. Barricade area to protect flooring until fully cured.

END OF SECTION

SECTION 096813
TILE CARPETING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Carpet tile, loose laid with edges and control grid adhered.

1.02 RELATED REQUIREMENTS

A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.

B. Section 033000 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors to receive adhesive-applied flooring.

C. Section 090561 - Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.

D. Section 090561 - Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing and remediation procedures.

1.03 REFERENCE STANDARDS

A. ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials 2016 (Reapproved 2021).

B. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source 2019a, with Editorial Revision (2020).

C. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2022.

D. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.

E. CRI 104 - Standard for Installation of Commercial Carpet 2015.

F. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source 2023.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.

C. Shop Drawings: Indicate layout of joints.

D. Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.

E. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.

F. Manufacturer's Qualification Statement.

G. Installer's Qualification Statement.

H. Operation and Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Carpet Tiles: Quantity equal to 5 percent of total installed of each color and pattern installed.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified carpet tile with minimum three years documented experience.

B. Installer Qualifications: Company specializing in installing carpet tile with minimum three years documented experience and approved by carpet tile manufacturer.

C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

1.06 FIELD CONDITIONS

A. Store materials in area of installation for minimum period of 24 hours prior to installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Tile Carpeting:
   1. Tarkett: Modular Carpet Tile; www.tarkett.commercial.com
   2. Patcraft; Modular Carpet Tile: www.patcraft.com
   3. Shaw Contract; Modular Carpet Tile: www.shawcontract.com

2.02 MATERIALS

A. Tile Carpeting CPT1: Tufted, patterned loop pile, manufactured in one color dye lot.
   1. Tile Size: 24 by 24 inch nominal
   2. Thickness: 0.185 inch (5 mm).
   3. Color: As indicated on drawings.
   4. Pattern: As indicated on drawings.
   5. Critical Radiant Flux: Minimum of 0.22 watts/sq cm, when tested in accordance with ASTM E648 or NFPA 253.
   6. Surface Flammability Ignition: Pass ASTM D2859 (the "pill test").
   7. Gauge: 1/2 inch
   8. Stitches: 8 / rows per inch
   9. Pile Density: 96.00 oz/sq yd
   10. Light Fastness: (AATCC 16 - E) ≥ 4.0 @ 60 AFU's.
   11. Primary Backing Material: Polypropylene.

B. Tile Carpeting, CPT2: Tufted, patterned loop pile, manufactured in one color dye lot.
   1. Tile Size: 24 by 24 inch
   2. Thickness: 0.185 inch (5 mm).
   3. Color: As indicated on drawings.
   4. Pattern: As indicated on drawings.
   5. Critical Radiant Flux: Minimum of 0.22 watts/sq cm, when tested in accordance with ASTM E648 or NFPA 253.
   6. Surface Flammability Ignition: Pass ASTM D2859 (the "pill test").
   7. Gauge: 5/64 inch
   8. Stitches: 10 / rows per inch
   9. Pile Density: 16 oz/sq yd
   10. Light Fastness: (AATCC 16 - E) ≥ 4.0 @ 60 AFU's.
   11. Primary Backing Material: Polypropylene.

2.03 ACCESSORIES

A. Subfloor Filler: White premix latex; type recommended by flooring material manufacturer.

B. Metal Edge Strips: As indicated on drawings.

C. Carpet Tile Adhesive: Recommended by carpet tile manufacturer; releasable type.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that subfloor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.

B. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to subfloor surfaces.

C. Cementitious Subfloor Surfaces: Verify that substrates are ready for flooring installation by testing for moisture and alkalinity (pH).

1. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.

D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

B. Remove subfloor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with subfloor filler.

C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.

D. Vacuum clean substrate.

3.03 INSTALLATION

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install carpet tile in accordance with manufacturer's instructions.

C. Blend carpet from different cartons to ensure minimal variation in color match.

D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.

E. Lay carpet tile as indicated in drawings, with pile direction parallel to next unit, set parallel to building lines.

F. Locate change of color or pattern between rooms under door centerline.

G. Trim carpet tile neatly at walls and around interruptions.

H. Complete installation of edge strips, concealing exposed edges.

3.04 CLEANING

A. Remove excess adhesive without damage, from floor, base, and wall surfaces.

B. Clean and vacuum carpet surfaces.

END OF SECTION

SECTION 099123
INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
   1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
   2. Prime surfaces to receive wall coverings.

D. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
   5. Stainless steel, anodized aluminum, bronze, terne-coated stainless steel, and lead items.
   6. Ceramic and other tiles.
   7. Glass.
   8. Acoustical materials, unless specifically indicated.
   9. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

A. Section 055000 - Metal Fabrications: Shop-primed items.

B. Section 099113 - Exterior Painting.

C. Section 099300 - Staining and Transparent Finishing: Wood substrates.

D. Section 210553 - Identification for Fire Suppression Piping and Equipment: Color coding scheme for items to be painted under this section.

E. Section 220553 - Identification for Plumbing Piping and Equipment: Color coding scheme for items to be painted under this section.

F. Section 230553 - Identification for HVAC Piping and Equipment: Color coding scheme for items to be painted under this section.

G. Section 260553 - Identification for Electrical Systems: Color coding scheme for items to be painted under this section.

1.03 DEFINITIONS

A. Comply with ASTM D16 for interpretation of terms used in this section.

1.04 REFERENCE STANDARDS

A. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications 2019.

B. SSPC-SP 6 - Commercial Blast Cleaning 2007.

C. SSPC-SP 13 - Surface Preparation of Concrete 2018.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:

1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").

C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Paint and Finish Materials: 1 gallon (4 L) of each color; from the same product run, store where directed.
   3. Label each container with color in addition to the manufacturer's label.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years experience and approved by manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.08 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply materials when relative humidity exceeds 85 percent, at temperatures less than 5 degrees F (3 degrees C) above the dew point, or to damp or wet surfaces.

D. Minimum Application Temperatures for Paints: 50 degrees F (10 degrees C) for interiors unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes from the same manufacturer to the greatest extent possible.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.
   1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
   3. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
   4. Supply each paint material in quantity required to complete entire project's work from a single production run.
   5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

B. Flammability: Comply with applicable code for surface burning characteristics.

C. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

D. Colors: As indicated on drawings.
   1. Extend colors to surface edges; colors may change at any edge as directed by Architect.

2.03 PAINT SYSTEMS - INTERIOR

A. Paint I-OP - Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board and concrete masonry units.
   1. Two top coats and one coat primer.
   2. Top Coat(s): High Performance Architectural Interior Latex.
   3. Top Coat Sheen:
      a. Flat: MPI gloss level 1; use this sheen for ceilings and other overhead surfaces.
      b. Eggshell: MPI gloss level 3; use this sheen at all locations unless indicated otherwise.
   4. Primer: As recommended by top coat manufacturer for specific substrate.

B. Paint I-OP-MD-DT - Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals:
   1. Two top coats and one coat primer.
   2. Top Coat(s): Interior Epoxy-Modified Latex.
   3. Top Coat Sheen:
      a. Semi-Gloss: MPI gloss level 5; use this sheen at all locations.
   4. Primer: As recommended by top coat manufacturer for specific substrate.

2.04 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been adequately prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. Test shop-applied primer for compatibility with subsequent cover materials.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

D. Seal surfaces that might cause bleed through or staining of topcoat.

E. Concrete:
   1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
   2. Prepare surface as recommended by top coat manufacturer and according to SSPC-SP 13.

F. Masonry:

1. Remove efflorescence and chalk. Do not coat surfaces if moisture content, alkalinity of surfaces, or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
2. Prepare surface as recommended by top coat manufacturer.

G. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

H. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Apply products in accordance with manufacturer's written instructions.

B. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.

C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

D. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

E. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.

F. Sand wood and metal surfaces lightly between coats to achieve required finish.

G. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

H. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 099300
STAINING AND TRANSPARENT FINISHING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of stains and transparent finishes.

1.02 RELATED REQUIREMENTS

A. Section 099113 - Exterior Painting: Stains and transparent finishes for concrete substrates.

B. Section 099123 - Interior Painting: Stains and transparent finishes for concrete substrates.

1.03 DEFINITIONS

A. Comply with ASTM D16 for interpretation of terms used in this section.

1.04 REFERENCE STANDARDS

A. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications 2019.

B. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials 2020.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category.

C. Maintenance Data: Submit data including finish schedule showing where each product/color/finish was used, product technical data sheets, safety data sheets (SDS), care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Stain and Transparent Finish Materials: 1 gallon (4 L) of each color and type; from the same product run, store where directed.
   3. Label each container with color and type in addition to the manufacturer's label.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of stain or transparent finish, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Stain and Transparent Finish Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by manufacturer of stains and transparent finishes.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply materials when relative humidity exceeds 85 percent; at temperatures less than 5 degrees F (3 degrees C) above the dew point; or to damp or wet surfaces.

D. Minimum Application Temperature: 50 degrees F (10 degrees C) unless required otherwise by manufacturer's instructions.

PART 2 PRODUCTS

2.01 STAINS AND TRANSPARENT FINISHES - GENERAL

A. Finishes:
   1. Provide finishes capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
   3. Supply each finish material in quantity required to complete entire project's work from a single production run.
   4. Do not reduce, thin, or dilute finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

B. Flammability: Comply with applicable code for surface burning characteristics.

C. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

D. Colors: As indicated on drawings.
   1. Extend colors to surface edges; colors may change at any edge as directed by Architect.

2.02 INTERIOR STAIN AND TRANSPARENT FINISH SYSTEMS

A. Finish on Wood - Doors:
   1. 1 coat(s) stain.
   2. 3 coat(s) sealer.
   3. 2 coat(s) topcoats.

2.03 ACCESSORY MATERIALS

A. Accessory Materials: Cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of finished surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of stains and finishes until substrates have been properly prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

D. Wood Surfaces to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.

3.03 APPLICATION

A. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

B. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

C. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

D. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

E. Reinstall items removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 101419
DIMENSIONAL LETTER SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Dimensional letter signage.

1.02 REFERENCE STANDARDS

A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines current edition.

B. ADA Standards - 2010 ADA Standards for Accessible Design 2010.

C. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's product literature for each type of dimensional letter sign, indicating style, font, colors, locations, and overall dimensions of each sign.

C. Shop Drawings:
   1. Include dimensions, locations, elevations, materials, text and graphic layout, and attachment details.
   2. Show locations of electrical service connections.
   3. Include diagrams for power, signal, and control wiring.

D. Samples: Submit one sample of each type of dimensional letter sign of size similar to that required for project, indicating sign style, font, and method of attachment.

E. Verification Samples: Submit samples showing colors and finishes specified.

F. Manufacturer's Installation Instructions: Include installation templates and attachment devices.

G. Manufacturer's qualification statement.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Package dimensional letter signs as required to prevent damage before installation.

B. Store under cover and elevated above grade.

1.06 FIELD CONDITIONS

A. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.

B. Maintain minimum ambient temperature during and after installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Dimensional Letter Signs:
   1. Woodland Manufacturing: www.woodlandmanufacturing.com.
   2. Inpro Corporation: www.inprocorp.com
   3. FASTSIGNS International, Inc: www.fastsigns.com

2.02 REGULATORY REQUIREMENTS

A. Accessibility Requirements: Comply with ADA Standards and ICC A117.1 and applicable building codes, unless otherwise indicated; in the event of conflicting requirements, comply with the most restrictive requirements.

2.03 DIMENSIONAL LETTERS

A. Applications: Interior building wayfinding.
   1. Use individual metal letters.
   2. Mounting Location: Interior as indicated on drawings.

B. Metal Letters:
   1. Material: Aluminum sheet, fabricated reverse channel.
   2. Thickness: As indicated on drawings.
   3. Letter Height: As indicated on drawings.
   4. Text and Typeface:
      a. Character Font: As indicated on drawings.
      b. Character Case: Upper case only.
   5. Finish: Brushed, satin.
   6. Color: As indicated on drawings.
   7. Mounting: Concealed screws.

2.04 ACCESSORIES

A. Concealed Screws: Noncorroding metal; stainless steel, galvanized steel, chrome plated, or other.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

B. Notify Architect if conditions are not suitable for installation of signs; do not proceed until conditions are satisfactory.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install with horizontal edges level.

C. Locate dimensional letter signs and mount at heights indicated on drawings and in accordance with ADA Standards and ICC A117.1.

D. Protect from damage until Substantial Completion; repair or replace damaged items.

END OF SECTION

SECTION 101423
PANEL SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Panel signage.

1.02 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.

B. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's product literature for each type of panel sign, indicating styles, font, foreground and background colors, locations, and overall dimensions of each sign.

C. Shop Drawings:
   1. Include dimensions, locations, elevations, materials, text and graphic layout, attachment details, and schedules.
   2. Show locations of electrical service connections.
   3. Include diagrams for power, signal, and control wiring.
   4. Schedule: Provide information sufficient to completely define each panel sign for fabrication, including room number, room name, other text to be applied, sign and letter sizes, fonts, and colors.
      a. When room numbers to appear on signs differ from those on drawings, include the drawing room number on schedule.
      b. When content of signs is indicated to be determined later, request such information from Owner through Architect at least 2 months prior to start of fabrication; upon request, submit preliminary schedule.
      c. Submit for approval by Owner through Architect prior to fabrication.

D. Verification Samples: Submit samples showing colors, materials, and finishes specified.

E. Manufacturer's Installation Instructions: Include installation templates and attachment devices.

F. Manufacturer's qualification statement.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements for additional provisions.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Package signs as required to prevent damage before installation.

B. Package room and door signs in sequential order of installation, labeled by floor or building.

C. Store under cover and elevated above grade.

D. Store tape adhesive at normal room temperature.

1.06 FIELD CONDITIONS

A. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.

B. Maintain minimum ambient temperature during and after installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Panel Signage:

1. 2/90 Sign Systems: www.290signs.com
2. Takeform: www.takeform.net
3. Inpro Corporation: www.inprocorp.com

2.02 REGULATORY REQUIREMENTS

A. Accessibility Requirements: Comply with ADA Standards and ICC A117.1 and applicable building codes, unless otherwise indicated; in the event of conflicting requirements, comply with the most restrictive requirements.

2.03 PANEL SIGNAGE

A. Panel Signage S1:
   1. Application: Room and door signs.
   2. Description: Flat signs for customer-produced media, tactile characters.
   3. Sign Size: As indicated on drawings.
   4. Total Thickness: As indicated on drawings.
   5. Sign Edges: As indicated on drawings..
   6. Color and Font, unless otherwise indicated:
      a. Character Font: Helvetica, Arial, or other sans serif font.
      b. Character Case: Upper and lower case (title case).
      c. Background Color: As indicated on drawings.
      d. Character Color: As indicated on drawings.
   7. Material: One-piece injection molded acrylic plastic with raised letters and braille.
   8. Profile: Two panel configuration in matching plastic frame.
   9. Tactile Letters: Raised 1/32 inch minimum.
   10. Braille: Grade II, ADA-compliant.
   11. One-Sided Wall Mounting: Tape adhesive.

2.04 SIGNAGE APPLICATIONS

A. Room and Door Signs:
   1. Rest Rooms: Identify with pictograms, and braille.

B. Interior Directional and Informational Panel Signs:
   1. Directories: As indicated on drawings.

2.05 ACCESSORIES

A. Tape Adhesive: Double-sided tape, permanent adhesive.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

B. Notify Architect if conditions are not suitable for installation of signs; do not proceed until conditions are satisfactory.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install with horizontal edges level.

C. Locate panel signs and mount at heights indicated on drawings and in accordance with ADA Standards and ICC A117.1.

D. Protect from damage until Substantial Completion; repair or replace damaged items.

END OF SECTION

SECTION 102113.13
METAL TOILET COMPARTMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal toilet compartments.

B. Urinal screens.

1.02 RELATED REQUIREMENTS

A. Section 102800 - Toilet, Bath, and Laundry Accessories.

1.03 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2022.

B. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate the work with placement of support framing and anchors in walls and ceilings.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate partition plan, elevation views, dimensions, details of wall, floor, and ceiling supports, door swings.

C. Product Data: Provide data on panel construction, hardware, and accessories.

D. Verification Samples: Submit two samples of partition panels, 3 by 3 inches in size illustrating panel finish, color, and sheen.

E. Manufacturer's Installation Instructions: Indicate special procedures.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Metal Toilet Compartments:
   1. ASI Global Partitions: www.asi-globalpartitions.com
   2. All American Metal Corp - AAMCO: www.allamericanmetal.com
   3. General Partitions Mfg. Corp: www.generalpartitions.com
   4. Substitutions: Section 016000 - Product Requirements.

2.02 MATERIALS

A. Steel Sheet: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with G90/Z275 coating.

B. Stainless Steel Sheet: ASTM A666, Type 304.

2.03 COMPONENTS

A. Toilet Compartments: Stainless steel, floor mounted - overhead braced.

B. Doors, Panels, and Pilasters: Sheet steel faces, pressure bonded to sound deadening core, formed and closed edges; corners made with corner clips or mitered, welded, and ground smooth.
   1. Panel Faces: 22 gauge, 0.0299 inch (0.76 mm).
   2. Door Faces: 22 gauge, 0.0299 inch (0.76 mm).
   3. Pilaster Faces: 22 gauge, 0.0299 inch (0.76 mm).
   4. Internal Reinforcement: Provide in areas of attached hardware and fittings. Mark locations of reinforcement for partition mounted washroom accessories.

C. Door and Panel Dimensions:
   1. Thickness: 1 inch (25 mm).

2. Door Width: 24 inch (610 mm).
3. Door Width for Handicapped Use: 36 inch (915 mm) , out-swinging.
4. Height: 58 inch (1473 mm).

D. Pilasters: 1-1/4 inch (32 mm) thick, of sizes required to suit compartment width and spacing.

E. Urinal Screen Splash Panels: Stainless steel sheet 30 inch (76 mm) wide by 42 inch (1,066 mm) high mounted on partitions adjacent to urinals. Fasten with stainless steel screws spaced 8 inches (20 mm) on center.

2.04 ACCESSORIES

A. Pilaster Shoes: Formed ASTM A666 Type 304 stainless steel with No. 4 finish, 3 inch (175 mm) high, concealing floor fastenings.
1. Provide adjustment for floor variations with screw jack through steel saddles integral with pilaster.

B. Head Rails: Hollow anodized aluminum tube, 1 by 1-5/8 inch (25 by 41 mm) size, with anti-grip strips and cast socket wall brackets.

C. Brackets: Satin stainless steel.

D. Attachments, Screws, and Bolts: Stainless steel , tamper proof type.
1. For attaching panels and pilasters to brackets: Through-bolts and nuts ; tamper proof.

E. Hardware: Polished chrome plated non-ferrous cast metal:
1. Pivot hinges, gravity type, adjustable for door close positioning; two per door.
2. Thumb turn or sliding door latch with exterior emergency access feature.
3. Door strike and keeper with rubber bumper; mounted on pilaster in alignment with door latch.
4. Coat hook with rubber bumper; one per compartment, mounted on door.
5. Provide door pull for outswinging doors.

2.05 FINISHING

A. Steel Compartments: Clean, degrease, and neutralize. Follow immediately with a phosphatizing treatment, prime coat and two finish coats powder coat enamel.

B. Stainless Steel Compartments: No. 4 finish.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that field measurements are as indicated.

C. Verify correct spacing of and between plumbing fixtures.

D. Verify correct location of built-in framing, anchorage, and bracing.

3.02 INSTALLATION

A. Install partitions secure, rigid, plumb, and level in accordance with manufacturer's instructions.

B. Maintain 3/8 to 1/2 inch (9 to 13 mm) space between wall and panels and between wall and end pilasters.

C. Attach panel brackets securely to walls using anchor devices.

D. Attach panels and pilasters to brackets. Locate head rail joints at pilaster center lines.

E. Field touch-up of scratches or damaged enamel finish will not be permitted. Replace damaged or scratched materials with new materials.

3.03 TOLERANCES

A. Maximum Variation From True Position: 1/4 inch (6 mm).

B. Maximum Variation From Plumb: 1/8 inch (3 mm).

3.04 ADJUSTING

A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16 inch (5 mm).

B. Adjust hinges to position doors in partial opening position when unlatched. Return out swinging doors to closed position.

C. Adjust adjacent components for consistency of line or plane.

END OF SECTION

SECTION 102600
WALL AND DOOR PROTECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Protective wall covering.

1.02 REFERENCE STANDARDS

A. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics 2010 (Reapproved 2018).

B. ASTM D543 - Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents 2021.

C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.

D. ASTM F476 - Standard Test Methods for Security of Swinging Door Assemblies 2014.

E. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi 2015, with Editorial Revision (2021).

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Indicate physical dimensions, features, wall mounting brackets with mounted measurements, anchorage details, and rough-in measurements.

C. Shop Drawings: Include plans, elevation, sections, and attachment details.

D. Samples: Submit samples illustrating component design, configurations, joinery, color and finish.
   1. Submit two sections of corner guards and protective corridor handrails, 24 inches (610 mm) long.
   2. Submit two samples of protective wall covering, 6 by 6 inches (152 by 152 mm) square.

E. Manufacturer's Instructions: Indicate special procedures, perimeter conditions requiring special attention.

F. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project:
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Stock Materials: One package(s) of minimum 96 inches (2438 mm) long unit of each kind of covers for corner guards.
   3. Extra Stock Materials: 2 percent of each kind of protective wall covering and door surface protection.

H. Maintenance Data: Manufacturer's instructions for care and cleaning of each type of product. Include information about both recommended and potentially detrimental cleaning materials and methods.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver wall and door protection items in original, undamaged protective packaging. Label items to designate installation locations.

B. Protect work from moisture damage.

C. Protect work from UV light damage.

D. Do not deliver products to project site until areas for storage and installation are fully enclosed, and interior temperature and humidity are in compliance with manufacturer's recommendations for each type of item.

E. Store products in either horizontal or vertical position, in compliance with manufacturer's instructions.

1.05 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide 5-year manufacturer warranty for metal crash rails. Complete forms in Owner's name and register with manufacturer.
   1. Failures include, but are not limited to, the following:
      a. Structural failures or internal connection failures.
      b. Deterioration of materials beyond that expected of normal use, as intended by manufacturer.

C. Installer Warranty: Provide 5-year warranty for metal crash rails commencing on Date of Substantial Completion. Complete forms in Owner's name and register with installer.
   1. Failures include, but are not limited to, the following:
      a. Detachment of rail system from substrate.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Protective Wall Covering:
   1. Construction Specialties, Inc: www.c-sgroup.com/
   2. Inpro: www.inprocorp.com
   3. MDC Interior Solutions: www.mdcwall.com

2.02 PERFORMANCE CRITERIA

A. Impact Strength: Unless otherwise noted, provide protection products and assemblies that have been successfully tested for compliance with applicable provisions of ASTM D256 and/or ASTM F476.

B. Chemical and Stain Resistance: Unless otherwise noted, provide protection products and assemblies with chemical and stain resistance complying with applicable provisions of ASTM D543.

C. Fungal Resistance: Unless otherwise noted, provide protection products and assemblies which pass ASTM G21 testing.

2.03 PRODUCT TYPES

A. Protective Wall Covering:
   1. Material: High-impact acrylic-modified vinyl.
   2. Thickness: 0.060 inch (1.52 mm).
   3. Surface Burning Characteristics: Provide assemblies with flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
   4. Color: As indicated on drawings.
   5. Pattern: Decorative pattern.
   6. Texture: Suede.
      a. Texture Direction: Horizontal.
   7. Accessories: Provide manufacturer's standard color-matched trim and moldings.
      a. Inside Corner Trim: Standard angle
      b. Outside Corner Trim: Standard angle.
   8. Mounting: Adhesive.

2.04 FABRICATION

A. Fabricate components with tight joints, corners and seams.

B. Form end trim closure by capping and finishing smooth.

2.05 SOURCE QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for additional requirements.

B. Provide wall and door protection systems of each type from a single source and manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that rough openings, concealed blocking, and anchors are correctly sized and located.

B. Verify that field measurements are as indicated on drawings.

C. Verify that substrate surfaces for adhered items are clean and smooth.
   1. Test painted or wall covering surfaces for adhesion in inconspicuous area, as recommended by manufacturer. Follow adhesive manufacturer's recommendations for remedial measures at locations and/or application conditions where adhesion test's results are unsatisfactory.

D. Start of installation constitutes acceptance of project conditions.

3.02 INSTALLATION

A. Install components in accordance with manufacturer's instructions, level and plumb, secured rigidly in position to supporting construction.

B. Position corner guard above scheduled base finish to height indicated on drawings.

C. Position protective wall covering above scheduled base finish to height indicated on drawings.
   1. Wainscot Installation: Establish a level line at the specified height for entire length of run. Install by aligning top of edge of covering with this line.
   2. Apply adhesive with 1/8 inch (3.2 mm) V-notch trowel to an area of wall surface that can be completed within cure time of the adhesive.
   3. Install trim pieces as required for a complete installation. Allow tolerance for thermal movement.
   4. At joints indicated to be caulked, allow for a minimum 1/16 inch (1.6 mm) wide gap between edges of sheets. Gaps are required to be of consistent width throughout the project.
   5. Use a roller to ensure maximum contact with adhesive.
   6. At inside and outside corners cut covering sheets to facilitate installation of trim pieces or corner guards.

3.03 TOLERANCES

A. Maximum Variation From Required Height: 1/4 inch (6 mm).

B. Maximum Variation From Level or Plane For Visible Length: 1/4 inch (6 mm).

3.04 CLEANING

A. Clean wall and door protection items of excess adhesive, dust, dirt, and other contaminants.

END OF SECTION

SECTION 123600
COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Countertops for architectural cabinet work.

B. Wall-hung counters and vanity tops.

1.02 RELATED REQUIREMENTS

A. Section 064100 - Architectural Wood Casework.

B. Section 224000 - Plumbing Fixtures: Sinks.

1.03 REFERENCE STANDARDS

A. ANSI A208.1 - American National Standard for Particleboard 2022.

B. ANSI A208.2 - Medium Density Fiberboard (MDF) for Interior Applications 2022.

C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.

D. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition 2014, with Errata (2016).

E. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards 2021, with Errata.

F. ISFA 2-01 - Classification and Standards for Solid Surfacing Material 2013.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Specimen warranty.

C. Shop Drawings: Complete details of materials and installation ; combine with shop drawings of cabinets and casework specified in other sections.

D. Verification Samples: For each finish product specified, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

E. Test Reports: Chemical resistance testing, showing compliance with specified requirements.

F. Certificate: Submit labels and certificates required by quality assurance and quality control programs.

G. Installer's qualification statement.

H. Installation Instructions: Manufacturer's installation instructions and recommendations.

I. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.

B. Quality Certification:
   1. Provide labels or certificates indicating that the installed work complies with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade or grades specified.
   2. Provide designated labels on shop drawings as required by certification program.
   3. Provide designated labels on installed products as required by certification program.
   4. Submit certifications upon completion of installation that verifies this work is in compliance with specified requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.07 FIELD CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 COUNTERTOPS

A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

B. Solid Surfacing Countertops: Solid surfacing sheet or plastic resin casting over continuous substrate.
   1. Flat Sheet Thickness: 1/2 inch (12 mm), minimum.
   2. Solid Surfacing Sheet and Plastic Resin Castings: Complying with ISFA 2-01 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
      a. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
      b. Finish on Exposed Surfaces: Matte, gloss rating of 5 to 20.
      c. Color and Pattern: As indicated on drawings.
   3. Other Components Thickness: 1/2 inch (12 mm), minimum.
   4. Back and End Splashes: Same sheet material, square top; minimum 4 inches (102 mm) high.
   5. Fabricate in accordance with manufacturer's standard requirements.

2.02 MATERIALS

A. Wood-Based Components:
   1. Wood fabricated from old growth timber is not permitted.

B. Particleboard for Supporting Substrate: ANSI A208.1 Grade 2-M-2, 45 pcf (20 kg/cu m) minimum density; minimum 3/4 inch (19 mm) thick; join lengths using metal splines.

C. Medium Density Fiberboard for Supporting Substrate: ANSI A208.2.

D. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.

E. Joint Sealant: Mildew-resistant silicone sealant, white.

2.03 ACCESSORIES

A. Fixed Top-Mounted Countertop Support Brackets:
   1. Material: Steel.
   2. Finish: Manufacturer's standard, factory-applied, textured powder coat.
   3. Color: White.

2.04 FABRICATION

A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
   1. Join lengths of tops using best method recommended by manufacturer.
   2. Fabricate to overhang fronts and ends of cabinets 1 inch (25 mm) except where top butts against cabinet or wall.
      a. Rout a 1/8 inch (3 mm) drip groove at underside of exposed overlapping edges, set back 1/2 inch (13 mm) from face of edge.

3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.

B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
   1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
   2. Height: 4 inches (102 mm), unless otherwise indicated.

C. Wall-Mounted Counters: Provide skirts, aprons, brackets, and braces as indicated on drawings, finished to match.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

A. Install vanities in accordance with manufacturer's instructions and approved shop drawings

B. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.

C. Seal joint between back/end splashes and vertical surfaces.

3.04 CLEANING

A. Clean countertops surfaces thoroughly.

3.05 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION