2024 Cy-Creek HS Renovations Cypress-Fairbanks ISD Cypress, Texas

January 30, 2025

ADDENDUM NO. 1 TO THE DRAWINGS AND PROJECT MANUAL FOR 2024 CY-CREEK HS RENOVATIONS CYPRESS-FAIRBANKS ISD CYPRESS, TEXAS



VLK 20445 State Highway 249, Suite 350 Houston, TX 77070 281.671.2300 voice vlkarchitects.com

1.1 GENERAL

Project No. 23-148.00

- A. This addendum modifies the drawings and project manual, dated January 10, 2025, as noted within and shall become part of the Contract Documents.
- B. Each holder of proposal documents registered with the Architect will receive a copy of the addendum. Each prime proposer is responsible for distribution of information conveyed by this addendum to its sub-proposers and suppliers.
- C. Proposers shall acknowledge receipt of this addendum in the space provided on the proposal form. Failure to do so may subject proposer to disqualification.
- D. A pre-proposal conference was held at 10:00 a.m., local time, Wednesday, January 29, 2025 in the Cypress-Fairbanks Independent School Facilities & Construction Conference Room 129A. Attached to this addendum is an Attendance Register from that conference.
- E. A site walk is scheduled for Monday, February 3, 2025 at: Cy Creek High School located at 9815 Grant Rd., Houston, Texas 77070. The site walk will begin at 3:30 PM. Meet and sign at the main entrance. Parking is available on the parking/band lot near the entrance off Grant Road.

VOLUME 1

1.2 SECTION 01 11 26 - OWNER/ARCHITECT PROVIDED DOCUMENTS

- A. Page 01 11 26 1, Add the following Sub-Paragraphs:
 - "3. Asbestos Survey Report:
 - 1. Entitled: Limited Asbestos Survey for Proposed Renovations
 - 2. Prepared for: Cypress-Fairbanks ISD
 - 3. Prepared by: EFI Global
 - 4. Dated: December 31, 2024"
- B. Please see attached Owner's Limited Asbestos Survey's for Cypress Creek HS.
- C. Please see attached Section 02 82 13 Asbestos Abatement by EFI Global.

2024 Cy-Creek HS Renovations Cypress-Fairbanks ISD Cypress, Texas

VOLUME 2

1.3 SECTION 13 14 19 - METAL BUILDING SYSTEMS

A. This section, attached hereto, is entirely new and is hereby made a part of this addendum.

DRAWINGS

1.4 ASBESTOS DRAWINGS

A. Sheet Nos. ABT1.01B, ABT1.01L, ABT1.01M, ABT1.02M, ABT1.01N, and ABT2.01D, provided by efi global, are attached for reference.

END OF ADDENDUM NO. 1



ATTENDANCE REGISTER

| Reference: 2024 Cy Creek HS Reno Cypress-Fairbanks ISD 24-02-5754-R-RFP | | k HS Renovation banks ISD I-RFP | Dat | te: | January 29, 2025 | |
|---|--------------|---------------------------------------|---------------|------------------------|----------------------|--|
| Type of Meeting: | Pre-Proposal | Meeting | Arc | chitect's Project No.: | 23-148.00 | |
| Name (Please print) | | Company Title | Phone | Email | | |
| Uissamilsu | 1 | Curey Construction | 713-229.1947 | elissa wilsu | na covenes com | |
| TAM QUANG | | VLK/PA | 7281-671-2312 | toware outkow | relistects.com | |
| Blake Wilcox | | VLK/EP | 281-671-4404 | 6 Williex QUIK | architects.com | |
| FUDY STAP | ks | VLK PRINCIPAL | 281 671 2500 | rstarksovik | architects.com | |
| Glenda E | WING | MPS | 281 328 2200 | estimati N | g pmps-team.com | |
| (reg beger | ļ | 13 \$5 | 281-578 9595 | areal@biodisono | Stev Ks.com | |
| CARLOS ALVIE | ADES | SALAS OSMON | 281-664-1902 | Carlos Augars | CSANTS OBLION. Com | |
| Raymelle wil | lison | CFISD | | | | |
| Jordan Mer | ecka | CFISD | | | | |
| Shannon Thop | NOSON | CFISD | | | | |
| PHILLIP CAND | 1 | PRIMECONTRACTORS | 2819990875 | estimatine Cprin | mecontractorsing.com | |
| Harry Gian | naris | Raba Kistner | 113-996-8990 | hajanuasist | 3, YKCi com | |
| AUNILU Probe | 777 | CFISD | | | | |
| Pablo Maisa | | Endineered Air | 651-363-6285 | Houston Benzin | sered his, com | |
| Jose A. VELA | | MANTON ROVINC | (73)537-5703 | ivela Dmrites | ias, com | |
| OSCAR PACAS | | SIPLAST | 346-275-8916 | OSCAR. PACAS @ | SIPLAST. COM | |
| Amy HAYES | | CFISD | • • • • | | | |
| DAN GROSZ | - | CFRD | | | | |
| | | | | | | |





2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 Tel: 832-518-5145

> Based on QAQC CD Limited Asbestos Survey For proposed Renovations

> Multiple Renovation Areas Interior and Exterior

Cypress Creek High School 9815 Grant Road Houston, Texas 77070

Prepared For: VLK Architects, Inc. 20445 State Highway 246, Suite 350 Houston, Texas 77070 c/o Cypress-Fairbanks Independent School District 11430-B Perry Road Houston, Texas 77064

December 31, 2024

EFI Project: 029.06921



Report No. 029.06921 December 31, 2024

VLK Architects, Inc. 20445 State Highway 246, Suite 350 Houston, Texas 77070

Attention: Mr. Rudy Starks

Email: rstarks@vlkarchitects.com

RE: Limited Asbestos Survey Cypress Creek High School 9815 Grant Road Houston, Texas 77070

EFI Global, Inc. (EFI) was retained by VLK Architects, Inc. (VLK), on behalf of Cypress-Fairbanks Independent School District (CFISD), to provide asbestos consulting services for the proposed renovations of the Cypress Creek High School campus located at 9815 Grant Road in Houston, Texas. The first phase of EFI's work was to review available asbestos history/data, conduct an asbestos survey of suspect Asbestos-Containing Building Materials (ACBM) and provide a report detailing our findings. The primary purpose of the survey is to locate, sample and analyze typical suspect friable and non-friable asbestos-containing materials. Mr. Kenneth Capps (Texas Department of Health License No. 10-5850) of EFI, conducted the initial field survey on September 10-12, 2024, with additional testing on November 27, 2024. Work on this project was performed in general accordance with our Proposal No. 98410-24-0648, dated August 8, 2024, via issuance of AIA C401-2017 Standard Form of Agreement between Architect and Consultant, and verbal authorization by Mr. Rudy Starks of VLK, dated September 5, 2024.

We appreciate the opportunity to provide these services to CFISD and VLK. If you have any questions about this asbestos survey report, or, if we can be of further assistance, please contact us at (832) 518-5145.

Sincerely, EFI Global

Sam Huff Project Manager (TDSHS # 10-5902)

Kenneth Capps Senior Project Manager (TDSHS # 10-5850)

(Z:/2024/CFISD/Cypress Creek High School/Survey Info/029.06921 - Cypress Creek High School Asbestos Rpt ACM)



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INTRODUCTION

EFI was retained by VLK, on behalf of CFISD to provide asbestos consulting services for the proposed renovations at the Cypress Creek High School campus located at 9815 Grant Road in Houston, Texas. The first phase of EFI's work was to review available asbestos history documents for the subject campus, conduct an asbestos survey of suspect Asbestos-Containing Building Materials (ACBM) and provide a report detailing our findings. The following report details the sampling of multiple suspect building components that may be impacted by the proposed renovations for the subject property. Based upon available information, the facility will undergo interior and exterior renovations throughout multiple areas of the campus.

Purpose and Scope of Work

The purpose of this project was to collect and analyze bulk samples of suspect ACBM at the Cypress Creek High School campus. For the proposed renovations, EFI's sampling activities were generally limited to construction finishes impacted by the planned renovations, as noted in VLK's 50% construction drawings dated July 25, 2024. The following generalizations describe the proposed work:

- Architectural: Remove and replace structural expansion joint covers, remove and replace floor tile and wall finishes; renovate restrooms; replace damaged building soffit at service entry with raised aluminum canopy, replace guardrails and handrails; replace paint booth to meet district standards; renovate Industrial Tech Computer and Electronics Room; Repaint all metal doors/frames/ and lite kits; provide 6 recirculating welding booths; replace campus marquee sign; provide new greenhouse; provide orchestra addition of rehearsal hall and practice rooms; renovate black box theater; provide new addition for tow new art rooms; remove and replace ceiling with new acoustical lay-in ceiling tile and grid throughout; paint all previously painted interior surfaces; provide auxiliary music rehearsal room.
- Athletics/Activities: Replace scoreboard in basketball Gym; provide new handrail in stairs at competition gym; provide electric key operated goals in competition gym; strip down and refinish floor in auxiliary gym; replace existing press-box; provide outdoor storage building for athletics; strip down and refinish floors in competition gym; provide 2 additional tennis courts to achieve 8 total.
- **Building Envelope:** Provide new cap sheet to existing mob bit roofing membrane.
- **Civil:** Replace pumps in lift station near Grant Road.
- **Electrical:** Replace secondary switchgear; provide generator backup power for all teleconference rooms.
- Food Service: Renovate and expand kitchen and servery per district standards.
- **Mechanical:** Add CO detection system to boiler room; replace R-22 air cooled 25 ton chiller; replace R-22 air cooled 30 ton chiller; replace refrigerant at monitoring system; replace two AHU's in the penthouse in area 1800 (Shop); replace two AHU's in the penthouse in area 1700 (Science); replace central station air handling units; replace HVAC controls; add dedicated HVAC unit to secondary telecommunications rooms.



- **Plumbing:** Separate irrigation meter from existing water meter; replace boiler.
- **Security items:** Harden main front desk; additional card readers on exterior doors; additional lockdown buttons; classroom and exterior door hardware; enhanced video intercoms, exterior window, and door numbering; and impact resistant glass.

The Main Building campus and football press-box was included as part of the survey process. Select areas or buildings were excluded, including, but not limited to: any maintenance sheds or portable buildings. Select building materials and areas throughout the facility were excluded from the EFI survey process since renovations were not described as impacting multiple areas and building components. Additional investigations may be requested by CFISD, or the Architect and reporting will be issued under separate cover.

EFI's scope was limited to and included visual observation of accessible building components that would have the potential to be impacted by the proposed renovations; architectural, mechanical, electrical and security upgrades; and excluded underground utilities, underground piping, electrical panels, enclosed/encased wall cavities and a multitude of other building components as referenced in other sections of this report. The scope of services for this survey included performance of the following tasks:

- Review available proposed renovation scope of work and reference previous asbestos historical documentation;
- Collect samples of suspect ACBMs that would be impacted by the proposed renovations and perform laboratory analyses;
- Prepare a report discussing our findings, give recommendations for dealing with asbestos-related hazards prior to renovations and provide generalized assessment of physical conditions; and
- Submit approximate locations and general descriptions of all identified and/or presumed ACBMs.

Report Organization

This report is divided into sections which discuss our field survey, laboratory analyses, hazard assessments, regulatory overview, and abatement recommendations. Supporting documentation follows the text.

FIELD SURVEY

Mr. Kenneth Capps [Texas Department of State Health Services (DSHS) License #10-5850] conducted the initial field survey on September 10-12, 2024, with additional testing on November 27, 2024, whereas accessible building components were collected for laboratory analysis. This survey activity was performed to confirm the presence of ACBM in all "accessible" building components impacted by the renovations process. The samples for each homogeneous material zone were collected in sufficient numbers to comply with U.S. Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), and DSHS protocols.



Observations

The Cypress Creek High School campus is located at 9815 Grant Road in Houston, Texas. Based upon available information, the following structure on the site is described as:

- Main Building: Constructed circa 1977, the school campus has had previous renovations in 2004, 2010, and 2012, with building additions being constructed in 1979, 1982, 2007, and 2012. The main building is a two-story brick veneer, slab on grade structure consisting of structural steel framing with spray-applied fireproofing (on columns, select beams, including overspray on adjacent surfaces), corrugated decking with select applications of bar-joist framing insulated with fiberglass batting. There are plaster exterior eaves and select gypsum ceiling and/or wallboard with joint compound throughout. The majority of the campus has a lay-in metal grid ceiling system throughout most common areas and classrooms. There is ceramic flooring in the corridors, cafeteria, and restrooms, with carpeting and vinyl flooring in most classrooms and miscellaneous areas. The basketball gymnasiums have wood flooring, the wrestling gym has multi-colored 12"x12" plastic-interlock flooring, and the locker rooms have epoxy flooring.
- The mechanical systems include Central Plant with heating water boilers and chiller/cooling tower system supplying air handling rooms/units with chilled and heating water mixed piping loop. The air handlers supply conditioned air via ductwork to multiple diffuser vents. Select plenum areas have heating water supplying coil units to condition spaces during cooler periods. The plumbing systems include insulated domestic water piping (cold and hot), sewer, venting and roof drain systems.
- Roofing materials were not tested as these materials are not currently scheduled to be impacted/removed during renovation activities. Roofing materials are suspect ACBM until proven otherwise (destructive sampling techniques will be required for the testing).

Sampling

The scope of EFI's sampling included sampling of suspect building components impacted by the proposed renovations. Suspect building components were grouped into homogeneous materials. A homogeneous material is described as any suspect building component that is similar in color, texture, composition, etc. and was installed around the same timeline. The materials were given classification designations to distinguish between different materials zones.

EFI reviewed data found in the AHERA (Asbestos Hazard Emergency Response Act) Management Plan to supplement the survey process. Select materials have been assumed asbestos at the campus, including roofing, mirror mastic, any felts under metal roofing and any other component that is not addressed.

As part of the January and November 2024, survey process, multiple Homogeneous Materials (HA) were documented and sampled from the Main campus structure. One hundred ninety-four (194) bulk samples were collected as part of the survey. Typical building materials that were collected and analyzed included, but were not limited to:



| | Sample Summary Table for the Cypress Creek High School | | | | | |
|-----|--|-------------------|--|--|--|--|
| HA# | Sample Description | Laboratory Result | | | | |
| 01 | 6"x6" Quary tile with mortar and grout – Kitchen area | Non-asbestos | | | | |
| 02 | 12"x12" Beige vinyl floor tile with yellow mastic on float – Kitchen area | Non-asbestos | | | | |
| 03 | 2'x2' Gypsum ceiling panel – Kitchen area | Non-asbestos | | | | |
| 04 | Domestic hot pipe insulation with white mastic at fittings 1" piping – Kitchen area | Non-asbestos | | | | |
| 05 | Cream duct mastic on foil/fiberglass insulation – Kitchen area | 5% Chrysotile | | | | |
| 06 | Plaster at columns – Kitchen area | Non-asbestos | | | | |
| 07 | Domestic hot pipe insulation with white mastic at fittings 6" piping – Kitchen area | Non-asbestos | | | | |
| 08 | Hood vent exhaust vent insulation with white mastic – Kitchen area | Non-asbestos | | | | |
| 09 | Fireproofing | Non-asbestos | | | | |
| 10 | Dryer exhaust vent duct with tape and white mastic – Kitchen area | Non-asbestos | | | | |
| 11 | CMU block filler with CMU block and mortar | Non-asbestos | | | | |
| 12 | Gypsum ceilings with joint compound – Original bldg | Non-asbestos | | | | |
| 13 | Gray exhaust vent sealant | Non-asbestos | | | | |
| 14 | Exterior plaster soffit | Non-asbestos | | | | |
| 15 | Exterior pavement caulking | Non-asbestos | | | | |
| 16 | Exterior expansion joint caulking | Non-asbestos | | | | |
| 17 | Exterior door frame caulking | Non-asbestos | | | | |
| 18 | 12"x12" White vinyl floor tile with yellow mastic on plywood – Football press-box | Non-asbestos | | | | |
| 19 | Window frame caulking – Football press-box | Non-asbestos | | | | |
| 20 | Gypsum ceiling with joint compound – 2010 additions | Non-asbestos | | | | |
| 21 | Cove base mastic | Non-asbestos | | | | |
| 22 | Carpet pad and glue | Non-asbestos | | | | |
| 23 | 12"x12" Beige and gray spec vinyl floor tile with yellow mastic | Non-asbestos | | | | |
| 24 | CMU block filler – 2010 addition | Non-asbestos | | | | |
| 25 | White duct mastic on foil/fiberglass insulation – 2010 addition | Non-asbestos | | | | |
| 26 | Gray duct sealant – 2010 addition | Non-asbestos | | | | |
| 27 | 2'x2' Pinhole ceiling panels | Non-asbestos | | | | |
| 28 | 2'x2' Gypsum ceiling panels – 1983 addition | Non-asbestos | | | | |
| 29 | Cream duct mastic on foil/fiberglass insulation – 1983 addition | Non-asbestos | | | | |
| 30 | Gray duct sealant – 1983 addition | Non-asbestos | | | | |
| 31 | Gypsum wallboard/ceiling with joint compound – 1983 addition | Non-asbestos | | | | |
| 32 | Domestic hot water with pipe insulation with cream mastic – 1983 addition | 5% Chrysotile | | | | |



| 33 | Cream duct mastic – original bldg | Non-asbestos |
|----|--|----------------|
| 34 | Domestic hot water pipe insulation with cream mastic – | Non-asbestos |
| | original bldg. | |
| 35 | Boiler rope gasket – Boiler room | Non-asbestos |
| 36 | Boiler tank insulation – Boiler room | Non-asbestos |
| 37 | Roof drain pipe insulation – 1983 addition | Non-asbestos |
| 38 | White duct mastic on foil/fiberglass insulation – Lieber | Non-asbestos |
| | Unit | |
| 39 | Condensate pipe insulation with white mastic – Lieber | Non-asbestos |
| | Unit | |
| 40 | Gray duct sealant on metal duct – Lieber Unit | Non-asbestos |
| 41 | Ceiling plaster – Penthouse mechanical rooms | Non-asbestos |
| 42 | Foil roof curb flashing – Penthouse mechanical rooms | Non-asbestos |
| 43 | Heating water pipe insulation with white mastic – | Non-asbestos |
| | Penthouse mechanical rooms | |
| 44 | Chilled water pipe insulation with white mastic – | Non-asbestos |
| | Penthouse mechanical rooms | |
| 45 | Gray duct sealant on metal – Penthouse mechanical | Non-asbestos |
| | rooms | |
| 46 | Gray duct sealant - RTU6 | Non-asbestos |
| 47 | Gray caulking - RTU6 | Non-asbestos |
| 48 | Black sealant at unit base - RTU6 | Non-asbestos |
| 49 | White mastic on duct insulation - RTU6 | Non-asbestos |
| 50 | Chilled water pipe insulation with white mastic at fitting - | Non-asbestos |
| | Penthouse mechanical rooms | |
| 51 | Heating water pipe insulation with white mastic at fitting | Non-asbestos |
| | - Penthouse mechanical rooms | |
| 52 | Gray duct sealant - Penthouse mechanical rooms | Non-asbestos |
| 53 | Air cooled chiller – chilled water pipe insulation | Non-asbestos |
| 54 | 12"x12" Tan vinyl floor tile with canvas and tan glue on | Non-asbestos |
| | 12"x12" Beige vinyl floor tile with yellow mastic -2^{nd} | |
| | floor science rooms | |
| 55 | Exterior damp proofing – black mastic on CMU block/ | Non-asbestos |
| | pink foam/ brick and mortar | |
| 56 | Chilled water pipe insulation with white mastic – fittings | Non-asbestos |
| 57 | Chilled water pipe insulation with cream mastic – | 5% Chrysotile |
| | AHU 6 Rm 1818 (Fitting/Runs) – Commons Snack | 2 |
| | Bar area | |
| 58 | Heating water pipe insulation with cream mastic - | 5% Chrysotile |
| | AHU 6 Rm 1818 (Fitting/Runs) – Commons Snack | - |
| | Bar area | |
| 59 | 12"x12" Black vinyl floor tile with yellow mastic – Drama | Non-asbestos |
| | control room | |
| 60 | Black damp proofing on CMU block – 1980s | 10% Chrysotile |
| | building additions | - |
| 61 | Cream duct mastic on foil/fiberglass insulation – Shop | Non-asbestos |
| | storage rooms | |
| | | |



* - HA# = Homogeneous area number / Sample number

The samples for each homogeneous material listed above were generally collected in sufficient numbers to comply with U.S. Environmental Protection Agency (EPA), Asbestos Hazard Emergency Response Act (AHERA) and Texas Department of State Health Services (TDSHS) survey sampling protocols. Limited survey data was utilized to supplement the survey process.

Appropriate chain-of-custody procedures were initiated at the site for all samples. Bulk samples were collected in a manner that reduced the potential for fiber release and exposure by using wet sampling methods and personal protective equipment, if necessary. Bulk samples collected during the survey were deposited in secure containers for transport to an independent third-party laboratory, Micro Analytical Services, Inc. (MAS), in Houston, Texas.

LABORATORY ANALYSIS

Bulk samples collected during the survey were deposited in secure containers for transport to the MAS laboratory in Houston, Texas. MAS is a successful participant in the National Voluntary Laboratory Accreditation Program (NVLAP Lab # 200618-0) and licensed by Texas Department of State Health Services (TDSHS License # 30-0341).

Analytical Procedure

All sampled materials were initially analyzed using Polarized Light Microscopy (PLM) coupled with dispersion staining as detailed in the EPA's "Method for the Determination of Asbestos in Bulk Building Materials" (EPA/600/R-93/116). Percentages for the samples were determined by visual area estimation.

Bulk Sample Results

The results of the laboratory analyses are presented in Appendix A1 – Laboratory Report, and Homogeneous Material Description Forms. Based upon the laboratory results, the following information was obtained:

- The cream mastic applied to duct foil/fiberglass insulation located in the kitchen and may exist in other areas throughout the campus was found to contain 5% chrysotile asbestos. (All duct with insulation in the kitchen area)
- The domestic hot water pipe insulation with white/cream mastic located in the (1980 additions) was found to contain 5% chrysotile asbestos.
- The chilled water pipe insulation with white/cream mastic located in the (1980 additions) commons snack bar area mechanical room was found to contain 5% chrysotile asbestos. (Approximately 40+ linear feet)
- The heating water pipe insulation with white/cream mastic located in the (1980 additions) commons snack bar area and mechanical room was found to contain 5% chrysotile asbestos. (Approximately 200+ linear feet)
- The black damp proofing mastic applied to CMU block walls located in the 1980's additions of the campus was found to contain 10% chrysotile asbestos.

All other bulk samples collected at the subject campus were found to have no asbestos detected.

• [See "Previously Identified ACBM Section" below for additional information]



• [See "Assumed ACBM Section" below for additional information]

Mastics, adhesives, floor tile and other resinously bound materials, when analyzed by the EPA method, may yield false negative results because of limitations in separating closely bound fibers and in detecting fibers of small length and diameter. When a definitive result is required, EFI recommends utilizing alternative methods of identification, including transmission electron microscopy (TEM).

Previously Identified Asbestos Containing Building Materials

Previous inspections have been conducted throughout the years at Cypress Creek High School and many types of materials have been identified as asbestos containing materials. Below is a chart of materials and approximate locations of known asbestos containing building materials.

| IDENTIFIED ASBESTOS CONTAINING MATERIALS Cypress Creek High School, 9815 Grant Road, Houston, Texas | | | | | | |
|--|--|----------------------------|---|--|--|--|
| Material Type | Material Location | Material Classification | Material Condition Assessment | | | |
| Chilled & Heating water piping with mastic coating fiberglass. ACM mastic on HWS Coil Piping (5% ACM). Both ACM and non-ACM piping at campus, test each location prior to impact. | Main Building | Category II non-friable | Good condition with potential for damage. | | | |
| Domestic Water Hot with mastic coating on Fiberglass Jacket | Main Building accessible piping | Category II non-friable | Good condition with potential for damage. | | | |
| Mirror mastic (Select units abated in 2009-2010) | Main Building | Category II non-friable | Good condition with potential for damage. | | | |
| Black damp proofing behind Brick Veneer ACM 3% | Exterior Brick some walls encased by building expansions | Category II non-friable | Good condition with potential for damage. | | | |
| Pin Mastic behind Batt Insulation. 3% ACM with limited damage or missing batt | Mechanical Rooms wall insulation | Category II non-friable | Good condition with potential for damage. | | | |
| HVAC Duct with Tan ACM mastic fiberglass | Campus ductwork some abated in 2009- 2010 | Category II non-friable | Good condition with potential for damage. | | | |
| Asbestos Science tables | 2 nd Floor Science Storage Room 2314 | Category II non-friable | Good condition with potential for damage. | | | |
| Wood Floor Vapor barrier | Under gym wood flooring | Suspect | Good condition with potential for damage | | | |

Assumed ACBM Section, Previous History Findings and Materials Not Sampled

This survey is based off the scope of work summary table, and the QAQC construction drawings. As a result of our limited survey, select building components (or areas) were excluded from the survey process since the materials were either a) not identified to be disturbed by the proposed renovations, or b) inaccessible with substantial demolition access. Other building materials are encased, enclosed, or deemed inaccessible without destructive sampling techniques.

In accordance with our proposal, the below listed material(s) were left intact and are, consequently, assumed to contain asbestos until proven otherwise:



- The mechanical systems, including the Central Plant boilers and air handling rooms/units are not in the current scope of renovation other than the areas defined in the mechanical demolition drawings. Should the scope change and any of the systems require demolition or renovation, the components are suspect ACBM until proven otherwise.
- The chilled and heating water pipe insulation mastics, domestic water pipe insulation mastics and duct mastics throughout the campus are not in the current path of construction other than the areas defined in the mechanical and plumbing demolition drawings. Should the scope change and the insulation need to be removed, the pipe insulation and mastic is suspect ACBM until proven otherwise.
- Restroom mirrors appeared to be mechanically attached, should any mirror be found to be adhered to the wall with mastic adhesive the mastic is suspect ACBM until proven otherwise. The weight rooms, dance, cosmetology, and theater dressing rooms have mirrors that are potentially adhered with ACBM mastic.
- Gymnasium wood flooring may contain vapor barrier mastic. The vapor barrier mastic located under the wood flooring is suspect ACBM until proven otherwise.
- Roofing is not in the current path of construction. Should the scope change and any of the roofing systems require demolition the building materials are suspect ACBM until proven otherwise.
- Fire doors may have an internal asbestos sheet or packing and are suspect ACBM until proven otherwise.

HAZARD ASSESSMENTS

Asbestos is an airborne hazard. A hazard assessment refers to the process by which a material's potential to release fibers into the air is evaluated. Fibers may be released spontaneously as part of a materials aging process or when acted upon by other factors such as air movement, vibration, impact, renovations or localized deterioration. Assessing a material's potential for fiber release, and hence its associated hazard risk, is accomplished by evaluating these and other factors.

Hazard Assessment Ratings

In accordance with AHERA regulations, any material identified as an ACM that exhibits damage should be considered a hazard to anyone in the area. Typically, damage is classified as minor or extensive. Minor damage is characterized by small cuts, tears, scuffs, small openings, or other limited disturbance to ACMs. Areas with minor damage represent varying degrees of hazards from low to Middle depending on:

- the nature of the damage;
- proximity to disturbers, such as air streams;
- location with respect to building occupants;
- activity in the immediate area; and
- frequency of maintenance in the area.

The recommended action for addressing asbestos-related hazards depends upon the degree of hazard. For example:



• A "**low**" assessment describes a situation in which the material is in good condition and has a low potential for disturbance, damage, or deterioration. In this situation, Operations & Maintenance (O&M) in the AHERA Asbestos Management Plan usually all that is needed.

Material Assessments

As a result of our survey, the presence of asbestos was documented in the following building materials and assumed ACBM. A general hazard assessment for the ACBM is presented below.

- * The **cream mastic applied to foil/fiberglass duct insulation** located above the ceilings is considered a Category II non-friable ACBM and in its current condition the material presents a "**low**" hazard.
- * The **domestic hot water pipe insulation with cream mastic** is classified as a category II non-friable ACBM and in its current condition the material presents a "**low**" hazard.
- * The heating and chilled water pipe insulation with cream mastic is classified as a category II non-friable ACBM and in its current condition the material presents a "low" hazard.
- * The **black damp proofing coatings on CMU behind brick veneer** is considered a Category II non-friable ACBM and in its current condition the material presents a "**low**" hazard.
- * The **assumed ACBM** at the facility currently presents a **low** hazard. If any assumed components are to be impacted by renovations, the suspect material(s) should be sampled prior to disturbance and, if found to contain asbestos in concentrations greater than one percent, abated in accordance with applicable regulations.

REGULATORY OVERVIEW

The EPA - NESHAP regulations (National Emissions Standard for Hazardous Air Pollutants - 40 CFR Part 61, Subpart M), require that all Regulated Asbestos-Containing Materials (RACM) be removed from a facility being demolished or renovated prior to any activity that would disturb the material. RACM is defined as (a) friable ACM, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subject to sanding, grinding, or abating, 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 the course of the renovations. Under current EPA AHERA regulations, the Asbestos Management Plan for the school facility requires updating to reflect the findings of any inspection process. EFI will forward the survey report to the CFISD Maintenance Department for inclusion into the AHERA Asbestos Management Plan.

ABATEMENT RECOMMENDATIONS

Based upon our understanding that Cypress Creek High School is proposed for renovations in select areas, we make the following recommendations:



* Renovations as defined in the architectural and M.E.P. drawings will impact identified asbestos containing building materials. Removal of all identified asbestos containing building materials in the path of construction shall be abated prior to disturbance from renovation activities. All removal, transportation, disposal, air monitoring and other regulatory protocols shall be completed by personnel licensed in the State of Texas and in accordance with all applicable AHERA, TAHPR and/or NESHAP regulations.

CONCLUSION

We understand that VLK and CFISD have proposed select renovations for the Cypress Creek High School campus. It should be noted that all renovation activities are governed by EPA NESHAP regulations, OSHA - Administration Construction Industry Standard regulations (Occupational Safety and Health, 29 CFR 1926.1101) and the Texas Department of State Health Services – Texas Asbestos Health Protection Rules (TAHPR) as amended July 2021.

Based upon the sampling and laboratory results, asbestos was detected in interior and exterior building materials designated by the Architect to be impacted by the proposed renovations. Therefore, EFI recommends the ACBM be removed according to applicable regulations. All other non-asbestos components and renovations may proceed in interior areas as proposed with corresponding communication of the potential asbestos hazard to all trades occupying the work zones.

Asbestos abatement work in public buildings, especially school facilities, are required under the revised Model Accreditation Plan (MAP) and TDSHS regulations, to be designed by an accredited/licensed Project Designer and must be performed with the proper engineering and regulatory controls by a licensed asbestos abatement contractor. Air monitoring should also be provided by licensed asbestos personnel under contract to the building owner. Should additional work changes and/or increased scope of work be proposed, please contact EFI for additional discussion and sampling review.

LIMITATIONS

This report has been prepared to assist VLK and CFISD in determining the extent of asbestoscontaining building materials (ACBM) at the Cypress Creek High School campus. This report only describes the conditions present at the time of our survey, and the results presented herein are based upon the information available at the time of our survey. The condition of ACBM (if any) may change gradually or suddenly, depending upon use, maintenance, or accident. This survey included limited destructive sampling of walls and other building materials. Consequently, observations of wall cavities, chases, and other concealed areas were limited. If other materials are encountered during renovations, we recommend contacting EFI to arrange for sampling of those affected materials.

The survey was limited to accessible areas, as directed by VLK and our work excluded the enclosed wall cavities, underground items, roofing substrates, exterior wall demolition and other building components that were not designated for impact as part of the renovations process proposed at the Main Building.

Our professional services have been performed using that degree of skill and care ordinarily exercised, under similar conditions, by reputable asbestos consultants practicing in this or



similar localities. No other warranty, expressed or implied, is made as to the professional information in this report. EFI reserves the right to alter our findings based on our review of any information obtained and reviewed after the date of this report. This report is prepared for the sole benefit of Cypress-Fairbanks Independent School District, VLK Architects, Inc. and may not be relied upon by any other person or entity without the written authorization of EFI Global.



APPENDIX A1

LABORATORY REPORTS



Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | Project Name: Cy-Creek HS | | | | | | |
|---------------------|---------------------------|--------------------------------|-----------------------------------|---------------------------------|-------------------------------------|--|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) | | |
| 01-01 MAS579620 | 1 | Brown non-fibrous ceramic tile | No | | 100% Other | | |
| 01-01 MAS579620 | 2 | Grey non-fibrous grout | No | | 100% Other | | |
| 01-01 MAS579620 | 3 | Grey non-fibrous mortar | No | | 100% Other | | |
| 01-02 MAS579621 | 1 | Brown non-fibrous ceramic tile | No | | 100% Other | | |
| 01-02 MAS579621 | 2 | Grey non-fibrous grout | No | | 100% Other | | |
| 01-02 MAS579621 | 3 | Grey non-fibrous mortar | No | | 100% Other | | |
| 01-03 MAS579622 | 1 | Brown non-fibrous ceramic tile | No | | 100% Other | | |
| 01-03 MAS579622 | 2 | Grey non-fibrous grout | No | | 100% Other | | |
| 01-03 MAS579622 | 3 | Grey non-fibrous mortar | No | | 100% Other | | |
| 02-01 MAS579623 | 1 | Beige non-fibrous floor tile | No | | 100% Other | | |
| 02-01 MAS579623 | 2 | Yellow non-fibrous mastic | No | | 100% Mastic | | |
| 02-02 MAS579624 | 1 | Beige non-fibrous floor tile | No | | 100% Other | | |
| 02-02 MAS579624 | 2 | Yellow non-fibrous mastic | No | | 100% Mastic | | |
| 02-03 MAS579625 | 1 | Beige non-fibrous floor tile | No | | 100% Other | | |

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Analyzed by: Tony Dang

Approved NVLAP Signatory: Tony Dang Page 1 of 27



Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| Project Name: Cy-Creek HS | | | | | | |
|---------------------------|---------|---------------------------------------|-----------------------------------|---------------------------------|--|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) | |
| 02-03 MAS579625 | 2 | Yellow non-fibrous mastic | No | | 100% Mastic | |
| 03-01 MAS579626 | 1 | White non-fibrous wall cover | No | | 100% Plastic | |
| 03-01 MAS579626 | 2 | White fibrous gypsum with brown paper | No | | 70% Cellulose 30% Gypsum | |
| 03-02 MAS579627 | 1 | White non-fibrous wall cover | No | | 100% Plastic | |
| 03-02 MAS579627 | 2 | White fibrous gypsum with brown paper | No | | 70% Cellulose 30% Gypsum | |
| 03-03 MAS579628 | 1 | White non-fibrous wall cover | No | | 100% Plastic | |
| 03-03 MAS579628 | 2 | White fibrous gypsum with brown paper | No | | 70% Cellulose 30% Gypsum | |
| 04-01 MAS579629 | 1 | White fibrous mastic | No | | 20% fibrous Glass 80% Mastic | |
| 04-01 MAS579629 | 2 | Yellow fibrous glass insulation | on No | | 100% fibrous Glass | |
| 04-02 MAS579630 | 1 | White non-fibrous mastic | No | | 100% Mastic | |
| 04-02 MAS579630 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | |
| 04-02 MAS579630 | 3 | Yellow fibrous glass insulation | on No | | 100% fibrous Glass | |
| 04-03 MAS579631 | 1 | White non-fibrous mastic | No | | 100% Mastic | |

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| Project Name: Cy-Creek HS | | | | | | |
|---------------------------|---------|---------------------------------------|-----------------------------------|---------------------------------|--|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) | |
| 04-03 MAS579631 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | |
| 04-03 MAS579631 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass | |
| 05-01 MAS579632 | 1 | Beige fibrous mastic | No | | 3% Wollastonite 17% fibrous Glass 80% Mastic | |
| 05-01 MAS579632 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | |
| 05-01 MAS579632 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass | |
| 05-02 MAS579633 | 1 | Beige fibrous mastic | Yes | 5% Chrysotile | 15% fibrous Glass 80% Mastic | |
| 05-02 MAS579633 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | |
| 05-02 MAS579633 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass | |
| 05-03 MAS579634 | 1 | Beige fibrous mastic | No | | 3% Wollastonite 17% fibrous Glass 80% Mastic | |
| 05-03 MAS579634 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | |
| 05-03 MAS579634 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass | |

Samples have been analyzed by the EPA Interim Method 600/M4-82-020(40CFR Part 763 Appendix E to Subpart E) & EPA 600/R-93/116. The test results herein relate only to the sample submitted and analyzed. This report may only be reproduced in full with the approval of the Bulk Asbestos Laboratory of Micro Analytical Services (MAS). The above percentages are visual estimates of area percent. MAS is not responsible for any errors resulting from improper or incorrect sampling or shipping procedures. These samples will be retained for a period of 30 days. Accreditation by NVLAP in no way constitutes or implies product certification, approval, or endorsement by NIST. Some materials, especially floor tiles, contain asbestos fibers too thin to be detected by this method. NVLAP Lab Code: 200618 TDSHS License: 30-0341

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | Project Name: Cy-Creek HS | | | | | | |
|-----------|---------------------------|--------------------------------|-----------|---------------|--------------------|--|--|
| Field ID/ | Layer # | Sample Description | Asbestos | Asbestos | Non-Asbestos | | |
| Lab ID | | | Detected? | Constituents | Constituents | | |
| | | | (Yes/No) | (%) | (%) | | |
| 05-04 | 1 | Beige fibrous mastic | Yes | 5% Chrysotile | 15% fibrous Glass | | |
| MAS579635 | | | | | 80% Mastic | | |
| 05-04 | 2 | Brown fibrous paper with | No | | 10% fibrous Glass | | |
| MAS579635 | | foil backing | | | 45% Cellulose | | |
| | | | | | 45% Foil | | |
| 05-04 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass | | |
| MAS579635 | | | | | | | |
| 05-05 | 1 | Beige fibrous mastic | Yes | 5% Chrysotile | 15% fibrous Glass | | |
| MAS579636 | | | | | 80% Mastic | | |
| 05-05 | 2 | Brown fibrous paper with | No | | 10% fibrous Glass | | |
| MAS579636 | | foil backing | | | 45% Cellulose | | |
| | | | | | 45% Foil | | |
| 05-05 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass | | |
| MAS579636 | | | | | | | |
| 06-01 | 1 | White/grey non-fibrous plaste | r No | | 80% Aggregate | | |
| MAS579637 | | with beige paint | | | 20% Other | | |
| 06-02 | 1 | White/grey non-fibrous plaste | r No | | 80% Aggregate | | |
| MAS579638 | | with beige paint | | | 20% Other | | |
| 06-03 | 1 | White/grey non-fibrous plaste | r No | | 80% Aggregate | | |
| MAS579639 | | with beige paint | | | 20% Other | | |
| 07-01 | 1 | White non-fibrous mastic | No | | 100% Mastic | | |
| MAS579640 | | | | | | | |
| 07-01 | 2 | White fibrous paper with | No | | 10% fibrous Glass | | |
| MAS579640 | | foil backing | | | 45% Cellulose | | |
| | | | | | 45% Foil | | |
| 07-01 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass | | |
| MAS579640 | | | | | | | |
| 07-02 | 1 | White non-fibrous mastic | No | | 100% Mastic | | |
| MAS579641 | | | | | | | |

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | Project Name: Cy-Creek HS | | | | | | |
|---------------------|---------------------------|---------------------------------------|----------------------------------|---------------------------------|--|--|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) | | |
| 07-02 MAS579641 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | | |
| 07-02 MAS579641 | 3 | Yellow fibrous glass insulation | n No | | 100% fibrous Glass | | |
| 07-03 MAS579642 | 1 | White non-fibrous mastic | No | | 100% Mastic | | |
| 07-03 MAS579642 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | | |
| 07-02 MAS579642 | 3 | Yellow fibrous glass insulation | n No | | 100% fibrous Glass | | |
| 08-01 MAS579643 | 1 | White non-fibrous mastic | No | | 100% Mastic | | |
| 08-01 MAS579643 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | | |
| 08-01 MAS579643 | 3 | Yellow fibrous glass insulation | n No | | 100% fibrous Glass | | |
| 08-02 MAS579644 | 1 | White non-fibrous mastic | No | | 100% Mastic | | |
| 08-02 MAS579644 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | | |
| 08-02 MAS579644 | 3 | Yellow fibrous glass insulation | n No | | 100% fibrous Glass | | |
| 08-03 MAS579645 | 1 | White non-fibrous mastic | No | | 100% Mastic | | |

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Analyzed by: Tony Dang

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077

MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | | Project Name: | Cy-Creek HS | | |
|---------------------|---------|---------------------------------------|-----------------------------------|---------------------------------|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) |
| 08-03 MAS579645 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 08-03 MAS579645 | 3 | Yellow fibrous glass insula | tion No | | 100% fibrous Glass |
| 09-01 MAS579646 | 1 | Tan fibrous fire proof insulation | No | | 5% fibrous Glass 10% Cellulose 10% Mica 75% Other |
| 09-02 MAS579647 | 1 | Tan fibrous fire proof insulation | No | | 5% fibrous Glass 10% Cellulose 10% Mica 75% Other |
| 09-03 MAS579648 | 1 | Tan fibrous fire proof insulation | No | | 5% fibrous Glass 10% Cellulose 10% Mica 75% Other |
| 09-04 MAS579649 | 1 | Tan fibrous fire proof insulation | No | | 5% fibrous Glass 10% Cellulose 10% Mica 75% Other |
| 09-05 MAS579650 | 1 | Tan fibrous fire proof insulation | No | | 5% fibrous Glass 10% Cellulose 10% Mica 75% Other |
| 09-06 MAS579651 | 1 | Tan fibrous fire proof insulation | No | | 5% fibrous Glass 10% Cellulose 10% Mica 75% Other |

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | Project Name: Cy-Creek HS | | | | | | |
|---------------------|---------------------------|---|-----------------------------------|---------------------------------|--|--|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) | | |
| 09-07 MAS579652 | 1 | Tan fibrous fire proof insulation | No | | 5% fibrous Glass 10% Cellulose 10% Mica 75% Other | | |
| 10-08 MAS579653 | 1 | Beige fibrous vent tape | No | | 70% Cellulose 30% Other | | |
| 11-01 MAS579654 | 1 | Dark grey non-fibrous CMU with beige paint | No | | 80% Aggregate 20% Other | | |
| 11-01 MAS579654 | 2 | Grey non-fibrous mortar with beige paint | No | | 80% Aggregate 20% Other | | |
| 11-02 MAS579655 | 1 | Dark grey non-fibrous CMU with beige paint | No | | 80% Aggregate 20% Other | | |
| 11-02 MAS579655 | 2 | Grey non-fibrous mortar with beige paint | No | | 80% Aggregate 20% Other | | |
| 11-03 MAS579656 | 1 | Dark grey non-fibrous CMU with beige paint | No | | 80% Aggregate 20% Other | | |
| 11-03 MAS579656 | 2 | Grey non-fibrous mortar with beige paint | No | | 80% Aggregate 20% Other | | |
| 12-01 MAS579657 | 1 | White non-fibrous texture with white paint | No | | 100% Other | | |
| 12-01 MAS579657 | 2 | White non-fibrous joint compound with beige paper | No | | 70% Cellulose 30% Other | | |
| 12-01 MAS579657 | 3 | White fibrous gypsum with brown paper | No | | 70% Cellulose 30% Gypsum | | |
| 12-02 MAS579658 | 1 | White non-fibrous texture with white paint | No | | 100% Other | | |
| 12-02 MAS579658 | 2 | White non-fibrous joint compound with beige paper | No | | 70% Cellulose 30% Other | | |

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | Project Name: Cy-Creek HS | | | | | | |
|-----------|---------------------------|-------------------------------|-----------|--------------|---------------|--|--|
| Field ID/ | Layer # | Sample Description | Asbestos | Asbestos | Non-Asbestos | | |
| Lab ID | | | Detected? | Constituents | Constituents | | |
| | | | (Yes/No) | (%) | (%) | | |
| 12-02 | 3 | White fibrous gypsum with | No | | 70% Cellulose | | |
| MAS579658 | | brown paper | | | 30% Gypsum | | |
| 12-03 | 1 | White non-fibrous texture | No | | 100% Other | | |
| MAS579659 | | with white paint | | | | | |
| 12-03 | 2 | White non-fibrous joint | No | | 70% Cellulose | | |
| MAS579659 | | compound with beige paper | | | 30% Other | | |
| 12-03 | 3 | White fibrous gypsum with | No | | 70% Cellulose | | |
| MAS579659 | | brown paper | | | 30% Gypsum | | |
| 12-04 | 1 | White non-fibrous joint | No | | 100% Other | | |
| MAS579660 | | compound | | | | | |
| 12-04 | 2 | White fibrous gypsum with | No | | 40% Cellulose | | |
| MAS579660 | | brown paper | | | 60% Gypsum | | |
| 12-05 | 1 | White non-fibrous joint | No | | 100% Other | | |
| MAS579661 | | compound with white paint | | | | | |
| 12-05 | 2 | White fibrous gypsum with | No | | 70% Cellulose | | |
| MAS579661 | | brown paper | | | 30% Gypsum | | |
| 13-01 | 1 | Grey non-fibrous vent sealant | No | | 100% Other | | |
| MAS579662 | | | | | | | |
| 13-02 | 1 | Grey non-fibrous vent sealant | No | | 100% Other | | |
| MAS579663 | | | | | | | |
| 13-03 | 1 | Grey non-fibrous vent sealant | No | | 100% Other | | |
| MAS579664 | | - | | | | | |
| 14-01 | 1 | White/grey non-fibrous plaste | er No | | 80% Aggregate | | |
| MAS579665 | | with white paint | | | 20% Other | | |
| 14-02 | 1 | White/grey non-fibrous plaste | er No | | 80% Aggregate | | |
| MAS579666 | | with white paint | | | 20% Other | | |
| 14-03 | 1 | White/grey non-fibrous plaste | er No | | 80% Aggregate | | |
| MAS579667 | | with white paint | | | 20% Other | | |

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| Project Name: Cy-Creek HS | | | | | | |
|---------------------------|---------|--|-----------------------------------|---------------------------------|-------------------------------------|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) | |
| 15-01 MAS579668 | 1 | Grey non-fibrous caulking | No | | 100% Other | |
| 15-02 MAS579669 | 1 | Grey non-fibrous caulking | No | | 100% Other | |
| 15-03 MAS579670 | 1 | Grey non-fibrous caulking | No | | 100% Other | |
| 16-01 MAS579671 | 1 | Beige non-fibrous expansion joint caulking | No | | 100% Other | |
| 16-02 MAS579672 | 1 | Beige non-fibrous expansion joint caulking | No | | 100% Other | |
| 16-03 MAS579673 | 1 | Beige non-fibrous expansion joint caulking | No | | 100% Other | |
| 17-01 MAS579674 | 1 | Grey non-fibrous door frame caulking | No | | 100% Other | |
| 17-02 MAS579675 | 1 | Grey non-fibrous door frame caulking | No | | 100% Other | |
| 17-03 MAS579676 | 1 | Grey non-fibrous door frame caulking | No | | 100% Other | |
| 18-01 MAS579677 | 1 | White non-fibrous floor tile | No | | 100% Other | |
| 18-01 MAS579677 | 2 | Yellow non-fibrous mastic | No | | 100% Mastic | |
| 18-01 MAS579677 | 3 | Brown fibrous wood | No | | 100% Cellulose | |
| 18-02 MAS579678 | 1 | White non-fibrous floor tile | No | | 100% Other | |
| 18-02 MAS579678 | 2 | Yellow non-fibrous mastic | No | | 100% Mastic | |

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | Project Name: Cy-Creek HS | | | | | | |
|---------------------|---------------------------|--|-----------------------------------|---------------------------------|-------------------------------------|--|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) | | |
| 18-02 MAS579678 | 3 | Brown fibrous wood | No | | 100% Cellulose | | |
| 18-03 MAS579679 | 1 | White non-fibrous floor tile | No | | 100% Other | | |
| 18-03 MAS579679 | 2 | Yellow non-fibrous mastic | No | | 100% Mastic | | |
| 18-03 MAS579679 | 3 | Brown fibrous wood | No | | 100% Cellulose | | |
| 19-01 MAS579680 | 1 | White non-fibrous window frame caulking | No | | 100% Other | | |
| 19-02 MAS579681 | 1 | White non-fibrous window frame caulking | No | | 100% Other | | |
| 19-03 MAS579682 | 1 | White non-fibrous window frame caulking | No | | 100% Other | | |
| 20-01 MAS579683 | 1 | White non-fibrous joint compound with white paint | No | | 100% Other | | |
| 20-01 MAS579683 | 2 | White fibrous gypsum with brown paper | No | | 40% Cellulose 60% Gypsum | | |
| 20-02 MAS579684 | 1 | White non-fibrous texture | No | | 100% Other | | |
| 20-02 MAS579684 | 2 | White non-fibrous joint compound with beige paper | No | | 70% Cellulose 30% Other | | |
| 20-02 MAS579684 | 3 | White fibrous gypsum with brown paper | No | | 40% Cellulose 60% Gypsum | | |
| 20-03 MAS579685 | 1 | White non-fibrous joint compound with white paint | No | | 100% Other | | |
| 20-03 MAS579685 | 2 | White fibrous gypsum with brown paper | No | | 70% Cellulose 30% Gypsum | | |

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | Project Name: Cy-Creek HS | | | | | | |
|---------------------|---------------------------|------------------------------|-----------------------------------|---------------------------------|-------------------------------------|--|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) | | |
| 21-01 MAS579686 | 1 | Yellow non-fibrous mastic | No | | 100% Mastic | | |
| 21-02 MAS579687 | 1 | Black non-fibrous cove base | No | | 100% Vinyl | | |
| 21-02 MAS579687 | 2 | Beige non-fibrous mastic | No | | 100% Mastic | | |
| 21-03 MAS579688 | 1 | Black non-fibrous cove base | No | | 100% Vinyl | | |
| 21-03 MAS579688 | 2 | Beige non-fibrous mastic | No | | 100% Mastic | | |
| 22-01 MAS579689 | 1 | Grey non-fibrous carpet pad | No | | 100% Foam | | |
| 22-01 MAS579689 | 2 | Clear non-fibrous glue | No | | 100% Glue | | |
| 22-02 MAS579690 | 1 | Grey non-fibrous carpet pad | No | | 100% Foam | | |
| 22-02 MAS579690 | 2 | Clear non-fibrous glue | No | | 100% Glue | | |
| 22-03 MAS579691 | 1 | Grey non-fibrous carpet pad | No | | 100% Foam | | |
| 22-03 MAS579691 | 2 | Clear non-fibrous glue | No | | 100% Glue | | |
| 23-01 MAS579692 | 1 | Beige non-fibrous floor tile | No | | 100% Other | | |
| 23-01 MAS579692 | 2 | Yellow non-fibrous mastic | No | | 100% Mastic | | |
| 23-02 MAS579693 | 1 | Grey non-fibrous floor tile | No | | 100% Other | | |

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077

MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | Project Name: Cy-Creek HS | | | | | | |
|---------------------|---------------------------|---|-----------------------------------|---------------------------------|--|--|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) | | |
| 23-02 MAS579693 | 2 | Yellow non-fibrous mastic | No | | 100% Mastic | | |
| 23-03 MAS579694 | 1 | Beige non-fibrous floor tile | No | | 100% Other | | |
| 23-03 MAS579694 | 2 | Yellow non-fibrous mastic | No | | 100% Mastic | | |
| 24-01 MAS579695 | 1 | Dark grey/grey non-fibrous CMU with grey paint | No | | 80% Aggregate 20% Other | | |
| 24-02 MAS579696 | 1 | Dark grey/grey non-fibrous CMU with grey paint | No | | 80% Aggregate 20% Other | | |
| 24-03 MAS579697 | 1 | Dark grey/grey non-fibrous CMU with grey paint | No | | 80% Aggregate 20% Other | | |
| 25-01 MAS579698 | 1 | White non-fibrous mastic | No | | 100% Mastic | | |
| 25-01 MAS579698 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | | |
| 25-01 MAS579698 | 3 | Pink fibrous glass insulation | No | | 100% fibrous Glass | | |
| 25-02 MAS579699 | 1 | White fibrous mastic | No | | 5% Wollastonite 15% fibrous Glass 80% Mastic | | |
| 25-02 MAS579699 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | | |
| 25-02 MAS579699 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass | | |
| 25-03 MAS579700 | 1 | White non-fibrous mastic | No | | 100% Mastic | | |

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EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | Project Name: Cy-Creek HS | | | | | | |
|---------------------|---------------------------|---|-----------------------------------|---------------------------------|--|--|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) | | |
| 25-03 MAS579700 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | | |
| 25-03 MAS579700 | 3 | Yellow fibrous glass insulati | on No | | 100% fibrous Glass | | |
| 26-01 MAS579701 | 1 | Grey non-fibrous duct sealar | nt No | | 100% Other | | |
| 26-02 MAS579702 | 1 | Grey non-fibrous duct sealar | nt No | | 100% Other | | |
| 26-03 MAS579703 | 1 | Grey non-fibrous duct sealar | nt No | | 100% Other | | |
| 27-01 MAS579704 | 1 | Beige fibrous ceiling tile wit white paint | h No | | 10% fibrous Glass 40% Cellulose 30% Perlite 20% Other | | |
| 27-02 MAS579705 | 1 | Beige fibrous ceiling tile wit white paint | h No | | 10% fibrous Glass 40% Cellulose 30% Perlite 20% Other | | |
| 27-03 MAS579706 | 1 | Beige fibrous ceiling tile wit white paint | h No | | 10% fibrous Glass 40% Cellulose 30% Perlite 20% Other | | |
| 27-04 MAS579707 | 1 | Beige fibrous ceiling tile wit white paint | h No | | 10% fibrous Glass 40% Cellulose 30% Perlite 20% Other | | |

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | | Project Name : C | y-Creek HS | | |
|---------------------|---------|---|-----------------------------------|---------------------------------|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) |
| 27-05 MAS579708 | 1 | Beige fibrous ceiling tile with white paint | n No | | 10% fibrous Glass 40% Cellulose 30% Perlite 20% Other |
| 27-06 MAS579709 | 1 | Beige fibrous ceiling tile with white paint | n No | | 10% fibrous Glass 40% Cellulose 30% Perlite 20% Other |
| 27-07 MAS579710 | 1 | Beige fibrous ceiling tile with white paint | n No | | 10% fibrous Glass 40% Cellulose 30% Perlite 20% Other |
| 28-01 MAS579711 | 1 | White non-fibrous wall cover | No | | 100% Plastic |
| 28-01 MAS579711 | 2 | White fibrous gypsum with brown paper | No | | 40% Cellulose 60% Gypsum |
| 28-02 MAS579712 | 1 | White non-fibrous wall cover | No | | 100% Plastic |
| 28-02 MAS579712 | 2 | White fibrous gypsum with brown paper | No | | 40% Cellulose 60% Gypsum |
| 28-03 MAS579713 | 1 | White non-fibrous wall cover | No | | 100% Plastic |
| 28-03 MAS579713 | 2 | White fibrous gypsum with brown paper | No | | 40% Cellulose 60% Gypsum |
| 29-01 MAS579714 | 1 | Beige fibrous mastic | No | | 5% Wollastonite 15% fibrous Glass 80% Mastic |

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | Project Name: Cy-Creek HS | | | | | | |
|---------------------|---------------------------|---------------------------------------|-----------------------------------|---------------------------------|--|--|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) | | |
| 29-01 MAS579714 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | | |
| 29-02 MAS579715 | 1 | Beige fibrous mastic | No | | 5% Wollastonite 15% fibrous Glass 80% Mastic | | |
| 29-02 MAS579715 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | | |
| 29-02 MAS579715 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass | | |
| 29-03 MAS579716 | 1 | Beige fibrous mastic | No | | 5% Wollastonite 15% fibrous Glass 80% Mastic | | |
| 29-03 MAS579716 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | | |
| 29-03 MAS579716 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass | | |
| 30-01 MAS579717 | 1 | Grey non-fibrous duct sealant | No | | 100% Other | | |
| 30-02 MAS579718 | 1 | Grey non-fibrous duct sealant | No | | 100% Other | | |
| 30-03 MAS579719 | 1 | Grey non-fibrous duct sealant | No | | 100% Other | | |
| 31-01 MAS579720 | 1 | White non-fibrous texture | No | | 100% Other | | |
| 31-01 MAS579720 | 2 | White fibrous gypsum with brown paper | No | | 40% Cellulose 60% Gypsum | | |

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| | Project Name: Cy-Creek HS | | | | | | |
|---------------------|---------------------------|---------------------------------|-----------------------|--------------------------|------------------------------|--|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? | Asbestos Constituents | Non-Asbestos Constituents | | |
| | 4 | XX71 · | (Yes/No) | (%) | (%) | | |
| 31-02 | 1 | White non-fibrous texture | No | | 100% Other | | |
| MAS5/9/21 | - | with white paint | | | | | |
| 31-02 | 2 | White non-fibrous joint | No | | 70% Cellulose | | |
| MAS579721 | | compound with beige paper | | | 30% Other | | |
| 31-02 | 3 | White fibrous gypsum with | No | | 40% Cellulose | | |
| MAS579721 | | brown paper | | | 60% Gypsum | | |
| 31-03 | 1 | White non-fibrous texture | No | | 100% Other | | |
| MAS579722 | | with white paint | | | | | |
| 31-03 | 2 | White non-fibrous joint | No | | 70% Cellulose | | |
| MAS579722 | | compound with beige paper | | | 30% Other | | |
| 31-03 | 3 | White fibrous gypsum with | No | | 40% Cellulose | | |
| MAS579722 | | brown paper | | | 60% Gypsum | | |
| 32-01 | 1 | Beige fibrous mastic | Yes | 5% Chrysotile | 95% Mastic | | |
| MAS579723 | | | | | | | |
| 32-01 | 2 | Brown fibrous paper with | No | | 10% fibrous Glass | | |
| MAS579723 | | foil backing | | | 45% Cellulose | | |
| | | | | | 45% Foil | | |
| 32-01 | 3 | Yellow fibrous glass insulation | n No | | 100% fibrous Glass | | |
| MAS579723 | | | | | | | |
| 32-02 | 1 | Beige fibrous mastic | No | | 5% Wollastonite | | |
| MAS579724 | | - | | | 15% fibrous Glass | | |
| | | | | | 80% Mastic | | |
| 32-02 | 2 | Brown fibrous paper with | No | | 10% fibrous Glass | | |
| MAS579724 | | foil backing | | | 45% Cellulose | | |
| | | - | | | 45% Foil | | |
| 32-02 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass | | |
| MAS579724 | | ÷ | | | | | |
| 32-03 | 1 | Beige fibrous mastic | Yes | 5% Chrysotile | 95% Mastic | | |
| MAS579725 | | - | | - | | | |

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | | Project Name : C | y-Creek HS | | |
|---------------------|---------|---------------------------------------|-----------------------------------|---------------------------------|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) |
| 32-03 MAS579725 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 32-03 MAS579725 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 33-01 MAS579726 | 1 | Beige fibrous mastic | No | | 5% Wollastonite 15% fibrous Glass 80% Mastic |
| 33-01 MAS579726 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 33-01 MAS579726 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 33-02 MAS579727 | 1 | Beige fibrous mastic | No | | 5% Wollastonite 15% fibrous Glass 80% Mastic |
| 33-02 MAS579727 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 33-02 MAS579727 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 33-03 MAS579728 | 1 | Beige fibrous mastic | No | | 5% Wollastonite 15% fibrous Glass 80% Mastic |
| 33-03 MAS579728 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 33-03 MAS579728 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | | Project Name : C | y-Creek HS | | |
|---------------------|---------|---------------------------------------|-----------------------------------|---------------------------------|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) |
| 34-01 MAS579729 | 1 | Beige fibrous mastic | No | | 5% Wollastonite 15% fibrous Glass 80% Mastic |
| 34-01 MAS579729 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 34-01 MAS579729 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 34-02 MAS579730 | 1 | Beige fibrous mastic | No | | 5% Wollastonite 15% fibrous Glass 80% Mastic |
| 34-02 MAS579730 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 34-02 MAS579730 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 34-03 MAS579731 | 1 | Beige fibrous mastic | No | | 5% Wollastonite 15% fibrous Glass 80% Mastic |
| 34-03 MAS579731 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 34-03 MAS579731 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 35-01 MAS579732 | 1 | Beige fibrous rope gasket | No | | 3% Cellulose 87% fibrous Glass 10% Other |

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| | | Project Name : C | y-Creek HS | | |
|---------------------|---------|---------------------------------------|-----------------------------------|---------------------------------|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) |
| 35-02 MAS579733 | 1 | Beige fibrous rope gasket | No | | 3% Cellulose 87% fibrous Glass 10% Other |
| 35-03 MAS579734 | 1 | Beige fibrous rope gasket | No | | 3% Cellulose 87% fibrous Glass 10% Other |
| 36-01 MAS579735 | 1 | White fibrous glass insulation | No | | 100% fibrous Glass |
| 36-02 MAS579736 | 1 | White fibrous glass insulation | No | | 100% fibrous Glass |
| 36-03 MAS579737 | 1 | White fibrous glass insulation | No | | 100% fibrous Glass |
| 37-01 MAS579738 | 1 | Beige fibrous mastic | No | | 5% Wollastonite 95% Mastic |
| 37-01 MAS579738 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 37-01 MAS579738 | 3 | Yellow fibrous glass insulatio | on No | | 100% fibrous Glass |
| 38-01 MAS579739 | 1 | White non-fibrous mastic | No | | 100% Mastic |
| 38-01 MAS579739 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 38-02 MAS579740 | 1 | White non-fibrous mastic | No | | 100% Mastic |
| 38-02 MAS579740 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |

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MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | | Project Name : C | y-Creek HS | | |
|---------------------|---------|--|-----------------------------------|---------------------------------|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) |
| 38-02 MAS579740 | 3 | Beige fibrous glass insulation | No | | 100% fibrous Glass |
| 38-03 MAS579741 | 1 | White non-fibrous mastic | No | | 100% Mastic |
| 38-03 MAS579741 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 38-03 MAS579741 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 39-01 MAS579742 | 1 | White non-fibrous mastic | No | | 100% Mastic |
| 39-01 MAS579742 | 2 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 39-02 MAS579743 | 1 | White non-fibrous mastic | No | | 100% Mastic |
| 39-02 MAS579743 | 2 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 39-03 MAS579744 | 1 | White non-fibrous mastic | No | | 100% Mastic |
| 39-03 MAS579744 | 2 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 40-01 MAS579745 | 1 | Grey non-fibrous duct sealant | No | | 100% Other |
| 40-02 MAS579746 | 1 | Grey non-fibrous duct sealant | No | | 100% Other |
| 40-03 MAS579747 | 1 | Grey non-fibrous duct sealant | No | | 100% Other |
| 41-01 MAS579748 | 1 | White non-fibrous plaster with white paint | No | | 70% Aggregate 30% Other |

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Approved NVLAP Signatory: Tony Dang Page 20 of 27



Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600

Houston, Texas 77077

MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | | Project Name : C | y-Creek HS | | |
|---------------------|---------|--|-----------------------------------|---------------------------------|---|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) |
| 41-02 MAS579749 | 1 | White non-fibrous plaster with white paint | No | | 70% Aggregate 30% Other |
| 41-03 MAS579750 | 1 | White non-fibrous plaster with white paint | No | | 70% Aggregate 30% Other |
| 42-01 MAS579751 | 1 | Black fibrous roofing material | No | | 10% Aggregate 30% fibrous Glass 60% Asphalt |
| 42-01 MAS579751 | 2 | Silver non-fibrous foil | No | | 100% Foil |
| 42-02 MAS579752 | 1 | Black fibrous roofing material | No | | 10% Aggregate 30% fibrous Glass 60% Asphalt |
| 42-02 MAS579752 | 2 | Silver non-fibrous foil | No | | 100% Foil |
| 42-03 MAS579753 | 1 | Black fibrous roofing material | No | | 10% Aggregate 30% fibrous Glass 60% Asphalt |
| 42-03 MAS579753 | 2 | Silver non-fibrous foil | No | | 100% Foil |
| 43-01 MAS579754 | 1 | White non-fibrous mastic | No | | 100% Mastic |
| 43-01 MAS579754 | 2 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 43-02 MAS579755 | 1 | White non-fibrous mastic | No | | 100% Mastic |
| 43-02 MAS579755 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |

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Approved NVLAP Signatory: Tony Dang Page 21 of 27



Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | | Project Name : C | y-Creek HS | | |
|---------------------|---------|---------------------------------------|-----------------------------------|---------------------------------|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) |
| 43-02 MAS579755 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 43-03 MAS579756 | 1 | White fibrous mastic | No | | 20% fibrous Glass 80% Mastic |
| 43-03 MAS579756 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 43-03 MAS579756 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 43-04 MAS579757 | 1 | White fibrous mastic | No | | 20% fibrous Glass 80% Mastic |
| 43-04 MAS579757 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 44-01 MAS579758 | 1 | White fibrous mastic | No | | 3% Cellulose 97% Mastic |
| 44-01 MAS579758 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 43-01 MAS579758 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 44-02 MAS579759 | 1 | White fibrous mastic | No | | 3% Cellulose 97% Mastic |
| 44-02 MAS579759 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 44-02 MAS579759 | 3 | Yellow non-fibrous foam | No | | 100% Foam |

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | | Project Name: C | Cy-Creek HS | | |
|---------------------|---------|---------------------------------------|-----------------------------------|---------------------------------|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) |
| 44-03 MAS579760 | 1 | White fibrous mastic | No | | 3% Cellulose 97% Mastic |
| 44-03 MAS579760 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 44-03 MAS579760 | 3 | Yellow non-fibrous foam | No | | 100% Foam |
| 44-04 MAS579761 | 1 | White fibrous mastic | No | | 3% Cellulose 97% Mastic |
| 44-04 MAS579761 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 44-04 MAS579761 | 3 | Yellow non-fibrous foam | No | | 100% Foam |
| 45-01 MAS579762 | 1 | Grey non-fibrous duct sealan | t No | | 100% Other |
| 45-02 MAS579763 | 1 | Grey non-fibrous duct sealan | t No | | 100% Other |
| 45-03 MAS579764 | 1 | Grey non-fibrous duct sealan | t No | | 100% Other |
| 46-01 MAS579765 | 1 | Grey non-fibrous duct sealan | t No | | 100% Other |
| 46-02 MAS579766 | 1 | Grey non-fibrous duct sealan | t No | | 100% Other |
| 46-03 MAS579767 | 1 | Grey non-fibrous duct sealan | t No | | 100% Other |
| 47-01 MAS579768 | 1 | Grey non-fibrous caulking | No | | 100% Other |

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Analyzed by: Tony Dang

Approved NVLAP Signatory: Tony Dang Page 23 of 27



Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077

MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | | Project Name : | Cy-Creek HS | | |
|---------------------|---------|---------------------------------------|-----------------------------------|---------------------------------|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) |
| 47-02 MAS579769 | 1 | Grey non-fibrous caulking | No | | 100% Other |
| 47-03 MAS579770 | 1 | Grey non-fibrous caulking | No | | 100% Other |
| 48-01 MAS579771 | 1 | Black fibrous sealant | No | | 5% Cellulose 95% Asphalt |
| 48-02 MAS579772 | 1 | Black fibrous sealant | No | | 5% Cellulose 95% Asphalt |
| 48-03 MAS579773 | 1 | Black/grey fibrous sealant | No | | 5% Cellulose 95% Asphalt |
| 49-01 MAS579774 | 1 | White non-fibrous mastic | No | | 100% Other |
| 49-01 MAS579774 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 49-02 MAS579775 | 1 | White non-fibrous mastic | No | | 100% Other |
| 49-02 MAS579775 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 49-03 MAS579776 | 1 | White non-fibrous mastic | No | | 100% Other |
| 49-03 MAS579776 | 2 | White fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 50-01 MAS579777 | 1 | White fibrous mastic | No | | 5% Wollastonite 95% Mastic |

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Approved NVLAP Signatory: Tony Dang Page 24 of 27



Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | | Project Name : C | y-Creek HS | | |
|---------------------|---------|---------------------------------------|-----------------------------------|---------------------------------|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) |
| 50-01 MAS579777 | 2 | Beige fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 50-01 MAS579777 | 3 | Yellow fibrous glass insulation | on No | | 100% fibrous Glass |
| 50-02 MAS579778 | 1 | White non-fibrous mastic | No | | 100% Mastic |
| 50-02 MAS579778 | 2 | Beige fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 50-02 MAS579778 | 3 | Yellow fibrous glass insulation | on No | | 100% fibrous Glass |
| 50-03 MAS579779 | 1 | White non-fibrous mastic | No | | 100% Mastic |
| 50-03 MAS579779 | 2 | Beige fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 50-03 MAS579779 | 3 | Yellow fibrous glass insulation | on No | | 100% fibrous Glass |
| 51-01 MAS579780 | 1 | White fibrous mastic | No | | 20% fibrous Glass 80% Mastic |
| 51-01 MAS579780 | 2 | Turquoise non-fibrous foam | No | | 100% Foam |
| 51-02 MAS579781 | 1 | White fibrous mastic | No | | 20% fibrous Glass 80% Mastic |
| 51-02 MAS579781 | 2 | Yellow fibrous glass insulation | on No | | 100% fibrous Glass |

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | | Project Name : C | y-Creek HS | | |
|---------------------|---------|--|-----------------------------------|---------------------------------|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) |
| 51-03 MAS579782 | 1 | White fibrous mastic | No | | 5% Wollastonite 15% fibrous Glass 80% Mastic |
| 51-03 MAS579782 | 2 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 52-01 MAS579783 | 1 | Grey non-fibrous duct sealant | No | | 100% Other |
| 52-02 MAS579784 | 1 | Grey non-fibrous duct sealant | No | | 100% Other |
| 52-03 MAS579785 | 1 | Grey non-fibrous duct sealant | No | | 100% Other |
| 53-01 MAS579786 | 1 | Grey non-fibrous chiller pipe material | No | | 100% Other |
| 53-01 MAS579786 | 2 | Yellow non-fibrous foam | No | | 100% Foam |
| 53-02 MAS579787 | 1 | Grey non-fibrous chiller pipe material | No | | 100% Other |
| 53-02 MAS579787 | 2 | Yellow non-fibrous foam | No | | 100% Foam |
| 53-03 MAS579788 | 1 | Grey non-fibrous chiller pipe material | No | | 100% Other |
| 53-03 MAS579788 | 2 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 54-01 MAS579789 | 1 | Beige fibrous vinyl floor sheeting | No | | 20% Synthetic 80% Vinyl |
| 54-01 MAS579789 | 2 | Beige non-fibrous mastic | No | | 100% Mastic |
| 54-01 MAS579789 | 3 | Beige non-fibrous floor tile | No | | 100% Other |

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077

MAS Project #: 19095-00 Date Received: 09/13/2024 Date Analyzed: 09/18/2024

| | | Project Name: | Cy-Creek HS | | |
|-----------|---------|------------------------------|-------------|--------------|---------------|
| Field ID/ | Layer # | Sample Description | Asbestos | Asbestos | Non-Asbestos |
| Lab ID | | | Detected? | Constituents | Constituents |
| | | | (Yes/No) | (%) | (%) |
| 54-01 | 4 | Yellow non-fibrous mastic | No | | 100% Mastic |
| MAS579789 | | | | | |
| 54-02 | 1 | Beige fibrous vinyl floor | No | | 20% Synthetic |
| MAS579790 | | sheeting | | | 80% Vinyl |
| 54-02 | 2 | Beige non-fibrous mastic | No | | 100% Mastic |
| MAS579790 | | | | | |
| 54-02 | 3 | Beige non-fibrous floor tile | No | | 100% Other |
| MAS579790 | | | | | |
| 54-02 | 4 | Yellow non-fibrous mastic | No | | 100% Mastic |
| MAS579790 | | | | | |
| 54-03 | 1 | Beige fibrous vinyl floor | No | | 20% Synthetic |
| MAS579791 | | sheeting | | | 80% Vinyl |
| 54-03 | 2 | Beige non-fibrous mastic | No | | 100% Mastic |
| MAS579791 | | | | | |
| 54-03 | 3 | Beige non-fibrous floor tile | No | | 100% Other |
| MAS579791 | | | | | |
| 54-03 | 4 | Yellow non-fibrous mastic | No | | 100% Mastic |
| MAS579791 | | | | | |

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Micro Analytical Services, Inc. 11301 Richmond Ave. Suite K100B+Houston+Texas 77082+Phone (281) 497-4500+Fax (281) 497-4517

Asbestos Bulk Sample Chain of Custody

| Company: FEI Gl | obal Inc | Contact: Kenneth C | anns | Project Name: | Carl HS |
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| Suite 60 | | DII to. EFI Giudai | | Project #: 079 fl | 001 |
| City: Houston | 0 | Email: Kenneth Ca | nns@efialoh | al com | 10 |
| State/Zin: TEXAS | \$ 77077 | Rick Anderson@efig | lobal com | PO #· | |
| Phone: (832) 518 | 2-5145 | Ginger Denman@e | figlobal com | 10 //. | |
| Fax: $(832) 518-51$ | 157 | Date Collected: 9-1 | 0-216 | MAS Project # | 9095 |
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| | | Page _ of | 5 | | MAS-F101 |

Project Name: <u>Cy-Greek IS</u> Project #: <u>029,06921</u>

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| 13-1 Cloppen Carbon (12) Corporal (12) 12 - 1 -2 -3 -4 -4 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 | |
| -2 -4 -4 -4 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 | |
| -4 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 | |
| -5 Affiliens 1623 ER 13-1 Gray Exhaust Vent Sentent (who due kitch any -2 -3 -3 -3 -3 -3 -3 -3 -5 -3 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 | |
| 13-1 Gran Excharst yent sentent Cuto dul Eiten ang -2 | |
| 13-1 Bran Exhaust your Sentent Custo due Eiten ang -2 RM [257] -3 RM [257] -3 RM [257] -3 RM [257] -3 RM [257] -3 RM [257] -3 RM [322] 1983 15-1 Extern Phrement Culton 9/3 Kitchen Could Date Orm -2 9/3 Dirichter (outher 9/3 Kitchen Could Date Orm -2 9/3 Orchester 2010410 -3 P 9/3 Orchester 2010410 -3 P 9/3 RM [327] 1983 16-1 Extern Expansion Sont Coulder 9/5 Kitchen (outh Date Orm -2 9/3 Proves Store Culton 9/5 Kitchen (outh Dout Orm -2 9/3 Proves Store Culton 9/5 Kitchen (outh Dout Orm -2 9/3 Part 1322 1983 17 -1 Exterior Door Franc Culton 9/5 Cotch Joseform 1983 Ady -3 9/5 Orchester 2010410 -3 9/5 Part 1322 1983 18 -1 12" White UST 9/ Yellow Master Press Door Alleform -2 9/3 Part 1322 1983 18 -1 12" White UST 9/ Yellow Master Press Door Alleform -2 9/3 Press Door 1 -2 9/3 Press Door 1 -2 9/3 Press Door 1 -3 9/5 Press Door 9/5 Press Door 9/5 Press Door 1 -3 9/5 Press Door 9/5 Press Door 9/5 Press Door 1 -3 9/5 Press Door 9/5 | 1 |
| 13-1 Gray Exhaust your Sendent (who had Eiter original RM (257) -3 F. Allefés (623 Bour RR N-1 Extern Prostan // Letther loady Dat-Om- // Daving/Stack Br (1983) -3 F. (Extern Phremen Cultor % Litcher (outh Date Orm -2 % RM (322 / 1983) 15-1 Extern Phremen Cultor % Litcher (outh Date Orm -2 % RM (322 / 1983) 16-1 Extern Exponsion Sant Carlos % Litcher (outh Date Orm -2 % RM (322 / 1983) 16-1 Extern Exponsion Sant Carlos % Litcher (outh Date Orm -2 % RM (322 / 1983) 16-1 Extern Exponsion Sant Carlos % Litcher (outh Date Orm -2 % Orchester [1983 Adg) -3 F. (2) % Carlos Sant Carlos % Carlos Date Orm -2 % Orchester [1983 Adg) -3 F. (2) % Carlos Sant (2) % Carlos Jone Date Orm -2 % Orchester [1983 Adg) -3 F. (2) % Carlos form (2) % Carlos Jone Date Orm -2 % Orchester [1983] 18 -1 / 12" Maste UST % Vellow Master [Pross Box -2 % Orm (322 / 1983) 18 -1 / 12" Maste UST % Vellow Master [Pross Box -2 % Orm (322 / 1983) 18 -1 / 12" Maste UST % Vellow Master [Pross Box -2 % Orm (322 / 1983) 18 -1 / 12" Maste UST % Vellow Master [Pross Box -2 % Orm (322 / 1983) 19 -1 % Winto Fran Carlos % Orm 5 | 10 |
| -2 RM [257] -3 Helsis [623 chen Rk] Ny-1 Extern Plost -2 95 Divity/Stale Br -3 96 RM [322 -3 97 RM [322 -4 97 RM [322 -5 97 RM [322 -7 97 RM [322 -8 97 RM [322 -9 97 RM [322 -7 98 RM [322 -7 98 RM [322 -7 98 RM [322 -7 98 RM [322 -7 97 RM [100 R | |
| -2 H-1 Extern Plasting -2 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 | |
| 14-1 Extern Plastin -2 -3 -3 15-1 Extern Phrene Culks -2 -3 16-1 Extern Expansion Sont Combins -2 -3 16-1 Extern Expansion Sont Combins -2 -2 -3 16-1 Extern Expansion Sont Combins -2 -2 -3 17-1 Extern Door Frene Culton -2 -3 17-1 Extern Door Frene Culton -2 -3 17-1 Extern Door Frene Culton -3 17-1 Extern Door Frene Culton -3 17-1 Extern Door Frene Culton -3 17-1 Extern Door Frene Culton -3 17-1 Extern Door Frene Culton -3 -3 -1 -1 -3 -3 -1 -1 -1 -1 -1 -1 -2 -3 -3 -1 -1 -2 -3 -1 -1 -2 -3 -1 -1 -2 -3 -1 -1 -2 -3 -1 -1 -2 -3 -1 -1 -2 -3 -1 -2 -3 -1 -2 -3 -1 -1 -2 -3 -1 -2 -3 -1 -2 -1 -2 -3 -1 -2 -3 -1 -2 -3 -1 -1 -2 -3 -1 -2 -3 -1 -2 -3 -1 -2 -3 -1 -1 -2 -3 -1 -1 -2 -3 -1 -2 -1 -2 -3 -1 -2 -3 -1 -2 -3 -1 -2 -3 -1 -1 -2 -3 -1 -2 -3 -3 -1 -2 -3 -1 -2 -3 -3 -1 -2 -3 -1 -2 -3 -3 -1 -2 -3 -2 -3 -1 -2 -3 -1 -2 -2 -3 -2 -2 -3 -1 -2 -2 -3 -2 -3 -2 -3 -2 -3 -2 -3 -2 -3 -3 -2 -1 -2 -2 -2 -3 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 | |
| 1-2 9/5 Dming/Stack Br 1983 -3 9/5 RM (322 1983 15-1 Extern Phrement Culters 9/5 Ktahn (outh Dock Orm -2 9/5 Orchester 2010411 -3 9/5 RM (322 1983 16-1 Extens Expansion Sont Coulters 9/5 Kither (outh Dock Orm -2 9/5 RM (322 1983 16-1 Extens Expansion Sont Coulters 9/5 Kither (outh Dock Orm -2 9/5 Pinnes/Street Bar 1983 Add -3 -2 9/5 Pinnes/Street Bar 1983 Add -3 -3 -3 9/5 Pinnes/Street Bar 1983 Add -3 -1 Exterior Door France Celler 0/15 Exter Door Orm 1983 -3 -2 9/5 Pinnes/Street Bar 1983 1983 -3 -3 -3 9/5 Pinnes/Street Orm 1983 -3 -1 12" Mate UFT "/ Yellow Master 1983 1983 -3 -1 12" Mate UFT "/ Yellow Master 1983 1983 -3 -1 -1 2010 Adv 1983 -3 -1 -1 <t< td=""><td></td></t<> | |
| -3 15-1 Exten Phrene [mlt] 9/3 Kithen (outh Dock Orm -2 -3 16-1 Extens Exponsion Sont Contra 9/3 Rm 1322 1983 -3 -2 -2 -2 -2 -3 -3 -3 -3 -1 Extens Exponsion Sont Contra 9/3 Rth (and Dock Orm -2 -3 -1 Extens Door Frome Called 0/3 Ertel and Dock Orm -2 -3 -3 -3 -1 -1 Extens In 1983 -3 -1 -1 Extens Door Frome Called 0/3 Ertel and Dock Orm -2 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 | |
| 15-1 Exten Hareney Caller 9/3 Kithen Could Dole Orm -2 -3 16-1 Extens Expansion Sout Company 1/5 Kithen Could Doub Diven -2 -2 -3 -3 -1 Extense Door France Coller -3 17-1 Extense Door France Coller -3 18-1 -2 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 | |
| -2 -3 -3 -3 -2 -3 -3 -3 -3 -3 -1 -2 -3 -3 -1 -2 -3 -1 -2 -3 -1 -1 -2 -3 -1 -1 -2 -3 -1 -1 -2 -3 -1 -1 -2 -3 -1 -1 -1 -2 -3 -1 -1 -2 -3 -1 -1 -2 -3 -1 -1 -2 -3 -3 -1 -1 -2 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 | - |
| -3 16-1 Cxter: Expansion Sont Company 9/5 Kither (ander Dout Open -2 -3 -3 17-1 Exterior Door France Celles -3 -1 -2 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 | |
| 16-1 Extens Lypons in Sont Company % Either (and Poul Over -2 | _ |
| -2 -3 -3 -3 -3 -1 -2 -2 -3 -3 -3 -3 -3 -1 -2 -3 -3 -1 -2 -3 -3 -1 -2 -3 -1 -2 -3 -1 -3 -1 -2 -3 -1 -3 -1 -3 -1 -3 -1 -1 -2 -3 -1 -3 -1 -1 -3 -1 -1 -3 -1 -1 -3 -1 -1 -3 -1 -1 -1 -1 -2 -3 -1 -3 -1 -1 -2 -3 -1 -3 -1 -1 -2 -3 -1 -3 -1 -1 -1 -2 -1 -3 -1 -1 -1 -2 -1 -3 -1 -1 -2 -1 -3 -1 -1 -1 -2 -1 -2 -1 -2 -1 -2 -1 -2 -1 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 | , |
| 17-1 Exleyer Door France Calles -2 J -3 J 18-1 12" White UFT "/ Yellow Martin Press Box Alfuletin -2 J 1935 18-1 12" White UFT "/ Yellow Martin Press Box Alfuletin -2 J -3 J 19, 27 19, 27 19, 28 19, 20 19, 20 | |
| -2 -3 H -1 12" White UFT "/ Yellow Master Press Box Athletic -2 18 -1 12" White UFT "/ Yellow Master Press Box Athletic -2 -3 19 -1 Windo Fran Caller Press Box 5 -2 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 | |
| -3 -3 18-1 12" White UFT "/ Yellow Martin Press Box Athletic -2 -3 19, 1 -2 -3 -2 -3 -2 -3 -2 -3 -1 -2 -3 -1 -2 -3 -2 -3 -1 -3 -1 -2 -3 -1 -1 -2 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -1 -3 -1 -1 -1 -1 -1 -2 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -1 -3 -1 -3 -1 -3 -1 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 | |
| 18 -1 12" White UFT "/ Yellow Martin Press Box Athletic -2 on Plyoner J -3 7 On Plyoner J 19 -1 Wenderm Caller Press Box 5 -2 5 5 | 2 |
| -2 -2 -2 -2 -3 -3 -3 -3 -3 -3 -3 -2 -3 -3 -2 -3 -2 -3 -2 -3 -2 -2 -3 -2 -2 -3 -2 -3 -2 -2 -2 -2 -2 -2 -2 -2 -3 -2 -2 -3 -2 -3 -2 -3 -2 -3 -2 -3 -2 -3 -2 -3 -2 -3 -2 -3 -2 -2 -3 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 | |
| -3 / on Flymm J 19-1 Wenderman Caller Press Sox | K5 |
| 19-1 Wenderfrom Caller Press Jox 12 J | |
| $\begin{array}{c c} & & & \\ \hline \\ \hline$ | |
| -3 8 5 | |
| | |
| 0-1 Guesum Catin V Jour Corport RR & Ochecha, 2010 And | 1 |
| 12 VI RR @ RM 1018 1 | |
| 3 R % RM 2441 | |
| | |

Page 2 of 5

Project Name: <u>Cy - Creck</u> <u>HS</u> Project #: <u>829.06921</u>

| Field ID ` | Sample Description | Sample Location | Comments |
|------------|--|-----------------------------|------------------|
| 21-1 | Care Bose Maste | Orcheste | 2010 |
| -2 | | RM 1757F | Ony |
| = 3 | | Rm 22474 | U |
| 12-1 | Carpet Glue | Orcheston | 2010 |
| -2 | | QM 1751F | Only |
| -5 | Bray 10 All A. J. | MA 2821 D | 005 |
| 4 23-1 | 10 fage V5 (7 Jellow Mast | Kin 1823 & Orchestin | 2212 |
| -1 | | OMITTIC | Marine Col |
| -3 | | RATISIF | Ony thop |
| | CIM O Block file | Orchest @ Dar | 2010 |
| - SA | | 1 O. Rest-Room 7 | |
| -151 | Life Det Male Alla | OU Of Dalad | 1 |
| -25-(| Unite any prostic on four for | 5. OKK 13 Ucheson | 00 |
| -5 | | 75 Proto tell | 1 |
| 196-1 | Ave. Dr. Solat | R & K & C | 2010 |
| -7 | grag put scout | DALIDIU J. DD | 1 |
| -2 | | Dan di Din-Dilit | L |
| 127 1 | and Delale Cot- Rel | Con of Dala ha | 2.10 |
| 11-1 | Dec Fin hole leaving fond | Della (P. | 1997 |
| | | Contract San | 1903 |
| -4 | | OMINIZ 0/2 PA | 20/0 |
| -0- | | OM 1021 / T. J | 2010 |
| 4 | | RIMITOSE CILLE | aver |
| 1 | Con Con | C 06 RH2 2755 | ma |
| 128-1 | 7.47- Grand in Cat Paul | Der Side Bar Kitching | 1487 |
| -2 | 1 - Copera Certa Jami | - Chiny Shace - Filer | 110) |
| -3 | J. | | 1 |
| - 79-1 | Cream truck Mash- on Fall low | Pinn Buch Row Kitchen | 1987 |
| -7, | Jun proj v jun jun jun / jun | RR 1233 | } |
| | | RA BISA | F |
| 20-1 | was Duct Sealan | RR % Din Shack Rem | 1982 |
| - 7_ | X | RR 1233 | , |
| -3 | | Pm 1315A | F |
| -31-1 | Gypsin well Band Certer of Jarta | pur RZ Dif Shuther | (983 |
| -2 | 1 | PR1233 | 1 |
| -3 | t is a second se | Ren 13,1517 | F |
| ¥ 32-1 | Domesti Hot Water Pipe lus. W | Sanflesh AGhrs. Meen Rel it | Succele Bon 1987 |
| -2 | Paller | RM 1315A ESTER | |
| -3 | 1 | KM 18/4 | |
| 1.33- | Grow Duct March | RR. 12:49 | Brign |
| -2 | | RM 1757F | 1 |
| -3 | + | HALLITS 1623 BAR | 4 |
| 54-1 | Domesti Hot Water Pipe Ins. " (nen | - Biler KM @ Boler | Om |
| -2 | Mach | 1 | |
| -3 | | 0 | |
| | Page 7 of 5 | | (Fra |

46

Project Name: <u>(y-Cruck HS</u> Project #: <u>029-06924</u>

| Field ID | Sample Description | Sample Location | Comments |
|----------|---|---------------------------|-------------|
| 4 35-1 | Boiler Rope Gasket | & Boker in BaberPA | Om |
| -2 | | 1 | 1 |
| ~ | | 1 | |
| - 26 -1 | Boiler Tank hereby | @ Boster Tarla | |
| -7 | | c porte re- je | |
| -2 | | ł | 4 |
| 1721 | Rel Do LO = 1 | D- Contract | 16.05 |
| 51-1 | Kor sing gipe lus | pmng commens | (10) |
| HALA | M | MAAA | WWW |
| 222 (| 11+ DIA + CIA | 1 st (a) + Rue larts | 900 SI |
| 30-1 | When Diet mas I ontal/fil | Labert und My 11513 | - Over ship |
| -2 | 57 | RM 25 15 1 | 1010 |
| 100 5 | | rRM 2317 | 076 |
| 37-1 | Condensate Pipe Ins. 7 Whete Mass | te Leibert Une Kun 1757 5 | Jong Shop |
| -2 | | Km 287574 | 2010 |
| tele . | | 7 1 1 1 0 - | t |
| x 900 -1 | Gra Dick Sedant on Mefello | at Leabert Unit RM-28 | 5 4 2010 |
| -2 | | en 2514 | om |
| -3 | | Ken23/4 | ~ |
| - 46 - 1 | Certing Plaster | 1700 Peuf have | an |
| 1-2 | | | [|
| 3 | | 1300 Perthan | |
| 42-1 | Foul Roof (cvb Flashing | @ 1700 Perthant | Roaf |
| -2 | 1 | Center Roof | 1 |
| ~ | T | @ 1800 Donthave | |
| 42-1 | tech lach Pizeles Winhite | Q 1700 Perthouse AHO | 11 cm |
| -2 | 1 Martin Martin | AHU | 12 1 |
| 17 | Perenta | Poo Run 10 | |
| f | 2 Cita | D-TU AHUG | Rock |
| - 14-1 | CI ted all PE I WILLE | LA IZONGIL | 41/12 000 |
| - | Chilles Water sipe hs. 10/ White | lesse c / or perform A | |
| 2 | an aparta | Aa - | |
| -4 | - Cfym | Dil All I | PP |
| | C. DISIL | A7000 /: | Foat |
| 5 8 -1 | Gory but secting an wetter | 100 fenth | onn |
| -7 | | L. | |
| | D D C C C C C C C C C C C C C C C C C C | All and Allelle | 06 |
| - 46 -1 | (200 Puct secont on Unit 6 | CHAY KTU FILVUL | Koef |
| -2 | | | |
| -3 | | PTUAUE | |
| 47-1 | and Callen on Unit le | NO 1440 (e | |
| -2 | | | |
| -3 | | T data | |
| - 48-1 | Black Sedent @ Buse of Unit 4 | ETO HAU Ce | |
| -2 | | | |
| -3 | | 0 | |
| + 49-1 | White mash on Duct (us @ Un | H6 RTU AHUG | |
| 2 | | | 4 |
| -5 | 1 | | 1×2 |
| | Page 4 of 5 | | (cre) |
| | 2 | | 147/ |

Project Name: Cy-Creek Hs Project #: 029,06921 · Field ID Sample Description Sample Location Comments 2 Wefer Pize 50-Peuther 1800 DAHU TT mr s. in m 1200 61-1 Pertl h Inter lipe Ć 52-1 Gran Dur 800 Pe--2 -3 0 53-One unit Air Coole htte 12 Pipe -3 54-1 Glue 0 lan way Rober VF -2 12 o~ 2m

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19303-00 Date Received: 12/02/2024 Date Analyzed: 12/03/2024

| | | Project Name: | Cy-Creek | | |
|---------------------|---------|---------------------------------------|-----------------------------------|---------------------------------|---|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) |
| 37-02 MAS587270 | 1 | Cream non-fibrous mastic | No | | 100% Mastic |
| 37-02 MAS587270 | 2 | Beige fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 37-03 MAS587271 | 1 | Cream non-fibrous mastic | No | | 100% Mastic |
| 37-03 MAS587271 | 2 | Beige fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 37-03 MAS587271 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 55-01 MAS587272 | 1 | Tan non-fibrous brick | No | | 100% Other |
| 55-01 MAS587272 | 2 | Grey non-fibrous mortar | No | | 80% Aggregate 20% Other |
| 55-01 MAS587272 | 3 | Black fibrous damp proofing | No | | 5% Cellulose 15% fibrous Glass 80% Mastic |
| 55-01 MAS587272 | 4 | Rusted non-fibrous copper | No | | 100% Copper |
| 55-01 MAS587272 | 5 | Pink non-fibrous foam | No | | 100% Foam |
| 55-02 MAS587273 | 1 | Tan non-fibrous brick | No | | 100% Other |
| 55-02 MAS587273 | 2 | Grey non-fibrous mortar | No | | 80% Aggregate 20% Other |

Samples have been analyzed by the EPA - 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA - 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Material. The test results herein relate only to the sample submitted and analyzed. This report may only be reproduced in full with the approval of the Bulk Asbestos Laboratory of Micro Analytical Services (MAS). The above percentages are visual estimates of area percent. MAS is not responsible for any errors resulting from improper or incorrect sampling or shipping procedures. These samples will be retained for a period of 30 days. Accreditation by NVLAP in no way constitutes or implies product certification, approval, or endorsement by NIST. Some materials, especially floor tiles, contain asbestos fibers too thin to be detected by this method. NVLAP Lab Code: 200618 TDSHS License: 30-0341

Approved NVLAP Signatory: Tony Dang Page 1 of 6



Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19303-00 Date Received: 12/02/2024 Date Analyzed: 12/03/2024

| | | Project Name: | Cy-Creek | | |
|---------------------|---------|---------------------------------------|-----------------------------------|---------------------------------|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) |
| 55-02 MAS587273 | 3 | Black fibrous damp proofing | No | | 5% Cellulose 15% fibrous Glass 80% Mastic |
| 55-02 MAS587273 | 4 | Rusted non-fibrous copper | No | | 100% Copper |
| 55-02 MAS587273 | 5 | Pink non-fibrous foam | No | | 100% Foam |
| 55-03 MAS587274 | 1 | Tan non-fibrous brick | No | | 100% Other |
| 55-03 MAS587274 | 2 | Grey non-fibrous mortar | No | | 80% Aggregate 20% Other |
| 55-03 MAS587274 | 3 | Black fibrous damp proofing | No | | 5% Cellulose 15% fibrous Glass 80% Mastic |
| 55-03 MAS587274 | 4 | Pink non-fibrous foam | No | | 100% Foam |
| 56-01 MAS587274 | 1 | White fibrous mastic | No | | 5% Wollastonite 15% fibrous Glass 80% Mastic |
| 56-01 MAS587275 | 1 | White fibrous mastic | No | | 5% Wollastonite 15% fibrous Glass 80% Mastic |
| 56-01 MAS587275 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 56-01 MAS587275 | 3 | Yellow fibrous glass insulation | on No | | 100% fibrous Glass |

Samples have been analyzed by the EPA - 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA - 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Material. The test results herein relate only to the sample submitted and analyzed. This report may only be reproduced in full with the approval of the Bulk Asbestos Laboratory of Micro Analytical Services (MAS). The above percentages are visual estimates of area percent. MAS is not responsible for any errors resulting from improper or incorrect sampling or shipping procedures. These samples will be retained for a period of 30 days. Accreditation by NVLAP in no way constitutes or implies product certification, approval, or endorsement by NIST. Some materials, especially floor tiles, contain asbestos fibers too thin to be detected by this method. NVLAP Lab Code: 200618 TDSHS License: 30-0341

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Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077

MAS Project #: 19303-00 Date Received: 12/02/2024 Date Analyzed: 12/03/2024

| | | Project Name : | Cy-Creek | | |
|---------------------|---------|---------------------------------------|-----------------------------------|---------------------------------|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) |
| 56-02 MAS587276 | 1 | White fibrous mastic | No | | 5% Wollastonite 15% fibrous Glass 80% Mastic |
| 56-02 MAS587276 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 56-03 MAS587277 | 1 | White fibrous mastic | No | | 3% Wollastonite 97% Mastic |
| 56-03 MAS587277 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 57-01 MAS587278 | 1 | Tan fibrous mastic | Yes | 5% Chrysotile | 15% fibrous Glass 80% Mastic |
| 57-01 MAS587278 | 2 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| 57-02 MAS587279 | 1 | Tan fibrous mastic | Yes | 5% Chrysotile | 15% fibrous Glass 80% Mastic |
| 57-02 MAS587279 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 57-02 MAS587279 | 3 | Yellow non-fibrous foam | No | | 100% Foam |
| 57-03 MAS587280 | 1 | Tan fibrous mastic | Yes | 5% Chrysotile | 15% fibrous Glass 80% Mastic |
| 57-03 MAS587280 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil |
| 57-02 MAS587279 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |

Samples have been analyzed by the EPA - 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA - 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Material. The test results herein relate only to the sample submitted and analyzed. This report may only be reproduced in full with the approval of the Bulk Asbestos Laboratory of Micro Analytical Services (MAS). The above percentages are visual estimates of area percent. MAS is not responsible for any errors resulting from improper or incorrect sampling or shipping procedures. These samples will be retained for a period of 30 days. Accreditation by NVLAP in no way constitutes or implies product certification, approval, or endorsement by NIST. Some materials, especially floor tiles, contain asbestos fibers too thin to be detected by this method. NVLAP Lab Code: 200618 TDSHS License: 30-0341

Approved NVLAP Signatory: Tony Dang Page 3 of 6



Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19303-00 Date Received: 12/02/2024 Date Analyzed: 12/03/2024

| | Project Name: Cy-Creek | | | | | | |
|---------------------|------------------------|---------------------------------------|-----------------------------------|---------------------------------|--|--|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) | | |
| 58-01 MAS587281 | 1 | Tan fibrous mastic | Yes | 5% Chrysotile | 15% fibrous Glass 80% Mastic | | |
| 58-01 MAS587281 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | | |
| 58-01 MAS587281 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass | | |
| 58-02 MAS587282 | 1 | Tan fibrous mastic | Yes | 5% Chrysotile | 15% fibrous Glass 80% Mastic | | |
| 58-02 MAS587282 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | | |
| 58-02 MAS587282 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass | | |
| 58-03 MAS587283 | 1 | Tan fibrous mastic | Yes | 5% Chrysotile | 15% fibrous Glass 80% Mastic | | |
| 58-03 MAS587283 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | | |
| 58-03 MAS587283 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass | | |
| 59-01 MAS587284 | 1 | Black non-fibrous floor tile | No | | 100% Other | | |
| 59-01 MAS587284 | 2 | Yellow non-fibrous mastic | No | | 100% Mastic | | |
| 59-02 MAS587285 | 1 | Black non-fibrous floor tile | No | | 100% Other | | |
| 59-02 MAS587285 | 2 | Yellow non-fibrous mastic | No | | 100% Mastic | | |

Samples have been analyzed by the EPA - 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA - 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Material. The test results herein relate only to the sample submitted and analyzed. This report may only be reproduced in full with the approval of the Bulk Asbestos Laboratory of Micro Analytical Services (MAS). The above percentages are visual estimates of area percent. MAS is not responsible for any errors resulting from improper or incorrect sampling or shipping procedures. These samples will be retained for a period of 30 days. Accreditation by NVLAP in no way constitutes or implies product certification, approval, or endorsement by NIST. Some materials, especially floor tiles, contain asbestos fibers too thin to be detected by this method. NVLAP Lab Code: 200618 TDSHS License: 30-0341

Approved NVLAP Signatory: Tony Dang Page 4 of 6



Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19303-00 Date Received: 12/02/2024 Date Analyzed: 12/03/2024

| | Project Name: Cy-Creek | | | | | | |
|---------------------|------------------------|---------------------------------------|-----------------------------------|---------------------------------|--|--|--|
| Field ID/ Lab ID | Layer # | Sample Description | Asbestos Detected? (Yes/No) | Asbestos Constituents (%) | Non-Asbestos Constituents (%) | | |
| 59-03 MAS587286 | 1 | Black non-fibrous floor tile | No | | 100% Other | | |
| 59-03 MAS587286 | 2 | Yellow non-fibrous mastic | No | | 100% Mastic | | |
| 60-01 MAS587287 | 1 | Black fibrous damp proofing | Yes | 10% Chrysotile | 90% Mastic | | |
| 60-01 MAS587287 | 2 | Dark grey non-fibrous CMU | No | | 80% Aggregate 20% Other | | |
| 60-01 MAS587287 | 3 | White fibrous insulation | No | | 5% fibrous Glass 10% Mica 20% Cellulose 65% Other | | |
| 60-02 MAS587288 | 1 | Black fibrous damp proofing | Yes | 10% Chrysotile | 90% Mastic | | |
| 60-02 MAS587288 | 2 | Dark grey non-fibrous CMU | No | | 80% Aggregate 20% Other | | |
| 60-02 MAS587288 | 3 | White fibrous insulation | No | | 5% fibrous Glass 10% Mica 20% Cellulose 65% Other | | |
| 61-01 MAS587289 | 1 | White fibrous mastic | No | | 5% Wollastonite 15% fibrous Glass 85% Mastic | | |
| 61-01 MAS587289 | 2 | Brown fibrous paper with foil backing | No | | 10% fibrous Glass 45% Cellulose 45% Foil | | |
| 61-01 MAS587289 | 3 | Yellow fibrous glass insulation | on No | | 100% fibrous Glass | | |

Samples have been analyzed by the EPA - 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA - 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Material. The test results herein relate only to the sample submitted and analyzed. This report may only be reproduced in full with the approval of the Bulk Asbestos Laboratory of Micro Analytical Services (MAS). The above percentages are visual estimates of area percent. MAS is not responsible for any errors resulting from improper or incorrect sampling or shipping procedures. These samples will be retained for a period of 30 days. Accreditation by NVLAP in no way constitutes or implies product certification, approval, or endorsement by NIST. Some materials, especially floor tiles, contain asbestos fibers too thin to be detected by this method. NVLAP Lab Code: 200618 TDSHS License: 30-0341

Approved NVLAP Signatory: Tony Dang Page 5 of 6



Polarized Light Microscopy Analysis

EFI Global, Inc. 2000 South Dairy Ashford, Suite 600 Houston, Texas 77077 MAS Project #: 19303-00 Date Received: 12/02/2024 Date Analyzed: 12/03/2024

| | | Project Name: | Cy-Creek | | |
|-----------|---------|--------------------------------|-----------|--------------|--------------------|
| Field ID/ | Layer # | Sample Description | Asbestos | Asbestos | Non-Asbestos |
| Lab ID | | | Detected? | Constituents | Constituents |
| | | | (Yes/No) | (%) | (%) |
| 61-02 | 1 | White fibrous mastic | No | | 5% Wollastonite |
| MAS587290 | | | | | 15% fibrous Glass |
| | | | | | 85% Mastic |
| 61-02 | 2 | Brown fibrous paper with | No | | 10% fibrous Glass |
| MAS587290 | | foil backing | | | 45% Cellulose |
| | | | | | 45% Foil |
| 61-02 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| MAS587290 | | | | | |
| 61-03 | 1 | White fibrous mastic | No | | 5% Wollastonite |
| MAS587291 | | | | | 15% fibrous Glass |
| | | | | | 85% Mastic |
| 61-03 | 2 | Brown fibrous paper with | No | | 10% fibrous Glass |
| MAS587291 | | foil backing | | | 45% Cellulose |
| | | | | | 45% Foil |
| 61-03 | 3 | Yellow fibrous glass insulatio | n No | | 100% fibrous Glass |
| MAS587291 | | | | | |

Samples have been analyzed by the EPA - 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA - 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Material. The test results herein relate only to the sample submitted and analyzed. This report may only be reproduced in full with the approval of the Bulk Asbestos Laboratory of Micro Analytical Services (MAS). The above percentages are visual estimates of area percent. MAS is not responsible for any errors resulting from improper or incorrect sampling or shipping procedures. These samples will be retained for a period of 30 days. Accreditation by NVLAP in no way constitutes or implies product certification, approval, or endorsement by NIST. Some materials, especially floor tiles, contain asbestos fibers too thin to be detected by this method. NVLAP Lab Code: 200618 TDSHS License: 30-0341



Asbestos Bulk Sample Chain of Custody

| Commence EEI Clobal Inc | Contact: Konnath Canna | Duringt Names Ass. Case 6 |
|--------------------------------------|------------------------------|--|
| Company: EFI Global, Inc. | Dill tax EELOL L | Project Name: y_met |
| Address: 2000 South Dairy Ashford | Bill to: EFI Global | Dint# 020 0/921 |
| City Houston | Email: Kannath Canna@afigla | Project #. 029,06/21 |
| City: Houston | Biels Anderson @officiale. | |
| State/Zip: TEXAS, 7/077 | Cinger Denman Cofiglobal.com | PO#: |
| Phone: (832) 518-5145 | Deta Callested | MAS Designet # Red to 2 |
| Fax: (832) 518-5157 | Date Collected: De 11-21 | MAS Project #: P7 8 0 3 |
| Turn around time (circle): Emergency | 1-day 2-day 3-day 4-day 5-da | Total # of samples 22 Positive stop YES or NO |
| Field ID Sample Des | cription San | nple Location Comments |
| CAR 37-1 Roaf Drai P | be my of Crean Connan | Such Bar Aren 1980- AN |
| -3 | Mast F | 5 |
| 55-1 Externin Dumpor | afin -Black Mask | Orchester Bldg Add 2010 |
| -2) 0 | Call Block Frank Brick/mar | to 1 |
| -3 0 | | J L |
| 5/0-1 Chitle Wober Pipe | elis Tuble Mat Cert | al Plat to Avidoaled Chilien |
| -2 1 | / | |
| -7 0 | | J J |
| 57-1 (hilled noter Die | Ing / Crem heater Mec | hRm 1918 1960's Host |
| -2) | - 1 | |
| -3 , 5 | | F O |
| 58-1 Heating water P | ac ma y Com Marca Mes | LR-1818 19805 Hol |
| -2 7 | | 7 |
| -3 1 | | |
| 59-1 12×12" Black VS | 7 7 Yellun Menta Dran | na Control Ren & Hudutan 2010 Ad |
| -2 | | |
| -3 0 | | 5 10 221/2 1/1 18 |
| 60-1 Black Unyopposti | 5 on Com place K. Ru | - SUL 1980'S Hod Mussins |
| -2 2 | Ol CI VICE | ~1314 F F |
| 61-1 Creim Det min | n on for 1/10 show | storage Rech Origen Blog |
| 2 | | 1 |
| | | |
| Relinquished by: | Date: | Fime: |
| Received by: TONY DANG | Date:2/2/2/2/ | Time: 11:30 AM |
| Relinquished by: | Date: | Time: |
| Received by: | Date:7 | Cime: |
| | 2 2 | |

Page__of__

MAS-F101



APPENDIX A2

PHOTOGRAPHS AND RENOVATION INFORMATION ARCHITECTURAL SCOPE OF WORK

Attachment No. 1



 Cy-Creek High School
 Utbu Issued: 11-15-202

 All costs are shown in 2019 dollars. The cost of all work items after this date should be adjusted accordingly.

| Priority Code | Item # | Item Description | Classification | Discipline | Source |
|------------------|------------|--|---|-----------------------|--------|
| Architectu | re | | | | |
| 1 | 1 | Remove and replace structural expansion joint covers, remove and replace floor tile and wall finishes. | Structural/ Foundation | Architecture | CA |
| 1 | 2 | Renovate restrooms (include new wall and floor finishes, fixtures, toilet partitions etc.). | Renovation | Architecture | CA |
| 2 | 3 | Replace damaged building soffit at service entry with raised aluminum canopy. Replace guardrails & handrails | Canopy/ Covered Walkway | Architecture | CA |
| 2 | 4 | Replace paint booth to meet district standards | Renovation | Architecture | DP |
| 2 | 5 | Provide director tower for band | Building Addition | Architecture | CA |
| 2 | 6 | Renovate Industrial Tech Computer and Electronics Rooms to create a larger electronics room | Renovation | Architecture | DP |
| 2 | 7 | Repaint all metal doors, frames, and lite kits. | Doors | Architecture | CA |
| 2 | 8 | Provide 6 recirculating welding booths | Renovation | Architecture | DP |
| 2 | 9 | Replace campus marquee sign | Signage/Way-finding | Architecture | CA |
| 2 | 10 | Provide new greenhouse | Renovation | Architecture | DP |
| 2 | 11 | Provide Orchestra addition of rehearsal hall and practice rooms | Building Addition | Architecture | CA |
| 2 | 12 | Renovate Black Box theater | Renovation | Architecture | PQI |
| 2 | 13 | Provide new addition for two new art rooms | Building Addition | Architecture | CA |
| 2 | 14 | Remove and replace ceiling with new acoustical lay-in ceiling tile and grid throughout facility. | Ceiling | Architecture | CA |
| 2 | 15 | Replace Furniture | Furniture | Architecture | CA |
| 2 | 16 | Paint all previously painted interior surfaces. Repair/patch walls prior to painting. | Painting | Architecture | CA |
| 2 | 17 | Provide auxiliary music rehearsal room (1,500 SF) | Building Addition | Architecture | CA |
| Athletics/ | Activities | | | | |
| 2 | 18 | Replace Scoreboard in Basketball Gym | Athletic Events | Athletics/ Activities | DP |
| 2 | 19 | Provide new handrail in stairs at competition gym | Railing (guard rails, handrails, etc.) | Athletics/ Activities | CA |
| 2 | 20 | Provide electric, key operated goals in competition gym | Athletic Equipment | Athletics/ Activities | CA |
| 2 | 21 | Strip down and refinish floors in auxiliary gym. | Flooring (carpet, tile, etc.) | Athletics/ Activities | CA |
| 2 | 22 | Provide new CMU dugouts and block wall backstop at softball. Includes, wall, bench, and softball accessories. | Building Addition | Athletics/ Activities | DP |
| 2 | 23 | Replace existing Press-box | Athletic Fields | Athletics/ Activities | DP |
| 2 | 24 | Provide outdoor storage building for Athletics | Building Addition | Athletics/ Activities | DP |
| 2 | 25 | Strip down and refinish floors in competition gym. | Flooring (carpet, tile, etc.) | Athletics/ Activities | CA |
| 2 | 26 | Provide new CMU dugouts and block wall backstop at baseball. Includes, wall, bench, and baseball accessories. | Building Addition | Athletics/ Activities | DP |
| 2 | 27 | Repair exterior wall at weight room | Wall Repair (Exterior) | Athletics/ Activities | CA |
| 2 | 28 | Provide 2 additional tennis courts to achieve 8 total. Include LED lighting (50 fc). | Athletic Courts | Athletics/ Activities | SI |
| 2 | 29 | Convert existing baseball and softball fields to synthetic turf. | Athletic Fields | Athletics/ Activities | SI |
| 2 | 30 | Renovate girls athletic facility | Renovation | Athletics/ Activities | CA |
| Building Er | velope | | | | |
| 2 | 31 | Provide new cap sheet to existing mod bit roofing membrane. | Roof Replacement | Building Envelope | CA |
| Civil | | | | | |
| 1 | 32 | Replace pumps in lift station near Grant Road. | Site Utilities | Civil | DP |
| 1 | 33 | Major improvements for on-site car, bus and vehicle stacking | Site Paving - Maintenance | Civil | DP |

Attachment No. 1 - Cont.

Cy-Creek High School All costs are shown in 2019 dollars. The cost of all work items after this date should be adjusted accordingly.

| Priority Code | ltem # | Item Description | Classification | Discipline | Source |
|------------------|--------|---|----------------------------|--------------|--------|
| Electrical | | | | | |
| 1 | 34 | Replace secondary switchgear. | Electrical Distribution | Electrical | CA |
| 1 | 35 | Provide generator backed power for all racks in all telecommunications rooms | Emergency Generator | Electrical | DP |
| Food Servi | ce | | | | |
| 2 | 36 | Renovate and expand kitchen and Servery per current District Standards, to 12,250 Sq. Ft. | Renovation | Food Service | CA |
| Mechanica | d | | | | |
| 1 | 37 | Add CO monitoring system to the boiler room. | HVAC | Mechanical | CA |
| 1 | 38 | Replace R-22 air cooled 25 ton chiller | Mechanical | Mechanical | CADP |
| 1 | 39 | Replace R-22 air cooled 30 ton chiller | HVAC | Mechanical | CADP |
| 1 | 40 | Replace existing refrigerant monitoring system | HVAC | Mechanical | CA |
| 1 | 41 | Replace two AHUs in the penthouse in area 1800 (Shop) | HVAC | Mechanical | CA |
| 1 | 42 | Replace two AHUs in the penthouse in area 1700 (Science) | HVAC | Mechanical | CA |
| 1 | 43 | Replace central station air handling units. | HVAC | Mechanical | CA |
| 1 | 44 | Replace HVAC controls | HVAC | Mechanical | CADP |
| 1 | 45 | Add dedicated HVAC unit to secondary telecommunications rooms (IDF) | HVAC | Mechanical | DP |
| 2 | 46 | Replace A/C units (A side and B side) at Portable Building #98 | HVAC | Mechanical | DP |
| Plumbing | | | | | |
| 2 | 47 | Separate irrigation meter from existing water meter | Irrigation | Plumbing | DP |
| 2 | 48 | Replace boiler | Plumbing - Water Heater | Plumbing | CADP |
| Security | | | | | |
| 1 | 49 | Additional card readers on exterior doors | Security | Security | DP |
| 1 | 50 | Harden main front desk | Security | Security | DP |
| 1 | 51 | Upgrade existing metal detectors | Security | Security | DP |
| 1 | 52 | Upgraded intrusion detection panels | Security | Security | DP |
| 2 | 53 | Additional lockdown buttons | Security | Security | DP |
| 2 | 54 | Classroom and exterior door hardware | Security | Security | DP |
| 2 | 55 | Enhanced Video Intercoms | Security | Security | DP |
| 2 | 56 | Exterior Window and Door Numbering | Security | Security | DP |
| 2 | 57 | Fencing around portable buildings | Security | Security | DP |
| 2 | 58 | Impact-resistant glass on doors and high-traffic areas | Security | Security | DP |
| 2 | 59 | Provide Classroom Phones | Security | Security | DP |

Items in purple are either already complete or will be completed in a separate project











APPENDIX A3

DRAWING PLATES WITH BULK SAMPLE LOCATIONS


































































APPENDIX A4

CERTIFICATIONS AND LICENSES





Texas Department of State Health Services

Asbestos Individual Consultant

KENNETH A CAPPS License No. 105850 Control No. 98161 Expiration Date: 23-Jan-2025





Texas Department of State Health Services

EFI GLOBAL INC

is certified to perform as an

Asbestos Consultant Agency

in the State of Texas and is hereby governed by the rights, privileges and responsibilities set forth in Texas Occupations Code, Chapter 1954 and Title 12, Texas Administrative Code, Chapter 295 relating to Texas Asbestos Health Protection, as long as this license is not suspended or revoked.

CALL OF THE

License Number: 100409

Control Number: 97653

MD

fennifer Shuford, MD, MPH, Commissioner of Health Expiration Date: 04/26/2026

(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE

SEE BACK



Texas Department of State Health Services

MICRO ANALYTICAL SERVICES INC

is certified to perform as an

Asbestos Laboratory

PCM, PLM

in the State of Texas and is hereby governed by the rights, privileges and responsibilities set forth in Texas Occupations Code, Chapter 1954 and Title 12, Texas Administrative Code, Chapter 295 relating to Texas Asbestos Health Protection, as long as this license is not suspended or revoked.

License Number: 300341

A. Alfl, MD

Jennifer Shuford, MD, MPH, Commissioner of Health Expiration Date: 01/25/2026

(Void After Expiration Date)

Control Number: 96774

VOID IF ALTERED NON-TRANSFERABLE

| United States Department of Commerce National Institute of Standards and Technology | ate of Accreditation to ISO/IEC 17025:2017 | NVLAP LAB CODE: 200618-0 | Micro Analytical Services, Inc. Houston, TX | credited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for: Asbestos Fiber Analysis | boratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. Aditation 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). | I through 2024-12-31 Effective Dates Effective Dates of Arres of A |
|--|--|--------------------------|--|--|--|---|
| Nat | Certificate d | | | is accredited b | This laboratory is This accreditation de mana | 2024-01-01 through 20 Effective Dat |



SECTION 02 82 13 ASBESTOS ABATEMENT

1.0 SUMMARY OF WORK

1.01 DESCRIPTION

- A. Cypress Creek High School scheduled work is to include interior and exterior renovations. Renovations will impact many areas of asbestos containing building materials throughout the Cypress Creek High School campus.
- B. The work will include, but is not limited to, the following abatement scope of work in the subject work areas. Reference the abatement floor plans which identifies keyed notes and approximate locations of the abatement scope of work.

Cypress-Fairbanks Independent School District:

Cypress Creek High School – 9815 Grant Road, Houston, TX 77070

- 1. Interior Abatement
 - a. In locations designated by the General Contractor, and as shown by keynotes and legend on the abatement drawings, abate all non-friable, asbestos-containing interior **black damp proofing** mastic coating on CMU block walls and any associated flashing or mastic coating on columns, beams, brick ledges, doors or windows located at the classroom addition (Area B), Kitchen Areas, and Side Commons Snack Bar.
 - b. In locations designated by the General Contractor, and as shown by keynotes and legend on the abatement drawings, abate all non-friable and/or friable, asbestos-containing **pipe insulation** located in ceiling plenum areas, and mechanical areas.
 - c. In locations designated by the General Contractor, and as shown by keynotes and legend on the abatement drawings, abate all non-friable asbestos-containing **duct insulation mastic** located in the Kitchen areas.
 - d. In locations designated by the General Contractor, or as shown by keynotes and legend on the abatement drawings, abate all non-friable asbestos-containing **black** "**transite**" **science tables** located in the second-floor science prep area (Room 2314).
 - e. In locations designated by the General Contractor, abate all presumed, asbestos-containing **fire doors** located at mechanical rooms, IDF closets, custodial closets, storage rooms and miscellaneous areas.
- 2. Exterior Abatement
 - a. In locations designated by the General Contractor, and as shown by keynotes and legend on the abatement drawings, abate all non-friable, asbestos-containing interior **black damp proofing** mastic coating on CMU block walls and any associated flashing or mastic coating on columns, beams, brick ledges, doors or windows located at the classroom addition (Area B), Kitchen Areas, and Side Commons Snack Bar.

Note: Should additional asbestos containing materials need to be impacted or be discovered during demolition such as **black floor mastic or old pipe insulation, etc.**, please notify EFI and CFISD so that the additional scope can be addressed prior to impact.



1.02 WORK NOT INCLUDED I THE WORK PROCEDURES

- A. Replacement of any materials scheduled for removal as part of the Work.
- B. Air monitoring for Owner/Owner's Representative by Testing Laboratory.

1.03 EXISTING CONDITIONS

A. Asbestos Abatement Contractor is advised that the locations of asbestos-containing materials are not clearly known and that it shall proceed with caution in all phases of the Work. Additional asbestos-containing material may be uncovered during the course of the Work and Asbestos Abatement Contractor may be directed by General Contractor to include this material in the Work at an agreed upon price.

1.04 BUILDING OCCUPANCY

A. Owner/Owner's Representative and General Contractor will occupy all other portions of the facility other than the identified work area for the conduct of normal building or construction operations. Coordinate work with Owner/Owner's Representative and General Contractor and conduct activities so as to minimize disruption to the building occupants and to planned building activities.

1.05 STORAGE

A. Limited storage space is available in the building and at the site. Store items only in areas designated by General Contractor. Supply any additional temporary storage areas required for storage of equipment and materials for duration of Project.

1.06 CONTRACTOR'S USE OF PREMISES

- A. Coordinate and follow General Contractor's building security/access requirements and sign in/sign out procedures.
- B. Limit use of premises to locations specified by General Contractor.
- C. Predetermine and obtain approval, in advance from General Contractor, for transportation route(s) for contaminated and non-contaminated waste materials, labor and construction materials into and out of the building and site.
- D. If required, coordinate with General Contractor for onsite material delivery/pickup and location of waste disposal container during the Project.
- E. Maintain existing building in a safe condition throughout the Project. Repair damage caused by abatement operations immediately. Take all precautions necessary to protect the building and its occupants during the Project.
- F. Keep work area and associated surrounding areas free from accumulation of waste, rubbish, or construction debris.
- G. Smoking or ignitable devices (e.g. matches, lighters, etc.) will not be permitted within the building or on the premises.
- H. Obtain approval from General Contractor prior to use of existing restroom facilities at the property by the Asbestos Abatement Contractor. Otherwise, Asbestos Abatement Contractor will provide portable toilets for its employees at locations to be approved by General Contractor.

1.07 SCHEDULING AND WORKING HOURS

A. Contractor's abatement work operations may be performed during or after normal business hours, Monday through Friday, or on the weekends. Submit schedule to General Contractor for approval.



- B. Transportation of construction materials, abatement materials and asbestos waste materials from the work area shall be performed during hours approved by General Contractor.
- C. Obtain approval from General Contractor prior to altering work schedule.

1.08 PARKING

A. Parking is limited at or near the site. Park only in specified parking areas designated by General Contractor. General Contractor assumes no responsibility for damage or theft to Contractor's vehicles. If necessary, park in offsite parking areas and pay all applicable parking fees.

1.09 BUILDING SECURITY

- A. Coordinate and follow Owner's/Owner's Representative's or General Contractor's building security requirements.
- B. Asbestos Abatement Contractor is responsible for the work area and its own supplies, equipment, and security.
- C. Secure work area completely at the end of each work shift.
- D. Maintain personnel at the asbestos waste disposal container at all times the container is open or not properly secured. Secure container completely at the end of each work shift.
- E. Install viewing windows to allow for observation of the entire work area or as designated by General Contractor or Asbestos Consultant.

1.10 FIRE PREVENTION

- A. Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations, provide type "ABC" dry chemical fire extinguishers, or a combination of several extinguishers per National Fire Protection Association (NFPA) recommendations and OSHA regulations.
- B. Asbestos Abatement Contractor's employees shall not enter building areas with cigarette lighters, matches, cigarettes, cigars, pipes or other flame emitting items. Asbestos Abatement Contractor's employees shall not smoke cigarettes, cigars, pipes or the like within the building areas.
- C. Flammable materials shall not be stored in the work area.

1.11 CONTINGENCY PLAN

- A. Prepare a contingency plan for emergencies including fire, fire alarms, accident, power failure, diminished pressure failure or any other emergency event. Incorporate building's emergency procedures as required. Note that nothing in the Work Procedures should impede safe exiting or providing of adequate medical attention in the event of an emergency.
- B. Post at the entrance to the work area telephone numbers and locations of emergency services including but not limited to the building security office.

1.12 PROJECT SUPERINTENDENT

A. Maintain a "competent" full-time superintendent (as defined by OSHA, EPA and DSHS) and necessary assistants who shall be in attendance at the facility during the progress of the work. The superintendent shall be satisfactory to General Contractor and shall not be changed without prior approval by the General Contractor.

1.13 SEGREGATION OF WORK AREAS

A. Segregate the work areas from the surrounding occupied or unoccupied areas.



- 1. Install temporary construction barriers acceptable to General Contractor to segregate work areas and prevent occupant or public access and viewing of the work areas.
- 2. Install black, frosted or opaque plastic sheeting over windows to prevent public viewing of the work areas.
- 3. Install secure, temporary plywood barriers in windows, doorways or other openings used for diminished air exhaust. If required, coordinate with General Contractor for the removal of exterior windows/glass.
- B. Demarcate the work area with asbestos warning barrier tape and post asbestos warning signage as required.

1.14 PRE-JOB DAMAGE SURVEY OF FACILITY

A. Perform a thorough survey of work area and the building ingress/egress path prior to starting the Work in order to prepare a list documenting existing damage. Items identified on this list will not be the responsibility of Asbestos Abatement Contractor unless further damaged by Asbestos Abatement Contractor during execution of Project. List shall be provided to General Contractor prior to proceeding with the Work.

1.15 CORRECTION OF DAMAGE TO FACILITY

A. Consider any damage to work area and the building ingress/egress path not identified in the pre-job damage survey as having resulted from execution of the Work and correct, restore, repair and/or replace to General Contractor's satisfaction at no additional expense to General Contractor.

1.16 UTILITIES

A. Asbestos Abatement Contractor may temporarily connect to available existing permanent utilities (e.g. water, sewer and electricity) during execution of the Work. Make connections in locations designated by General Contractor. The cost for the use of existing permanent utilities will be paid by Owner. If permanent utilities are not available, Asbestos Abatement Contractor shall provide and pay for any temporary utilities during the Project. Remove connections and all extensions of utilities at Project completion.

1.17 SALVAGEABLE MATERIALS

A. Consider all materials and items removed in the execution of the Work unsalvageable unless indicated otherwise by the General Contractor.

1.18 CLEANUP

- A. Dismantle and dispose of all temporary barriers erected to isolate the work areas at completion of Work.
- **B.** Leave all areas visibly clean at completion of Work.

2.0 SUBMITTALS

2.01 DESCRIPTION

A. Make submittals required by the Work Procedures in a timely manner and at appropriate times in the execution of the Work to allow for sufficient and prompt review by Asbestos Consultant. Revise and resubmit as necessary to establish compliance with the specified requirements.

2.02 WORK INCLUDED

A. Submit complete, bound sets of the submittals required herein. Submit complete sets entitled "Project Submittals".

Consultant Signature: Kenneth Capps_________ DSHS License No./Expiration date <u>10-5850 (01/23/2025)</u>



- B. Update submittals to Asbestos Consultant to account for all new equipment and employees used on the Project.
- C. Project Submittals
 - 1. Submit one complete set of "Project Submittals" to Asbestos Consultant for review. Bind project submittals in a three-ring binder or cover with metal fasteners.

2.03 PROJECT SUBMITTALS

A. Notice of impending commencement of asbestos removal work, and any amendments if required, in writing via regular mail to:

Environmental Health Notifications Group Attention: Asbestos Department of State Health Services P. O. Box 143538 Austin, Texas 78714-3538

Or electronically:

Through the Department of State Health Services' Online Asbestos Notification System

and comply with the applicable notice period set forth in EPA 40 CFR 61.145 and Department of State Health Services (DSHS) asbestos regulations. In the case of an emergency and if applicable, contact DSHS and obtain a waiver to the typical notice period. Include one copy of notification and amendments, if applicable, in submittal package. Any required notification fees shall be paid by Asbestos Abatement Contractor.

- B. Copy of the Asbestos Abatement Contractor's license as an Asbestos Abatement Contractor in accordance with the Texas Department of State Health Services asbestos regulations.
- C. Personnel Submittals:
 - 1. Listing of supervisory personnel (including foremen) and workers to be utilized on the Project. Listing shall be in alphabetical order and include each worker's social security number. Include copy of Texas Department of State Health Services License or Registration for each asbestos supervisor or worker to be used on the Project.
 - 2. Training documentation that each and every employee to be utilized on the Project has had instruction on the hazards of asbestos exposure, protective dress, use of showers, entry to and exit from work areas and on all aspects of work procedures and protective measures regarding asbestos removal.
 - 3. Certification from Asbestos Abatement Contractor that each and every worker to be utilized on the Project is actively involved in an employee medical surveillance program for asbestos exposure. Include copy of physician's written opinion for each person to be utilized on the Project.
 - 4. Individually signed forms by each and every worker to be utilized on the Project, documenting that each is actively involved in a company employee respirator protection program and has had appropriate training in respiratory protection.
 - 5. Individually signed Certificate of Worker's Release Form for each and every worker to be utilized on the Project.
- D. Properly completed copies of the Uniform Hazardous Waste Manifest (Texas Commission on Environmental Quality form TCEQ-0311, current edition, or EPA equivalent) from the landfill, documenting the disposal of the asbestos-containing/ contaminated waste material.



E. Copy of the Sign In/Out Logs showing the following: date, name, social security number, entering and leaving time, company or agency represented.

2.04 ASBESTOS CONSULTANT'S REVIEW

- A. Partial submittals may be rejected for non-compliance with the Work Procedures.
- B. Review by Asbestos Consultant does not relieve Asbestos Abatement Contractor from responsibility for errors which may exist in the submitted data.
- C. Make revisions when required by Asbestos Consultant and resubmit for review.

3.0 TESTING LABORATORY SERVICES

3.01 DESCRIPTION

- A. Owner/Owner's Representative will provide a qualified Testing Laboratory to perform routine and special testing of the Work under these Work Procedures.
- B. Testing Laboratory representative will, in addition to performing routine and special testing necessary to determine general compliance with the Work Procedures, observe and document, on a daily basis, the execution and progress of the Work. Such observation and documentation shall be for the sole benefit of Owner/Owner's Representative and shall not be construed in any way as to include responsibility for Asbestos Abatement Contractor's means, methods, techniques, sequences or procedures involved with the execution of the Work. Nor shall such observation and documentation by Testing Laboratory be construed as to include responsibility for any safety programs or procedures either utilized or not utilized by Asbestos Abatement Contractor during the Work.
- C. Provision of the Testing Laboratory by Owner/Owner's Representative to perform testing for Owner/Owner's Representative shall not relieve the Asbestos Abatement 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 Work Procedures.

3.02 QUALITY ASSURANCE

- A. All environmental air testing shall be performed in general accordance with the procedures outlined in the National Institute for Occupational Safety and Health (NIOSH) Method No. 7400 and also will follow guidelines issued by the Environmental Protection Agency regarding detection limits.
- B. Final air testing will be performed using Phase Contrast Microscopy (PCM) analysis or Transmission Electron Microscopy (TEM) as specified in this Section and elsewhere in the Work Procedures.
- C. PCM final air samples will be analyzed in general accordance with the sample analysis procedures outlined in NIOSH Method No. 7400.
- D. TEM final air samples will be analyzed in general accordance with the sample analysis procedures outlined in the EPA 40 CFR Appendix A to Subpart E of Part 763 – Interim Transmission Electron Microscopy Analytical Methods.

3.03 PAYMENT FOR TESTING

- A. Owner/Owner's Representative will pay for all daily environmental air testing and final air clearance testing as required by the Work Procedures.
- B. When additional testing is required due to Asbestos Abatement Contractor non-compliance with the Work Procedures, such testing will be performed by Testing Laboratory and all associated costs will be paid by Asbestos Abatement Contractor.



3.04 SCHEDULING

- A. Testing Laboratory will perform tests in areas and at times during the Work as deemed necessary by the Testing Laboratory and as specified in the Work Procedures.
- B. Notify Testing Laboratory of need for final air testing at least 2-4 hours prior to desired time of testing.
- C. Coordinate other scheduling with Testing Laboratory as necessary.

3.05 SCHEDULE OF AIR SAMPLES

- A. Before Start of Work:
 - 1. Testing Laboratory will collect, at a minimum, the following air samples to establish a base line before the start of work:

| BASE LINE SAMPLES | | | | | | | | |
|-------------------|-----------|----------|-----------------|----------|--|--|--|--|
| Sample | Number of | Analysis | Minimum | Rate | | | | |
| Location | Samples | Method | Volume (Liters) | LPM | | | | |
| Work Area | 3 Minimum | PCM | 1250 | 10 to 16 | | | | |

- 2. Base Line: An action level expressed in fibers per cubic centimeter which, for PCM, is equal to the greater of the average of the samples collected on mixed cellulose ester filters in the work area prior to abatement activities or 0.01 fibers per cubic centimeter.
- B. Daily During the Course of the Work:
 - 1. Testing Laboratory will collect area samples in areas and at times during the work as deemed necessary by the Testing Laboratory, required by the Asbestos Consultant, or as specified in the Work Procedures. Daily samples will be analyzed using Phase Contrast Microscopy.
- C. Final Air Clearance Samples:
 - 1. Testing Laboratory will collect the following air samples to determine if the Asbestos Abatement Contractor may remove the demarcation barriers and demobilize from the site:

| FINAL AIR CLEARANCE FOR CONTAINMENT AREAS | | | | | | | |
|---|--------------------|------------------------------------|-------------------------------|-------------|-----------------|--|--|
| Sample Location | Analysis Method | Number of Samples | Minimum Volume (Liters) | Rate LPM | Results | | |
| Non-Friable Materials (Excluding Flooring, floor tile/sheet flooring or floor mastic) | | | | | | | |
| Inside | PCM | 5 Minimum Per Work Area | 1250 | 10 to 16 | <u><0.01</u> | | |
| Work Area | | | | | | | |
| Friable Materials or Non-Friable Materials that have become Friable in the abatement process. | | | | | | | |
| (Including Flooring, floor tile/sheet flooring or floor mastic) | | | | | | | |
| Inside | PCM | 5 Minimum Per Work Area | 1250 | 10 to 16 | <u><0.01</u> | | |
| Work Area | | Less Than or Equal To 1 ARU | | | | | |
| | | (160 SQFT or 260LF or 3CF) | | | | | |
| Inside | TEM | 5 Minimum Per Work Area | 1300 | Up to 10 | <70s/mm | | |
| Work Area | | 3 Blanks (inside, outside and LAB) | | | 2 | | |
| | | Greater Than 1 ARU | | | | | |
| | | (160 SQFT or 260LF or 3CF) | | | | | |


3.06 RESULTS

- A. Testing Laboratory will perform all testing and analysis promptly and issue results expeditiously in order to minimize any possible delay in the progress of the Work.
- B. Test results shall be available to General Contractor and Asbestos Abatement Contractor as follows:
 - 1. PCM Air clearance results: within 4 hours following tests.
 - 2. TEM Results deemed necessary by Asbestos Consultant: as quickly as possible but not earlier than 6 hours following completion of tests.
- C. Air tests will be made both inside and outside of work areas, as necessary. Asbestos Abatement Contractor is cautioned, however, that should interpretations be made, opinions be formed and conclusions be drawn as a result of examining the test results, these interpretations, opinions and conclusions will be those made, formed and drawn solely by Asbestos Abatement Contractor. Asbestos Abatement Contractor is responsible for performing air tests required for its evaluation of the safety of its employees.

4.0 ASBESTOS ABATEMENT

4.01 DESCRIPTION

- A. Perform all planning, administration, execution of work necessary to safely conduct the Work. The Work will consist of the abatement of asbestos-containing materials noted in section 1.01.B.
- B. Approval of or acceptance by Owner/Owner's Representative, General Contractor or Asbestos Consultant of various construction activities or methods proposed by Asbestos Abatement Contractor does not constitute an assumption of liability either by the Owner/Owner's Representative, General Contractor or Asbestos Consultant for inadequacy or adverse consequences of said activities or methods.

4.02 DEFINITIONS

- A. The following definitions pertain to the Work of these Work Procedures.
 - 1. **Abatement** procedures to decrease or eliminate fiber release from precast, sprayor trowel-applied asbestos-containing building materials. Includes encapsulation, enclosure and removal.
 - 2. **ACM** Asbestos-Containing Material.
 - 3. **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 3 feet apart.
 - 4. **Air Monitoring** the process of measuring the fiber content of a specific volume of air during a stated period of time.
 - 5. **Amended Water** water to which a surfactant has been added.
 - 6. **ANSI** American National Standards Institute.
 - 7. **ASTM** American Society for Testing and Materials.
 - 8. **Clean Room** an uncontaminated area or room which is part of the worker decontamination enclosure system, with provisions for storage of workers' street clothes and protective equipment. Also known as the "Change Room".



- 9. **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; operable windows; floor, wall, and ceiling penetrations; and air plenums.
- 10. **Curtained Doorway** a device to allow ingress or egress from one room to another while minimizing air movement between the rooms. Two curtained doorways spaced a minimum of 3 feet apart form an airlock.
- 11. **Decontamination Enclosure System** a series of connected rooms, with curtained doorways between any two adjacent rooms, for the decontamination of workers or of materials and equipment. A worker decontamination enclosure system or an equipment decontamination system always contains at least three airlocks (rooms).
- 12. **Encapsulation** the sealing of asbestos surfaces involving application of a material (encapsulant) that will envelop or coat the fiber matrix and eliminate fiber fallout and protect against contact damage.
- 13. **Enclosure** procedures necessary to completely enclose material containing asbestos behind airtight, impermeable, permanent barriers.
- 14. **EPA** United States Environmental Protection Agency.
- 15. **Equipment Decontamination Enclosure System** a decontamination enclosure system for materials and equipment, typically consisting of an airlock, a washroom, and a holding area.
- 16. **Equipment Room** a contaminated area or room which is part of the worker decontamination enclosure system, with provisions for storage of contaminated clothing and equipment.
- 17. **Fixed Object (Immoveable object)** a unit of equipment or furniture in the work area which cannot be removed from the work area.
- 18. **Glove-Bag** A 6 to 12-mil plastic bag fitted with long-sleeved gloves, a tool pouch and an opening for amended water and sealant application.
- 19. **HEPA Filter** a High Efficiency Particulate Absolute (HEPA) filter capable of trapping and retaining 99.97 percent of asbestos fibers greater than 0.3 microns in length.
- 20. **HEPA Vacuum Equipment** vacuuming equipment equipped with a HEPA-filtration system.
- 21. **Holding Area** a chamber between the washroom and uncontaminated area in the equipment decontamination enclosure system. The holding area comprises an airlock.
- 22. **Moveable Object** a unit of equipment or furniture in the work area which can be removed from the work area.
- 23. **MSHA** Mine Safety and Health Administration.
- 24. **NEC** National Electrical Code.
- 25. **NESHAP** National Emissions Standard for Hazardous Air Pollutants.
- 26. **NIOSH** National Institute for Occupational Safety and Health.
- 27. **OSHA** Occupational Safety and Health Administration.
- 28. **Plastic Sheeting** plastic sheet material of specified thickness used for protection of walls, floors, etc., and used to seal openings into the work area. All plastic sheeting utilized on the project shall be fire retardant.



- 29. **PPE** Personal protective equipment including respirators, disposable clothing, gloves, eye protection, hard hats, safety boots, safety vests, etc.
- 30. **Removal** the act of removing asbestos-containing or contaminated materials from the structure under properly controlled conditions to a suitable disposal site.
- 31. **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 or warm running water suitably arranged for complete showering during decontamination.
- 32. **Surfactant** a chemical wetting agent added to water to improve penetrating ability, thus reducing the quantity of water required to saturate asbestos-containing materials.
- 33. **Washroom** a room between the work area and the holding area in the equipment decontamination enclosure system. The washroom comprises an air lock.
- 34. **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, disposing of these cleaning tools as asbestos-contaminated waste.
- 35. Work Area area or areas of Project which undergo abatement or are contaminated.
- 36. **Worker Decontamination Enclosure System** a decontamination enclosure system for workers, typically consisting of a clean room, a curtained doorway or airlock, a shower room, a curtained doorway or airlock, and an equipment room.

4.03 **REFERENCE STANDARDS**

- A. Acknowledge awareness and familiarity with the contents and requirements of the following regulations, codes, standards, and guidance documents. Assume responsibility for the performance of the Work in strict compliance with these documents and for every instance of failure to comply with these documents. The current issue of each document shall govern. Where conflict exists between these documents and the Work Procedures, the more stringent requirements shall apply.
 - 1. EPA Regulations for Asbestos (40 CFR 61.140 61.157 and 40 CFR 763).
 - 2. OSHA Asbestos Regulations (29 CFR 1910, 29 CFR 1926).
 - 3. EPA Office of Toxic Substances Guidance Document, "Asbestos-Containing Materials in School Buildings", Part I and Part II.
 - 4. EPA Office of Pesticide and Toxic Substances Guidance Document, "Guidance for Controlling Friable Asbestos-Containing Materials in Buildings", EPA 560/5-85-024, June, 1985.
 - 5. All state, county, and city codes and ordinances as applicable. Make available for review at the site one copy of EPA, OSHA, and applicable state, county and city regulations governing the Work.

4.04 WORKSITE CONDITIONS

- A. Worker and Visitor Procedures: Asbestos Abatement Contractor is hereby advised that asbestos has been determined by the U.S. Government to be a CANCER-CAUSING AGENT. Provide workers and visitors with respirators (which, as a minimum, meet the requirements of OSHA 29 CFR 1926.1101) and protective clothing during all phases of the Work and until final air tests are accepted by Asbestos Consultant.
- B. Airborne Fiber Concentration Inside Work Area: Testing Laboratory will conduct prevalent levels prior to abatement operations, and daily air monitoring inside the work area to monitor



the effectiveness of Asbestos Abatement Contractor's work practices during removal activities. The Testing Laboratory will provide the General Contractor a daily copy of the sample results. The following fiber concentrations will be based on environmental air samples obtained in the work area:

- 1. Maintain an average airborne fiber concentration inside the work area of less than or equal to prevalent level or 0.05 fibers per cubic centimeter (f/cc), whichever is greater. If the average daily fiber counts obtained from the work area rise above this figure, revise work procedures to lower the fiber counts.
- 2. Upon notification by the Testing Laboratory that the average airborne fiber concentrations exceed 0.1 fibers per cubic centimeter for any period of time, cease work and commence cleaning of the Work Area. Work activities may not resume until Testing Laboratory performs testing to obtain a fiber concentration less than or equal to prevalent level or 0.05 fibers per cubic centimeter, whichever is greater.
- C. Airborne Fiber Concentration Outside Work Area: Testing Laboratory will conduct prevalent levels prior to abatement operations, and daily air monitoring outside the Work Area to monitor the effectiveness of Asbestos Abatement Contractor's work practices and work area enclosure during removal activities. The Testing Laboratory will provide the General Contractor a daily copy of the sample results. The following fiber concentrations will be based on environmental air samples obtained outside the work area:
 - 1. Maintain an airborne fiber concentration outside the work area less than or equal to prevalent level or 0.01 fibers per cubic centimeter (f/cc), whichever is greater. Upon notification by the Testing Laboratory, that the airborne fiber concentration exceeds this level, commence cleaning of the affected area. Continue cleaning until Testing Laboratory performs testing to obtain a fiber concentration less than or equal to prevalent level or 0.01 fibers per cubic centimeter, whichever is greater.
 - 2. Upon notification by the Testing Laboratory, that an airborne fiber concentration obtained outside the work area exceeds 0.05 fibers per cubic centimeter, cease work, restrict access into the affected area with the installation of barrier tape, and commence cleaning of the affected area. Review work procedures and work area enclosure for effectiveness, and review activities in the general location of the affected area for potential of creating airborne fibers. Report review findings to General Contractor and Asbestos Consultant. Continue cleaning until Testing Laboratory performs testing to obtain a fiber concentration less than or equal to prevalent level or 0.01 fibers per cubic centimeter, whichever is greater. General Contractor may elect to perform additional testing at Asbestos Abatement Contractor's expense.

4.05 PERSONNEL PROTECTION

- A. Prior to commencement of work, instruct all workers in the appropriate procedures for personnel protection and asbestos removal. Ensure that workers are knowledgeable in these procedures.
- B. Provide respiratory protection at all times, which is in compliance with OSHA requirements. When not in violation of the above, the minimum acceptable respiratory protection used for this project shall be as follows, unless airborne fiber concentrations inside the face mask exceed 0.01 fibers per cubic centimeter (f/cc). In the event that airborne fiber concentrations inside the mask exceed 0.01 f/cc, respiratory protection required to achieve 0.01 f/cc shall be used.
 - 1. Provide a minimum of half-face dual cartridge respirators for workers during precleaning of work area (including HEPA-vacuuming of floors), installation of plastic sheeting, and waste handling and disposal activities outside the work area.



- 2. Provide a minimum of Powered Air Purifying Respirator (PAPR) equipment for "friable" removal work and half-face respirators for "non-friable" removal work for workers during all phases of the Work from the time of first disturbance of the asbestos-containing/contaminated material until acceptance of final air clearance tests by Asbestos Consultant.
- 3. Provide additional "piggy-back" cartridges recommended by the product or solvent manufacturer whenever solvents (e.g. mastic removers, spray adhesives, etc.) are used.
- C. Be solely responsible for scheduling necessary air sampling by an independent testing laboratory for compliance monitoring of own respiratory protection with OSHA regulations. Pay for all costs associated with such testing. In addition, submit copies of personal air monitoring results to Asbestos Consultant. If a prior negative exposure assessment (NEA) is used in lieu of employee air monitoring, provide documentation indicating that an NEA has been performed and include supporting documentation (e.g. the objective data used in the determination of the NEA).
- D. Permit no visitors, except for governmental inspectors having jurisdiction, or as authorized by General Contractor or Asbestos Consultant, in the work areas after commencement of asbestos disturbance or removal.
- E. Provide workers sufficient sets of protective disposable clothing, consisting of full-body coveralls, head covers, gloves, and foot covers, of sizes to properly fit individual workers.
- F. Leave reusable equipment, apparel and protection devices (excluding respirators) in the work area until the end of the asbestos abatement work, at which time such items shall be disposed of as contaminated waste or decontaminated for reuse.
- G. Provide suitable respirators and protective disposable clothing for use by authorized visitors, Owner/Owner's Representative, General Contractor, Asbestos Consultant and Testing Laboratory's representatives. Furrnish these in as many sets as required for full-time monitoring by Testing Laboratory.
- H. Provide and post at the entrance to the work area the asbestos removal work procedures to be followed by workers.

4.06 OBSERVATIONS

- A. Asbestos Consultant will observe the status and progress of the Work for completeness and general compliance with the requirements of the Work Procedures. At a minimum, the observations will be conducted at the following times during the Project:
 - 1. During preparation of work areas.
 - 2. Following complete preparation of work areas and prior to proceeding with actual disturbance of asbestos-containing material.
 - 3. During removal of asbestos-containing material.
 - 4. At designated times during the cleaning phases.
 - 5. As appropriate during the work outlined elsewhere in the Work Procedures.

4.07 SIGN-IN/OUT LOG

A. Maintain a Sign-In/Out Log in the immediate vicinity of the entrance to the work area. Maintain log from the time the first activity is performed involving the disturbance of asbestoscontaining material until acceptance of the final air test results by Asbestos Consultant. Require all persons entering the work areas, including the Asbestos Abatement Contractor's workers, Asbestos Consultant, General Contractor, Owner/Owner's Representative or agents of the Owner/Owner's Representative, government officials to register each time upon





entering and leaving work areas. Indicate name, last four numbers of the social security number, time, company, or agency represented and reason for entering work area.

4.08 MATERIALS

- A. Glove-Bag Six-mil or greater thickness, in size sufficient to allow airtight seal around pipe. Separate tool pouch and openings for amended water or sealant and HEPA-vacuum must be present.
- B. **Impermeable Containers** suitable to receive and retain asbestos-containing or contaminated materials until disposal at an approved site and labeled in accordance with OSHA Regulation 29CFR 1926.1101. Containers shall be both air and water tight.
- C. Mastic Remover Manufactured by a reputable, established manufacturer of mastic (adhesive) remover materials and approved specifically for use in asbestos-contaminated environments. Provide product compatibility for usage in confined areas. Flash Point shall be greater than 140 degrees Fahrenheit as determined by ASTM D 92. Product waste shall not meet the definition of hazardous waste under the EPA hazardous waste regulations 40CFR 261.
- D. **Plastic Sheeting** thicknesses as specified, in sizes to minimize the frequency of joints. All plastic sheeting utilized on the project shall be fire retardant.
- E. **Sealant (encapsulant)** manufactured by reputable, established manufacturer of encapsulant/sealant materials and approved specifically for use in asbestos-contaminated environments. Determine compatibility of the sealant with the materials and conditions.
- F. **Surfactant (wetting agent)** mixture of "Dust-Set Amended Water Base" (Matheson Chemical Corporation) or equivalent and water, mixed to manufacturer's specifications.
- G. **Tape** glass fiber or other type capable of sealing joints of adjacent sheets of plastic and for attachment of plastic sheet to finished or unfinished surfaces under both dry and wet conditions.
- H. **TSP Cleaning Solution** Trisodium phosphate cleaning solution, such as Sentinel 805 (Sentinel Chemical Company) or equivalent and water, mixed to manufacturer's specifications.
- I. Warning Labels and Signs as required by OSHA 29CFR 1926.1101.
- J. **Other Materials** provide all other materials, such as lumber, nails and hardware, which may be required to construct and dismantle the decontamination system and the barriers that isolate the work area.

4.09 TOOLS AND EQUIPMENT

- A. Provide suitable tools for asbestos-containing material removal.
 - 1. **Air Purifying Equipment (for internal recirculation in the work area)** HEPA Filtration Systems or Electronic Precipitators. Verify that no internal air movement system or purification equipment exhausts contaminated air from inside the work area into uncontaminated areas.
 - 2. **Half-Face Respirator Equipment** negative pressure, half-face air purifying respirators approved by NIOSH and MSHA for asbestos removal work.
 - 3. **HEPA-Filtered Vacuum** vacuum equipped with a HEPA filtration system.
 - 4. **Powered Air Purifying Respirator (PAPR) Equipment** powered air purifying respirators (PAPRs) approved by NIOSH and MSHA for asbestos removal work.
 - 5. **Scrapers and Brushes** as required to remove asbestos-containing materials.



- 6. **Transportation** as required for loading, temporary storage, transit, and unloading of contaminated waste without exposure to persons or property. Use only enclosed trucks or dumpsters to haul waste containers to prevent loss or damage of containers in route to the landfill.
- 7. **Water Sprayer** utilize airless or other low pressure sprayer for amended water application.

4.10 PREPARATION

- A. Coordinate with General Contractor for HVAC system supplying work area to remain off during all abatement activities. Alternatively, completely isolate HVAC system from the work area containment.
- B. Coordinate with General Contractor to identify, isolate and "make safe" all electrical, wiring, cabling, life safety, telephone/data/communication, etc. to be left in place. Clearly identify and mark all active systems or components to remain and protect from damage.
- C. Coordinate with General Contractor to remove movable objects from the work area as necessary to access asbestos-containing materials.
- D. Initial Work Area Preparation
 - 1. Erect temporary construction barriers and/or dust barriers as required to prevent building occupant or public viewing of the construction area.
 - 2. Install and entry vestibule or "airlock" at the entry of the construction area.
 - 3. Install construction warning tape and signs outside the construction area to prevent building occupant or public access to the construction area.
 - 4. Install asbestos warning barrier tape and signs inside the construction areas to segregate and demarcate the abatement work area within the construction area.
 - 5. Flammable materials (e.g. plastic sheeting, spray adhesives, etc.) shall not be stored in the work area.
 - 6. Maintain a Sign In/Out Log in the immediate area of the entrance to the work area to be utilized by every person, each time upon entering and leaving the work area.
- E. Preparation of Work Area Enclosure for the Removal of Non-Friable ACM, Pipe Insulation/ Duct Insulation Mastics, or Interior Black Damp Proofing on CMU Block – Full Containment.
 - 1. Coordinate with Owner/General Contractor for HVAC inside or supplying work area to remain off during all abatement activities.
 - 2. Install critical barriers and seal all openings and equipment within work area with a minimum of two layers of 6-mil (true thickness) plastic sheeting. Where fire hazards exist install fire retardant plastic sheeting with the minimum of same thickness as stated above.
 - 3. Notify Asbestos Consultant for observation of the critical barriers prior to pre-cleaning work area.
 - 4. Wet clean and HEPA-vacuum all immovable objects, equipment, walls and floor in the work area
 - 5. Install minimum one layer of 4-mil plastic sheeting (true thickness) the entire height of the walls from floor to ceiling/decking. If there is no wall on a side of the enclosure area, install two layers of 6-mil plastic sheeting as a critical barrier. Where fire hazards exist install fire retardant plastic sheeting with the minimum of same thickness as stated above.



- 6. Install two layers of 6-mil plastic sheeting (true thickness) on the floor below extending up the walls 18-inches with a minimum 12-inch to overlap between layers of plastic sheeting.
- 7. Ceiling preparation, install one layer of 4-mil (true thickness) plastic sheeting to extend the wall sheeting up and over the work area to provide a complete, segregated work area enclosure. If ceilings do not exist, install two layers of 4-mil (true thickness) plastic sheeting to extend the wall sheeting up and over the work area to provide a complete, segregated work area enclosure. Provide at least 18 inches of overlap with wall sheeting. Where fire hazards exist install fire retardant plastic sheeting with the minimum of same thickness as stated above.
- 8. Construct a three-stage worker/equipment decontamination unit consisting of an airlock, shower, and a clean room. Construct decontamination unit of appropriate materials (including plastic sheeting) to provide airtight barriers and allow continuous diminished pressure to be maintained in work areas. Provide proper decontamination equipment (water sprayer, towels, etc.) in the airlock to allow workers to properly decontaminate prior to exiting the airlock or removing materials from the work area. Post OSHA decontamination procedures in Change Room for duration of Project.
- 9. Place each work area under diminished air pressure utilizing HEPA filtration systems which comply with ANSI Z9.2-79, local exhaust ventilation.
- 10. Notify Asbestos Consultant for observation of the completion of work area preparation prior to disturbing asbestos-containing material.
- F. Preparation of Work Area for Glove-Bag Area Removal of Pipe Insulation and/or Duct Insulation.
 - 1. Coordinate with Owner/General Contractor for HVAC inside or supplying work area to remain off during all abatement activities.
 - 2. Install two layers 6-mil (true thickness) plastic sheeting on floor below work area extending at least 3 feet beyond the glove-bag in each direction.
 - 3. Check pipe/duct along entire length for damaged insulation. If damaged insulation is found, wrap the area with one layer of 6-mil plastic sheeting and seal with duct tape during the removal. If a large portion of the insulation is damaged wrap the entire length in one layer, 6-mil plastic sheeting and seal with duct tape.
 - 4. Place all necessary tools for removal in glove-bag before attaching to pipe.
 - 5. Place at least one layer of duct tape around the pipe/duct at each location where the glove-bag will be attached to ensure an airtight seal. Secure glove-bag to pipe/duct with sufficient duct tape to ensure the bag does not pull loose during removal.
 - 6. Attach the HEPA-vacuum unit to the glove-bag to provide a negative pressure in the bag.
 - 7. In the presence of Asbestos Consultant, smoke test the glove-bag. If a leak is detected, reseal and retest bag. Turn on the HEPA-vacuum to clear the smoke and further test the seal.
 - 8. Provide a remote two stage decontamination unit with air locks, use "double-suit" decontamination procedures as follow:
 - a. Two sets of protective disposable clothing will be worn while performing the work.
 - b. HEPA-vacuum and remove the outer set of protective clothing near the work area, immediately before entering the airlock.



- c. Once in the airlock, wet clean or HEPA-vacuum respirator and exposed portions of the body. Then HEPA-vacuum and remove inner set of protective clothing prior to leaving the airlock.
- d. Maintain respiratory protection throughout the decontamination process. Dispose of all used protective clothing and disposable filter cartridges as asbestos-contaminated waste.
- G. Preparation of Work Area Enclosure for the Removal Floor Tile, Floor Sheeting and Floor Mastics.
 - 1. Coordinate with Owner/General Contractor for HVAC inside or supplying work area to remain off during all abatement activities.
 - 2. Install critical barriers and seal all openings and equipment within work area with a minimum of two layers of 6-mil (true thickness) plastic sheeting. Where fire hazards exist install fire retardant plastic sheeting with the minimum of same thickness as stated above.
 - 3. Notify Asbestos Consultant for observation of the critical barriers prior to pre-cleaning work area.
 - 4. Wet clean and HEPA-vacuum all immovable objects, equipment, walls and floor in the work area
 - 5. Install one layer of 4-mil (true thickness) entire height of wall from floor to ceiling. If there is no wall on a side of the enclosure area, install two layers of 6-mil plastic sheeting as a critical barrier. Where fire hazards exist install fire retardant plastic sheeting with the minimum of same thickness as stated above.
 - 6. Ceiling preparation: (if hard ceilings exist, ceiling prep is not required)
 - a. Option 1 Should the ceiling not be intact, install two layers of 4-mil (true thickness) plastic sheeting to extend the wall sheeting up and over the work area to provide a complete, segregated work area enclosure. Provide at least 18 inches of overlap with wall sheeting. Where fire hazards exist install fire retardant plastic sheeting with the minimum of same thickness as stated above.
 - b. Option 2 Should the ceiling be intact, but the walls around the containment work area are not demising, install one layer of 4-mil (true thickness) plastic sheeting to extend the wall sheeting up and over the work area to provide a complete, segregated work area enclosure. Provide at least 18 inches of overlap with wall sheeting. Where fire hazards exist install fire retardant plastic sheeting with the minimum of same thickness as stated above.
 - 7. Construct a three-stage worker/equipment decontamination unit consisting of an airlock, shower, and a clean room. Construct decontamination unit of appropriate materials (including plastic sheeting) to provide airtight barriers and allow continuous diminished pressure to be maintained in work areas. Provide proper decontamination equipment (water sprayer, towels, etc.) in the airlock to allow workers to properly decontaminate prior to exiting the airlock or removing materials from the work area. Post OSHA decontamination procedures in Change Room for duration of Project.
 - 8. Place each work area under diminished air pressure utilizing HEPA filtration systems which comply with ANSI Z9.2-79, local exhaust ventilation. Ensure that odors from solvents to be used do not permeate to other occupied or public areas of the facility.
 - 9. Notify Asbestos Consultant for observation of the completion of work area preparation prior to disturbing asbestos-containing material.



- H. Preparation of Work Area for Removal of "Transite" Science Tables, and Fire Doors. (Component Removal).
 - 1. Install barrier tape around the work area.
 - 2. Install two layers of 6-mil plastic sheeting (true thickness) on the floor below the areas where the removal is to occur to act as a drop cloth.
 - 3. Use decontamination procedures, as described here, for personnel in work area.
 - a. Two sets of protective disposable clothing will be work while in work area.
 - b. Remove the outer set of protective clothing and HEPA-vacuum and remove the inner suit inside the work area, immediately before leaving the work area.
 - c. Dispose of all used protective clothing as asbestos-contaminated waste.
 - 4. Notify Asbestos Consultant for observation of the completion of work area preparation prior to disturbing asbestos-containing material.
- I. Preparation of Work Area for Removal of Exterior Wall Damp Proofing (NESHAP).
 - 1. Coordinate with Owner/General Contractor for HVAC inside or supplying work area to remain off during all abatement activities.
 - 2. Install construction barrier tape.
 - 3. If removal of damp proofing creates an opening to the interior of building areas, install a minimum of two layers of 6-mil (true thickness) plastic sheeting as critical barriers and seal all openings on the interior side of the building in the location where the damp proofing will be removed. In areas where the opening will be very large and there are no walls to support the plastic sheeting critical, install framing supports as needed to support the plastic sheeting. Where fire hazards exist install fire retardant plastic sheeting with the minimum of same thickness as stated above.
 - 4. Install two layers 6-mil (true thickness) plastic sheeting on floor below the work area.
 - 5. Use decontamination procedures, as described here, for personnel in work area.
 - a. Two sets of protective disposable clothing will be work while in work area.
 - b. Remove the outer set of protective clothing inside the work area, immediately before entering the airlock.
 - c. HEPA-vacuum and remove the inner suit prior to leaving the airlock.
 - d. Dispose of all used protective clothing as asbestos-contaminated waste.
 - 6. Notify Asbestos Consultant for observation of the completion of work area preparation prior to disturbing asbestos-containing material.
- J. Preparation of Exterior Work Area for Removal of Underground Transite Piping (NESHAP).
 - 1. Established a regulated work zone with appropriate asbestos signage, barrier tape and controlled access. Utilize decontamination unit with a minimum of two-stage decontamination unit with decon room with HEPA vacuum and clean room where workers may remove PPE safely, including respiratory protection.
 - 2. Install wetting apparatus or water connections to be used during wet removal methods. Protect all City storm drains and/or sloped areas from releasing any contaminated debris and/or water to exit the immediate work zone.
 - 3. Place two layers of 6-mil plastic sheeting on the ground to act a drop cloth once the underground piping has been excavated. Piping or piping debris will be placed on plastic sheeting prior to preparation for proper disposal.



4. Notify Asbestos Consultant for observation of the completion of work area preparation prior to disturbing asbestos-containing material.

4.11 REMOVAL OF ASBESTOS-CONTAINING MATERIAL

- A. Remove and properly dispose of all asbestos-containing materials scheduled for removal in the Work Procedures in accordance with the methods and procedures outlined in the OSHA 29CFR 1926.1101 and as more stringently specified herein.
- B. Removal of Pipe Insulation, Duct Insulation, and Interior Black Damp Proofing on CMU Block – Full Containment.
 - 1. Prepare work area as described in Item 4.10E.
 - 2. Spray areas of asbestos-containing material with amended water using spray equipment capable of providing a "mist" application to reduce the release of fibers. Spray the asbestos-containing material repeatedly during work process to maintain wet condition but do not use excessive amounts of water.
 - 3. As necessary, remove the asbestos-containing material. As the material is removed, place the material in a properly labeled sealable plastic bag of 6-mil minimum thickness, and remove from work area.
 - 4. After removal of asbestos-containing material, wet-clean and HEPA-vacuum all surfaces in the work area to remove residual accumulated material. Continue wet-cleaning until surfaces are visibly free of material.
 - 5. Notify Asbestos Consultant for observation of the completion of cleaning.
- C. Removal of Pipe Insulation and/or Duct Insulation and Mastic Glovebag.
 - 1. Prepare work area as described in Item 4.10F.
 - 2. Insert the water sprayer wand and tape all the water sleeve tightly around the wands to prevent air leakage.
 - 3. Use two people for glove-bag operation. One to remove insulation, the other to operate water sprayer and repair any leaks in bag.
 - 4. At all times, keep insulation thoroughly wetted.
 - 5. Care shall be taken not to puncture bag while cutting insulation.
 - 6. Gently remove insulation from pipe and place it in bottom of bag.
 - 7. After removal of insulation, brush, and wet-clean pipe to remove residual material. Continue wet cleaning until surfaces are free of visible material.
 - 8. Spray all tools with water inside bag and place back in pouch.
 - 9. Wet and double seal with plastic sheeting and duct tape, visible ends of remaining pipe insulation.
 - 10. Spray the inside of the bag with amended water and remove the watering wand, taping the water sleeve closed.
 - 11. Using the HEPA-vacuum, collapse bag and seal off lower portion containing asbestos-containing material and gloves of the bag.
 - 12. Remove bag from pipe, HEPA-vacuum from bag and tools from pouch.
 - 13. Encapsulate abated section of pipe/duct and any adjacent pipe/duct which did not contain insulation.
- D. Removal of Floor Tile, Floor Sheeting and Floor Mastics.
 - 1. Prepare work area as described in Item 4.10G.



- 2. Spray areas of asbestos-containing material with amended water using spray equipment capable of providing a "mist" application to reduce the release of fibers. Spray the asbestos-containing material repeatedly during work process to maintain wet condition but do not use excessive amounts of water.
- 3. Remove floor tile or floor sheeting. As it is removed, place the material in a properly labeled sealable plastic bag of 6-mil minimum thickness, and remove from work area.
- 4. As necessary, apply mastic remover to dissolve the mastic used to adhere the floor tile or floor sheeting to the concrete slab. The mastic remover is to be used per the manufacturer's recommendations.
- 5. After removal of asbestos-containing material, wet-clean and HEPA-vacuum all surfaces in the work area to remove residual accumulated material. Continue wet-cleaning until surfaces are visibly free of material.
- 6. Notify Asbestos Consultant for observation of the completion of cleaning.
- E. Removal of "Transite" Science Tables, and Fire Doors. (Component Removal).
 - 1. Prepare work area as described in Item 4.10H.
 - 2. Remove the component without disturbance or breaking, wrapped and seal the component in two layers of 6-mil (true thickness) plastic sheeting and properly labeled.
 - 3. Notify Asbestos Consultant for observation of the completion of removal.
- F. Removal of Exterior Wall Damp Proofing.
 - 1. Prepare work area as described in Item 4.10I.
 - 2. Remove damp proofing from substrate along with any adhesive materials utilized, if present and place materials in properly labeled sealable plastic bags of 6-mil minimum thickness and dispose of. Any material that cannot be placed in 6-mil plastic bags shall be wrapped and sealed in two layers of 6-mil (true thickness) plastic sheeting and properly labeled.
 - 3. Notify Asbestos Consultant for observation of the completion of removal.
- G. NESHAP Removal of Underground Piping ACBM using Wet Methods.
 - 1. Prepare exterior work area as previously described. Workers performing any work that involves segregation of waste via manual selection shall don PPE as described above. Ensure water spraying equipment is functional before starting any soil removal work. Demarcate general area of underground piping removal.
 - 2. Remove the underground piping, wrap, and seal in two layers of 6-mil (true thickness) plastic sheeting and properly labeled.
 - Notify Asbestos Consultant for observation of the completion of removal.

4.12 CLEANUP AND CLEARANCE TESTING

- A. Provide general cleanup of work area concurrent with the removal of all asbestos-containing materials. Do not permit accumulation of debris on workspace floor.
- B. Cleanup Sequence

3.

- 1. Remove all visible accumulations of asbestos-containing material and debris.
- 2. Carefully remove plastic sheeting on the walls or floor. Maintain plastic seals (i.e. critical barriers) on entrances, wall/floor penetrations, etc. Plastic sheeting must be double bagged in appropriately labeled 6-mil (true thickness) plastic bags.
- 3. Wet clean and HEPA-vacuum any remaining debris.



- 4. Notify Asbestos Consultant for observation of cleaning to determine completeness. Work area surfaces will be considered clean when free from dust, dirt, residue, or film resultant from abatement operations or other activities subordinate to these operations.
- C. Final Air Clearance Testing
 - 1. Testing Laboratory will conduct clearance testing of the work area as described in section 3.05C after the Asbestos Consultant has determined the work area is clean.
 - 2. Glovebag Removal Testing Laboratory will collect air samples in the work area during the removal and cleaning operations. If these samples indicate airborne fiber concentrations of less than or equal to ambient prevalent levels or 0.01 f/cc, whichever is greater, the work will be considered completed.
 - 3. PCM Clearances Testing Laboratory will test for the final air clearance levels upon notice from Asbestos Abatement Contractor that work areas are considered by Asbestos Consultant as visually decontaminated. If the final air clearance samples indicate airborne fiber concentrations of less than or equal to ambient prevalent levels or 0.01 f/cc, whichever is greater, the work will be considered completed.
 - 4. TEM Clearances Testing Laboratory will test for the final air clearance levels upon notice from Asbestos Abatement Contractor that work areas are considered by Asbestos Consultant as visually decontaminated. If the final air clearance samples indicate airborne fiber concentrations of less than 70 structures per millimeters squared (s/mm²), the work will be considered completed.
 - 5. Re-clean and continue to clean at Asbestos Abatement Contractor's expense, areas which do not comply with the specified final clearance level. Asbestos Abatement Contractor to bear cost of all follow-up tests necessitated by the failure of the air tests to meet the specified clearance level.
 - 6. Upon achieving final air clearance, dismantle the work area barriers and signage.

4.13 DISPOSAL OF ASBESTOS-CONTAMINATED WASTE

- A. Perform bag decontamination procedures as follows:
 - 1. As bags are moved out of the work area, wet-wipe bags to remove all contamination from them before they are moved into an uncontaminated space.
 - 2. Place bagged waste into appropriately labeled second bag for transport to landfill.
 - 3. Label asbestos-containing/contaminated waste in accordance with EPA 40 CFR 61.150, including waste generator and location information.
 - 4. Transport bagged waste on-site inside an enclosed buggy. Enclose and secure top of buggy with a minimum of 6-mil opaque plastic sheeting.
- B. Transportation to landfill shall be performed in accordance with all federal, state, and local laws and regulations.
 - 1. Place bags in the lockable, fully enclosed, metal waste disposal container, which has been lined with a minimum of one layer of 6-mil plastic sheeting. Plastic sheeting for the transport shall be reinforced type.
 - 2. Transport contaminated waste using a transporter licensed by the Texas Department of State Health Services to transport asbestos waste.
 - 3. Provide Texas Commission on Environmental Quality manifests (or EPA equivalent) for transportation of all contaminated waste to landfill.



- C. Remove sealed and labeled bags of contaminated material and wastes, and transport them for disposal to an approved landfill as follows:
 - 1. Notify Asbestos Consultant prior to removing each waste disposal container from the jobsite.
 - 2. Dispose of treated, packaged, labeled, asbestos-containing waste material in accordance with EPA 40 CFR 61.150.
 - 3. Allow only sealed plastic bags or impermeable containers to be deposited in landfill.
 - 4. Ensure that there are no visible emissions to the outside air from site where materials and waste are deposited.
 - 5. Submit copies of receipts from authorized representative of landfill operator for each delivery of waste material to Asbestos Consultant after each delivery and a complete set of copies of receipts for all deliveries.

4.14 SCHEDULING

- A. Asbestos Consultant will perform observations in areas and at times during the Work as deemed necessary by the Asbestos Consultant and as specified in the Work Procedures.
- **B.** Coordinate scheduling of observations with Asbestos Consultant as necessary. Should advance notice not be given to Asbestos Consultant, Asbestos Consultant will make reasonable effort to comply with time of requested observations. Do not proceed until such observations by Asbestos Consultant are made. Any delay in the completion of the Project caused by lack of advance notice by Asbestos Abatement Contractor to Asbestos Consultant shall not be sufficient cause for any extension of time or extension of the Project completion deadline.

5.0 ELECTRICAL WORK

5.01 DESCRIPTION

- A. Work included:
 - 1. Installation of temporary lighting and power necessary to perform the Work.
 - 2. Installation of Ground Fault Circuit Interrupters (GFCI) for Asbestos Abatement Contractor's and Asbestos Consultant's equipment.
 - 3. All electrical tie-ins are to be performed by licensed electricians.
- B. All materials and equipment required shall be:
 - 1. Approved by Underwriters Laboratories and so labeled.
 - 2. For wire and cable, marked as required by Article 310-10 National Electrical Code.
 - 3. Installed by mechanics skilled in their trades, working under the direct supervision of competent experienced foremen or superintendents.
 - 4. Installed in compliance with all applicable Occupational Safety and Health Administration and city electrical codes.
- C. Install items specified at the proper time during progress of construction. Coordinate work operations with other trades as necessary.
- D. Decontaminate and remove all temporary lighting and other electrical items after completion of asbestos-containing material removal operations.

END OF SECTION 02 82 13



2024 Cy-Creek HS Renovations Cypress-Fairbanks ISD Cypress, Texas

METAL BUILDING SYSTEMS

PART 1 - GENERAL

- 1.1 SUMMARY
 - A. Section Includes: Pre-engineered building system including the structural steel system primary and secondary per Design Criteria, metal roof system, canopy, wall system and all roof and wall insulation, trim and accessories as required.
 - B. Related Sections:
 - 1. Section 03 30 00 Cast-in-place Concrete
 - 2. Section 05 50 00 Metal Fabrications; structural frames for overhead doors
 - 3. Section 08 33 23 Overhead Coiling Doors
 - 4. Section 09 91 00 Painting; field painting exposed structure
 - Division 21 Fire Suppression; piping and supports 5.
 - 6. Division 22 Plumbing; piping and supports
 - 7 Division 23 - Heating, Ventilating, and Air Conditioning (HVAC); ductwork and supports
 - Section 31 23 00 Excavation and Fill 8.

1.2 SUBMITTALS

- A. Shop Drawings: Submit in accordance with SECTION 01 33 23 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES. Include complete erection drawings showing anchor bolt sizing, patterns and embedment lengths from datum, sidewall, endwall and roof framing, transverse cross sections, panel layout, flashing and trim details, and foundation loads.
- B. Samples: Submit in accordance with SECTION 01 33 23 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES. Submit a 12" long by actual width sample of roofing and siding panels, with required finish.
- C. Letter of Certification: Submit written Certification prepared and signed by a Professional Engineer, registered to practice in the State of Texas, verifying that building design and metal roof system (including panels, clips and support system components) meet indicated loading requirements and codes of authorities having jurisdiction. The certification must reference specific dead loads, live loads, snow loads, wind loads/speeds, tributary area load reductions (if applicable), concentrated loads, collateral loads, seismic loads, end use categories, governing code bodies including year and load applications.
- D. Welders Certification: Provide copy of welder's certification. Welders must show proof of certification/ gualification prior to starting any welding on the project.

1.3 QUALITY ASSURANCE

- A. Design Criteria:
 - 1. Design of metal building systems shall be based upon both strength and deflection requirements. These requirements shall meet the more stringent of the 2015 IBC or the criteria listed herein.
 - 2. Structural Framing: Design primary and secondary structural members and exterior covering materials for applicable loads and combinations of loads in accordance with the Metal Building Manufacturer's Association's (MBMA) "Design Practices Manual" and applicable Building Code.
 - 3. Structural Steel: Comply with the requirements of the American Institute of Steel Construction's (AISC) "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings" for design requirements and allowable stresses.
 - 4. Light Gage Steel: Comply with the requirements of the American Iron and Steel Institute's (AISI) "Specifications for the Design of Cold Formed Steel Structural Members" and "Design of Light Gage Steel Diaphragms" for design requirements and allowable stresses.
 - 5. Welders must show proof of certification/gualification prior to starting any welding on the project. For welded connections, comply with the American Welding Society's (AWS) "Standard Code for Arc and Gas Welding in Building Construction" for welding procedures. Welding procedure and operator qualifications and welding quality standard shall be in accordance with the American Welding Society structural welding code. Inspection other than visual inspection as defined by AWS, Paragraph 8.15.1, shall be identified and negotiated prior to bidding.

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- 6. Roof Live Load = **20 psf** with code-allowable area reductions.
- 7. Total Roof Dead Load and Collateral Load = **5 psf** plus frame weight.
- 8. Roof purlins shall be capable of supporting concentrated loads such as mechanical loads, sprinkler loads, sectional overhead doors.
- 9. Wind Load = **120 mph**, Exposure C.
- 10. Building Drift = Limited to H/400 at masonry.
- 11. Metal roof panels shall not provide a diaphragm or lateral stability for purlins.
- 12. Roof Panel System shall meet UL Class 90 uplift requirements and Class 1 fire requirements.
- 13. The General Contractor is responsible for obtaining and installing the building frame anchor bolts. The manufacturer shall provide design loads and/or the anchor bolt size required. The General Contractor shall verify the anchor bolt lengths do not extend beyond the concrete foundation dimensions. The General Contractor shall verify that all bids meet the above minimum design criteria, including the requirements for Collateral Load of 5 psf.
- B. Certain characteristics as dimensioned, detailed and specified shall not vary, including:
 - 1. Roof decking and insulation systems.
 - 2. Wall enclosure systems, insulation, etc. Including locations and sizes of openings, etc.
 - 3. Column locations, except to reduce quantity of columns.
 - 4. Primary frame locations and spacing.
 - 5. Secondary frame spacing (purlins, girts, etc.), except to reduce dimensions.
 - 6. Shape or gauge of exposed sheet metal gutters, fascia, flashing, etc.
 - 7. Roof slope or direction of slope.
 - 8. Bracing of interior drywall and masonry partitions to roof structure.
- C. Certain characteristics as dimensioned, detailed and specified shall be allowed to vary to accommodate alternate framing, including:
 - 1. Member sizes, except where clearances with scheduled ceiling heights, ductwork and piping, etc., as designed, create conflicts.
 - 2. Concealed portions of flashings, except as required to maintain watertightness and system integrity.
 - 3. Bracing methods, except where architectural elements create conflicts. Minor adjustments may be made by the Architect to accommodate bracing requirements.
- D. Installation of the pre-engineered building system shall be performed by one of the following:
 - 1. Authorized builder or contractor of the manufacturer having a minimum of 5 years' experience in installations of this type.
 - 2. Contractor authorized by the manufacturer as trained and qualified to erect the manufacturer's product and have a minimum of 5 years' experience in installations of this type.
- E. Manufacturer's Qualifications:
 - 1. Provide pre-engineered metal buildings as produced by a manufacturer with not less than 10 years successful experience in the fabrication of pre-engineered metal buildings of the type and quality required.
 - IAS accredited according to the International Accreditation Service's AC472, "Accreditation Criteria for Inspection Programs for Manufacturers of Metal Building Systems", as set forth in the International Building Code, Section 1704.
- 1.4 DELIVERY, STORAGE, AND HANDLING
 - A. Deliver preformed metal roofing panels and trim items to the project site with no dents, scratches, or abraded areas. Deliver in manufacturer's standard bundles, securely bound and store at the project site raised above slab or ground level on pallets.

1.5 WARRANTY

- A. Special Project Warranty: Submit two executed copies of standard 2-year "Roofing Guarantee" on form included at the end of this section, covering work of this section, including roofing panels, trim, sheet metal flashing, roof insulation and roofing accessories, signed by installer (roofer).
- B. Furnish to the Owner written 20-year warranties for the following:
 - 1. 20-year material failure warranty covering the cost of material and labor to repair, repaint, or replace materials not to exceed \$.80/SF for the aggregate of all claims.
 - 2. 20-year weathertightness warranty to repair or stop any leaks not to exceed \$.50/SF for the aggregate of all claims.

- 3. The warranty dollar limits noted in items 1. and 2. above, shall be additive so that the aggregate value of the dollar limit of all claims shall not exceed \$1.30/SF.
- 20-year warranty that coating shall not blister, peel, crack, chip or experience material rust-through for 20 years. For a period of 20 years, chalking shall not exceed #8-ASTM and fading shall be 5 ΔE Color Difference Units or less.

PART 2 - PRODUCTS

2.1 ACCEPTABLE PRODUCTS/MANUFACTURERS

A. Basis of Design shall be Butler Manufacturing Co. Provide pre-engineered building as manufactured by one of the following:

Alliance Seam 24 -AS24 Panel/PBR Panel; Alliance Steel (phone 800.624.1579 web site: www.allianceokc.com)

- MR 24 Roof Panels/BR II Wall Panels; Butler Manufacturing Co. (phone 816.968.3304 web site: www.butlermfg.com) Starshield Standing Seam Roof Panels/Dura-Rib Wall Panels; Star Manufacturing Co. (phone 800.879.7827 web site: www.starbldg.com)
- SSR Roof Panels/VP Panel Rib Wall Panels; VP Buildings, Inc.
- (phone 800.238.3246 web site: www.vp.com)

2.2 MATERIALS: STRUCTURAL FRAMING SYSTEM

- A. Structural Steel Design:
 - 1. Structural Steel: Comply with AISC 360, "Specification for Structural Steel Buildings."
 - 2. Bolted Connections: Comply with RCSC's "Specification for Structural Joints Using High-Strength Bolts."
 - 3. Cold-Formed Steel: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" for design requirements and allowable stresses
 - 4. The structural system will be designed in accordance with a specified building code. (Refer to Design Loads and Building Codes).
 - 5. Anchor bolts shall be designed using loads provided by manufacturer.
- B. Primary Framing:
 - 1. Rigid Frames
 - a. Frames shall consist of welded-up plate section columns and roof beams complete with necessary splice plates for bolted field assembly.
 - 1) All base plates, cap plates, compression splice plates and stiffener plates shall be factory welded into place and have the connection holes shop fabricated.
 - Columns and roof beams shall be fabricated complete with holes in webs and flanges for the attachment of secondary structural members and bracing except for field work as noted on manufacturer's erection drawings.
 - b. All bolts for field assembly of frame members shall be high strength bolts as indicated on erection drawings.
 - 2. Endwall Structurals:
 - a. The endwall structurals shall be cold-formed channel members designed in accordance with the 1986 AISI Specification or welded-up plate sections designed in accordance with the 1989 AISC Specification.
 - b. Endwall frames shall consist of endwall corner posts, endwall roof beams and endwall posts as required by design criteria.
 - All splice plates and base clips shall be shop fabricated complete with bolt connection holes. All base plates, cap plates, compression splice plates and stiffener plates shall be factory welded into place and have the connection holes shop fabricated.
 - 2) Beams and posts shall be shop fabricated complete with holes for the attachment of secondary structural members except for field work as noted on manufacturer's erection drawings.
 - c. Intermediate frames shall be substituted for endwall roof beams when specified.
 - 1) Necessary endwall posts and holes for connection to the intermediate frame used in the endwall shall be shop fabricated.
- C. Secondary Structural Members:
 - 1. Purlins and Girts
 - a. Purlins and girts shall be "Z" shaped, precision roll formed.
 - 2. Eave Struts: "C" sections.
 - 3. Bracing

- a. Bracing shall be located as indicated on drawings.
- b. Diagonal bracing shall be hot-rolled rod of size indicated on drawings, and attached to columns and roof beams as shown on the drawings.
- c. Optional fixed base wind posts or pinned base portal frames may be substituted for wall rod bracing on buildings as required.
- d. Flange braces, purlin braces, etc., when required, shall be cold-formed and installed as indicated on drawings.
- D. Finish: Factory Primed Structural Painting
 - 1. General:
 - a. Apply specified primer immediately after cleaning and pretreating.
 - b. All structural steel shall be prime painted as temporary protection against ordinary atmospheric conditions. Subsequent finish, painting, if required, shall be performed in the field by others.
 - c. Prior to painting all steel shall be cleaned of loose rust, loose mill scale, dirt and other foreign material. Unless otherwise specified the fabricator shall not sand-blast, flame clean or pickle prior to painting.
 - d. Factory cover all steel with one coat of red oxide primer paint formulated to equal or exceed the performance requirements of Federal Specification TT-P-636D, TT-P-664C and SSPC Paint-25.
 - 2. Primary Frames:
 - a. Clean all steel per SSPC-SP2.
 - b. Apply one coat of water reducible alkyd primer by spray or dip method to a minimum coating thickness of 1.0 mil.
 - 3. Secondary Structural Members:
 - a. Clean all steel per SSPC-SP8.
 - b. Apply one coat of coil applied polyester primer to a minimum coating thickness of 0.5 mil. (purlins and girts).
- 2.3 MATERIALS WALL PANELS
 - A. Exterior walls shall be covered with precision roll-formed Butlerib® II panels as furnished by Butler Manufacturing Company or approved equal.
 - 1. Panels shall be 3' wide with four major corrugations, 1¹/₂" high 12" on center with two minor corrugations between each of the major corrugations the entire length of the panel.
 - 2. Panels shall be one piece from base to building eave.
 - 3. The upper end of panels shall be fabricated with a mitered cut to match corrugations of Butlerib® II roof panels and square cut for all other roof panels.
 - 4. The bottom end of the panels shall be straight cut.
 - 5. Wall panels shall be properly aligned with structurals.
 - 6. Panel Design: Panel design shall be in accordance with AISI "Specifications for the Design of Light-Gage, Cold Formed Steel Structural Members," and in accordance with sound engineering methods and practices.
 - 7. 26 gage galvanized, per ASTM Specification A 653, and painted with exterior colors of Butler-Cote® 500 FP finish system, a full strength, 70% Kynar® 500/Hylar 5000[™] fluoropolymer coating. Manufacturer warrants that coating shall not blister, peel, crack, chip, or experience material rust-through for 20 years. For a period of 20 years chalking shall not exceed #8 ASTM and fading shall be 5ΔE Color Difference Units or less.
 - B. Trim material should be as follows:
 - 1. Exterior trim shall be of the same color as the exterior color of the Butlerib® II wall panel except the following:
 - a. Eave trim, gable trim, door side flashings and header flashings to be galvanized prepainted steel with Butler-Cote® 500 FP finish system, a full strength, 70% Kynar® 500/Hylar 5000™ fluoropolymer coating.
 - b. Downspouts and gutters shall be 24 gauge preprimed galvanized steel ready for field painting.
 - c. Interior trim shall be painted.
 - d. Flashings, trims, closures and similar items shall be as detailed on drawings as supplied by the manufacturer of the panel.
 - C. Fasteners:
 - 1. Butlerib® II wall panel-to-structural connections shall be made with Torx® head Scrubolt™ fasteners, Torx® head self-drilling screws or Lock-Rivet™ fasteners. Panel-to-panel connections shall be made with Torx® head self-drilling screws, or Lock-Rivets.
 - 2. Lock-Rivets (optional) shall be set by a special Lock-Rivet tool.
 - 3. Fastener locations shall be as shown on erection drawings as furnished by Butler Manufacturing Company.
 - 4. All exposed fasteners shall be either pre-painted to match wall color or shall be covered with plastic color caps to match wall color.

- D. Thermal Insulation: Provide glass fiber blanket insulation, of not less than 0.5 lb. per cu. ft. density, 4" nominal thickness at wall panels, with UL flame spread classification of 25 or less, and 2" wide continuous vapor tight edge tabs. Insulation shall be faced with manufacturer's standard vinyl film vapor barrier.
 - 1. Retainer Strips: Provide 26 gage formed galvanized steel retainer clips to hold insulation in place at roof panels.

2.4 MATERIALS - ROOF PANELS

- A. Roof panels shall be roll formed MR-24 panels as manufactured by Butler Manufacturing Co. or approved equal. Architect shall choose from the manufacturer's standard colors.
- B. Roof Panels: Provide drawing quality aluminum coated steel sheets complying with requirements of ASTM A 463; coated both sides with a layer of aluminum-zinc alloy (approximately 55% aluminum, 45% zinc) applied by the continuous hot-dip method. Metal thickness not less than 24 gage (0.0239").
 - 1. Color: Painted with exterior colors of Butler-Cote® 500 FP finish system, a full strength, 70% Kynar® 500/Hylar 5000[™] fluoropolymer coating. Manufacturer warrants that coating shall not blister, peel, crack, chip, or experience material rust-through for 20 years. For a period of 20 years chalking shall not exceed #8 ASTM and fading shall be 5ΔE Color Difference Units or less.
 - 2. The panels shall be 2' wide with two major corrugations, with a minimum rib height of 2³/₄" including the seam, 24" on center. Minor corrugations (cross fluting) at 6" on center between and perpendicular to the major corrugations, will be required to stiffen panel and reduce wind noise. Panels of 9", 12", 15", 18" and 21", in lengths up to 25' shall be provided as required.
 - 3. Provision for a full 2½" thermal movement of the roof panel shall be accomplished by the use of clips with self-centering movable tabs and shall be non-friction creating during thermal expansion cycles. The movable tab shall be made of high strength 304 stainless steel. The clip base shall be a minimum of 16 ga. galvanized steel. The clip system shall provide a self-centering mechanism to center the clip during erection. The force required to move the movable tab shall not exceed 8 lbs.
 - 4. The roof shall provide for thermal expansion/contraction without detrimental effect to the roof panel when there is a 100°F. temperature difference between the inside structural framework of the building and the temperature of the roof panels.
 - 5. Roofing assemblies shall be installed on a minimum ¼" in 12" downslope to drain, except at endwalls which may be warped to a lesser elevation when "flat roofed" appearance is desired. All gable end panels installed below ¼" to 12" shall have sufficient elevation to provide positive drainage.
 - 6. Panels of maximum possible lengths shall be used to minimize end laps. Panel end splices shall allow the roof panels to expand and contract with roof panel temperature changes, with a floating splice connection. Endlaps shall be staggered 5'-0" at alternating panels. Continuous in line splices will not be permitted. Panel end laps shall be not less than 6", sealed with sealants and fastened together by aluminum clamping plates, forming a free floating splice. Sealant at end laps shall contain PVC beads to prevent expulsion of the sealant during fastening process.
 - 7. Ridge assembly shall be designed to allow roof panels to move lengthwise with expansion/contraction as the roof panel temperature changes, and the ridge assembly itself shall be designed to accommodate expansion/contraction in its own length caused by thermal movement.
 - 8. All endwall trim and roof transition flashing shall allow the roof panel to move relative to the wall panels as the roof expands and contracts with temperature changes.
 - 9. All sidelap sealant shall be factory applied.
 - 10. Material used in flashing and transition parts shall match the roof panel materials, be compatible, and shall not cause a corrosive condition. Copper and lead materials shall not be used with zinc or aluminum coated panels.
- C. Thermal Insulation: Provide glass fiber blanket insulation, of not less than 0.5 lb. per cu. ft. density, 6" nominal thickness at roof panels, with UL flame spread classification of 25 or less, and 2" wide continuous vapor tight edge tabs. Insulation shall be faced with manufacturer's standard vinyl film vapor barrier.
 - 1. Provide thermal spacers.
 - 2. Retainer Strips: Provide 26 gage formed galvanized steel retainer clips to hold insulation in place at roof panels.
 - 3. Provide insulation Liner System with minimum R-25.
- D. Fasteners:
 - 1. All connections to roof panels shall be made with clips with movable tabs that are seamed into the standing seam sidelaps. Panel-to-panel connections shall be made with positive field formed double lock standing seam.
 - 2. Exposed fasteners are permitted at the eave and splice only.
 - 3. Exposed eave fasteners shall be aluminum-zinc coated or stainless steel.

- 4. Splice fasteners shall be stainless steel.
- E. Metal Accessories: Provide miscellaneous items as required for installation of work; all trim and metal flashing associated with the preformed metal panels shall receive the same finish as panels.
 - 1. Pipe flashing units shall be constructed of E.P.D.M. (ethylene Propylene Diene Monomer) rubber as manufactured by DuPont (Nordel 1440 Hydrocarbon). Unit shall be black in color with a ductile aluminum (Alloy A1100-0) reinforcing ring bonded to a rubber flange on the base of the flashing unit.
- F. Sealant: Provide one-part elastomeric polyurethane, polysulfide or silicone rubber sealant as recommended by roofing panel manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION AND ERECTION

- A. General: Install preformed metal roofing and wall panels and related items in accordance with roofing panel manufacturer's instructions.
- B. Framing: Erect structural framing true to line, level and plumb, rigid and secure. Level base plates to a true even plane with full bearing to supporting structures, set with double-nutted anchor bolts. Use a non-shrinking grout to obtain uniform bearing and to maintain a level base line elevation. Moist cure grout for not less than 7 days after placement.
- C. Purlins and Girts: Provide rake purlins with tight fitting closure channels. Secure purlins and girts to structural framing and hold rigidly to a straight line by sag rods.
- D. Bracing: Provide diagonal rod or angle bracing in both roof and sidewalls as indicated.
- E. Framed Openings: Provide shapes of proper design and size to reinforce openings and to carry loads and vibrations imposed, including equipment furnished under mechanical or electrical work. Securely attach to building structural frame.
- F. Roof Panels:
 - 1. Position and align panel with the eave structural member and align the panel with the panel clip.
 - 2. All side laps shall be field sealed by a lock-seaming device. Side lap sealant shall be factory applied.
 - 3. Panel end laps shall be not less than 6", sealed with sealants and fastened together by clamping plates, forming a free floating splice.
 - 4. Panel clips shall be attached to the secondary structural members.
- G. All connections of roof panels to structural members shall be made with clips with movable tabs that are seamed into the double lock standing seam side lap. Panel clips shall be attached to the secondary structural members.
- H. Panel-to-panel connections shall be made with positive field formed Pittsburgh double lock standing seam.
- I. Standing seams shall be formed by an electrically powered mechanical lock seaming device. Hand seaming devices may be required in some areas.
- J. Anchor components parts of the preformed metal roofing securely in place, providing for necessary thermal and structural movement.
- K. Thermal Insulation: Install insulation concurrently with installation of roof and wall panels in accordance with manufacturer's published directions. Install blankets straight and true in one-piece lengths with both sets of tabs sealed to provide a complete vapor barrier. Locate insulation on the underside of roof sheets, extending across the top flange of purlin members and held in place by retainer strips at each longitudinal joint of insulation, installed straight and taut. Provide thermal spacer blocks in accordance with manufacturer's recommendation.
- L. Install and securely anchor metal flashing, trim, gutters and related items to provide a weatherproof enclosure, no fasteners shall be exposed on the exterior face of the work.
- M. Upon completion of installation of gutters, test gutters for leaks. Block off downspouts and fill gutters with water. Inspect gutters for leaks, repair leaks and re-test sections of gutters until all sections are leak-proof.

- N. Upon completion and during all roofing operations roof panels, gutters and other system components shall be thoroughly cleaned of filings, tailings, spatters and excess materials.
- O. During all mechanical and painting operations, provide temporary protective coverings to prevent damage by overspray, solders or other contaminants.
- P. Structural system shall be plumb before wall panels are attached.
- Q. Panels shall be aligned and attached in accordance with erection drawings furnished by Butler Manufacturing Company.
- R. All sidelaps shall be at least one full corrugation.
- S. Panels shall be sealed at the base with metal closures.

END OF SECTION

2024 Cy-Creek HS Renovations Cypress-Fairbanks ISD Cypress, Texas

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ROOFING WARRANTY

| WHEREAS | |
|--|--|
| of (Address) | |
| herein called the "Roofing Contractor", has performed roofing an | d associated work ("work") on following project: |
| Owner: | |
| Address: | |
| Name and Type of Building: | |
| Address: | |
| Area of Work: | Date of Acceptance: |
| Warranty Period: | _ Date of Expiration: |

AND WHEREAS Roofing Contractor has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

NOW THEREFORE Roofing Contractor hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in watertight condition.

This Warranty is made subject to the following terms and conditions:

- 1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. lightning;
 - b. Peak gust wind speed exceeding 120 miles per hour;
 - c. fire;
 - d. failure of roofing system substrate including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. faulty construction of chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. vapor condensation on bottom of roofing; and
 - g. activity on roofing by others including construction contractors, maintenance personnel, other persons, and animals whether authorized or unauthorized by Owner.
- 2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Contractor, and until cost and expense thereof has been paid by Owner or by another responsible party so designated.
- 3. The Roofing Contractor is responsible for damage to work covered by this Warranty, but is not liable for consequential damages to building or building contents, resulting from leaks or faults or defects of work.

- 4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Contractor, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void upon date of said alterations, but only to extent said alterations affect work covered by this Warranty. If Owner engages Roofing Contractor to perform said alterations, Warranty shall not become null and void, unless Roofing Contractor, prior to proceeding with said work, shall have notified Owner in writing, showing reasonable cause for claim that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this warranty.
- 5. The Owner shall promptly notify Roofing Contractor of observed, known or suspected leaks, defect, or deterioration, and shall afford reasonable opportunity for Roofing Contractor to inspect work, and to examine evidence of such leaks, defects, or deterioration.
- 6. This Warranty is recognized to be the only warranty of Roofing Contractor on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to him in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Contractor of responsibility for performance of original work in accordance with requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

Installation Company

Bу

Title

Business Address

Telephone Number

FAX Number

ATTEST:

Secretary

IN WITNESS THEREOF, this instrument has been duly executed this

___day of ___

_____, 20_____

(INSERT APPROPRIATE EXECUTION FORM)

* * * * *



Z (1) TRUE NORTH

| | ABATEMENT PLAN GENERAL NOTES: |
|--|--|
| | ABATEMENT PLAN GENERAL NOTES: ABATEMENT PLANS WERE DERIVED FROM EXISTING BUILDING PLANS A ARE INTENDED TO REASONABLY PRESENT EXISTING CONDITION ABATEMENT CONTRACTOR SHALL VERIFY ACTURAL CONDITIONS A COORDINATE ABATEMENT AND DEMOLITION SPECIFICATIONS AND DRAWIN FOR DEMOLITION REQUIREMENTS AND EXISTING BUILDING DRAWINGS F BUILDING CONSTRUCTION CONDITIONS REFERENCE ARCHITECT'S DEMOLITION SPECIFICATIONS AND DRAWINGS F BUILDING. HOWEVER, THE LOCATIONS OF ALL ASBESTOS CONTAIN MATERIALS ARE NOT SHOWN. ABATEMENT CONTRACTOR SHALL VERIFY J. EXISTING CONDITIONS IN THE AREAS TO BE ABATED AND THE LOCATIONS ALL ASBESTOS-CONTAINING MATERIALS. ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR ABATEMENT OF J. ASBESTOS-CONTAINING MATERIALS. THE ASBESTOS ABATEMENT SCOPE OF WORK IS DESCRIBED IN TA ABATEMENT SPECIFICATIONS. THE ASBESTOS ABATEMENT SCOPE OF WO SHALL ALSO INCLUDE ANY HIDDEN ASBESTOS-CONTAINING MATERIALS TH MAY BE ASSUMED OR UNCOVERED DURING THE BUILDING SELECT DEMOLITION ACTIVITIES. THE ASBESTOS-CONTAINING MATERIALS IDENTIF IN THE BUILDING INCLUDE, AS A MINIMUM, THE FOLLOWING MATERIALS TH MAY IS ASSUMED OR UNCOVERED DURING THE BUILDING SELECT DEMOLITON ACTIVITIES. THE ASBESTOS-CONTAINING MATERIALS IDENTIF IN THE BUILDING INCLUDE, AS A MINIMUM, THE FOLLOWING MATERIALS INTERIOR ASBESTOS-CONTAINING MATERIALS: BLACK DAMPPROOF MASTICS AND ANY ASSOCIATED FLASHINGS, CREAMTAN DUCT MAS' OLD DOMESTIC HOT WATER PIPE INSULATION WITH WHITE/CRE MASTIC, AND FIRE DOORS (ASSUMED ASBESTOS). <u>EXTERIOR ASBESTOS-CONTAINING MATERIALS:</u> BLACK DAMPROOFING MASTICS AND A ASSOCIATED FLASHINGS. ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING A VERIFING MATERIALS: BLACK DAMPPROOFING MASTICS AND A ASSOCIATED FLASHINGS. ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING A VERIFING AND FIRE DOORS (ASSUMED ASBESTOS). <u>EXTERIOR ASBESTOS-CONTAINING MATERIALS:</u> NA CASESTOS-CONTAINING MATERIALS IN A RESCHEDULED FOR DEMOLITION OF WARERIAS. THAT WILL B |
| WALL PENETRATIONS FOR PIPING | ABATEMENT CONTRACTOR. ABATEMENT PLAN KEYED NOTES: DAMP PROOFING BLACK MASTIC APPLIED TO EXTERIOR CMU BLOCK AND . ASSOCIATED MASTIC OR FLASHING AROUND DOORS/WINDOWS AND AT CLOUN BEAMS OR BRICK LEDGES IN THIS AREA ARE TO BE ABATED. (NESHAP METHODS) RE TO THE ARCHTECTURAL DRAWINGS FOR EXACT SCOPE OF DEMO AND REMOVAL. FI VERIFY ALL COMPONENTS/MATERIALS TO BE DEMOLISHED. DAMP PROOFING BLACK MASTIC APPLIED TO INTERIOR (ONCE EXTERIOR WALL) (D BLOCK AND ANY ASSOCIATED MASTIC OR FLASHING AROUND DOORS/WINDOWS AND CLOUMNS, BEAMS OR BRICK LEDGES IN THIS AREA ARE TO BE ABATED. (THAPR - F CONTAINMENT REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT SCOPE OF DE AND REMOVAL. FIELD VERIFY ALL COMPONENTS/MATERIALS TO BE DEMOLISHED. MASTIC (TAN/CREAM) APPLIED TO DUCT INSULATION AND/OR METAL DUCT IN T AREA IS TO BE ABATED. REFER TO THE ARCHITECTURAL/M.E.P. DRAWINGS FOR EX SCOPE OF REMOVAL. FIELD VERIFY ALL COMPONENTS/MATERIALS TO BE REMOV (THAPR - FULL CONTAINMENT OR GLOVEBAG) WHITE OR CREAM MASTIC APPLIED TO CHILLED WATER PIPE INSULATION RUNS. SCOPE OF REMOVAL. FIELD VERIFY ALL COMPONENTS/MATERIALS TO BE REMOV (THAPR - FULL CONTAINMENT OR GLOVEBAG) WHITE OR CREAM MASTIC APPLIED TO THE ARCHITECTURAL/M.E.P. DRAWINGS FOR EX SCOPE OF REMOVAL. FIELD VERIFY ALL COMPONENTS/MATERIALS TO BE REMOV (THAPR - FULL CONTAINMENT OR GLOVEBAG) WHITE OR CREAM MASTIC APPLIED TO THE ARCHITECTURAL/M.E.P. DRAWINGS FOR EX SCOPE OF REMOVAL. FIELD VERIFY ALL COMPONENTS/MATERIALS TO BE REMOV (THAPR - FULL CONTAINMENT OR GLOVEBAG) |
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| ABATEMENT FLOOR PLAN - LEVEL ONE - UNIT B SCALE: 1/8" = 1'-0" | |





| ABATEMENT PLAN GENERAL NOTES: | | | | | | |
|-------------------------------|------|------------|-------|-------------|------------|-----|
| 1. A | BATI | EMENT PLAN | IS WI | ERE DERIVED | FROM EXIST | INC |
| A | RE | INTENDED | TO | REASONABLY | PRESENT | E |

- ABATEMENT CONTRACTOR SHALL VERIFY ACTURAL CONDITIONS AND COORDINATE ABATEMENT AND DEMOLITION WORK. 2. REFERENCE ARCHITECT'S DEMOLITION SPECIFICATIONS AND DRAWINGS
- FOR DEMOLITION REQUIREMENTS AND EXISTING BUILDING DRAWINGS FOR BUILDING CONSTRUCTION CONDITIONS 3. THESE DRAWINGS ARE REPRESENTATIVE OF TYPICAL CONDITIONS IN THE
- BUILDING. HOWEVER, THE LOCATIONS OF ALL ASBESTOS CONTAINING MATERIALS ARE NOT SHOWN. ABATEMENT CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE AREAS TO BE ABATED AND THE LOCATIONS OF ALL ASBESTOS-CONTAING MATERIALS.
- 4. ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR ABATEMENT OF ALL ASBESTOS-CONTAINING MATERIALS. 5. THE ASBESTOS ABATEMENT SCOPE OF WORK IS DESCRIBED IN THE
- ABATEMENT SPECIFICATIONS. THE ASBESTOS ABATEMENT SCOPE OF WORK SHALL ALSO INCLUDE ANY HIDDEN ASBESTOS-CONTAINING MATERIALS THAT MAY BE ASSUMED OR UNCOVERED DURING THE BUILDING SELECTIVE DEMOLITION ACTIVITIES. THE ASBESTOS-CONTAINING MATERIALS IDENTIFIED IN THE BUILDING INCLUDE, AS A MINIMUM, THE FOLLOWING MATERIALS: INTERIOR ASBESTOS-CONTAINING MATERIALS: BLACK DAMPPROOFING MASTICS AND ANY ASSOCIATED FLASHINGS, CREAM/TAN DUCT MASTIC, OLD DOMESTIC HOT WATER PIPE INSULATION WITH WHITE/CREAM MASTIC, CHILLED/HEATING WATER PIPE INSULATION WITH WHITE/CREAM MASTIC, AND FIRE DOORS (ASSUMED ASBESTOS). EXTERIOR ASBESTOS-CONTAINING MATERIALS: BLACK DAMPPROOFING MASTICS AND ANY ASSOCIATED FLASHINGS.
- 3. ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING AND VERIFYING THE ACTUAL QUANTITIES OF ALL ASBESTOS-CONTAINING MATERIALS AND OTHER REGULATED MATERIALS THAT WILL BE ABATED UNDER THE IDENTIFIED SCOPE OF WORK. WHILE SOME OF THE EXISTING AREAS OF ASBESTOS-CONTAINING MATERIALS ARE ACCESSIBLE OR EXPOSED, OTHER AREAS OF ASBESTOS-CONTAINING MATERIALS MAY BE "HIDDEN" (E.G. LOCATED ABOVE CEILINGS; IN WALLS OR CHASES; UNDER CARPET OR OTHER FLOOR FINISH MATERIALS; ABOVE AND/OR UNDER WALLS, MILLWORK, ETC.). ALL "HIDDEN" AREAS OF ASBESTOS-CONTAINING MATERIALS IN AREAS SCHEDULD FOR DEMOLITION IN THE SUBJECT BUILDING SHALL BE UNCOVERED AND ABATED BY THE ABATEMENT CONTRACTOR AS PART OF THE PROJECT SCOPE OF WORK.
- 7. PERFORM SELECTIVE DEMOLITION OF WALL AREAS, CEILING AREAS, FLOOR AREAS, CHASE AREAS, ETC, AS REQUIRED TO UNCOVER AND LOCATE ALL "HIDDEN" AREAS OF ASBESTOS-CONTAINING MATERIALS IN AREAS SCHEDULED FOR DEMOLITION IN THE SUBJECT BUILDING.
- B. REMOVE AND DISPOSE OF CARPET TO FACILITATE REQUIRED ABATEMENT WORK. DISPOSE OF NON-CONTAMINATED CARPET AS CONSTRUCTION WASTE. WHERE CARPET IS ADHERED TO FLOOR TILE/MASTIC WITH ADHESIVE OR MASTIC, AND THE FLOOR TILE/MASTIC IS REMOVED ALONG WITH THE CARPET, REMOVE AND DISPOSE OF CARPET UNDER ABATEMENT CONDITIONS.
- 9. FOR INTERIOR OR EXTERIOR WALL OPENINGS THAT IMPACT ASBESTOS CONTINAING MATERIALS, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR IDENTIFING AND MARKING OFF ANY NEW WALL OPENING LOCATIONS FOR THE ABATMENT CONTRACTOR.

ABATEMENT PLAN KEYED NOTES:

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- 4) WHITE OR CREAM MASTIC APPLIED TO CHILLED WATER PIPE INSULATION RUNS AND FITTINGS IN THIS AREA IS TO BE ABATED FROM CEILING PLENUM AREAS AND/OR MECHANICAL ROOM. REFER TO THE ARCHITECTURAL/M.E.P. DRAWINGS FOR EXACT SCOPE OF REMOVAL. FIELD VERIFY ALL COMPONENTS/MATERIALS TO BE REMOVED. (THAPR - FULL CONTAINMENT OR GLOVEBAG)
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- 7) SCIENCE "TRANSITE" ASBESTOS TABLES IN THIS AREA IS TO BE ABATED. (THAPR -COMPONENT REMOVAL)

ASBESTOS LEGEND (LOCATION PURPOSES ONLY):

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- BLACK "TRANSITE" SCIENCE TABLES





TRUE NORTH

ABATEMENT FLOOR PLAN - LEVEL ONE - UNIT M SCALE: 1/8" = 1'-0"

ABATEMENT PLAN GENERAL NOTES:

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- 2. REFERENCE ARCHITECT'S DEMOLITION SPECIFICATIONS AND DRAWINGS FOR DEMOLITION REQUIREMENTS AND EXISTING BUILDING DRAWINGS FOR BUILDING CONSTRUCTION CONDITIONS
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- (4) White or cream mastic applied to chilled water pipe insulation runs and FITTINGS IN THIS AREA IS TO BE ABATED FROM CEILING PLENUM AREAS AND/OR MECHANICAL ROOM. REFER TO THE ARCHITECTURAL/M.E.P. DRAWINGS FOR EXACT SCOPE OF REMOVAL. FIELD VERIFY ALL COMPONENTS/MATERIALS TO BE REMOVED. (THAPR - FULL CONTAINMENT OR GLOVEBAG)
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ASBESTOS LEGEND (LOCATION PURPOSES ONLY):

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- BLACK "TRANSITE" SCIENCE TABLES

KEY PLAN - LEVEL ONE

KEY PLAN - LEVEL ONE

