

**BID NO. PUR-1486
INVITATION TO BID
ISSUED ON BEHALF OF
THE BOARD OF COUNTY COMMISSIONERS
OF WASHINGTON COUNTY, MARYLAND**

**BY
THE WASHINGTON COUNTY PURCHASING DEPARTMENT
100 WEST WASHINGTON STREET, SUITE 3200
HAGERSTOWN, MD 21740
PHONE: 240-313-2330
FAX: 240-313-2331**

DATE ISSUED: October 28, 2020

LABORATORY FUME HOOD

PRE-BID TELE-CONFERENCE

**DATE/TIME AND LOCATION: Thursday, November 5, 2020 at 2:00 P.M., (EDT/EST)
Washington County Administration Complex
Hagerstown, MD 21740**

SUBMIT BIDS TO:

Washington County Purchasing Department
Washington County Administration Complex
100 West Washington Street
Third Floor, Suite 3200
Hagerstown, MD 21740

**BID SUBMISSION DEADLINE
AND BID TELE-CONFERENCE**

OPENING TIME: No later than 2:00 P.M., (EDT/EST) Monday, November 30, 2020

BID OPENING LOCATION:

Washington County Administration Complex
100 West Washington Street
Hagerstown, MD 21740

If indicated below (✓) and not waived by the County, Bidders shall be required to provide the following:

- _____ A Bid Bond, in the amount of five (5%) percent of the bid on a bid of \$100,000 or more for construction contracts and on a bid of \$50,000 or more for contracts for services, supplies, or construction related services. See "Bid Bonds – Section 2" of the General Conditions and Instructions to Bidders.
- _____ A Performance Bond for a bid award of \$100,000 or more on construction contracts and on contracts for services, supplies, or construction related services. See "Bid Bonds – Section 2" of the General Conditions and Instructions to Bidders.
- _____ A Labor and Material Bond for a bid award of \$100,000 or more on construction contracts and on contracts for services, supplies, or construction related services. See "Bid Bonds – Section 2" of the General Conditions and Instructions to Bidders.

**PUR-1486
LABORATORY FUME HOOD**

TABLE OF CONTENTS

	PAGE
I. Invitation to Bid	1-2
II. General Conditions and Instructions to Bidders	3-15
III. Supplemental Terms and Conditions	16-18
IV. Specifications	19-40
V. Washington County's <i>Insurance Requirements for Independent Contractors Policy</i>	41-42
VI. Provisions for Other Agencies	43
VII. Signature to Bids	44-45
VIII. Form of Proposal	46



PURCHASING DEPARTMENT
DIVISION OF BUDGET & FINANCE

**PUR-1486
INVITATION TO BID
LABORATORY FUME HOOD**

The Board of County Commissioners of Washington County, Maryland will accept sealed bids for “**LABORATORY FUME HOOD**” at the Conococheague WwTP. Bid documents are available immediately from the Washington County website: www.washco-md.net by accessing the “**Services/Bids-Purchasing/Open Bid Invitations**”. Assistance may be obtained by contacting the Washington County Purchasing Department, Washington County Administration Complex, 100 West Washington Street, Third Floor, Suite 3200, Hagerstown, Maryland, 21740. **Direct all inquiries to Rick F. Curry, CPPO, Director of Purchasing at telephone 240-313-2330 or fax 240-313-2331.**

All bids must be enclosed in a sealed opaque envelope marked “**SEALED BID – (PUR-1486) LABORATORY FUME HOOD**” and be received and time stamped by the Washington County Purchasing Department, Washington County Administration Complex, 100 West Washington Street, Third Floor, Suite 3200, Hagerstown, Maryland, 21740, no later than **2:00 P.M., (EDT/EST), Monday, November 30, 2020** after which time they will be opened in the presence of a County staff member. All interested parties are invited to hear a reading of the bids. For those bidders who wish to hear a reading of the bids, call 240-313-2330 to receive instructions prior to the tele-conference.

Due to the Coronavirus (COVID-19) pandemic the Washington County Purchasing Department has canceled all in person meetings. **A Pre-Bid Teleconference will be held on Thursday, November 5, 2020 at 2:00 P.M., (EDT/EST). All interested bidders wishing to take part in the meeting shall call 240-313-2330 to receive instructions prior to the meeting.** Participation is not mandatory but is strongly encouraged.

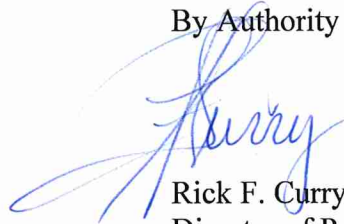
NOTE: Washington County Government has limited access to the Washington County Administration Complex at 100 West Washington Street, Hagerstown, Maryland until further notice. All Bidders shall allow ample time for delivery of their bid packets. Delivery of bid packets via-courier service or United States Postal Service (USPS) will be accepted. Those bidders who wish to deliver their bid packet in person will need to call 240-313-2330 to schedule an appointment to drop off their bid packet.

Washington County shall make positive efforts to utilize Disadvantaged Business Enterprises for its supplies and services and shall allow these sources to maximum feasible opportunity to compete for contracts. The Board of County Commissioners does not discriminate on the basis of race, color, national origin, sex, religion, age and disability in employment or the provision of services. Individuals requiring

special accommodations are requested to contact the undersigned at 240-313-2330 Voice, TTY Dial 711 to make arrangements no later than five (5) calendar days prior to the Pre-Bid Conference and/or Bid Opening.

The Board of County Commissioners of Washington County, Maryland, reserves the right to accept or reject any or all bids and to waive formalities, informalities and technicalities therein. The Board reserves the right to contact a Bidder for clarifications and may, at its sole discretion, allow a Bidder to correct any and all formalities, informalities and technicalities in the best interest of Washington County.

By Authority of:



Rick F. Curry, CPPO
Director of Purchasing

BOARD OF COUNTY COMMISSIONERS
OF WASHINGTON COUNTY, MARYLAND

GENERAL CONDITIONS AND INSTRUCTIONS TO BIDDERS
(Supply and Service Contracts)

INTRODUCTION

The general rules and conditions which follow, along with all other documents consisting of this "Bid Document," apply to all purchases and become a definite part of each formal invitation to bid, purchase order, contract, or other award issued by the Washington County's Director of Purchasing (hereinafter "Director of Purchasing"), unless otherwise specified. Bidders or their authorized representatives are expected to fully inform themselves as to the conditions, requirements, and specifications before submitting bids; failure to do so will be at the Bidder's own risk and they cannot secure relief on the plea of error. Bidders are advised that all costs related to preparing and/or submitting a Bid or Proposal shall be borne by the Bidder.

Satisfactory evidence of authority to bind the firm by the person signing the Bid when submitted by partnerships or corporations may be requested by the County prior to making any award. Anyone signing a Bid as an agent shall include evidence of his/her authority to do so.

Subject to Maryland State and Washington County, Maryland (hereinafter "County") laws and all rules, regulations and limitations imposed by legislation of the Federal Government, bids on all advertisements and invitations issued by the Washington County Purchasing Department shall bind bidders to applicable conditions and requirements set forth herein unless otherwise specified in the Invitation to Bid. Should there be a conflict in laws between states, State of Maryland law shall prevail.

Should there be a conflict between the general bid conditions and the supplemental bid conditions (if any), the supplemental bid conditions shall prevail.

GENERAL CONDITIONS OF BIDDING

1. **Bids Binding for Ninety (90) Days:** Unless otherwise specified all formal bids submitted shall be binding for ninety (90) calendar days following bid opening date, unless the bidder, upon request of the Director of Purchasing, agrees to an extension.
2. **Bids for All or Part:** Unless otherwise specified by the County or by the Bidder, the County reserves the right to make award on all items, or on any of the items according to the best interests of the County. Bidder may restrict his/her bid to consideration in the aggregate by so stating, but should name a unit price on each item bid upon; any bid in which the bidder names a total price for all the articles without quoting a price on each and every separate item, may be rejected at the option of the County.
3. **Catalogs:** Each Bidder shall submit where necessary or when requested by the Director of Purchasing, catalogs, descriptive literature, and detailed drawings, fully detailing features, designs, construction, finishes and the like necessary to fully describe the materials or work they propose to furnish.

4. **Collusive Bidding:** The Bidder certifies that his/her bid is made without any previous understanding, agreement or connection with any person firm, or corporation making a bid for the same project, without unlawful prior knowledge of competitive prices, and is in all respects fair, without outside control, collusion, fraud or otherwise illegal action.
5. **Competency of Bidder:** No proposal shall be accepted from or contract awarded to any person, firm or corporation that is in arrears or is in default to Washington County, Maryland upon any debt or contract, or that is a defaulter, as surety or otherwise, upon any obligation to said County, or had failed to perform faithfully any previous contract with the County. The Bidder, if requested, must present within forty-eight (48) hours evidence satisfactory to the Director of Purchasing of performance ability and possession of necessary facilities, pecuniary resources and adequate insurance to comply with the terms of these specifications and contract documents.

The successful Bidder shall actively cooperate in all matters pertaining to the proper compliance of this contract and shall come to the office of the Director of Purchasing whenever requested in connection with the performance of this contract.

The successful Bidder shall inform the Director of Purchasing of any and all circumstances which may impede the progress of the work or inhibit the performance of the contract including, but not limited to: bankruptcy, dissolution or liquidation, merger, sale of business, assignment, etc.

The County may examine the Bidder's and any-first-tier subcontractor's records to determine and verify compliance with the contract. The Bidder and any-first-tier subcontractor must grant the County access to these records at all reasonable times during the contract term and for three (3) years after final payment. If the contract is supported to any extent by Federal or State funds, the appropriate Federal or State authorities may also examine these records. The Bidder must include the preceding language of this paragraph in all first-time subcontracts.

6. **Completeness:** All information required by Invitation to Bid must be supplied to constitute a proper bid. The County shall not be responsible for the premature opening of Bids if not properly addressed or identified.
7. **Conditional Bids:** Qualified bids are subject to rejection in whole or in part.
8. **Confidentiality:** Firms shall give specific attention to the identification of those portions of their proposals that they deem to be confidential, proprietary information or trade secrets and provide any justification why such materials, upon request, should not be disclosed by the County under the Access to Public Records Act, State Government Article, Title 10, Sections 10-611 to 10-628, Annotated Code of Maryland.
9. **Errors in Bids:** When an error is made in extending total prices, the written unit bid price shall govern. In the absence of written prices, the unit bid price shall govern. Carelessness in quoting prices, or in preparation of bid, otherwise, will not relieve the Bidder. *Erasures or changes in bids must be initialed.*
10. **General Guaranty:** Bidder agrees to:

- a. Save the County, its agents and employees harmless from liability of any nature or kind for the use of any copyrighted or uncopyrighted composition, secret process, patented or unpatented, invention, article or appliance furnished or used in the performance of the contract which the Bidder is not the patentee, assignee, licensee or owner.
- b. Protect the County against latent defective material or workmanship and to repair or replace any damages or marring occasioned in transit or delivery.
- c. Furnish adequate protection against damage to all work and to repair damages of any kind, to the building or equipment, to their own work or to the work of other contractors, for which their worker is responsible due to the negligence in the course and scope of the employment.
- d. Pay for all permits, licenses and fees and give all notices and comply with all laws, ordinances, rules and regulations of the County and State of Maryland.

11. Illegal Immigrants:

- a. The Bidder shall comply with the Immigration and Nationality Act (INA) which includes provisions addressing employment eligibility, employment verification, and nondiscrimination. Under the INA, the Bidder may hire only persons who may legally work in the United States (i.e., citizens and nationals of the U.S.) and aliens authorized to work in the U.S. The Bidder shall verify the identity and employment eligibility of anyone employed or to be employed, including completion of the Employment Eligibility Verification Form (I-9). The Bidder shall establish appropriate procedures and controls to ensure that no services under this Contract will be performed by any worker who is not legally eligible to perform such services or for employment.
- b. Failure by the Bidder or his/her Sub-Contractors to comply with the provisions of Section 11.a. herein will be grounds for termination of the Contract.

12. Insurance: Liability insurance on all major divisions of coverage for each and every Bidder and subcontractor shall be required for the length of the contract. Bidder and subcontractor must supply evidence of insurance upon request. Each Bidder agrees to assist in every manner possible in the reporting and investigation of any accident, and upon request, agrees to cooperate with all interested insurance carriers in the handling of any claims by securing and giving evidence and obtaining the attendance of witnesses as required for any claim or suit. The Bidder shall be prepared to show evidence of insurance as required under Washington County's *Insurance Requirements for Independent Contractors Policy*, included herein, prior to the execution of any contract. The Bidder, if requested, shall provide the Certificate of Insurance to the Purchasing Department within ten (10) calendar days after receiving a request for it. Failure to provide an acceptable Certificate of Insurance within the time frame stated above shall be cause to terminate the contract(s). The certificate shall state that such insurance is in force and cannot be cancelled or released except upon thirty (30) days prior written notice to the County. If any of the stated coverages expire during the term of this contract, the Bidder shall deliver renewal certificates to the County at least ten (10) calendar days prior to the expiration.

13. **Interpretations, Discrepancies, Omissions:** Should any Bidder find discrepancies in, or omissions from the documents or be in doubt of their meaning, he/she should at once request, in writing, an interpretation from:

Rick F. Curry, CPPO – Director of Purchasing
Washington County Purchasing Department
Washington County Administration Complex
100 West Washington Street, Suite 3200
Hagerstown, MD 21740
FAX: 240-313-2331 or send questions in MicroSoft Word platform via
e-mail to: purchasingquestions@washco-md.net

All necessary interpretations will be issued to all Bidders in the form of addenda to the specifications, and such addenda shall become part of the contract documents. Exceptions as taken in no way obligates the County to change the specifications. Failure of any Bidder to receive any such addendum or interpretation shall not relieve such Bidder from any obligation under his/her bid as submitted. The County shall assume no responsibility for oral instructions or suggestions. ORAL ANSWERS WILL NOT BE BINDING ON THE COUNTY. Requests received after 4:00 P.M. on the date included in the Supplemental Terms and Conditions may not be considered.

14. **Landfill Tipping Fees:** Disposal of items shall be at an approved sanitary landfill and any fees for same must be included in the Bidder's proposal.
15. **Late Bids:** Formal bids or amendments thereto received by the County after the time specified for bid opening will not be considered. Bids received after the time specified for bid opening will be returned unopened.
16. **Mailing of Bids:** The County assumes no responsibility for the timely deliverance of mailed bids. Ample time should be allowed for the transmittal of bids by mail, and postmarks indicating the date of mailing will not be considered as evidence of intent to submit bids in proper time for the opening.
17. **Maryland Buy American Steel Act:** In accordance with the Annotated Code of Maryland -State Finance and Procurement Article, Sections 17-301 – 17-306, Washington County is defined as a Public Body and as such shall require a Bidder or subcontractor to use or supply only American Steel products in the performance of a contract as stated in the above referenced Sections.
18. **Multiple Bids:** No Bidder shall be allowed to offer more than one (1) price on each item even though he/she may feel that there are two (2) or more types or styles that will meet specifications. Bidders must determine for themselves which to offer. If said Bidder should submit more than one (1) price on any item, all prices for that item may be rejected at the discretion of the Director of Purchasing.
19. **Officers Not to Benefit:** No member of the elected governing body of Washington County, or members of his or her immediate family, including spouse, parents, or children, or any person representing, or purporting to represent any member or members of the elected governing body shall receive or be promised directly or indirectly, any financial benefit, by way of fee, political contribution, or any other similar form of remuneration and/or on the account of awarding and/or

executing the contract and that upon request of the County, as a prerequisite to payment pursuant to the terms of this contract, there will be furnished to the requester, under oath, answers to any interrogatories related to a possible conflict of interest as herein embodied. The Bidder, to the best of his/her knowledge, whether he/she be an officer, director, partner or any of its employees directly involved in obtaining contracts with the State, or any County or other subdivision of the State, has not been convicted of bribery or conspiracy to bribe under the laws of any State or Federal Government. Any contract made or entered into where it is discovered that violation of the intent of this provision exists shall be declared null and void and all monies received by the Bidder shall be returned to the County.

20. **Payment Terms:** Bid prices are to be net thirty (30) calendar days; all discounts are to be deducted and reflected in net prices. Term discounts of less than twenty (20) calendar days will not be considered in connection with any prompt payment discount offered, time will be computed from date of receipt of correct invoice or receipt and acceptance of shipment, whichever is later.
21. **Procurement Policy Manual:** This bid is administered according to Washington County's Procurement Policy Manual adopted by the Board of County Commissioners of Washington County, Maryland on June 25, 2013 and effective July 1, 2013. The contents of the aforementioned Manual may be requested from the Washington County Purchasing Department at 240-313-2330 or may be found on the web site at: <https://www.washco-md.net/wp-content/uploads/ProcurementPolicyManual2013FinalDraftrevised3-5-2020.pdf>.
22. **Proposal Forms:** Bids shall be submitted only on the forms provided by the County. The Bidder shall submit one (1) original bid on the forms provided with original signature, sealed to the County for that purpose. All bids must be enclosed in a sealed, opaque envelope marked with the title of the bid and be received in the Washington County Purchasing Department promptly on or before, time, date, and place stipulated on the Invitation to Bid. **NO** bids received after such stipulated time and date will be considered by the County. ***Facsimile Bids will not be accepted.***
23. **Registration with Maryland Department of Assessments and Taxation:** Prior to contracting, private corporations must either be incorporated in the State of Maryland or registered with the Maryland Department of Assessments and Taxation as a foreign corporation and must be in good standing. Proof of such standing is required prior to the start of the contracting process and good standing shall be maintained for the duration of the contract. The website for the State Department of Assessments and Taxation is: <http://dat.maryland.gov/Pages/sdatforms.aspx#BNE>, email address is sdat.charterhelp@maryland.gov, and phone numbers are: **(410) 767-1340** or **(888) 246-5941**.
24. **Reservations:** The County or its authorized agent reserves the right to reject any or all bids and to waive any informality or deficiency in bids received whenever such rejection or waiver is in the best interest of the County. The County also reserves the right to reject the bid of a Bidder who has previously failed to perform properly or complete on time contracts of a similar nature, or the Bid of a Bidder who investigation shows is not in a position to perform the contract. The County reserves the right to waive minor differences in specifications provided these differences do not violate the specifications intent nor affect the operation for which the items are being purchased, nor increase estimated maintenance and repair cost to the County. The County reserves the right to award contracts or place orders on a lump sum or individual item basis, or such combination as shall, in its judgment, be in the best interest of the County.

25. **Response to Invitation:** In the event you cannot submit a bid on our requirements, as set forth in the "Invitation to Bid", please return the Bid with an explanation as to why you are unable to bid on these requirements. Because of the large number of firms listed on the County's lists of Bidders, it is necessary to delete from these lists the names of those persons, firms or corporations who fail to respond after having been invited to bid on a commodity or commodities for three (3) successive bid openings.
26. **Substitutions:** All equipment is to be supplied in exact accordance with the specifications. Any Bidder who contemplates offering a product that differs from that specified must obtain the County's written approval prior to bid opening. Substitution requests must be received in the Purchasing Department no later than the date/time specified in the Supplemental Terms and Conditions. Requests received after the specified date/time will not be considered. All such decisions will be considered final and not subject to further recourse.
27. **Taxes-Responsibility for Payment, Exemptions, Forms to be Filed, etc.:**
- a. The County is exempt from State of Maryland Sales Tax. The County's Maryland Sales Tax Exemption Number is 3000129 2. However, the Bidder is responsible for making any necessary inquiries and investigations with regulating state agencies to obtain a determination of tax exemptions in his/her bid.
 - b. The Bidder is responsible for and by submitting a Bid agrees to pay all retail sales, income, real estate, sales and use, transportation and special taxes applicable to and assessable against any materials, equipment, processes and operations incident to or involved in the Project. The Bidder is responsible for ascertaining and acquainting his/herself with such taxes and making all necessary arrangements to pay same.
 - c. The Successful Bidder shall complete a W-9 Vendor Information form (provided by the County) and return it to the Director of Purchasing.
 - d. The County hereby reserves the right to withhold payment under this Contract until the Bidder and any subcontractor performing any duties under this Contract have furnished or caused to be furnished the Comptroller of the State of Maryland with all properly completed forms required by the said Comptroller and until all of said retail sales and/or use taxes due the State of Maryland by the Bidder have been paid and the Bidder exhibits a release or receipt from the Comptroller evidencing such payment.
 - e. The Bidder is hereby advised of Section 1-106(b)(3) of the Code of Public Local Laws of Washington County, MD: "If a bidder has not paid all taxes owed to the County or a municipal corporation in the County, the County Commissioners may reject the bidder's bid."
28. **Withdrawal of Bids:** A written request for the withdrawal of a bid or any part thereof may be granted if the request is received by the County prior to the specified time of opening.

BID BONDS

- 1. Bid Deposit - Bid Bond, Certified or Cashier's Check:** When required, each bid shall be accompanied by a bid bond signed by a surety company licensed to do business in the State of Maryland, or by a cashier's check, certified check or Treasurer's check drawn on a responsible bank doing business in the United States in the amount of five (5%) percent of the total Bid and shall be made payable to the Board of County Commissioners of Washington County, Maryland. When computing the amount of Bid for Check purposes, DO NOT deduct for trade-ins. U.S. Postal Money Orders are acceptable in lieu of checks.
- 2. Performance/Labor and Material Bonds:** The successful Bidder(s) on this bid must furnish the required bonds as indicated on the bid cover, made out to the Board of County Commissioners of Washington County, Maryland, prepared on forms contained herein, or in his/her absence, on an approved form, as security for the faithful performance of his/her contract, within ten (10) calendar days of his/her notification that his/her bid has been accepted. The surety thereon must be such surety company or companies as are authorized and licensed to transact business in the State of Maryland. Attorneys in fact who sign bonds must file with each bond a certified copy of his/her power of attorney to sign bonds. The successful Bidder or Bidders upon failure or refusal to furnish within ten (10) calendar days after his/her notification the required bonds shall forfeit to the County, as liquidated damages his/her bid deposit. The Performance Bond shall be in the amount of one hundred (100%) percent of the contract price covering faithful performance of the contract; and the Labor and Materials Payment Bond shall be in the amount of one hundred (100%) percent of the contract price as security for payment of all persons performing labor and furnishing materials in connection therewith.

SPECIFICATIONS REFERENCES

- 1. Formal Specifications:** The Bidder shall abide by and comply with the true intent of the specifications and not take advantage of any unintentional error or omission but shall fully complete every part as the true intent and meaning of the specifications and drawings. Whenever mention is made herein, of any article, material, or workmanship to be in accordance with laws, ordinances, building codes, underwriter's codes, A.S.T.M. regulations or similar expressions, the requirements of these laws, ordinances, etc., shall be construed to meet or exceed specification requirements and current established noise levels for specific equipment, materials, and/or services being furnished under this contract. All deviations from the specifications must be noted in detail by the Bidder, in writing, at the time of submittal of the formal bid. The absence of a written list of specification deviations at the time of submittal of the bid will hold the Bidder strictly accountable to the County to the specifications as written. Any deviation from the specifications as written not previously submitted, as required by the above, will be grounds for rejection of the material and/or equipment when delivered.
- 2. Samples:** The Purchasing Department reserves the right to retain or destroy the samples submitted for the purpose of evaluation and will be free from any redress or claim on the part of the Bidder if any samples are lost or destroyed. Bidders shall make all arrangements for delivery of samples to the place designated, as well as the removal of samples. Cost of delivery and removal of samples shall be borne by the Bidder. Upon notification by the Purchasing Department that a sample is available for pickup, it shall be removed within thirty (30) calendar days at the Bidder's expense or the Director of Purchasing shall dispose of same at his/her discretion. All sample packages shall

be marked "Sample for Purchasing Department" and each sample shall bear the name of the Bidder, item number, bid number, and shall be carefully tagged or marked in a substantial manner. Failure of the Bidder to clearly identify samples as indicated may be considered sufficient reason for rejection of bid.

3. **Trade Names/Substitutions:** In cases where an item is identified by a manufacturer's name, trade name, catalog number, or reference it is understood that the Bidder proposes to furnish the item so identified and does not propose to furnish an "equal/substitution" unless submission of an "equal/substitution" is stated otherwise as permissible. Any Bidder who contemplates offering a product that differs from that specified must obtain the County's written approval by submission of his/her request no later than the deadline for receipt of substitution requests as stated in the Supplemental Terms and Conditions. The reference to the above catalog is intended to be descriptive but not restrictive and only to indicate to the prospective Bidder articles that will be satisfactory. Bids on makes and catalogs will be considered, provided each Bidder clearly states on the face of his/her proposal exactly what he/she proposes to furnish, and forwards with his/her bid, a cut, illustration, or other descriptive matter which will clearly indicate the character of the article covered by his/her bid. The Director of Purchasing hereby reserves the right to approve as an equal, or to reject as not being an equal, any article the Bidder proposes to furnish which contains major or minor variations from specification requirements but may comply substantially therewith. If no particular brand, model, or make is specified, and if no data are required to be submitted with the bid, and after award and before manufacture or shipment, the successful Bidder may be required to submit working drawings or detailed descriptive data sufficient to enable the Director of Purchasing to judge if each requirement of the specifications is being complied with.

AWARD

1. **Award or Rejection of Bids:** For contracts of purchase, the contract shall be awarded to the lowest, responsive and responsible Bidder complying with all the provisions of the Invitation, provided the bid price is reasonable and it is to the best interest of the County to accept it. For contracts of sale, the contract shall be awarded to the highest, responsive and responsible Bidder complying with all the provisions of the Invitation, provided the bid price is to the best interest of the County to accept it.
2. **Notice of Award:** A written award (or Acceptance of Bid) mailed (or otherwise furnished) to the successful Bidder within the time for acceptance as specified herein shall be deemed to result in a binding contract without further action by either party. The bid with respect to all items accepted and all papers accompanying the same, the general conditions and instructions to Bidders, the specifications, and other papers and documents referred to in any of the foregoing shall constitute the formal contract, unless otherwise specified, between the Bidder and the County.
3. **Political Contribution Disclosure:** In accordance with Maryland Code, State Finance and Procurement Article, §17-402, the Bidder shall comply with Maryland Code, Election Law Article, Title 14, which requires that every person that enters into contracts, leases, or other agreements with the State, a county, or any incorporated municipality, or their agencies during a calendar year in which the person receives in the aggregate \$100,000 or more, shall file with the State Administrative Board of Election Laws a statement disclosing contributions in excess of \$500 made during the reporting period to a candidate for elective office in any primary or general election. The statement shall be filed with the State Administrative Board of Election Laws: (1)

before a purchase or execution of a lease or contract by the State, a county, an incorporated municipality or their agencies, and shall cover the preceding two (2) calendar years; and (2) if the contribution is made after the execution of a lease or contract, then twice a year, throughout the contract term, on: (a) February 5, to cover the 6-month period ending January 31; and (b) August 5, to cover the 6-month period ending July 31.

4. **“Requirements” Contract Bid Quantities:** On “Requirements” bids, acceptance shall bind the County to pay for, at unit bid prices, only quantities ordered and satisfactorily delivered. All stated quantities are estimated requirements and do not constitute a minimum or maximum.

5. **Responsibility/Qualifications of Bidder:** The County may make such investigations as it deems necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the County all such information and data for this purpose as the County may request. The County reserves the right to reject any bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the County that such Bidder is properly qualified to carry out the obligation of the contract and to complete the work contemplated therein. Conditional bids will not be accepted. In determining responsibility, the following qualifications, in addition to price, shall be considered by the Director of Purchasing on contracts of purchase and on contracts of sale (if applicable):
 - a. The ability, capacity and skill of the Bidder to perform the service required.
 - b. The character, integrity, reputation, judgment, experience and efficiency of the Bidder.
 - c. The quality of performance of previous contracts or services.
 - d. The Bidder’s previous and present compliance with laws and ordinances relating to the contract or service.
 - e. The sufficiency of the financial resources and ability of the Bidder to perform the contract or provide the service.
 - f. The quality, availability and adaptability of the supplies, or services, to the particular use required.
 - g. The ability of the Bidder to provide future maintenance and service for the use of the subject of the contract.
 - h. Whether the Bidder is in arrears to the County on a debt or contract or is a defaulter on surety to the County.
 - i. Such other information as may be secured having a bearing on the decision to make the award.

In determining a Bidder’s responsiveness, the Director of Purchasing shall consider material deviations from the advertised specifications which materially affect price, quantity, quality or limit the Bidder’s liability.

6. **Specific Bid Quantities:** Where quantities are specifically stated, acceptance will bind the County to order quantities specified and to pay for, at contract prices, all such supplies or services delivered that meet specifications and conditions of the contract. However, the County will not be required to accept delivery of any balances unordered, as of the contract expiration date; unless Bidder furnishes the Director of Purchasing with a statement of unordered balances not later than ten (10) calendar days after the termination date of the contract.
7. **Tie Bids:** If two (2) or more Bidders shall be tied for the lowest bid on a purchase contract, quality and service being equal, the contract shall be awarded to a local Bidder. If there is no local Bidder, or more than one local Bidder, the County shall award the contract to one (1) of the Bidders by drawing lots in public.

CONTRACT PROVISIONS

1. **Availability of Funds:** A contract shall be deemed executory only to the extent of appropriations available to each County department/agency for the purchase of such articles. The County's extended obligation on those contracts that envision extended funding through successive fiscal periods shall be contingent upon actual appropriations for the succeeding fiscal year.
2. **Contract Alterations:** No alterations or variables in the terms of a contract shall be valid or binding upon the County unless made in writing and signed by the County or its authorized agent.
3. **Default:** The contract may be cancelled or annulled by the County in whole or in part by written notice of default to the Bidder upon non-performance or violation of contract terms. An award may be made to the next low Bidder, or, articles specified may be purchased on the open market similar to those so terminated. In either event, the defaulting Bidder (or their surety) shall be liable to the County for costs to the County in excess of the defaulted contract prices: Provided, that the Bidder shall continue the performance of this contract to the extent not terminated under the provisions of this clause. Failure of the Bidder to deliver materials or services within the time stipulated on his/her bid, unless extended in writing by the Director of Purchasing, shall constitute contract default. In the event that a Bidder exempted from posting a Bid or Performance Guarantee fails to execute and perform any contract awarded to them, they shall forfeit the right to Bid on any future County contract for a period of time determined by the Director of Purchasing and they shall be liable for any costs incurred by the County as a result of his/her default.
4. **Guarantee:** All work, supplies, and/or materials and requirements described in the specifications including any modifications thereto which may be made in accordance with the direction and/or approval of the County Director of Purchasing shall be Guaranteed/Warranted for a period of one (1) year from the date of final acceptance by the County as follows, unless indicated otherwise in this contract:
 - a. Against all faulty or imperfect materials and/or equipment and against all imperfect, careless and/or unskilled workmanship.
 - b. Against injury or undue deterioration from proper and usual use of the goods and/or services.

- c. Removal and replacement with proper materials, equipment, and/or services and re-execute, correct or repair without cost to the County, any materials, equipment, and/or services found to be improper, imperfect, defective or fails to perform as specified.
- d. Make good all damage caused to other work, materials and/or equipment due to such required removal, replacement and/or re-execution.
- e. Shall comply with any and all guarantee/warranties of whatever nature referred to in other portions of the contract specifications.

Any warranties whether expressed or implied shall not reduce the risk of the seller's/ manufacturer's obligation to the County against latent defect which may be found during the rated life of the supplies and/or materials and requirements described in the specifications including any approved modifications.

- 5. **Intergovernmental Purchasing:** The following Agencies/Jurisdictions shall be able to purchase, if applicable, directly from contracts resulting from this Invitation to Bid (ITB): Washington County Board of Education and all of its public schools, Hagerstown Community College, Municipalities of Washington County, and public or quasi-public agencies that receive County money and are exempt from taxation under Section 501(c)(3) of the Internal Revenue Code, i.e, Washington County Volunteer Fire and Rescue Companies. While this ITB is prepared on behalf of the County, it is intended to apply for the benefit of the above-named agencies/jurisdictions as though they were expressly named throughout the document. Each of these agencies/ jurisdictions may purchase from the successful Bidder under the same terms and conditions of the contract with the County, in accordance with each agencies/jurisdictions respective laws and regulations, or an agency may choose not to procure from the successful Bidder at the agency's sole discretion. If one of the above-named agencies/jurisdictions elects to purchase under the contract, the price shall be determined by using unit costs and other pertinent costs provided in the offer. Any special discounts unique to a particular agency/jurisdiction shall be stated. Bidder shall also submit the attached "Provisions for Other Agencies" form, if included in this bid.
- 6. **New Goods, Fresh Stock:** All contracts, unless otherwise specifically stated, shall produce new commodities, fresh stock, latest model, design or pack.
- 7. **Non-Discrimination:** No Bidder who is the recipient of County funds or who proposes to perform any work or furnish any goods under this agreement shall discriminate against any worker, employee or applicant or any member of the public because of religion, race, sex, color or national origin, age, marital status, physical or mental handicap, nor otherwise commit an unfair employment practice. Bidder further agrees that this article will be incorporated by Bidder in all contracts entered into with suppliers of materials or services, Bidders and subcontractors and all labor organizations, furnishing skilled, unskilled and craft union skilled labor, or who may perform any such labor or services in connection with this contract.
- 8. **Non-Liability:** The Bidder shall not be liable in damages for delay in shipment or failure to deliver when such delay or failure is the result of fire, flood, strike, act of God, act of government, act of an alien enemy or by any other circumstances which, in the Director of Purchasing's opinion, is beyond the control of the Bidder. Under the circumstances, however, the County may in its discretion, cancel the contract.

9. **Placing of Orders:** Orders against contracts shall be placed with the Bidder on a Purchase Order executed and released by the Director of Purchasing.
10. **Subletting of Contract:** It is mutually understood and agreed that the Bidder shall not assign, transfer, convey, sublet, or otherwise dispose of their contract or their rights, title or interest therein, or their power to execute such contract, to any other person, firm or corporation, without the previous written consent of the County Director of Purchasing, but in no case shall such consent relieve the Bidder from his/her obligations, or change the terms of the contract.
11. **Termination of Contracts:** Contracts shall remain in force for full periods specified and until all articles ordered before date of termination shall have been satisfactorily delivered and accepted and thereafter until all requirements and conditions shall have been met, unless:
 - a. Terminated prior to expiration date by satisfactory deliveries of entire contract requirements.
 - b. Extended upon written authorization of the Director of Purchasing and accepted by Bidder, to permit ordering of unordered balances or additional quantities at contract prices and in accordance with contract terms.
12. **Termination for Convenience:** The performance of work under this Contract may be terminated by the County in accordance with this clause in whole, or from time to time in part, whenever the County shall determine that such termination is in the best interest of the County. The County shall pay all reasonable expenses associated with this Contract that the Contractor has incurred up to the date of termination, and all reasonable expenses associated with termination of the Contract; provided, however, the Contractor shall not be reimbursed for any anticipatory profits that have not been earned up to the date of termination.

DELIVERY PROVISIONS

1. **Delivery:** Delivery shall be required to the place designated in the specifications or on the proposal form. All prices must be FOB Destination, Inside Delivery. The weight, count, measure, etc. shall be determined at the points of delivery. The Bidder shall be required to furnish proof of delivery in every instance. Bulk materials are to be placed on skids or pallets. No help for unloading shall be provided by the County. Suppliers shall notify their shippers accordingly.
2. **Delivery Failures:** Failure of a Bidder to deliver within the time specified, or within a reasonable time as interpreted by the Director of Purchasing or failure to make replacements of rejected articles when so requested, immediately or as directed by the Director of Purchasing shall constitute authority for the Director of Purchasing to purchase in the open market articles of comparable grade to replace the articles rejected or not delivered. On all such purchases, the Bidder shall reimburse the County, within a reasonable time specified by the Director of Purchasing, for any expense incurred in excess of contract prices or the County may deduct such amount from monies owed the defaulting Bidder. Such purchases shall be deducted from contract quantities.
3. **Inspections:** Inspection and acceptance of materials or supplies shall be made after delivery. Final inspection shall be conclusive except as regards latent defects, fraud, or such gross mistakes as

amount to fraud. Final inspection and acceptance or rejection of the materials or supplies shall be made as promptly as practicable, but failure to inspect and accept or reject materials or supplies shall not impose liability on the County for such materials or supplies as are not in accordance with the specifications. All delivered materials shall be accepted subject to inspection and physical count.

4. **Hazardous Safety Data Sheets:** Any hazardous substances as defined under the Department of Labor Occupational Safety and Health Standard for General Industry (29-CFR-1910.1200) and State of Maryland Law and Regulations on "Access to Information About Hazardous and Toxic Substances", MDSH Article 89, Section 28-49-D, being delivered to Washington County as a result of this Invitation to Bid shall be accompanied by a current "Hazardous Data Safety Sheet" or item may not be accepted.
5. **Packing Slips or Delivery Tickets:** All shipments or deliveries shall be accompanied by Packing Slips or Delivery Tickets and shall contain the following information for each item delivered. Bidders are cautioned that failure to comply with these conditions shall be considered sufficient reason for refusal to accept the goods.

The Purchase Order Number
The Name of the Article and Stock Number (Supplier's)
The Quantity Ordered
The Quantity Back Ordered
The Name of the Contractor

6. **Responsibility for Materials Shipped:** The Bidder shall be responsible for the materials or supplies covered by this contract until they are delivered at the designated point and the Bidder shall bear all risk on rejected materials or supplies after notice of rejection. Rejected materials or supplies must be removed by and at the expense of the Bidder promptly after notification of rejection, unless public health and safety require immediate destruction or other disposal of rejected delivery. Upon failure of the Bidder to remove materials or supplies within ten (10) calendar days after date of notification, the County may return the rejected materials or supplies to the Bidder at the Bidder's risk and expense or dispose of them as its own property.
7. **Testing:** The cost of testing a representative sample of an order or shipment for acceptance shall be borne by the County. However, if the order and shipment is rejected for failure to meet the requirements of the specifications or purchase description, the cost of testing shall be charged to the Bidder.
8. **Time of Delivery:** Deliveries shall be accepted between 8:00 A.M. and 3:00 P.M. on weekdays only, unless stated otherwise in the bid document. No deliveries shall be accepted on Saturdays, Sundays or County Holidays, unless otherwise arranged by an individual Department/Agency.

**PUR-1486
LABORATORY FUME HOOD**

SUPPLEMENTAL TERMS AND CONDITIONS

1. **Award:** The County reserves the right to award a contract to the responsive, responsible low bidder for the purchase, removal and insulation of the equipment. The County reserves the right to make an award to the firm providing the most advantageous offer or the firm providing the offer determined solely by the County to be in the County's best interest.

2. **Brochures, Descriptive Literature, Manuals:**
 - a. Bidders shall furnish the information requested at the time stated in the bid documents.
 - b. Failure to comply with this requirement shall be ample cause for rejection of the bid proposal and termination for default of any resulting contract.

3. **Certification of Compliance with Specifications:** Bidders shall comply with all conditions, provisions and specifications contained herein and which are hereby made a part of the contract. Bidders shall certify the materials and processes provided shall be suitable for the usage it is being used for. Furthermore, the Bidder shall specify that the materials and processes will or will not comply in every respect with this specification. In the event the materials and processes offered do not fully comply with these specifications, the Bidder shall definitely state **all deviations on his bid proposal sheet or an attached sheet**. Where no statement is received, the bidder will be responsible for meeting every requirement of these specifications.

4. **Competition:** To better ensure fair competition and to permit determination of lowest Bidder:
 - a. The name of the manufacturer, trade name, or manufacturer or vendor catalog number mentioned in the specifications is for the purpose of designating a standard or quality and type and for no other.
 - b. A Bid that demonstrates any omission, irregularity of form, additions not called for, or is anyway conditional, or at the sole discretion of the County is determined to be unbalanced may be rejected.
 - c. All bids must be accompanied by such descriptive literature as may be called for by the specifications or proposal.
 - d. Specifications provided are based on County needs and uses, estimated cost of operation and maintenance, and other significant and/or limiting factors to meet County requirements and be consistent with County policies. Minimum specifications where included, are not established arbitrarily to limit competition or to exclude otherwise competitive Bidders.

5. **Demonstration of Equipment:** All bidders shall be willing and able to demonstrate similar proposed equipment to the County prior to award to ensure the unit will function in accordance with the specifications and will perform adequately for the County required work. Bidders shall incur all cost of providing a demonstration of their unit. Bidders shall be responsible for scheduling and coordinating demonstration with the designated department.

6. **Delivery:**

After an acceptable demonstration and notification of an award the successful Bidder shall guarantee delivery of the equipment and items in accordance with such delivery schedule as may be provided in the specifications. All items shall be delivered F.O.B. Destination, and delivery costs and charges shall be incidental and included in the bid.

- a. Bidders shall guarantee delivery of all the equipment, no later than forty-five (45) consecutive calendar days after receipt of a Purchase Order. The successful Bidder shall deliver the equipment to the **Department of Water Quality, 12630 Elliott Parkway, Williamsport, Maryland 21795**. The equipment shall be ready for use. Contact telephone number 240-313-2600.
- b. The Bidder shall bear responsibility for timely delivery and safety during delivery. All deliveries must arrive between 8:00 A.M. and 2:00 P.M., (EDT/EST), Monday through Friday. All Federal, State and Local Safety Regulations must be followed during transportation, loading and unloading of any product. The County observes the following holidays:

Veteran's Day	Thursday, November 11, 2020
Thanksgiving Day	Thursday, November 26, 2020
Friday after Thanksgiving	Friday, November 27, 2020
Christmas Eve	Thursday, December 24, 2020
Christmas Day	Friday, December 25, 2020
New Year's Eve	Thursday, December 31, 2020
New Year's Day	Friday, January 1, 2021
Martin Luther King's Birthday	Monday, January 18, 2021

7. **Form of Proposal:** All bids must be submitted on the form provided herein.

8. **Interpretation, Discrepancies, Omissions:** Refer to General Conditions and Instructions to Bidders – General Conditions of Bidding, Section 13; requests received after **4:00 P.M., (EDT/EST), Thursday, November 12, 2020** may not be considered. All correspondence in regard to this bid shall be directed to and issued by the Washington County Purchasing Department.

9. **Liquidated Damages:** The County reserves the right to charge the Contractor for each consecutive calendar day that delivery is not completed in accordance with the delivery schedule. The per diem charge may be invoked at the discretion of the County, said sum of Two Hundred Fifty (\$250.00) Dollars per consecutive calendar day to be charged back to the Contractor for each piece of equipment not delivered by the delivery time specified herein.

10. **Material and Workmanship:** All materials furnished will be guaranteed to be new and of current manufacture, to meet all requirements of the specifications, and to be in intended use condition at time of delivery. All workmanship will be of high quality and accomplished in a professional manner in accordance with the best practices of the trade if not otherwise specified herein.
11. **Payment:** Payment shall be made within thirty (30) consecutive calendar days of receipt of invoice, after approval and final acceptance of the equipment. The invoice shall be submitted to the Department Water Quality, 16232 Elliott Parkway, Williamsport, Maryland 21795. The invoice amount shall be the amount as stipulated on the Form of Proposal.
12. **Silence of Specifications:** The apparent silence of this specification, as to any detail or apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only best commercial practice is to prevail. Appurtenances and/or accessories and processes not herein mentioned but necessary to furnish to perform as intended shall be included, conform to the best practice and workmanship known, and be subject to these specifications in full. All interpretations of these specifications shall be construed as minimum.
13. **Site Visit:** Bidders wishing to visit the site will be given the opportunity to do so by calling the County's Representative, Mark Bradshaw, P.E., Interim Division Director of Environmental Management at 240-313-2600 to schedule an appointment.
14. **Substitutions:** Refer to General Conditions and Instructions to Bidders – General Conditions of Bidding, Section 26. Substitution requests must be received in the Purchasing Department **no later than 4:00 P.M., (EDT/EST) Thursday, Novemebr12, 2020**. Requests received after this deadline for substitutions will not be considered. All such decisions will be considered final and not subject to further recourse. All correspondence in regard to this bid shall be directed to and issued by the Washington County Purchasing Department.
14. **Warranty:**
 - a. Warranty requirements are detailed in the specifications for the equipment.
 - b. Bidders shall provide copies of all warranties with the submission of their bid proposal.
 - c. Warranties shall commence after final acceptance of the equipment.

PUR-1486
LABORATORY FUME HOODS

SCOPE OF WORK / SPECIFICATIONS

I. SUMMARY:

Section Includes:

- Bench-top High-Performance Laboratory Fume Hoods.
- Service fixtures (i.e. water, gas, etc.) and electrical service fittings in fume hoods.
- Piping and wiring within service fittings, light fixtures, switches, and other electrical devices.
- Fume hood base support.
- Work Surfaces within fume hoods.
- Laboratory sinks and cup sinks in fume hoods.
- Filler panels and ceiling enclosures for fume hoods.

II. CLASSIFICATION:

- a. This specification covers the requirements for the purchase of bench mounted laboratory fume hoods for use with remote exhaust blower systems, remove/disposal of existing fume hood and blower system, and installation of new fume hood and blower system. Mercury and acid were used in the existing hood.
- b. Bench-mounted laboratory fume hood in 5-foot widths, internal depth of 23.3" and external depth of 31.7" is required.
- c. This specification sets the intent for quality, performance and appearance.

III. REFERENCES:

The laboratory hoods must conform to the following regulations and standards.

- a. SEFA 1-2010, Scientific Equipment and Furniture Association, Recommended Practices for Laboratory Fume Hoods.
- b. SEFA 8-2010, Recommended Practices for Laboratory Grade Metal Casework, 8.0 Cabinet Surface Finish Tests
- c. NFPA 45-2011, National Fire Protection Association, Fire Protection for Laboratories Using Chemicals.
- d. ASTM E84-09C, ANSI 2.5, NFPA 255, UL 723, UBC 8-1 (42-1), Standard Test method for Surface Burning Characteristics of Building Materials
- e. ASHRAE 110-2016, American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Method of Testing Performance of Laboratory Fume Hoods.
- f. ANSI/AIHA Z9.5-2011, American Industrial Hygiene Association, Laboratory Ventilation

- g. OSHA, Federal Register 29 CFR Part 1910, Occupational Safety & Health Administration, U.S. Department of Labor, Occupational exposures to hazardous chemicals in laboratories.

The laboratory fume hoods shall carry the ETL listed mark for the following.

- a. UL 61010-1 (formerly 3101-1), Underwriters Laboratories Inc., Electrical Equipment for Laboratory Use.
- b. UL 1805, Underwriters Laboratories Inc., Standard for Laboratory Hoods and Cabinets

IV. PERFORMANCE REQUIREMENTS:

General Design Requirements (See Part 2 for details)

Fume hoods shall function as ventilated, enclosed workspaces, designed to capture, contain and exhaust fumes, vapors and particulate matter produced or generated within the enclosure.

Fume hood shall be factory designed to function as a by-pass fume hood.

- a. Structure and Materials of Construction:
 - 1. Hoods are of double-wall construction
 - 2. Powder-coated, cold rolled steel exterior
 - 3. Galvanized steel support members
 - 4. One-piece, monolithic, molded polyester resin liner
- b. Baffles:
 - 1. One-piece, monolithic, molded polyester resin
 - 2. Moving or adjustable baffles are not acceptable
- c. Sash:
 - 1. Maximum opening is 28".
 - 2. Unobstructed viewing height is 37.5".
 - 3. Hood incorporates a perforated sash handle to bleed air into the hood chamber directing fume concentrations away from the user's breathing zone.
- d. Airfoil:
 - 1. Hoods are provided with an air foil across the bottom of the sash area to allow airflow into the hood regardless of user's position.
 - 2. Besides the exhaust blower, no additional blowers are required for specified containment.
 - 3. Access for maintenance is from both the front and exterior sides of the hood.

e. Services:

1. Furnishing and delivering all service outlets, accessory fittings, electrical receptacles and switches, as listed in these specifications, equipment schedules or as shown on drawings.
2. Plumbing fittings mounted on the fume hood superstructures shall be pre-plumbed per section 2.03.
3. Final plumbing and electrical connections are the responsibility of the contractor. The contractor shall install the plumbing and electrical per local codes.
4. All electrical services are pre-wired to a single point internal junction box at the top right of the hood.
5. Hoods without service fixtures pass through a 33" opening without disassembly.

f. Containment:

1. The purpose of this section is to set a standard of performance for the bidder's laboratory fume hood before award of contract and may not necessarily represent the operating conditions of the hoods after installation. Before or after award of contract, owners may require representative witness to said testing at their option, with failure to meet passing criteria as grounds for rejection of the bidder. Test data shall be provided at no cost to the owner.
2. Evaluation of manufacturer's standard product shall take place in manufacturer's test facility meeting the following criteria.
3. Lab to be located at manufacturer's place of business for the testing of bench-mounted laboratory hoods in accordance with ASHRAE Standard 110.
4. Room shall accommodate hoods up to 16' wide, while maintaining sufficient area so that a minimum of 15 feet of clear space is available in front of and 5' on both sides of hoods for viewing tests.
5. The facility's ventilation system shall have adequate heating and air conditioning so that room air temperatures can be maintained within the desired ranges.
6. One hundred (100) percent non-recirculated air to be both carbon and HEPA filtered to ensure removal of contaminants that could interfere with containment testing before entering the lab.
7. Make-up air to the test room shall be ceiling-supplied through any combination of multiple diffusers to either minimize adverse airflow, or increase it depending on test objectives.
8. Exhaust volumes shall be computer controlled and measured via AMCA calibrated orifices and flow station at each exhaust trunk.

9. Room pressurization must be digitally monitored, and variable depending on test objectives.
 10. All equipment must be properly calibrated.
 11. Qualified personnel familiar with the laboratory and its operation shall be available to perform the test.
- g. Include the following instrumentation and test equipment:
1. Properly calibrated hot wire thermal anemometer capable of measuring air velocities from 10 to 600 ft/minute; correlate with computer data acquisition format to provide simultaneous readings at all points.
 2. Theatrical smoke generator or other source of high-volume smoke.
 3. Smoke tubes or other source of localized smoke.
 4. Leakmeter with traceable calibration, calibrated just before test, to indicated concentration of sulfur hexafluoride.
- h. Tracer gas:
1. Sulfur hexafluoride supplied from a cylinder with two stage regulator.
 2. Adjustable mannequin, 5' 0" to 5'8" in height, with reasonable human proportions, clothed in a smock
 3. Inclined manometer with graduations no greater than 0.2 inch of water.
- i. Ejector system:
1. Tracer gas ejector built to specific ASHRAE-110 requirements.
 2. Critical orifice: Sized to provide tracer gas at four or eight liters per minute at an upstream pressure sufficient to maintain release rate.
 3. Data acquisition software to include HoodPro™ and LabMeasurePro™ from Exposure Control Technologies, Inc or approved equal.
 4. Hood shall be tested to ASHRAE 110 modified test method as detailed below.
 5. Some fume hoods may use face velocity controls, motorized baffles, integral auxiliary make up, or supply fans. Because all of these devices are subject to failure, containment testing shall show both operational containment and product containment with these systems off.
 6. Fume hood sashes shall be placed in their fully open position, at least 28" from the work surface, unless noted otherwise.
 7. Ambient Temperature: 68 to 74 degrees F.

j. Average Face Velocity:

Face velocity average shall be 60 fpm, as noted below in subsection 8.d, parts 1 and 2, plus or minus 5%. An imaginary grid is formed comprised of equal 12" by 12" squares, or smaller, across the face opening of the laboratory hood. Airflow velocity readings are taken at the intersections of these grids with calibrated hot wire anemometer over a twenty second period of time. Probes shall communicate readings to a computer data acquisition package, which will provide an average of each reading over the one-minute period and also an overall average upon completion of data acquisition. Face velocity shall be determined by averaging readings at the hood face. Average face velocity must be achieved without exceeding the CFM noted in part C.

k. Tracer Gas Detection:

Hood shall achieve a rating of 4.0AM0.00 maximum average and 4.0AM0.01 maximum spike (unless specifically otherwise noted), wherein:

1. 4.0 = tracer gas release in liters/minute, AM = as manufactured, 0.01 = tracer gas in parts per million (PPM)
2. With the ejector body 6" from the rear of the sash plane, the test shall be conducted for each ejector position noted.
3. Left position with ejector 12" from the left interior wall.
4. Center position with ejector equidistant from the sidewalls.
5. Right position with ejector 12" from the right interior wall.
6. Install mannequin positioned in front of the hood, centered on the ejector.
7. Detector probes shall be placed 3" in front of the sash plane. The test shall be conducted for each detector probe position and corresponding face velocity.
8. Detector probe in the region of the nose and mouth of the mannequin. Test with average face velocity of 60 fpm.
9. With the mannequin height reduced 4", place detector probe in the chest of the mannequin, and even with the height of the ejector. Test with average face velocity of 60 fpm.
10. Open tracer gas valve, and collect readings with a computer data acquisition package, which is capable of monitoring and visually recording a minimum of one reading per second for a minimal five-minute time period for each position.
11. The single control rating of the fume hood shall be the results of the test position yielding the highest average levels of tracer gas in any of the six mannequin/ejector configurations.
12. With the ejector and mannequin in the center position, detector probe in the region of the nose and mouth of the mannequin, average face velocity of 60 fpm, tracer

gas released, and concentration recorded, open and close the sash in a smooth motion. Test to be repeated three times, with peak values of 0.01 PPM or less.

13. With the mannequin removed, the periphery of the hood is traversed by the probe at 1" in front of the hood opening at a rate of 3 inches per second. The hood shall have a maximum perimeter reading of 0.03 PPM or less.

I. Flow Visualization:

1. Test the operation of the lower air bypass airflow opening and hood periphery by introducing light smoke under the air foil, and around the perimeter of the sash opening. If any smoke that enters the hood reverses directions and escapes from any of these locations, the hood fails this portion of the test and receives no rating.
2. Introduce smoke along both walls and the hood floor in a line parallel to the hood face and 6 inches (152 mm) back into the hood. Define air movement toward the face of the hood as reverse airflow and define lack of movement as dead air space. All smoke should be carried to the back of the hood and out.
3. Introduce a large volume of smoke at the work surface in the center of the hood, and 6" inside the plane of the sash. Define air movement toward the face of the hood as reverse airflow and define lack of movement as dead air space. All smoke should be carried to the back of the hood and out.
4. All data on the above, including instrumentation and equipment, and test conditions shall be provided on a report, including the average face velocities, and a separate graph-type performance curve on all tracer gas tests for all required fume hood widths. Performance test data for a 6' representative hood shall be conducted by an independent testing agency and by a specific individual certified to perform such tests by the National Environmental Balancing Bureau (NEBB).

m. Efficiencies:

1. The fume hood shall maintain constant volumetric rate (+/- 5 CFM) and static pressure losses (+/- 0.01" H₂O) across all sash positions, unless the hood has a restricted by-pass for use with a variable air volume (VAV) system.
2. The fume hood shall demonstrate a minimization of the volumetric rate of air (CFM) requirement at any given face velocity. Required CFM to achieve desired face velocity shall not exceed that which is noted in the chart below.
3. The fume hood shall demonstrate a minimization of static pressure loss (inches of H₂O) at any given CFM. Static pressure loss at desired face velocity, and corresponding CFM, shall not exceed that which is noted in the chart below.

Velocity (fpm) Sash at 28" Open	Airflow Volumetric Rate (CFM) @ Static Pressure (inches of water)			
	4' Hood	5' Hood	6' Hood	8' Hood
100	725, 0.22"	955, 0.31"	1180, 0.41"	1640, 0.28"
80	580, 0.14"	765, 0.20"	945, 0.26"	1310, 0.18"
60	435, 0.08"	575, 0.11"	710, 0.15"	985, 0.10"
50*	365, 0.06"	480, 0.08"	590, 0.10"	820, 0.07"
Velocity (fpm) Sash at 18" Open	Airflow Volumetric Rate (CFM) @ Static Pressure (inches of water)			
	4' Hood	5' Hood	6' Hood	8' Hood
100	450, 0.09"	595, 0.12"	735, 0.16"	1025, 0.11"
80	365, 0.06"	480, 0.08"	590, 0.10"	820, 0.07"
60	270, 0.03"	360, 0.04"	440, 0.06"	615, 0.04"

*There is not a written standard that would suggest a design face velocity below 60 fpm. This data is for informational purposes only.

Noise Criterion: The hood shall have a Noise Criterion (NC) rating of less than 50; measured 36" in front of the hood with full open sash, at 100 fpm face velocity. NC is a factor of sound pressure level (dB) and frequency.

n. **Illumination:**

1. Shall be a minimum average of 80 foot-candles inside the work area. Work area is defined as the area inside the lined portion of the fume hood, from the face of baffle to sash plane, from interior left to interior right, and from the work surface to a height of 28 inches.
2. **Materials of Construction:** Interior and Exterior materials of construction and finishes shall meet the requirements in Part 2 of this specification.

V. QUALITY ASSURANCE:

Fume hoods shall be designed, including comprehensive engineering analysis, by a qualified, licensed Professional Engineer.

a. **Manufacturer's Qualifications:**

1. ISO 9001 Certified manufacturing plant and processes.
2. Ten installations of equal or larger size and requirements. Provide contact at each.
3. Only hood manufacturers who have had fume hoods as a principal product for 30 years are considered.

b. **Fume hoods shall be *Made in America*:**

1. 95% or more of raw material and component suppliers shall be United States based.

2. Stainless and cold rolled steel used in manufacturing shall be sourced from United States steel mills.
 3. Final product must be fabricated and assembled within the United States of America.
 4. Owner reserves the right to evaluate Made in America claims for compliance with the Bureau of Consumer Protection.
- c. Supply all equipment in accordance with this specification. Offering a product differing in materials, construction, or performance from this specification requires written approval obtained seven days or more before the proposal deadline.
 - d. The owner reserves the right to reject qualified or alternate proposals and to award based on product value where such action assures the owner greater integrity of product.
 - e. Manufacturer's warranty against defects in material or workmanship on its fume hoods will be for one (1) year from date of installation or 2 years from date of purchase, whichever is sooner, and includes replacement of parts (except lamps) and labor.

VI. SUBMITTALS

Action Submittals

Laboratory hood specification sheets and product manuals shall be submitted by the hood manufacturer upon request and include safe and proper operation and maintenance information.

- a. Shop Drawings: Include plans, elevations, sections, and details.
 1. Indicate details for anchoring fume hoods to permanent building construction including locations of blocking and other supports.
 2. Indicate locations and types of service fittings together with associated service supply connection required.
 3. Indicate duct connections, electrical connections, and locations of access panels.
 4. Include roughing-in information for mechanical, plumbing, and electrical connections.
 5. Provide face opening, volumetric rates, and static pressure drop data.
 6. Submit a document detailing the information supplied on the Hood Safety Practices Label to verify compliance to specifications.

Informational Submittals

- a. Product Test Reports: Showing compliance with specified performance requirements, including NEBB representative test report as defined previously.
- b. Independent validation: Written verification that the laboratory fume hoods carry the ETL listed mark for the following.

1. UL 61010-1 (formerly 3101-1), Underwriters Laboratories Inc., Electrical Equipment for Laboratory Use
 2. UL 1805, Underwriters Laboratories Inc., Standard for Laboratory Hoods and Cabinets
- c. Written verification from an outside testing agency confirming coating compliance to SEFA 8-2010, Recommended Practices for Laboratory Grade Metal Casework, 8.0 Cabinet Surface Finish Tests
 - d. Documentation of ISO 9001 Certified manufacturing plant and processes.
 - e. List of five installations (of equal or larger size and requirements) is available upon request. Provide contact at each.
 - f. Declaration of Made in America. Owner reserves the right to evaluate Made in America claims for compliance with the Bureau of Consumer Protection.

Material Submittals

- a. Samples for Verification: of the hood exterior wall material, interior liner and baffle material, epoxy work surface material, and color selection chips are available from the hood manufacturer upon request.

VII. DELIVERY, STORAGE, AND HANDLING

- a. Protect finished surfaces during handling and installation with protective covering of polyethylene film or another suitable material.
- b. Schedule delivery of equipment so that spaces are sufficiently complete that equipment can be installed immediately following delivery.

PRODUCTS

VIII. MANUFACTURERS

- a. Approved Manufacturer: Labconco Corporation, 8811 Prospect Avenue, Kansas City, Missouri 64132 or approved equal.
- b. Basis-of-Design Product: Labconco Protector Premier; for use with remote blower or approved equal.

IX. MATERIALS

Hood Interior Liner and Baffle: Liner material must comply with UL 1805, and be listed within NRTL test report as proof of compliance.

- a. General Material Properties:
 1. Nonflammable, corrosion and chemical-resistant
 2. Fiberglass reinforced polyester resin

3. Minimum thickness is 3/16"
 - 4.. Smooth, white finish
- b. Method of Construction: Liner shall be one continuous molded component, and of monolithic construction, including the left and right-side walls, rear, ceiling, and duct collar. Liners that are bonded together, do not include the duct collar within the continuous structure, or are of panelized construction are not acceptable.
 - c. Flame and Smoke Characteristics: Flame retardant, self-extinguishing, with a flame spread rating of 25 or less in accordance with ASTM-E84
 - d. Chemical Resistance
 - e. Splash and Spill Resistance:
 1. Suspend sample panel in a vertical plane
 2. Apply five drops of each reagent listed with an eyedropper
 3. Apply liquid reagents at top of panel and allow to flow down full panel height
 - f. Fume Resistance:
 1. Place 25 milliliters of reagent into 100 milliliters beakers and position panel over beaker tops in the proper sequence. Ensure beaker pouring lip permits air to enter the interior atmosphere.
 2. After 24 hours remove panel, flush with water, clean with detergent, rinse, wipe dry and evaluate
 - g. Evaluation ratings: Change in surface finish and function shall be described by the following ratings
 1. Excellent for intended service with expected long and economic life.
 2. Some staining may result with prolonged usage. Satisfactory for limited service. Tests under actual conditions suggested.
 3. Surface deterioration may be experienced with prolonged usage. Test under actual conditions.
 4. NR: Not Recommended

Required minimum results for each reagent (Reagent, Rating)

<u>Acetic Acid</u>	<u>G</u>	<u>Acetone</u>	<u>G</u>
<u>Acrylic Acid</u>	<u>G</u>	<u>Aluminum Fluoride</u>	<u>E</u>
<u>Aluminum Sulfate</u>	<u>E</u>	<u>Ammonia</u>	<u>E</u>
<u>Ammonium Bicarbonate</u>	<u>E</u>	<u>Ammonium Carbonate</u>	<u>G</u>
<u>Ammonium Chloride</u>	<u>E</u>	<u>Ammonium Fluoride</u>	<u>F</u>
<u>Ammonium Hydroxide</u>	<u>G</u>	<u>Ammonium Nitrate</u>	<u>E</u>
<u>Ammonium Persulfate</u>	<u>E</u>	<u>Ammonium Sulfate</u>	<u>E</u>

<u>Ammonium Thiocyanate</u>	<u>E</u>	<u>Amyl Aceta</u>	<u>E</u>
<u>Amyl Alcohol</u>	<u>E</u>	<u>Aniline</u>	<u>F</u>
<u>Aniline Sulfate</u>	<u>E</u>	<u>Antimony Pentachloride</u>	<u>E</u>
<u>Antimony Trichloride</u>	<u>E</u>	<u>Aqua Regia (HNO3-HCl) Aromatic</u>	
		<u>Hydrocarbon</u>	<u>E</u>
<u>Arsenious Acid</u>	<u>E</u>	<u>Barium Carbonate</u>	<u>E</u>
<u>Barium Chloride</u>	<u>E</u>	<u>Barium Hydroxide</u>	<u>F</u>
<u>Benzaldehyde</u>	<u>F</u>	<u>Benzene</u>	<u>G</u>
<u>Benzene Sulfonic Acid</u>	<u>E</u>	<u>Benzoic Acid</u>	<u>E</u>
<u>Bleach - Hypochlorite</u>	<u>E</u>	<u>Bromine, liquid</u>	<u>F</u>
<u>Butyl Acetate</u>	<u>E</u>	<u>Butyl Alcohol</u>	<u>E</u>
<u>Butyric Acid</u>	<u>E</u>	<u>Calcium Chlorate</u>	<u>E</u>
<u>Calcium Chloride</u>	<u>E</u>	<u>Calcium Hydroxide</u>	<u>E</u>
<u>Calcium Hypochlorite</u>	<u>E</u>	<u>Calcium Sulfate</u>	<u>E</u>
<u>Caprylic Acid (n-Octanoic Acid)</u>	<u>E</u>	<u>Carbon Dioxide</u>	<u>E</u>
<u>Carbon Disulfide Vapor</u>	<u>F</u>	<u>Hydrocyanic Acid</u>	<u>E</u>
<u>Hydrofluoric Acid</u>	<u>G</u>	<u>Hydrofluorosilic Acid</u>	<u>F</u>
<u>Hydrogen</u>	<u>E</u>	<u>Hydrogen Chloride, Anhydrous</u>	<u>E</u>
<u>Hydrogen Fluoride, Wet</u>	<u>F</u>	<u>Hydrogen Peroxide</u>	<u>E</u>
<u>Hydrogen Sulfide</u>	<u>E</u>	<u>Hypochlorous Acid</u>	<u>E</u>
<u>Kerosene</u>	<u>E</u>	<u>Lactic Acid</u>	<u>E</u>
<u>Lead Acetate</u>	<u>E</u>	<u>Lime Slurry</u>	<u>E</u>
<u>Linseed Oil</u>	<u>E</u>	<u>Lithium Chloride</u>	<u>E</u>
<u>Magnesium Carbonate</u>	<u>E</u>	<u>Magnesium Chloride</u>	<u>E</u>
<u>Magnesium Sulfate</u>	<u>E</u>	<u>Malic Acid</u>	<u>E</u>
<u>Mercaptan, Organic, H2S, H2O, Butanol</u>	<u>E</u>	<u>Mercuric Chloride</u>	<u>E</u>
<u>Mercurous Chloride</u>	<u>E</u>	<u>Mercury</u>	<u>E</u>
<u>Alcohol</u>	<u>E</u>	<u>Methyl Chloride</u>	<u>F</u>
<u>Methyl Ethyl Ketone</u>	<u>G</u>	<u>Methyl Isobutyl Ketone</u>	<u>E</u>
<u>Moisture</u>	<u>E</u>	<u>Naptha</u>	<u>E</u>
<u>Napthalene</u>	<u>E</u>	<u>Nickel Chloride</u>	<u>E</u>
<u>Nickel Nitrate</u>	<u>E</u>	<u>Nickel Sulfate</u>	<u>E</u>
<u>Nitric Acid</u>	<u>E</u>	<u>Nitrobenzene</u>	<u>G</u>
<u>Nitrogen</u>	<u>E</u>	<u>Nitrous Acid</u>	<u>E</u>
<u>Oleic Acid</u>	<u>E</u>	<u>Oxalic Acid</u>	<u>E</u>
<u>Perchloric Acid</u>	<u>NR</u>	<u>Phenol</u>	<u>F</u>
<u>Phosphate Salts</u>	<u>E</u>	<u>Phosphonitrilic Chloride, Cl2, HCl,</u>	
		<u>benzene, H2O Vapors</u>	<u>E</u>
<u>Phosphoric Acid</u>	<u>E</u>	<u>Phosphoric Vapor & Condensate</u>	<u>E</u>
<u>Phosphoric: Nitric Vapor</u>	<u>E</u>	<u>Phosphoric: HCl, Saturated with</u>	
		<u>phosphorous</u>	<u>E</u>
<u>Phosphoric: HCl, Sat. with Cl2</u>	<u>E</u>	<u>Phosphorous Oxychloride, CHl, Cl2, H2O</u>	
		<u>Vapors</u>	<u>E</u>
<u>Phosphorous Trichloride, HCl, Cl2, H2O</u>		<u>Phosphorous Sesquisulfide</u>	<u>E</u>
<u>Vapors</u>	<u>E</u>	<u>Picric Acid in Alcohol</u>	<u>E</u>
<u>Phthalic Anhydride</u>	<u>E</u>	<u>Potassium Carbonate</u>	<u>E</u>
<u>Potassium Bicarbonate</u>	<u>E</u>	<u>Potassium Dichromate</u>	<u>E</u>
<u>Potassium Chloride</u>	<u>E</u>	<u>Potassium Hydroxide</u>	<u>F</u>
<u>Potassium Ferrocyanide</u>	<u>E</u>	<u>Potassium Permanganate</u>	<u>G</u>
<u>Potassium Nitrate</u>	<u>E</u>	<u>Potassium Sulfate</u>	<u>E</u>
<u>Potassium Persulfate</u>	<u>E</u>	<u>PVA Emulsion</u>	<u>E</u>
<u>Propylene Glycol</u>	<u>E</u>		

<u>Pyridine</u>	<u>F</u>	<u>Silver Nitrate</u>	<u>E</u>
<u>Sodium Acetate</u>	<u>G</u>	<u>Benzoate</u>	<u>E</u>
<u>Sodium Bicarbonate</u>	<u>E</u>	<u>Sodium Bisulfate</u>	<u>E</u>
<u>Sodium Borate</u>	<u>E</u>	<u>Sodium Bromide</u>	<u>E</u>
<u>Sodium Carbonate</u>	<u>E</u>	<u>Sodium Chloride</u>	<u>E</u>
<u>Sodium Cyanide</u>	<u>F</u>	<u>Sodium Ferricyanide</u>	<u>E</u>
<u>Sodium Hydroxide</u>	<u>G</u>	<u>Sodium Hypochlorite</u>	<u>E</u>
<u>Sodium Nitrate</u>	<u>E</u>	<u>Sodium Sulfate</u>	<u>E</u>
<u>Sodium Sulfide</u>	<u>E</u>	<u>Sodium Sulfite</u>	<u>E</u>
<u>Sodium Tetraborate</u>	<u>E</u>	<u>Sodium Xylene Sulfonate</u>	<u>E</u>
<u>Stannic Chloride</u>	<u>E</u>	<u>Stannous Chloride</u>	<u>E</u>
<u>Stearic Acid</u>	<u>E</u>	<u>Styrene</u>	<u>G</u>
<u>Sulfite Liquors</u>	<u>E</u>	<u>Sulfur, molten, vapors</u>	<u>E</u>
<u>Sulfur Chloride</u>	<u>E</u>	<u>Sulfur Dioxide</u>	<u>E</u>
<u>Sulfonated Aliphatics, HCl, H₂S, Butanol vapors</u>	<u>E</u>	<u>Sulfur Dioxide Saturated H₂O; trace HF, H₂SO₄, H₂S, F₂</u>	<u>E</u>
<u>Sulfur Dioxide: SO₃ wet vapor</u>	<u>F</u>	<u>Sulfur Trioxide</u>	<u>E</u>
<u>Sulfuric Acid</u>	<u>G</u>	<u>Sulfuric Acid + Dichromate</u>	<u>G</u>
<u>Sulfuric + Chromic</u>	<u>G</u>	<u>Sulfuric Acid vapor</u>	<u>G</u>
<u>Sulfuric-Nitric Acids</u>	<u>G</u>	<u>Sulfuric - HCl</u>	<u>G</u>
<u>Sulfurous Acid</u>	<u>G</u>	<u>Tannic Acid</u>	<u>E</u>
<u>Tartaric Acid</u>	<u>E</u>	<u>Tetrapotassium Pyrophosphate</u>	<u>E</u>
<u>Toluene</u>	<u>G</u>	<u>Toluene Diisocyanate</u>	<u>E</u>
<u>Trichloroacetic Acid</u>	<u>E</u>	<u>Trichloroethylene</u>	<u>G</u>
<u>Trichloroethylene, HCl, Cl₂, H₂O vapors</u>	<u>G</u>	<u>Trichlorophenol</u>	<u>F</u>
<u>Trisodium Phosphate</u>	<u>F</u>	<u>Waste, Organic, H₂O, HCl, Cl₂, Vapors</u>	<u>E</u>
<u>Water</u>	<u>E</u>	<u>Zinc Chloride</u>	<u>E</u>
<u>Zinc Sulfate</u>	<u>E</u>		

h. Sheet Steel:

1. Side panels and access panels 20-gauge (or heavier) sheet steel.
2. Hood corner posts are 16-gauge sheet steel.
3. Ceiling enclosure panels are 18-gauge sheet steel.
4. Cold-rolled, commercial steel (CS) sheet, complying with ASTM A 1008/A 1008M.
5. Chemical Resistant Finish

i. General: Prepare, treat, and finish welded assemblies after welding. Prepare, treat, and finish components that are to be assembled with mechanical fasteners before assembling.

j. Chemical and Physical Resistance of Finish System:

1. Finish complies with acceptance levels of cabinet surface finish tests in SEFA 8. Third party validation required.
2. Powder-coat process required. Paint processes that release Volatile Organic Compounds (VOC) are not acceptable

- k. Color for Fume Hood Finish: Glacier White
- l. Safety Glass: Tempered
 - 1. Clarity and temper test to be as specified in latest edition of Glass Tempering Association, Engineering Standards Manual, Section 8.1.
 - 2. Surface and interior visible quality to be as specified per ASTM C 1036, Standard Specification for Flat Glass, Table 4, Quality level Q3.

X. CONSTRUCTION

- a. Superstructure:
 - 1. Self-supporting, rigid structural assembly, to support inner wall consisting of fume hood liner and outer wall of sheet metal exterior.
 - 2. Fabricated from galvanized steel.
 - 3. Space shall accommodate fume hood wiring and plumbing components for service fixtures.
 - 4. Access to fixture valves concealed in wall provided by exterior removable access panels or through removable access panels on the front posts.
- b. Exterior:
 - 1. Fabricate from steel sheet with component parts screwed together.
 - 2. Apply chemical-resistant finish to interior and exterior surfaces of component parts before assembly.
 - 3. Interchangeable side panels shall lift off without the use of tools to allow access to plumbing lines, service fittings, electrical wiring, counterbalance sash weights, and light fixtures. Exposed fasteners or hardware, and Velcro type fasteners, are not acceptable.
- c. Corner posts:
 - 1. Pre-punched and plugged to accommodate up to 4 service fixtures per side
 - 2. All services are accessible from the front of the hood.
 - 3. Aerodynamic shape
 - 4. Accommodate two electrical duplexes per side.
 - 5. Right hand corner post includes electrical switches and pre-cut for Airflow monitor installation.
 - 6. Un-used penetrations shall be plugged.

7. Top and sides of face opening to provide an aerodynamic shape to ensure smooth, even flow of air into fume hood.
 8. Panel above header shall be removable without the use of tools to allow access to mechanical connection, electrical wiring, counterbalance sash weights, and light fixtures.
 9. Exposed fasteners or hardware, and “hook-and-loop” type fasteners, are not acceptable.
- d. Dimensions:
1. Overall exterior dimensions are as follows: 5-foot nominal width: 60” w x 59” h x 31.7”d
 2. Overall interior dimensions are as follows: 5-foot nominal width: 50.1” w x 48” h x 23.3” d
- e. Hood Liner:
1. Adhere interior liner components to superstructure.
 2. Stainless steel fasteners shall be used on the interior ceiling for structural integrity.
 3. Fasteners exposed to chemical environment are not acceptable.
 4. Punch fume hood lining side panels to receive four service fittings, for use with remote controls, per side. Provide removable plug buttons for holes not used for indicated fittings.
- f. Hood Baffle:
1. Baffle system shall be designed to capture a wide range of gaseous densities without adjustment or moving components.
 2. Shall provide a continuous horizontal slot at the work surface, vertical openings running the interior height of the hood on the left and right sides, and an opening at the ceiling running left to right.
 3. The baffle system shall be constructed with the same material as the fume hood liner.
 4. The baffles shall be removable for cleaning.
 5. Exposed components to be non-metallic. Metal components exposed to chemical environment are not acceptable.
 6. Moving parts or adjustment of any kind is not acceptable.
- g. Exhaust Connection:
1. Fiberglass reinforced polyester resin, and a continuous component of the fume hood liner.

2. Duct collars attached with fasteners, adhesive, or varying in material of construction from the liner are not acceptable.
 3. 12.81" ID to accommodate any 12" nominal duct without the need for a transition adapter.
 4. 4, 5, and 6-foot hoods have one exhaust connection, 8-foot hoods have two exhaust connections. Additional components required to accommodate 12" nominal mechanical system not acceptable.
 5. Ducting shall go inside the duct collar to ensure condensate travels into the hood and evaporates. Duct collars that allow duct connection over the collar are not acceptable.
- h. Airfoil:
1. 316 stainless steel with Chemical-Resistant Finish.
 2. Airfoil shall have an aerodynamic radius to sweep the air into the hood with minimal turbulence. Airfoil directs airflow across work top to remove heavier-than-air gases.
 3. Must have 5 rows of perforations to allow the air to bypass underneath and through the foil and sweep across the work surface to prevent any back flow of fumes escaping from the front of the hood opening. This airflow continues even if blocked by the presence of the operator.
 4. Foil must extend back under the sash to prevent closure of the lower by-pass opening when the sash is in the fully closed position, directly on top of the airfoil.
- i. Sash Assembly
1. Glass: Fully tempered safety glass with unobstructed, side-to-side view of fume hood interior and service fixture connections.
 2. Dimensions: The full sash opening height is 28", the total unobstructed viewing height is 37.5" measured from the work surface.
 3. Sash Tracks: Steel with Chemical Resistant Finish. Shall include bump stops for opening and closing.
 4. Sash Handle: extruded aluminum with Chemical Resistant Finish. Sash handle includes a perforated air passage directly atop the handle to bleed air into the hood chamber and direct chemical fumes away from the user's breathing zone. The handle is ergonomic in design and is easy to grasp when operating
 5. Sash guides: Corrosion resistant extruded poly-vinyl chloride.
- j. Sash System
1. Vertical Sash (Cable and Pulley)

2. Hoods have a single vertical sash counterbalanced by a single weight.
 3. Sash and weight to be connected via aircraft cable meeting MIL-W-83420 Military Specification.
 4. Rear pulleys shall be connected via timing shaft to prevent sash tilting and permit one finger operation at any point along full width sash handle. Maximum 7 pounds pull required to raise or lower sash throughout its full length of travel.
 5. Design system to hold sash at any position without creep and to prevent sash drop in the event of cable failure.
 6. Include a defeatable and automatically resetting sash stop positioned for an 18" sash height.
- k. Electrical Components:
- Lighting
1. Provide UL Listed, high-efficiency, quick-start, T8 fluorescent lighting systems, including bulbs.
 2. 5 Foot Hoods – two (2) each, 4-foot 32-watt fluorescent lamps
- l. Vapor-Proof:
1. All electrical components shall be outside of the contaminated air space. Lighting shall be located behind a laminated safety glass shield, sealed to the top of the hood liner.
 2. The fluorescent light assemblies shall be serviceable from outside the fume hood cavity without the use of tools.
 3. Light switch to be included on the lower right corner post, at heights compliant with the Americans with Disabilities Act (ADA).
- m. Blower Switch:
1. Hoods shall be provided with blower switch, on the lower right corner post, at heights compliant with the Americans with Disabilities Act (ADA).
- n. Electrical Receptacles:
1. The hoods shall accommodate up to four (two per corner post) electrical receptacles as indicated in schedule or drawings. Options to include:
 - a) 2-115-volt, 60 Hz, three-wire polarized and grounded electrical duplex, with Ground Fault Circuit Interruption (GFCI)
 - b) 230volt, 60 Hz, three-wire polarized and grounded electrical duplex

2. Receptacles shall be individually wired to field wiring box, and each rated at 20 Amperes.
 3. Cover plates shall be acid resistant thermoplastic.
- o. Wiring:
1. Every electrical component shall be individually wired to a single point internal field wiring box (including individual duplexes/receptacles).
 2. Field wiring box to be 7" x 4" x 2.5", grounded, and have (12) 7/8" diameter knock out penetrations.
 3. Final wiring and circuit dedication are to be by others.
 4. Each receptacle circuit shall accommodate being wired to a dedicated building circuit rated at 20A, or the receptacles ganged together on a building circuit with the total load not exceeding 20 Amperes.
 5. Fume hood to have third party validation of compliance to UL 1805 and UL 61010-1 by a Nationally Recognized Testing Laboratory (NRTL)
- p. By-Pass Opening
- The size of the by-pass opening is controlled by sash position for use with a constant volume mechanical system. The hood shall not have a change in static pressure or exhaust volume across all sash positions.
- q. Hood Safety Practices Label: Corrosion resistant plate attached to the corner post of the fume hood with the following Hood Safety Practices:
1. For use with substances that produce hazardous levels of airborne chemicals: gas, fumes, vapors, dust
 2. Do not put your head in the hood.
 3. Minimize drafts and sudden movements in front of the hood.
 4. Work a minimum of six inches inside the hood.
 5. Elevate equipment above the work surface.
 6. Keep sill and baffle unobstructed.
 7. Do not use the hood for storage.
 8. Adjust the sash to smallest opening possible when in use.
 9. Close sash when unattended.
 10. Do not remove any of the hood components.
 11. Do not place flammable solvents near heat, flame or sparks.
 12. Do not evaporate large amounts of flammable liquids.

13. Wipe up spills immediately.
 14. Routinely validate airflow.
 15. If the ventilation system malfunctions, or airflow alarm indicates unsafe condition, close sash and discontinue hood operation immediately-call for help.
 16. Do not use with Biohazards or Perchloric Acid
- r. Fume Hood Accessories
1. Service Fixtures: Color-coded hose nozzle outlets and valves mounted inside the fume hood and controlled from the exterior with color-coded index handles
 - a) The hoods are equipped without service fixtures or will be provided with a total of up to 8 service fixtures as indicated in schedule.
 - b) Hose connectors located inside the fume hood cavity are chemically resistant, glass-filled polypropylene with 6 serrations.
 2. Service lines shall be factory installed from valve to outlet
 - a) Copper tubing unless otherwise noted
 - b) Brass service lines for gas
 - c) Stainless steel service lines for Deionized Water
 - d) Connections shall be made with quick-connect compression fittings on the inlet and outlet of the valve body, soldered and brazed connections not easily disassembled are not acceptable.
 - e) Inlet tubing not included
- s. Valves
1. Extruded brass valve and rotating seat, TFE-coated silicone bronze stem and TFE packing.
 2. Fixture handles are plastic and color coded as well as labeled for the designated type of service.
 3. Fixtures are rated at maximum pressure of 200 psi.
 4. Coefficient of flow for the valve, $C_v=0.43$.
 5. Valves are front loaded, located on the fume hood corner post for remote use, and include:
 - a) Hot and cold tap water
 - b) Vacuum
- t. Tissue Screen: Provide epoxy-coated, stainless-steel screen at bottom baffle opening to prevent paper from being drawn into the exhaust plenum behind baffles.

- u. Rear Finish Panel: Shall be the same materials and coating as the hood exterior.
- v. Ceiling Enclosure Panels:
 - 1. Provide filler panels matching fume hood exterior to enclose space above fume hoods at front and sides of fume hoods and extending from tops of fume hoods to ceiling.
 - 2. Exposed fasteners are not acceptable.
 - 3. Height adjustment to be within the following ranges as specified in the schedule.
 - 11.0 - 14.0"
 - 14.0 – 18.6"
 - 18.6 – 24.4"
- w. Face Velocity Monitor/Alarm
 - Digital Airflow Monitor
 - 1. Provide audible and visual alarm in the event of an unsafe face velocity.
 - 2. Alarm must sit flush with the fume hood corner post.
 - 3. Based on a thermally compensated thermistor in the alarm module, and air passing through a separate airstream into the hood interior.
 - 4. Velocity shall be displayed digitally on the user facing LCD in fpm or m/s.
 - 5. LED lights display red for alarm, yellow for caution, and green for normal operation.
 - 6. Must include external alarm and night setback functions.
 - 7. Alarm mute shall be accessible from the front of the monitor; visual alarm must remain activated until alarm condition is corrected.
 - 8. UL Listed electrical components
 - 9. Calibration shall be through a menu driven step by step procedure.
 - 10. Calibration is the responsibility of the owner, following a complete balancing of the mechanical system, and concurrently with As-Installed testing.
- x. Work Surface
 - 1. 1.25" thick, molded from solid modified epoxy resin, with smooth, non-specular, black finish.
 - 2. One-inch radius front edge for optimal fume hood performance.
 - 3. 3/8" dished area to match the fume hood interior work-space and form a water-tight pan for spill containment.

4. Include a 2.5" diameter hole on each side for service pass-through and piping. Hole to be covered by hood superstructure upon installation.
 5. Include two 1.5" diameter penetrations to accommodate base cabinet venting. Holes to be located outside of dished area and under the fume hood baffles. Include plugs.
- y. Physical Properties:
1. Flexural Strength: Not less than 10,000 psi (70 MPa).
 2. Modulus of Elasticity: Not less than 2,000,000 psi (1400 MPa).
 3. Hardness (Rockwell M): Not less than 100.
 4. Water Absorption (24 Hours): Not more than 0.02 percent.
 5. Heat Distortion Point: Not less than 260 deg F (127 deg C).
 6. Flame-Spread Index: 25 or less per ASTM E 84.
- z. Cupsink
1. 3 x 6" dimension, polypropylene construction
 2. Provide with strainers and tailpieces, NPS 1-1/2 (DN 40)
 3. To sit flush with dished area of work surface
 4. Cupsink(s) to be located Right rear
- aa. Supporting Base Cabinets
- Base cabinets shall be in depths of 22", widths, quantities, and types called out in the equipment schedule, and meet the requirements of this specification.
- bb. Construction requirements for all cabinets
1. Exterior construction is 18-gauge (or heavier) cold rolled sheet steel with Chemical Resistant Finish.
 2. Hinges are 10-gauge (or heavier) plate with self-clinching pilot pin. Knuckle, bullet, or piano type hinges are not accepted.
 3. The rear panel will feature a 12" x 8" removable plumbing access panel.
 4. Units 24" wide or less have only one door.
 5. Each cabinet includes four leveling feet.
 6. Capable of supporting up to 800 pounds.
 7. An 8" filler panel is required to increase the cabinet depth to 30".
- cc. Acid Storage – Provide two (2) acid storage cabinets.

1. Overall exterior dimensions:
 - a) 30" 30" w x 22" d x 35.5"-36.75"
2. Completely lined with a polyethylene corrosion resistant liner. The liner is 3/16" thick, with a vacuum formed PVC liner pan at the bottom to contain spills. Each door has a 3/16" sheet polyethylene liner.
3. The cabinet is labeled: "ACID".
4. Flush pull handles are ABS, low gloss black.
5. Each cabinet is vented into the fume hood with a 1-1/2" vent pipe. It should provide a positive airflow directly into the fume hood exhaust system.
6. Supply an epoxy coated steel shelf with PVC liner pan if indicated in the schedule.

XI. EXAMINATION

- a. Examine areas, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of fume hoods.
- b. Coordinate with other trades for the proper and correct installation of plumbing and electrical rough-in and for rough opening dimensions required for the installation of the hood.
- c. Proceed with installation only after unsatisfactory conditions have been corrected.

XII. INSTALLATION

- a. General:
 1. Install fume hoods according to shop drawings and manufacturer's written instructions.
 2. Install level, plumb, and true; shim as required, using concealed shims, and securely anchor to building and adjacent laboratory casework.
 3. Securely attach access panels but provide for easy removal and secure reattachment. Where fume hoods abut other finished work, apply filler strips and scribe for accurate fit, with fasteners concealed where practical.
 4. Neighboring splash blocks shall not be attached directly to the hood.
 5. Install according to standards required by authority having jurisdiction.
 6. Sequence installations to ensure utility connections are achieved in an orderly and expeditious manner.
 7. Touch up minor damaged surfaces caused by installation. Replace damaged components as directed by Architect.

XIII. FIELD QUALITY CONTROL

- a. NFPA 45 requires that fume hoods be field tested when installed.
- b. Field test installed fume hoods according to ASHRAE 110 to verify compliance with performance requirements.
- c. Adjust fume hoods, hood exhaust fans, building's HVAC system, and make other corrections until tested hoods perform as specified in fume hood schedule.
- d. After making corrections, retest fume hoods that failed to perform as specified.

XIV. ADJUSTING AND CLEANING

- a. Adjust moving parts for smooth, near silent, accurate sash operation with one hand. Adjust sashes for uniform contact of rubber bumpers. Verify that counterbalances operate without interference.
- b. Clean finished surfaces, including both sides of glass; touch up as required; and remove or refinish damaged or soiled areas to match original factory finish, as approved by Architect.
- c. Clean adjacent construction and surfaces that may have been soiled in the course of installation of work in this section.
- d. Provide all necessary protective measures to prevent exposure of equipment and surfaces from exposure to other construction activity.
- e. Advise contractor of procedures and precautions for protection of material and installed equipment and casework from damage by work of other trades.

POLICY TITLE: **Insurance Requirements for Independent Contractors**

ADOPTION DATE: August 29, 1989

EFFECTIVE DATE: September 1, 1989

FILING INSTRUCTIONS: _____

I. PURPOSE

To protect Washington County against liability, loss or expense due to damaged property, injury to or death of any person or persons and for care and loss of services arising in any way, out of, or in connection with or resulting from the work or service performed on behalf of Washington County.

II. ACTION

The following should be inserted in all Independent Contractor Contracts:

"The Contractor shall procure and maintain at his sole expense and until final acceptance of the work by the County, insurance as hereinafter enumerated in policies written by insurance companies admitted in the State of Maryland, have A.M. Best rating of A- or better or its equivalent, and acceptable to the County."

1. **Workers Compensation:** The Contractor agrees to comply with Workers Compensation laws of the State of Maryland and to maintain a Workers Compensation and Employers Liability Policy.

Minimum Limits Required:

Workers Compensation - Statutory
Employers' Liability - \$100,000 (Each Accident)
\$500,000 (Disease - Policy Limit)
\$100,000 (Disease - Each Employee)

2. **Comprehensive General Liability Insurance:** The Contractor shall provide Comprehensive General Liability including Products and Completed Operations.

Minimum Limits Required:

\$1,000,000 combined single limit for Bodily Injury and Property Damage.

Such insurance shall protect the County, its agents, elected and appointed officials, commission members and employees, and name Washington County on the policy as additional insured against liability, loss or expense due to damaged property (including loss of use), injury to or death of any person or persons and for care and loss of services arising in any way, out of, or in connection with or resulting from the work of service performed on behalf of Washington County.

2. **Comprehensive General Liability Insurance** (continued)

The Contractor is ultimately responsible that Subcontractors, if subcontracting is authorized, procure and maintain at their sole expense and until final acceptance of the work by the County, insurance as hereinafter enumerated in policies written by insurance companies admitted in the State of Maryland, have A.M. Best rating of A- or better or its equivalent, and acceptable to the County.

3. **Business Automobile Liability:** The Contractor shall provide Business Auto Liability including coverage for all leased, owned, non-owned and hired vehicles.

Minimum Limits Required:

\$1,000,000 combined single limit for Bodily Injury or Property Damage.

Certificate(s) of Insurance: The Contractor shall provide certificates of insurance requiring a 30-day notice of cancellation to the Insurance Department, Board of County Commissioners of Washington County prior to the start of the applicable project.

Approval of the insurance by the County shall not in any way relieve or decrease the liability of the Contractor. It is expressly understood that the County does not in any way represent that the specified limits of liability or coverage or policy forms are sufficient or adequate to protect the interest or liabilities of the Contractor.

All responsibility for payment of any sums resulting from any deductible provisions, corridor, or self-insured retention conditions of the policy or policies shall remain with the Contractor.

General Indemnity: The Contractor shall indemnify, defend and save harmless the Board of County Commissioners of Washington County, its appointed or elected officials, commission members, employees and agents for any and all suits, legal actions, administrative proceedings, claims, demands, damages, liabilities, interest, attorneys fees, costs and expenses of whatsoever kind of nature, whether arising before or after final acceptance and in any manner directly or indirectly caused, occasioned or contributed to in whole or in part by reason of any act, error or omission, fault or negligence whether active or passive by the Contractor, or any one acting under its direction, control or on its behalf in connection with or incident to its performance of the Contract.

Revision Date: August 27, 1991
Effective Date: August 27, 1991
Revision Date: March 4, 1997
Effective Date: March 4, 1997

**BOARD OF COUNTY COMMISSIONERS
OF WASHINGTON COUNTY, MARYLAND
WASHINGTON COUNTY PURCHASING DEPARTMENT**

PROVISIONS FOR OTHER AGENCIES

All items, conditions and pricing shall be made available to the entities listed below if authorized by the Bidder. Authorization is to be indicated by a check mark in the appropriate column. A negative reply will not adversely affect consideration of the bid. Any jurisdiction using this contract shall place its own order with the successful Bidder(s). There is no obligation on the lead jurisdiction for agreements made with other jurisdictions.

<u>YES</u>	<u>NO</u>	<u>JURISDICTION</u>
_____	_____	WASHINGTON COUNTY PUBLIC SCHOOLS
_____	_____	WASHINGTON COUNTY HEALTH DEPARTMENT
_____	_____	OTHER WASHINGTON COUNTY MUNICIPALITIES
_____	_____	HAGERSTOWN COMMUNITY COLLEGE
_____	_____	CITY OF HAGERSTOWN
_____	_____	FREDERICK COUNTY COMMISSIONERS
_____	_____	OTHER FREDERICK COUNTY MUNICIPALITIES
_____	_____	ALLEGANY COUNTY COMMISSIONERS
_____	_____	BOARD OF EDUCATION OF ALLEGANY COUNTY
_____	_____	OTHER ALLEGANY COUNTY MUNICIPALITIES
_____	_____	ALLEGANY COMMUNITY COLLEGE
_____	_____	CITY OF FROSTBURG
_____	_____	CITY OF CUMBERLAND
_____	_____	GARRETT COUNTY - GENERAL SERVICES
_____	_____	BOARD OF EDUCATION OF GARRETT COUNTY
_____	_____	OTHER GARRETT COUNTY MUNICIPALITIES
_____	_____	GARRETT COUNTY COMMUNITY COLLEGE
_____	_____	WASHINGTON COUNTY VOLUNTEER FIRE & RESCUE COMPANIES

SIGNATURE TO BIDS

NOTE: Bidders shall use this page as a cover page when submitting his/her bid.

Each bid must show the full business address and telephone number of the Bidder and be signed by the person legally authorized to sign contracts. All correspondence concerning the bid and contract, including notice of award, copy of contract and purchase order, will be mailed or delivered to the address shown on the bid in the absence of written instructions from the Bidder to the contrary. Bids by partnerships must be signed in the partnership name by one of the members of the partnership or by an authorized representative, followed by the signature and designation of the person signing, who shall also state the names of the individuals composing the partnership. Bids by corporations must be signed with the name of the corporation, followed by the signature and designation of the officer having authority to sign. When requested, satisfactory evidence of authority of the officer signing in behalf of the corporation shall be furnished. Anyone signing the bid as agent shall file satisfactory evidence of his/her authority to do so.

All documents, materials, or data developed as a result of this contract are the County's property. The County has the right to use and reproduce any documents, materials, and data, including confidential information, used in or developed as a result of this contract. The County may use this information for its own purposes or use it for reporting to Federal agencies. The Bidder warrants that it has title to or right of use of all documents, materials, or data used or developed in connection with this contract. The Bidder must keep confidential all documents, materials, and data prepared or developed by the Bidder or supplied by the County. All erasures and/or changes shall be initialed by the individual making modifications to the proposal.

BIDDER MUST SIGN HERE AND RETURN THIS PAGE AND THE PROPOSAL FORM IN ADDITION TO SUBMITTING ANY DOCUMENTS CALLED FOR BY THE GENERAL CONDITIONS AND INSTRUCTIONS TO BIDDERS, SPECIFICATIONS, AND ANY OTHER DOCUMENTS HEREIN CONTAINED.

By signing here, Bidder does hereby attest that he/she has read fully the general conditions and instructions, specifications, and any other documents herein contained, and does understand them and will furnish and deliver all labor and materials in accordance with the specifications for the price as listed on the proposal form.

Bidder acknowledges receipt of Addenda by initialing the following:

Addendum No. 1 _____ Addendum No. 2 _____ Addendum No. 3 _____
Addendum No. 4 _____ Addendum No. 5 _____ Addendum No. 6 _____

AFFIRMATION REGARDING COLLUSION

I AFFIRM THAT:

Neither I nor, to the best of my knowledge, information, and belief, the below stated business has:

- (a) Agreed, conspired, connived, or colluded to produce a deceptive show of competition in the compilation of the accompanying bid or offer that is being submitted;
- (b) In any manner, directly or indirectly, entered into any agreement of any kind to fix the bid price or price proposal of the Bidder or Offeror or of any competitor, or otherwise taken any action in restraint of free competitive bidding in connection with the contract for which the accompanying bid or offer is submitted.

AFFIRMATION REGARDING BRIBERY CONVICTIONS

I FURTHER AFFIRM:

Neither I nor, to the best of my knowledge, information, and belief, the below business (as is defined in Section 16-101 (b) of the State Finance and Procurement Article of the Annotated Code of Maryland), or any of its officers, directors, partners, or any of its employees directly involved in obtaining or performing contracts with public bodies (as is defined in Section 16-101(f) of the State Finance and Procurement Article of the Annotated Code of Maryland), has been convicted of, or has had probation before judgment imposed pursuant to Criminal Procedure Article, Section 6-220 of the Annotated Code of Maryland, or has pleaded nolo contendere to a charge of, bribery, attempted bribery, or conspiracy to bribe in violation of Maryland law, or of the law of any other State or federal law, **except as follows** (indicate the reasons why the affirmation cannot be given and list any conviction, plea, or imposition of probation before judgment with the date, court, official or administrative body, the sentence or disposition, the name(s) of person(s) involved, and their current positions and responsibilities with the business):

BIDDER'S COMPANY/FIRM: _____

ADDRESS: _____

AUTHORIZED SIGNATURE: _____

NAME AND TITLE PRINTED: _____

TELEPHONE & FAX NUMBER: _____

E-MAIL ADDRESS: _____

STATE DEPARTMENT OF ASSESSMENTS AND TAXATION (SDAT) NO. _____

DATE: _____ FEDERAL EMPLOYER'S IDENTIFICATION NO. _____

For Informational Purposes Only: Has your company/firm been certified by the State of Maryland as a Minority Business Enterprise? (Please check below.)

_____ Yes _____ No

**PUR-1486
LABORATORY FUME HOOD
WASHINGTON COUNTY, MARYLAND FORM OF PROPOSAL**

LUMP SUM BID – ONE (1) LABORATORY FUME HOOD *(purchase, removal and insulation):*

_____ DOLLARS (\$ _____)
(Written) (Figures)

REMARKS/EXCEPTIONS:
