



Date: August 12, 2022
To: All Vendors
Subject: Addendum #1

REFERENCE: B045-22 Laboratory Facility – HVAC Replacement Project

This Addendum forms part of the contract and clarifies, corrects or modifies original bid document.

New BID DEADLINE: August 24, 2022 at 5:00 PM (same time) and New Bid Opening Deadline, August 25, 2022 at 10:30 AM

Question 1: Just to clarify, BPUB will be removing the ceilings and the building will be vacant of employees.

Answer 1: Via a separate contract, BPUB will demolish the existing acoustical ceilings tiles and grid throughout the building; however, the main laboratory room drywall ceiling will remain intact so the contractor will need to maneuver within the attic area for the duct replacements.

Question 2: Will there be any equipment/materials that will need to be covered? Would we need to put covering down on the floor?

Answer 2: The contractor must protect all contents within the building as they progress with their work. The flooring will be covered via a separate contract. If the contractor destroys the paper covering as they move ladders and such, they will be required to restore the paper covering in the affected area to protect the flooring.

Question 3: Who is the preferred roofer, contact information? Will everyone be required to use pricing from this roofer?

Answer 3: CPM Designs, LLC | luis@cpmdg.com | (956) 592-6031
Everyone must get pricing from this roofer to keep pricing uniform for all bidders.

Question 4: What is the expected timeline to complete the project?

Answer 4: 270 consecutive calendar days to Substantial Completion and Final Completion 30 consecutive calendar days after the date of Substantial Completion. Contractor must begin interior lab work as soon the suspended ceilings are removed by separate BPUB contractor and coordination with said contractor for ongoing work among the various trades.

Question 5: The current lab exhaust fans are mounted on stands. Would the new fans be mounted the same way or would a curb be preferred?

Answer 5: Replacement of the lab exhaust fume hoods are hereby deleted from this contract. See revised Bid Schedule deleting the bid item and attached herewith. The exhaust ductwork replacement remains in the contract.

Question 6: How many lab hoods are being replaced? We looked at two but the drawings show three.

Answer 6: Replacement of the lab exhaust fume hoods is hereby deleted from this contract. Sheet 14 was deleted in its entirety and replaced with additional equipment schedules. This attached plan sheet replaces the original sheet 14.

Question 7: Will there be an equipment schedule issued for the exhaust fans, chemical shot feeder, air devices & dampers?

Answer 7: Yes, see revised Sheet 14 that includes the schedules and attached herewith.

Question 8: Is there an old schedule of the existing air handlers or dimensions of the existing units?

Answer 8: See updated Air Handler Schedule on the bottom of Sheet 7 and attached herewith; this sheet replaces the original sheet 7. Dimensions of existing units will need to be field verified by all prospective bidders.

Question 9: To clarify, no piping below grade will be replaced. New chilled water piping will be run along the same lines as the drawings but elevated to approximately 10'.

Answer 9: No below grade Chilled Water piping will be replaced. New chillers will be relocated next to Air Handler Unit AH-2 parking area on a new concrete slab. New Chilled Water piping will be routed and elevated with galvanized pipe supports through the gable wall and routed through the interior attic space to AH-2 and AH-1 and supported with hanger supports to the roof trusses. The existing chillers and above ground piping will be removed and disposed of by the contractor; and all below ground piping will be capped at ground level. A separate contractor will pour the slab on grade for the chillers to be set on. The slab dimensions will be based on the approved submittals for the chillers.

Question 10: Base bid will consist of new chillers (2), new pumps (2), air separator (1), expansion tank (1), chemical shot feeder (1), VAV boxes (7), air handler (1), new supply duct & new lab exhaust duct (stainless steel), air devices & dampers.

Answer 10: Yes, please see Base Bid Items 1-14 and equipment schedules in the plan sheets.

Question 11: Alternate #1 will consist of additional air handlers and are both air handlers the same model number, only one unit is listed in the schedule and both are tagged AHU-2 on the drawings.

Answer 11: Alternate #1 will consist of Bid Item 15 and 16, which is AHU-1. See updated air handler unit schedule. AHU-1 is in the NW corner and AHU-2 is in the NE corner.

Question 12: Alternate #2 outdoor chilled water pipe, **not exactly sure how** it will be run.

Answer 12: Chilled water piping will be replaced in its entirety in the base bid. See revised Bid Schedule attached herewith.

The signature of the company agent, for the acknowledgment of this addendum, shall be required. **Complete information below and return via e-mail to: dsolitaire@brownsville-pub.com.**

I hereby acknowledge receipt of this addendum.

Company: _____

Agent Name: _____

Agent Signature: _____

Address: _____

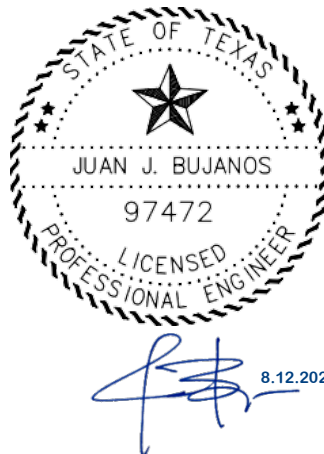
City: _____ **State:** _____ **Zip:** _____

Phone Number: _____ **E-mail address:** _____

If you have any further questions about the Bid, call 956-983-6366.

BY: ***Diane Solitaire***
Purchasing

JNB
ENGINEERING
29798 County Rd 725
Los Fresnos, Texas 78566
956.454.6740 phone
jnbengineering@gmail.com



BID
B045-22
BPUB Purchasing Department
1155 FM 511
Olmito, Texas 78575
Due: August 24, 2022 at 5:00PM

Bid of _____ hereinafter called BIDDER, a corporation organized and existing under the laws of the State of _____, or, a partnership, or an individual doing business as _____.

To the Brownsville Public Utilities Board of the City of Brownsville, Texas, hereinafter called OWNER.

Gentlemen:

The undersigned BIDDER, in compliance with your Invitation to Bid for the **LABORATORY FACILITY - HVAC REPLACEMENT PROJECT**, having read and examined the Plans and Specifications with related Contract Documents and visited the site of the proposed Work, and being familiar with all of the federal, state and local conditions surrounding the construction of the proposed Project, including the availability of materials and labor, hereby proposes to furnish all labor, materials, equipment and supplies, and to construct the Project in accordance with the Contract Documents, within the time set forth herein, and at the Total Base Bid Amount prior to OWNER options on additive/deductive alternates of: (in words and numeric figures)

_____. These price(s) are to cover all expenses incurred in performing the Work required under the Contract Documents, of which this bid is a part. These price(s) are firm and shall not be subject to adjustment, provided this Bid is accepted by OWNER within ninety (90) calendar days after the time set for BPUB receipt of bids.

BIDDER hereby agrees to commence Work under this Contract on or before a date to be specified in a written "Notice to Proceed" to be issued by the OWNER, and to then fully complete the Project within the times established in Article 3 of the Construction Agreement. BIDDER further agrees to pay as liquidated damages, not as a penalty, for failure to do so, the sum(s) established in Article 3 of the Construction Agreement.

BIDDER agrees to perform all Work for which he contracts as described in the Technical Specifications and as shown on the Plans, for the prices indicated on the following Bid Form.

**BID SCHEDULE
B045-22
BROWNSVILLE PUBLIC UTILITIES BOARD**

COMPANY NAME: _____

SOLICITATION: **B045-22 Laboratory Facility HVAC Replacement Project**

The Bidder, in compliance with the Invitation for Bids for the **LABORATORY FACILITY - HVAC REPLACEMENT PROJECT**, having examined the scope of work and written Specifications, hereby proposes to furnish construction services for the following Unit prices and lump sums.

PRICING
Pricing shall be inclusive of all labor, equipment, supplies, overhead, profit, material, and any other incidental costs required to perform and complete all work as specified in the Contract Documents. In the event there is a discrepancy between a subtotal or total amount and the unit prices and extended amounts, the unit prices will prevail and the corrected extension(s) and total(s) will be considered the price.

PLEASE ENSURE you have provided a printed copy of the Bid Schedule with your hard copy submission packages.

BPUB LABORATORY FACILITY HVAC REPLACEMENT PROJECT					
Item	Description	Unit of Measure	Estimated Quantity	Unit Price	Extended Amount
1	Mobilization: Move-in and set-up including all bonds, insurance, permits, and demobilize, complete as specified (5% maximum of total base bid)	LS	1		\$ -
2	Removal of Existing Air Cooled Chillers, ACC-1 & ACC-2: Disconnect electrical, controls and chilled water piping, remove and properly dispose of existing chillers and chilled water piping located outside on the northside of the building.	LS	2		\$
3	Installation of New Air Cooled Chillers: Furnish and install a new York air-cooled chiller, YLAA0065HE, including control panel, service isolation valves, equipment, BACnet integration, flow switch + extension kit, thermal dispersion flow switch, low sound fans with VSD control, 410A refrigerant, post coated dipped epoxy condenser corrosion protection condensers, metal louvered enclosure with hail guard protection condenser coils, wire protection panels compressor section, electrical, controls and water piping and reconnections, insulation, crane service and all associated parts, tools. All work must meet current and applicable building and manufacturer regulations and standards, commission, Test, Adjust and Balance (TAB).	LS	2		\$ -
4	Removal of Existing Air Handler AHU-2 and VFD: Disconnect electrical, controls and water piping, remove and properly dispose of existing air handler unit located in the exterior mechanical room.	LS	1		\$ -
5	Installation of New Air Handler AHU-2 and New VFD: Furnish and install a new York Air Handler Unit, XTI-45x72, 6620 CFM, galvanized exterior gauge and stainless steel interior gauge, including control panel in ext mechanical room, 3-way chilled water valve and actuator (DDC) and commission thru JCI automation and insulation. Includes equipment and all associated electrical, controls, water piping modifications, parts, tools and supplies necessary for complete installation. Tie-in electrical to motor and new VFD with required conduit and wire. Reinstall differential pressure sensors, temperature sensors and JCI automation devices commission to JCI automation. Fabricate and tie-in new metal duct to supply and return. All work must meet current and applicable building and manufacturer regulations and standards, commission, TAB.	LS	1		\$ -
6	Removal of Existing Chilled Water Pumps, CWP/S,CWP/R: Disconnect electrical, controls and water piping, remove and salvage for the owner.	LS	2		\$
7	Installation of New Chilled Water Pumps, CWP/S, CWP/R: Furnish & Install new chilled water pumps, 7.5 HP, end suction, connect electrical, controls and mechanical piping for complete installation, Commission, TAB.	LS	2		\$
8	Remove and Replace All Chilled Water Supply/Return Lines: Remove all above ground chilled water lines in their entirety and furnish new CHW S/R piping, fittings, insulation systems, pipe supports, restraints, and any other pertinent item to make the system complete and operable. Cap existing underground chilled water piping at ground level. Route exterior chilled water piping above ground (10' height) pipe supports; route through CMU wall into bldg attic & hang with truss hanger supports towards AHU-1 and AHU-2.	LS	1		\$
9	Removal of Existing Lab and Office VAVs, VMAs, Supply and Return Ducts: Remove and dispose of all supply and return duct and grilles.	LS	1		\$ -
10	Installation of New Lab & Office VAVs, VMAs, Supply and Return Ducts: Furnish and Install New Supply and Return Ducts, Grilles, external duct wrap insulation and back of supply air grilles, (7) VAV Boxes and (7) VMA Controllers and commission to latest upgrade of Metasys automation, DDC programming, test all zone sensors, Test, Adjust and Balance with final report.	LS	1		\$ -
11	Removal of Lab Exhaust and Make-Up Air Ducts and Roof Exhaust Fans: Remove and properly dispose of existing make-up air and exhaust fan units from the lab ventilation system. Remove existing grills from the existing hood.	LS	1		\$ -
12	Installation of New Lab Exhaust and Make-Up Air Ducts and Roof Exhaust Fans: Furnish and install a new 316 Stainless Steel lab exhaust and make-up units system, connecting to new fume hoods. Equipment must be Greenheck or Approved Alternate. Work shall include the addition of two new lab control exhaust fans on the roof with stainless steel cabinet, and a total of eight (8) sensors and variable frequency drives for the fans to achieve demand control ventilation. Includes equipment and all associated parts, tools and supplies necessary for a complete installation. All work must meet current and applicable building and manufacturer regulations and standards, Commission, TAB.	LS	1		\$ -
13	Remove and Replace Air Separator System, Expansion Tank and Chemical Treatment Systems per schedules.	LS	1		\$
14	Allowance - Owner Contingency: Contractor shall include in the following sums as a contingency to cover the cost of hidden, concealed or otherwise unforeseen conditions which develop during completion of the work. Contractor shall proceed with the work in question only after receiving written directions executed by the Owner and the Engineer. Owner will not be obligated to pay the cost of any work performed without prior written authorization. The Contractor's overhead and profit relative to this contingency sum and work performed in accordance herewith, shall be included in the total Base Proposal price, but not included in the contingency sum. Un -	LS	1	\$50,000.00	\$50,000.00

	expended balance of contingency sums shall revert to the Owner in the final settlement of the Contract.				
TOTAL BASE BID AMOUNT: BID ITEMS 1 - 14					\$ -
ADDITIVE ALTERNATES: AHU-1 Replacement and Chilled Water S/R Line Replacements					
Item	Description	Unit of Measure	Estimated Quantity	Unit Price	Extended Amount
15	Removal of Existing Air Handler AHU-1 and VFD: Disconnect electrical, controls and water piping, remove and properly dispose of existing air handler unit located in the exterior mechanical room.	LS	1		\$
16	Installation of New Air Handler AHU-1 and New VFD: Furnish and install a new York Air Handler Unit, XTI-30x39, 1800 CFM, galvanized exterior gauge and stainless steel interior gauge, including control panel in ext mechanical room, 3-way chilled water valve and actuator (DDC) and commission thru JCI automation and insulation. Includes equipment and all associated electrical, controls, water piping modifications, parts, tools and supplies necessary for complete installation. Tie-in electrical to motor and new VFD with required conduit and wire. Reinstall differential pressure sensors, temperature sensors and JCI automation devices commission to JCI automation. Fabricate and tie-in new metal duct to supply and return. All work must meet current and applicable building and manufacturer regulations and standards, commission, TAB.	LS	1		\$
TOTAL ADDITIVE ALTERNATES BID AMOUNT: BID ITEMS 15 -16					\$ -
BID SUMMARY					
TOTAL BID AMOUNT = TOTAL BASE BID (Items 1-14) + TOTAL ADDITIVE ALTERNATES (Items 15-16) = \$ _____					
**Quantities are not guaranteed. Final payment will be based on actual quantities.					
TOTAL BID AMOUNT:					
(Use Words to Write Total)					

NOTE: Quantities are estimated. The Brownsville PUB reserves the right to increase or decrease quantities as allowed by Texas law (plus or minus twenty-five (25%) percent and as deemed necessary by OWNER, without impacting the quoted unit prices. Prospective bidders are encouraged to visit and assess the existing Project site and structures prior to submitting a bid.

BIDDER Acknowledges receipt of the following Addenda:

SUBCONTRACTORS. The undersigned BIDDER proposes that he will be responsible to perform major portions of the Work at the Project site with his own forces and that specific portions of the Work not performed by the undersigned will be subcontracted and performed by the following subcontractors.

Work Subcontracted	Name of Subcontractor
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Bid amounts are to be legibly shown in both words and figures. In case of discrepancy, the unit price amount written in words will govern.

The above lump sum and unit prices shall include all labor, materials, excavation, bailing, shallow groundwater dewatering, shoring, removal, backfill, overhead, profit, insurance, etc., to cover the finished Work of the several kinds called for.

BIDDER understands that the OWNER reserves the right to reject any or all bids and to waive any informalities in the bidding and to elect to opt for any additive or deductive alternates in arriving at a final Contract price.

BIDDER agrees that this bid shall be good and may not be withdrawn for a period of ninety (90) calendar days after the scheduled bid opening.

The undersigned hereby declares that only the persons or firms interested in the bid as principal or principals are named herein, and that no other persons or firms than are herein mentioned have any interest in this Bid or in the Contract to be entered into; that this Bid is made without connection with any other person, company, or entities likewise submitting a bid or bid; and that it is in all respects for and in good faith, without collusion or fraud.

Upon receipt of written notice of the acceptance of this bid, BIDDER will execute the formal Contract attached within ten (10) calendar days and deliver the Bonds and Insurance Certificates as required under the GENERAL CONDITIONS. The Bid security attached in the sum of _____ (\$_____) is to become the property of the OWNER in the event the Contract, Bonds, and insurance certificates are not executed or delivered within the time above set forth, as mutually agreed to liquidated damages and not as a penalty for the delay and additional administrative expense to the OWNER caused thereby; otherwise the Bid security will be returned upon the signing of the Contract and delivering the approved Bonds and Insurance Certificates.

Seal affixed here if BID is by a Corporation:
Respectfully submitted,

By: _____
Signature **(Failure to sign disqualifies bid)**

Title

Address

Attest: _____

AIR COOLED CHILLER SCHEDULE																																
MARK	LOCATION	AREA AND/OR BLDG SERVED	TYPE	CAPACITY		# OF COMP	MAX KW/TON	MIN COP	MAX IPLV (KW/TON)	EVAPORATOR					FOULING FACTOR	CONDENSER AMBIENT OA TEMP		ELECTRICAL					REMARKS	MANUFACTURER	MODEL NO							
										FLOW		EWT		LWT		MAX WPD		# COMP		COMPRESSOR MOTOR		CONDENSER FAN MOTORS										
				TONS	[KW]					GPM	[L/s]	°F	[°C]	°F	[°C]	FT	[kPa]	°F	[°C]	HP	[KW]	PHASE				VOLT	# FANS	NOMINAL POWER HP	[W]	PHASE	VOLT	
					[]						[]				[]																	
ACCH-1	Exterior	Office	SCREW	62.29	[220]	5	1.05	3.3	.156	148.7	[9]	54	[12]	44	[7]	12	[36]	0.0001	95	[35]	5	87	[65]	3	460	4	2	[1500]	3	460	York	YLAA 0065HE46XFSXTX
ACCH-2	Exterior	Lab	SCREW	62.29	[220]	5	1.05	3.3	.156	148.7	[9]	54	[12]	44	[7]	12	[36]	0.0001	95	[35]	5	87	[65]	3	460	4	2	[1500]	3	460	York	YLAA 0065HE46XFSXTX
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NOTES																																
1. SEE SPECIFICATIONS FOR OTHER APPLICABLE ENGINEERING REQUIREMENTS.										3. PROVIDE WITH PART WINDING STARTER																						
2. PROVIDE WITH HOT GAS BYPASS SUCH THAT YOU CAN MODULATE DOWN TO 5%										4. PROVIDE WITH SINGLE POINT POWER CONNECTION																						

SINGLE DUCT SCHEDULE - ELECTRIC HEAT

RESULTS															ELECTRIC HEAT								SOUND			RAD SOUND POWER						DIS SOUND POWER					
TAG	MFG	QTY	MODEL	SIZE	CONTROLS	MAX PRIMARY CFM	MIN PRIMARY CFM	INLET SP IN WC	MIN SP IN WC	DOWN SP IN WC	ARRANGEMENT	MCA **	MSCP **	WEIGHT lb	HEAT CFM	EAT DEG F	LAT DEG F	HTR KW	HTR AMPS	HTR VOLT	PHASE	STEPS	RAD NC	DIS NC	ATTEN METHOD	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
V2-1	JCI	1	TSS	08		980	105	1	0.37	0.25	LH Controls / LH Coil	18.04	20	32	980	55	93.7	12	14.43	480	3	3	20	16	AHRI-885E	58	47	45	40	35	28	66	60	55	52	48	44
V2-2	JCI	1	TSS	06		440	53	1	0.48	0.25	LH Controls / LH Coil	9.02	15	29	440	55	98.09	6	7.22	480	3	2	16	15	AHRI-885E	52	47	43	37	32	27	63	58	53	50	43	41
V2-3 V2-4	JCI	2	TSS	10		1380	165	1	0.19	0.25	LH Controls / LH Coil	27.06	30	34	1380	55	96.22	18	21.65	480	3	3	21	19	AHRI-885E	57	49	47	40	34	30	68	62	58	55	51	48
V2-5	JCI	1	TSS	10		1130	165	1	0.13	0.25	LH Controls / LH Coil	22.55	25	34	1130	55	96.95	15	18.04	480	3	3	19	16	AHRI-885E	55	47	45	38	32	30	65	60	56	53	49	46
V2-6	JCI	1	TSS	10		1010	165	1	0.11	0.25	LH Controls / LH Coil	19.55	20	34	1010	55	95.67	13	15.64	480	3	3	18	16	AHRI-885E	54	46	44	37	32	29	64	60	56	52	49	46
V2-7	JCI	1	TSS	05		300	48	1	0.19	0.25	LH Controls / LH Coil	6.01	15	29	300	55	97.13	4	4.81	480	3	2	20	24	AHRI-885E	51	50	46	38	34	30	68	65	55	51	46	44

- * "-" signifies a NC value (radiated or discharge) that is less than 15
- * Actual coil APD shown is at max airflow, not heating airflow.
- ** MCA/MSCP number may vary from unit nameplate due to component changes related to actual product selections and devices applied.

CHILLER PUMP SCHEDULE																								
MARK	LOCATION	AREA AND/OR BLDG SERVED	SYSTEM AND/OR SERVICE	TYPE	CIRCULATING FLUID										MIN % EFF	ELECTRICAL MOTOR						REMARKS	MANUFACTURER	MODEL NO
					FLUID	FLOW		HEAD		NPSH AVAILABLE		TEMPERATURE		SP GR		NOMINAL POWER		PHASE	VOLT	MAX RPM	SPEED CONTROL			
						GPM	[L/s]	FT	[kPa]	FT	[kPa]	°F	[°C]			HP	[KW]							
P-1	OUTDOORS	LAB/OFFICE	CHILLED WATER	END SUCTION	CHILLED WATER	180	[11]	45	[720]	N/A	#VALUE!	95	[35]	1	85	7.5	[6]	3	460	1800	VARIABLE	----	BELL & GOSSETT	209251
P-2	1220 MER	SURGERY	CHILLED WATER	END SUCTION	CHILLED WATER	255	[16]	46	[730]	N/A	N/A	95	[35]	1	85	7.5	[6]	3	460	1800	VARIABLE	----	BELL & GOSSETT	209251

- DESIGNER NOTES
1. ANTIFREEZE FLUID IS USUALLY PROPYLENE GLYCOL WATER (PGW). ADJUST FLOW, HEAD, AND POWER FOR FLUID PUMPED, EXCEPT SIZE MOTORS FOR HOT FLUIDS ON COLD CONDITIONS.



6/29/22

AIR HANDLING UNITS																																																	
TAG	LOCATION	SERVICE	AIR FLOW (CFM)	MIN. OA (CFM)	SUPPLY FAN CHARACTERISTICS					MOTOR					RETURN FAN CHARACTERISTICS					MOTOR					HEATING COIL					COOLING COIL					MANUFACTURER														
					WHEEL TYPE	WHEEL DIA. (IN)	TSP ("WG)	ESP ("WG) (1)	RPM	BHP	HP	PH	VOLT	VFD	WHEEL TYPE	WHEEL DIA. (IN)	ESP ("WG) (1)	RPM	BHP	HP	PH	VOLT	VFD	TYPE	EAT ("F)	LAT ("F)	CAPACITY (MBH)	MAX. FACE VEL (FPM)	AIRFLOW AT MAX HEATING (CFM)	AIR PD AT UNIT MAX AIRFLOW ("wg)	STEAM COIL STEAM PRESSURE (PSIG) (2)	STEAM FLOW (LBS/HR)	HOT WATER COIL MAX. WATER PD (FT)	GPM		EWT ("F)	LWT ("F)	EAT ("F)	DB	WB	LAT ("F)	DB	WB	MAX. FINS/INCH	MAX. FACE VEL (FPM)	MAX. AIR PD ("WG) (1)	MAX. WATER PD (FT)	CAPACITY (MBH) (TOTAL)	GPM
AHU-2	LAB MECH RM	VERTICAL DRAW-THRU	6620	100%	AF.FS	15	2.63	1.75	1800	5.71	7.5	3	460		DWDI	15	1.75	3500	6.02	7.5	3	460		STAGED	36	64.89	3876		6620	0.03							95.7	79.9	53.6	52.8	11	453	0.74	19.6	603	144	44	54	YORK XTI-45X72
AHU-1	OFFICE MECH RM	VERTICAL DRAW-THRU	1800	420%	FC	10X7		1	1800	1.03	1.5	3	460			10X7	1	1800	1.03	1	3	460		STAGED			388		1800	0.03							80.8	67.2	55	54.2	8	500	0.6	15	91.2	15	44	54	YORK XTI-030X039

- (1) ESP TO EXCLUDE PD OF UNIT COMPONENTS FURNISHED BY UNIT MANUFACTURER SUCH AS COILS, FACE AND BYPASS DAMPERS, HOT AND COLD DECK DAMPERS, INLET VANES AND PERFORATED DIFFUSER PLATES WHERE REQUIRED.
- (2) STEAM PRESSURE INDICATED IS STEAM PRESSURE AVAILABLE DOWNSTREAM OF CONTROL VALVE.

8/12/22

PROJECT:

BPUB LABORATORY FACILITY
HVAC REPLACEMENT PROJECT

SHEET TITLE
HVAC SCHEDULES

J N B
ENGINEERING

29798 COUNTY RD. 725; 956-454-6740
LOS FRESNOS, TEXAS 78566

PROJECT #

DRAWN BY: AJM

DATE:
6-29-2022

SHEET
7 OF 16

8/12/22

AIR DEVICE SCHEDULE										
MARK	MODEL	SIZE	THROW (• 100 FPM)	CFM RANGE	INLET	O.B.D. REQ'D. ?	P.D. ("WG) *	MAX. NC	REFERENCE	NOTES
(A)	TRI-TEC-AL	24"x48"	5'	450-650	10"ø	YES	0.15	35	TITUS	(1)
(B)	TRI-TEC-AL	24"x48"	2'	651-750	12"ø	YES	0.18	35	TITUS	(1)
(C)	PAS-AA	24"x24"	5'	50-160	6"ø	YES	0.1	30	TITUS	(1) (2)
(D)	PAS-AA	24"x24"	6'	161-250	8"ø	YES	0.1	30	TITUS	(1) (2)
(E)	PAS-AA	24"x24"	6'	250-350	10"ø	YES	0.1	30	TITUS	(1) (2)
(RA)	50F	10"x6"	--	0-270	--	YES	.07	30	TITUS	(1)
(RB)	50F	24"x6"	--	0-650	--	YES	.07	30	TITUS	(1)
(RC)	50F	16"x12"	--	0-1,100	--	YES	.07	30	TITUS	(1)
(RD)	4FL	24"x12"	--	0-725	--	YES	.08	31	TITUS	(1)
(RE)	4FL	24"x16"	--	0-1,000	--	YES	.08	31	TITUS	(1)
(RF)	PAR	24"x24"	--	0-2,000	22"x22"	YES	.13	30	TITUS	(1)

- * AT MAX. CFM
- (1) PROVIDE WITH SURFACE MOUNT FRAME OR LAY-IN FRAME WHERE APPLICABLE
(SEE ARCH. REFLECTED CEILING PLAN.)
- (2) 4-WAY THROW UNLESS INDICATED OTHERWISE.

8/12/22

FAN SCHEDULE												
MARK	TYPE	MANUFACTURER AND MODEL	SERVICE	CFM	S.P. (" WG)	MAX. BHP	H.P.	V/PH	MAX. SONES	DRIVE	CONTROL	NOTES
EF-1	CENTRIFUGAL ROOFTOP	COOK 120C2B	OFFICE	390	.375	.07	1/6	120/1ø	8.0	BELT	INTERLOCK W/AHU-1	(1)
EF-2	UTILITY SET	COOK 210CPA	GENERAL LAB	6,350	1.0	2.5	3	480/3ø	-	BELT	THRU DDC	(2) (4)
EF-3	UTILITY SET	COOK 120CPA	ICP HOOD	150	1.0	.15	1/4	120/1ø	-	BELT	TOGGLE SWITCH AT HOOD	(2) (3) (4)
EF-4	CENTRIFUGAL ROOFTOP	COOK 90C11DM	HYDROGEN STORAGE	300	.125	--	91 WATTS	120/1ø	5.0	DIRECT	CONTINUOUS	(6) (7)
EF-5	WALL-PROPELLER	COOK 48SP7B	PCB BUILDING	18,600	.125	1.2	1	480/3ø	-	BELT	THERMOSTAT	(5)
EF-6	WALL-PROPELLER	COOK 48SP7B	PCB BUILDING	18,600	.125	1.2	1	480/3ø	-	BELT	THERMOSTAT	(5)
EF-7	CENTRIFUGAL ROOFTOP	COOK 90C100H	CYLINDER STORAGE	300	.125	--	91 WATTS	120/1ø	5.0	DIRECT	CONTINUOUS	

- (1) PROVIDE WITH MANUFACTURERS 8" ROOF CURB, BIRDSCREEN, BACKDRAFT DAMPER, AND INTEGRAL DISC SWITCH.
CURB TO BE MOUNTED ON STANDING SEAM METAL ROOF, SEE ARCH.
- (2) SEE DETAIL 3/M502 FOR INSTALLATION
- (3) AIR TEMPERATURE 400°F
- (4) PROVIDE W/SCROLL DRAIN AND FLEXIBLE DUCT CONNECTION AT INLET
- (5) PROVIDE W/MOTORIZED SHUTTER AND GALVANIZED STEEL PROTECTIVE CAGE WITH 1/2" MESH SCREEN
- (6) FURNISH SPARK RESISTANT MOTOR AND DISCONNECT RATED FOR CLASS 1 DIVISION 2 HAZARDOUS LOCATION
- (7) PROVIDE WITH MANUFACTURER'S 8" ROOF CURB, BIRDSCREEN AND BACKDRAFT DAMPER.
CURB TO BE MOUNTED ON STANDING SEAM METAL ROOF, SEE ARCHITECTURAL

8/12/22

CHEMICAL SHOT (POT) FEEDER		
SYSTEM MAIN SIZE	MODEL	CAPACITY (GAL)
4" AND SMALLER	FB-2-SB-CS-Z-250	2-GALLONS
5" THRU 10"	FB-5-SB-CS-Z-250	5-GALLONS
12" AND LARGER	FB-12-SB-CS-Z-250	12-GALLONS

- NOTES: 1. Model numbers based upon Griswold Water Systems
2. All feeders to include FP-75 funnel package and VP-75 valve package
3. Contractor to provide legs with minimum 10" clearance above floor or a Griswold P-12 pedestal
4. Where plans indicate "SHOT FEEDER/FILTER," in addition to the feeder trim above, also provide a Griswold CFA Filter Assembly with CF-25-250 filter and one (1) package of twenty-five (25) filters [part #CF-2525-250] to owner

8/12/22

FLEX DUCT SCHED.	
CFM RANGE	SIZE ("ø")
< 50	5
51 - 100	6
101 - 200	8
201 - 350	10
351 - 600	12
601 - 900	14
901 - 1300	16
1301 - 1800	18
1801 - 2300	20

FLEX DUCT SHALL BE SIZED IN ACCORDANCE W/ FLEX DUCT SCHEDULE. PROVIDE RIGID REDUCER AT NECK OF AIR DEVICE, VAV INLET DUCT, ETC. TO TRANSITION FROM FLEX DUCT SIZE TO EQUIPMENT CONNECTION SIZE.



6/29/22

8/12/22 - Addendum #1 - Lab Schedule

PROJECT:

BPUB LABORATORY FACILITY
HVAC REPLACEMENT PROJECT

SHEET TITLE

LAB FUME HOODS

JNB
ENGINEERING

29798 COUNTY RD. 725, 956-454-6740
LOS FRESNOS, TEXAS 78566

PROJECT #

DRAWN BY: AJM

DATE:
6-29-2022

SHEET
14 OF 16