

**ADVERTISEMENT FOR BIDS
RALEIGH COUNTY AIRPORT AUTHORITY
RALEIGH COUNTY, WEST VIRGINIA
TERMINAL HVAC UPGRADES**

ADDENDUM #1

May 21, 2025

THRASHER PROJECT # T80-11391

TO WHOM IT MAY CONCERN:

A Pre-Bid Conference was held on Thursday, May 15, 2025, on the above-referenced project, a copy of the sign-in sheet is included in this Addendum. The following are clarifications and responses to questions posed by contractors for the above-referenced project.

A. GENERAL

1. **THE BID FORM HAS BEEN REVISED. YOU MUST USE THE REVISED BID FORM WHEN PREPARING YOUR BID PACKAGE FOR THIS PROJECT.**

B. SPECIFICATIONS

1. Bid Form has been revised
2. Notice of Award has been revised.

C. DRAWINGS

1. The following drawing has been revised:
M1.01 - Notes, Abbreviations, Symbols, Schedules, & Details

D. QUESTIONS AND RESPONSES

1. QUESTION

With the age of the terminal building is there any concern for asbestos for the required new penetrations?

RESPONSE

Based on previous projects there could be the chance that asbestos is encountered. Therefore, please include a cost to have asbestos containing materials abated for penetrations that are made in the floor and walls.

If you have any questions or comments, please feel free to contact me at your earliest convenience. As a reminder, bids will be received by 2:00 p.m. on Tuesday, June 3, 2025, at Raleigh County Airport Authority located at 176 Airport Road, Beaver, WV 25813. Good luck to everyone and thank you for your interest in the project.

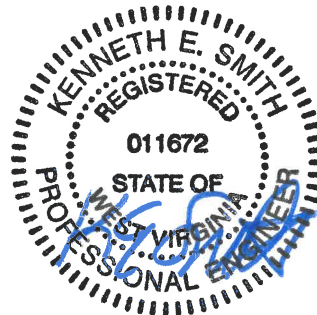
Sincerely,

THE THRASHER GROUP, INC.



KENNETH SMITH, PE
Project Manager

Enclosures:



5/21/2025

**RALEIGH COUNTY AIRPORT AUTHORITY
RALEIGH COUNTY, WEST VIRGINIA
TERMINAL HVAC UPGRADE**

PRE-BID CONFERENCE

Thursday, May 15, 2025

Thrasher Project #T80-11391

Name	Representing	Phone #	Email Address
Chris Craghead	Dougherty Company	304-925-6664	brnsmth@doughertyco.com
RICHARD SLATER	CASTO TECHNICAL SERVICES	304-993-5889	rslater@castotech.com rslater@castotech.com
Mark Rivenbark	CASTO TECHNICAL	681-945-5894	MRivenbark@Castotech.com
Nathan Cornwell	Southern Air	434-484-0578	Nathan.Cornwell@Southern-Air.com
Ken Smith	Thrasher	304-346-7601	kesmith@thethrashergroup.com
Nicole Jones	Thrasher	304-423-5991	njones@thethrashergroup.com
Eric Mahaffey	Pennington Plumbing & Heating	304-252-7529	ericm@pphvw.com
Lora Clemens	RCMA	304-255-147	lclemens@flybeckley.com

BID FORM FOR CONSTRUCTION CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to:

*RALEIGH COUNTY AIRPORT AUTHORITY
176 AIRPORT ROAD
BEAVER, WV 25813*

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

1.03 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

A. Bid Opening Requirements

ARTICLE 3—BASIS OF BID—UNIT PRICES

GENERAL

The Bidder shall take notice of and shall be responsible for any local or state taxes levied and applicable, and the cost for the same shall be included as part of the submitted Bid.

BID PROPOSAL

The Bidder agrees to perform all required Work described in the Plans, Construction Details, General and Special Provisions, Technical Specifications and all other contract documents for the consideration of the prices quoted in the following schedule of bid items.

BID SCHEDULE
PROPOSED
TERMINAL HVAC UPGRADES
FOR THE
RALEIGH COUNTY AIRPORT AUTHORITY
RALEIGH COUNTY, WEST VIRGINIA
THRASHER PROJECT # T80-11391

3.02 Total Bid Price Lump Sum

NOTE: *Bid PRICE amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will govern. Bids shall include sales tax and all other applicable taxes and fees.*

Base Bid

Item #	Qty	UNIT	DESCRIPTION	TOTAL PRICE
1	1	LS	<i>Provide all labor, materials, equipment, fees, bonds, insurance and taxes to perform the following work as detailed in the plans and specifications and addenda:</i> The project will consist of the replacement of existing HVAC equipment including but not limited to replacement of 30 ton condenser & DX coil, associated refrigerant piping and specialties, 12.5-ton condenser & DX coil, associated refrigerant piping and specialties; replacement of temperature controls for 30-ton AHU & DX unit, 12.5-ton AHU & DX unit.	

TOTAL BASE BID: _____
(Written in Words)

_____ (\$ _____)

(Amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.)

ADD ALTERNATE #1

Item #	Qty	UNIT	DESCRIPTION	TOTAL PRICE
1	1	LS	Replacement of existing electric heating coils and makeup air unit are to be included in Add Alternate.	

TOTAL ADD ALTERNATE #1: _____
(Written in Words)

_____ (\$ _____)

(Amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.)

3.01 *Method of Award*

If at the time this contract is to be awarded, the lowest total bid submitted by a qualified, responsive, responsible Bidder does not exceed the amount of funds then estimated by the Owner, as available to finance the contract, the construction contract will be awarded. Awarding of Additive Alternate(s) will not affect the lowest Bidder. If such bids exceed such amount, the Owner may reject all bids.

The Owner will award the contract on the total base bid amount inclusive or exclusive of alternates as determined by the Owner and submitted by a qualified, responsive, responsible Bidder. The Owner may elect to award any or all of the additive alternates in no particular order.

~~ARTICLE 4—BASIS OF BID—COST PLUS FEE - DELETED~~

~~ARTICLE 5—PRICE PLUS TIME BID -DELETED~~

ARTICLE 6—TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Article 8 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD AND INSTRUCTIONS

7.01 *Bid Acceptance Period*

A. This Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

7.02 *Instructions to Bidders*

A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

ARTICLE 8—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

8.01 *Bidder's Representations*

A. In submitting this Bid, Bidder represents the following:

1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.

5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

8.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
 - a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
 - b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.

- c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
- d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

BIDDER hereby submits this Bid as set forth above:

Bidder:

(typed or printed name of organization)

By: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(typed or printed)

Address for giving notices:

Bidder's Contact:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Phone: _____

Email: _____

Address: _____

Bidder's Contractor License No.: (if applicable)

NOTICE OF AWARD

Date of Issuance:

Owner: Raleigh County Airport Authority Owner's Project No.:
Engineer: The Thrasher Group, Inc. Engineer's Project No.: T80-11391
Project: Terminal HVAC Upgrade
Contract Name: Terminal HVAC Upgrade
Bidder:
Bidder's
Address:

You are notified that Owner has accepted your Bid dated _____ for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

The Contract Price of the awarded Contract is \$ _____. Contract Price is subject to adjustment based on the provisions of the Contract, including but not limited to those governing changes, Unit Price Work, and Work performed on a cost-plus-fee basis, as applicable.

Three (3) unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award or has been transmitted or made available to Bidder electronically.

☐ Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner three **(3)** counterparts of the Agreement, signed by Bidder (as Contractor).
2. Deliver with the signed Agreement(s) the Contract security (such as required performance and payment bonds) and insurance documentation, as specified in the Instructions to Bidders and in the General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any): **Drug Policy**

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within 10 days after you comply with the above conditions, Owner will return to you one fully signed counterpart of the Agreement.

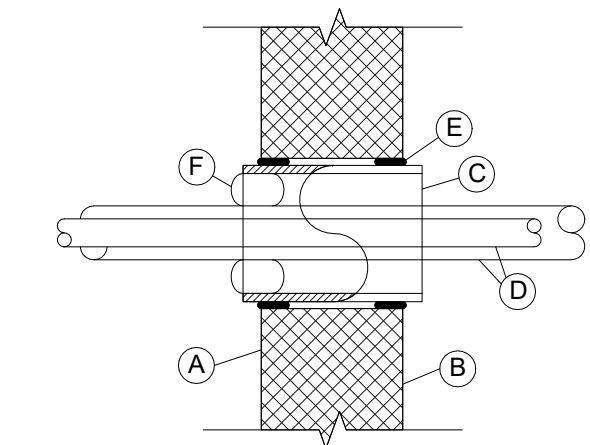
Owner: Raleigh County Airport Authority

By (signature): _____

Name (printed): _____

Title: _____

Copy: Engineer



DETAIL OF REFRIGERANT PIPE THROUGH WALL
1/8" = 1'-0"

NOTES:

- (A) EXTERIOR SIDE OF WALL
- (B) INTERIOR SIDE OF WALL
- (C) PIPE SLEEVE, SEE SPECIFICATIONS
- (D) REFRIGERANT PIPING
- (E) CAULK AROUND PIPE SLEEVE
- (F) SEAL WITH SPRAY FOAM INSULATION

CONDENSING UNIT SCHEDULE

MARK	MANUF.	MODEL NO.	WEIGHT	LOCATION	SERVING	TOT. COOLING MBH	NO. OF STAGES	NO. OF CIRCUITS	VOLTS/PHASE	MCA	MOCP	NOTES
CU-1	TEMPMASTER	KD180C00A4DAE1	818	GRADE	AHU-1	184.0	2	2	460/3	32.3	40.0	1,3,4
CU-2	TEMPMASTER	KD360C00A4BAB1	1875	GRADE	AHU-2	355.0	4	2	460/3	60.5	70.0	2,3,4

NOTES

- PROVIDE WITH NON-POWERED CONVENIENCE OUTLET, DISCONNECT, SMART EQUIPMENT CONTROLLER, PHASE MONITOR, LIQUID LINE DRIER, AND COIL GUARD.
- PROVIDE WITH NON-POWERED CONVENIENCE OUTLET, DISCONNECT, SMART EQUIPMENT CONTROLLER, PHASE MONITOR, LIQUID LINE DRIER, COPPER TUBE / ALUMINUM FIN CONDENSER COIL, AND GUARD.
- UNIT DESIGNED FOR R454B REFRIGERANT.
- LOW AMBIENT CONTROL TO 40°F.
- RATED AT 95°F AMBIENT.

DIRECT EXPANSION COIL SCHEDULE

MARK	MANUFACTURER	MODEL NO.	WEIGHT	CFM	TOTAL MBH	SEN MBH	EAT(°F) DB/WB	LAT(°F) DB/WB	FACE VELOCITY (FT/MIN)	AIR PRESSURE DROP (IN H2O)	REFRIGERANT	ROWS	FINS/INCH	FACE AREA (SQ FT)	REMARKS
DX-1	SFI COILS	-	153	3865	181.4	120.7	80/67	51.8/51.6	501	1.12	R-454B	6	14	7.78	1
DX-2	SFI COILS	-	259	13400	13400	13400	80/67	59.6/57.5	457	0.34	R-454B	4	8	26.25	1

NOTES

- CONTRACTOR SHALL CONFIRM COIL DIMENSIONS, ROWS, AND FINS/INCH PRIOR TO ORDERING.

ELECTRIC HEATER COIL SCHEDULE

MARK	CFM	SIZE WxH	KW	MBH	NO. STEPS	EAT (°F)	LAT (°F)	VOLTS / PHASE	NOTES
EHC-1	3865	63X23	42	143.3	1	57	90	480/3	1,2,3
EHC-2	13400	91X43	137	467.5	1	61	90	480/3	1,2,3

NOTES:

- HEATERS TO BE INCLUDED AS ADD ALTERNATE #1.
- CONTRACTOR SHALL CONFIRM HEATER DIMENSIONS PRIOR TO ORDERING.
- PROVIDE WITH PROPORTIONAL CONTROL OPTION, MAGNETIC DISCONNECTING CONTACTOR, SCR CONTROLLER, FUSES, MANUAL THERMAL CUTOUT, AIRFLOW SWITCH NEGATIVE, 0-10VDC PROPORTIONAL INPUT, FUSED CONTROL CIRCUIT TRANSFORMER, INLET SIDE PRESSURE PLATE, AND AUTOMATIC THERMAL CUTOUT.

MAKE-UP AIR UNIT SCHEDULE

MARK	MANUFACTURER	MODEL NO.	WEIGHT (LBS)	CFM			SUPPLY FAN			HEATING				VOLTS/ PHASE	MCA	MOCP	NOTES
				S.A. (MAX)	R.A.	O.A.	E.S.P. (IN.)	H.P.	RPM	TOTAL INPUT (KW)	TOTAL MBH OUTPUT	E.A.T. (°F)	L.A.T. (°F)				
MAU-1	KING ELECTRIC	CKL2460-3-4-3.0	650	3,000	0	3,000	1.0	2.0	VARIES	60	204.7	11	74	240/3	145	200	1

NOTES:

- OUTDOOR, MAKE-UP AIR UNIT; 2" MERV 8 FILTERS; HORIZONTAL DISCHARGE; INLET AIR SENSOR; INTAKE AND DISCHARGE SCREEN; STEP CONTROLLER WITH SOLID STATE RELAY; VARIABLE FREQUENCY DRIVE; AND NON-FUSED DISCONNECT.
- SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- ELECTRIC-RESISTANCE HEAT CONTROLS: A) DISCHARGE AIR TEMPERATURE SENSOR TO MAINTAIN DISCHARGE AIR TEMPERATURE OF 55 F (ADJ.), B) WALL-MOUNTED, TEMPERATURE SENSOR TO MAINTAIN SPACE TEMPERATURE SETPOINT OF 72 F (ADJ.). WHEN SPACE TEMPERATURE FALLS BELOW SETPOINT, UNIT SHALL OVERRIDE DISCHARGE AIR TEMPERATURE.

CONTROLS INFORMATION

PROVIDE NEW CONTROL ENCLOSURES FOR EXISTING AHU-1 AND AHU-2 WITH BACNET/IP CONTROLLER WITH TOUCH SCREEN AND THE FOLLOWING ANCILLARY DEVICES:

- DUCT MOUNTED SUPPLY AIR TEMPERATURE SENSOR
- DUCT MOUNTED MIXED AIR TEMPERATURE SENSOR
- DUCT MOUNTED OUTSIDE AIR TEMPERATURE SENSOR
- RELAYS FOR DX COOLING, SUPPLY FAN, AND ELECTRIC HEAT CONTROL
- ACTUATOR FOR OUTSIDE AIR DAMPER CONTROL
- SPACE TEMPERATURE SENSOR WITH SETPOINT ADJUSTMENT

SEE MAKEUP AIR UNIT SCHEDULE NOTE #3.

INCLUDE ALL ENGINEERING, PROGRAMMING, AND COMMISSIONING.

SEQUENCE OF OPERATIONS

CONSTANT VOLUME AIR HANDLING UNITS (AHU-1,2)

OCCUPIED MODE: DURING THE OCCUPIED MODE THE SUPPLY FAN SHALL OPERATE CONTINUOUSLY, THE OUTDOOR AIR DAMPER SHALL OPEN TO MINIMUM POSITION. THE COMPRESSOR(S) SHALL STAGE TO MAINTAIN COOLING SETPOINT (74°F ADJ.). THE ELECTRIC HEAT SHALL MODULATE TO MAINTAIN HEATING SETPOINT (72°F ADJ.).

UNOCCUPIED MODE: DURING THE UNOCCUPIED MODE THE SUPPLY FAN SHALL CYCLE, THE COMPRESSOR SHALL STAGE, THE ELECTRIC HEAT SHALL MODULATE TO MAINTAIN UNOCCUPIED SETPOINT (85°F COOLING AND 65°F HEATING ADJ.). THE OUTDOOR AIR DAMPER SHALL BE CLOSED.

HEATING: ON A CALL FOR HEATING THE SUPPLY FAN SHALL BE ON, THE COMPRESSOR(S) SHALL BE OFF, AND THE ELECTRIC HEAT SHALL MODULATE TO MAINTAIN SETPOINT (ADJ.).

COOLING: ON A CALL FOR COOLING THE SUPPLY FAN SHALL BE ON, THE COMPRESSOR(S) SHALL STAGE TO MAINTAIN SETPOINT (ADJ.), AND THE ELECTRIC HEAT SHALL BE OFF.

MAKE-UP AIR UNIT (MAU-1)

SEE MAKE UP AIR UNIT SCHEULE NOTE #3.

DEMOLITION NOTES

- COORDINATE HVAC DEMOLITION WITH OTHER TRADES AND GENERAL CONTRACTOR. DO NOT DEMOLISH EQUIPMENT OR COMPONENTS WITHOUT APPROVAL.
- UNDER NO CIRCUMSTANCE SHALL DEMOLITION CAUSE DAMAGE OR REMOVAL IN WHOLE OR IN PART OF ANY STRUCTURAL MEMBER WITHOUT EXPRESS APPROVAL OF THE GENERAL CONTRACTOR.
- CAP AND PROTECT ANY EXPOSED EQUIPMENT, DUCT, PIPE OR ELECTRICAL CABLE / CONDUIT THAT RESULTS FROM DEMOLITION. UNDER NO CIRCUMSTANCE WILL DEMOLITION RESULT IN THE PERMANENT EXPOSURE OF ANY CHARGED OR LIVE COMPONENT OR ANY EQUIPMENT TO BE RE-USED.
- PROTECT ANY EQUIPMENT, SYSTEM, OR COMPONENT THEREOF THAT SHALL BE RE-USED.
- COORDINATE DISPOSAL OF ALL REMOVED ITEMS WITH THE GENERAL CONTRACTOR. TURN OVER ANY COMPONENTS TO THE OWNER AS DESIGNATED IN CLEAN CONDITION, WITHOUT DAMAGE, AND WITH OPENING SEALED. FURNISH RECEIPTS OF PROPER DISPOSAL OF ALL ITEMS REMOVED TO THE GENERAL CONTRACTOR UPON REQUEST. RECEIPTS SHALL INDICATE DISPOSAL IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

GENERAL MECHANICAL NOTES:

- PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE HVAC SYSTEM AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
- CERTAIN ITEMS SUCH AS RISES AND DROPS IN DUCTWORK, ACCESS DOORS, VOLUME DAMPERS, ETC., ARE INDICATED FOR CLARITY IN CERTAIN AREAS. THIS DOES NOT RELIEVE THE CONTRACTOR OF PROVIDING THESE ITEMS NOT SHOWN IN OTHER AREAS AS REQUIRED FOR A COMPLETE INSTALLATION.
- UNLESS NOTED OTHERWISE, LOCATE ALL ROOM THERMOSTATS 5'-0" ABOVE FINISH FLOOR.
- ALL DUCTWORK SHALL CLEAR DOORS AND WINDOWS.
- ALL DUCTWORK DIMENSIONS, AS SHOWN ON DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS. DUCT SIZE SHALL BE INCREASED IN SIZE TO COMPENSATE FOR INTERNAL LININGS.
- COORDINATE DIFFUSER, REGISTER, AND GRILLE LOCATIONS WITH ARCHITECTURAL PLANS, LIGHTING, AND OTHER ITEMS LOCATED IN CEILING.
- LOCATE ALL MECHANICAL EQUIPMENT FOR UNOBSTRUCTED ACCESS TO UNIT ACCESS PANELS, CONTROLS, AND VALVING.
- PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCTWORK SYSTEMS CONNECTED TO AIR HANDLING UNITS, FANS, AND OTHER EQUIPMENT THAT REQUIRE VIBRATION ISOLATION. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AT THE POINT OF CONNECTION UNLESS NOTED OTHERWISE.
- RUNS OF FLEXIBLE DUCTWORK SHALL NOT EXCEED 5 FEET.
- ALL DUCTS SHALL BE GROUNDED ACROSS FLEXIBLE CONNECTIONS WITH FLEXIBLE COPPER GROUNDING STRAPS.
- TURNING VANES SHALL BE INSTALLED IN ALL RECTANGULAR DUCT ELBOWS THAT EXCEED 45° CHANGE IN DIRECTION.
- INSTALL 1" DUCTLINER IN FIRST 15' OF ALL RETURN AIR DUCTS.
- SMOKE DETECTORS SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL INSTALL THE SMOKE DETECTOR IN THE DUCTWORK.
- CONTROL RELAYS SHALL BE WIRED BY THE ELECTRICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL THE RELAY IN THE EQUIPMENT.

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	MAU	MAKE-UP AIR UNIT
BF	BELOW FLOOR	MH	MOUNTING HEIGHT
BCU	BLOWER COIL UNIT	MBH	THOUSAND BTU/HR
CFM	CUBIC FEET PER MINUTE	MOD	MOTORIZED DAMPER
COP	COEFFICIENT OF PERFORMANCE	NIC	NOT INCLUDED IN CONTRACT
CU	CONDENSING UNIT	NTS	NOT TO SCALE
DN	DOWN	O.A.	OUTSIDE AIR
DB	DRY BULB	PC	PLUMBING CONTRACTOR
DU	DUCTLESS UNIT	PD	PRESSURE DROP
EA	EXHAUST AIR	RA	RETURN AIR
EAT	ENTER AIR TEMPERATURE	RH	RELATIVE HUMIDITY
EC	ELECTRICAL CONTRACTOR	RPM	REVOLUTIONS PER MINUTE
ECH	ELECTRIC CEILING HEATER	RTU	ROOFTOP UNIT
EER	ENERGY EFFICIENCY RATIO	SA	SUPPLY AIR
EF	EXHAUST FAN	SD	SMOKE DETECTOR
ESP	EXTERIOR STATIC PRESSURE	SF	SUPPLY FAN
EUH	ELECTRIC UNIT HEATER	STR	STARTER (MOTOR)
EWH	ELECTRIC WALL HEATER	TS	TIP SPEED
FD	FIRE DAMPER	TSP	TOTAL STATIC PRESSURE
FPD	FEET PER MINUTE	(TYP)	TYPICAL
GC	GENERAL CONTRACTOR	TZ	TRANSFORMER
GUH	GAS UNIT HEATER	UNO	UNLESS NOTED OTHERWISE
HP	HORSEPOWER	WH	WATER HEATER
KW	KILOWATTS	W/	WITH
L	LOUVER	WB	WET BULB
LAT	LEAVING AIR TEMPERATURE	W/O	WITHOUT
		WP	WEATHER PROOF

SYMBOL LEGEND

SYMBOL	DESCRIPTION
	EQUIPMENT SYMBOL - SEE LIST ON DWGS.
	RIGID AIR DUCT SYSTEM
	FLEXIBLE DUCT
	MANUAL CONTROL DAMPER (W/LOCKING DEVICE)
	CEILING SUPPLY DIFFUSER
	CEILING RETURN OR EXHAUST GRILLE
	DUCT SIZE INSIDE DIMENSIONS - 24"W x 10"D
	DUCT SIZE - 10" DIAMETER
	THERMOSTAT / SENSOR
	PLAN NOTE
	DIFFUSER SYMBOL - SEE SCHEDULE
	NECK SIZE
	DESIGN CUBIC FEE PER MINUTE OF AIR QUANTITY FOR ROOM OR SPACE

THRASHER

600 WHITE OAKS BLVD.
P.O. BOX 940
BRIDGEPORT, WV 26330

P (304) 624-4108
F (304) 624-7831

www.thethrashergroup.com

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ADDENDUM #1	DESCRIPTION
1	KES
5/21/2025	DATE
BY	DATE
NO.	DATE

RALEIGH COUNTY AIRPORT
TERMINAL HVAC UPGRADE
RALEIGH COUNTY AIRPORT AUTHORITY
176 AIRPORT ROAD, BECKLEY, WV

APRIL 2025
AGENCY REVIEW

DRAWN: TTG DATE: 04/25/2025

CHECKED: KES DATE: 04/25/2025

PROJECT No.

T80-11391

NOTES,
ABBREVIATIONS,
SYMBOLS, SCHEDULES
& DETAILS

SHEET No.

M1.01