### ADDENDUM - 01



REFERENDUMS • ENGINEERING • ARCHITECTURE • DESIGN



DATE:	Monday, 06 March 2023
FROM:	Angelo P. Butera, AIA
VIA:	

456 HIGH ST. • MT. HOLLY, NJ 08060 USA (609) 265-2652 • 21AI00912100 • www.RYEBREAD.com

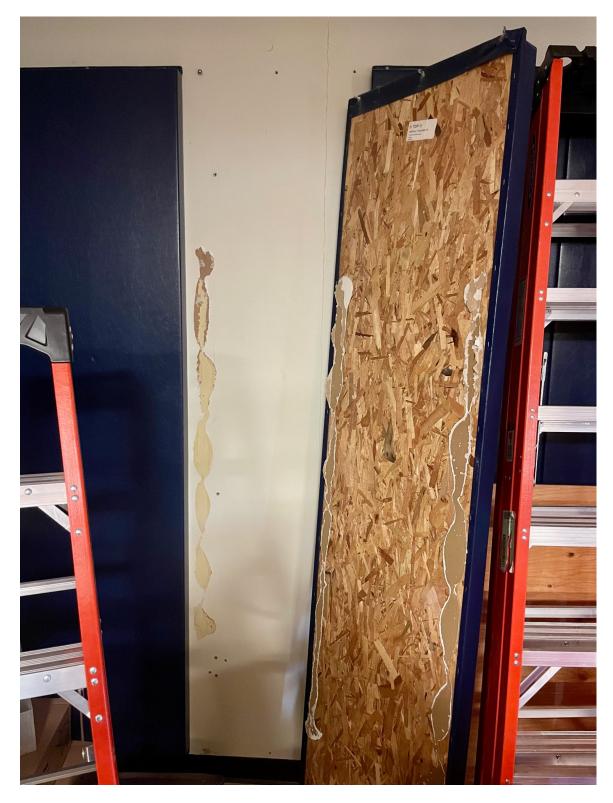
> RYEB Project #5672G Gloucester City BOE INDUSTRIAL ARTS ALTERATION NJDOE SP#: 1770-050-XX-XXXX

This addendum is issued to clarify, correct or supplement the Documents as originally issued and will become a part of the Contract. Receipt thereof shall be acknowledged by Bidders in space provided in the Form of Bid. Failure to acknowledge this Addendum on the official Form of Bid may be cause for rejection of Bid.

- 1.01. CLARIFICATION: Section 002000 Form of Bid, Bidder shall correlate all required documents in the order listed on the Form of Bid & place an "X" in the box next to each item provided. Failure to provide all required documents and required number of copies may be cause for disqualification and rejection of bid.
- 1.02. ADD: Attached C-SK-01 Storage Rack Anchor Detail dated 03 Mar 23 to Sht C2.
- 1.03. CLARIFICATION: All proposed chain link fencing shall have "privacy slats" to match existing adjacent fencing.
- 1.04. CLARIFICATION: Sht AD-100, Refer to the picture below showing how the wrestling mats are attached to the wall.
- 1.05. DELETE: The following note from Sht A-100.

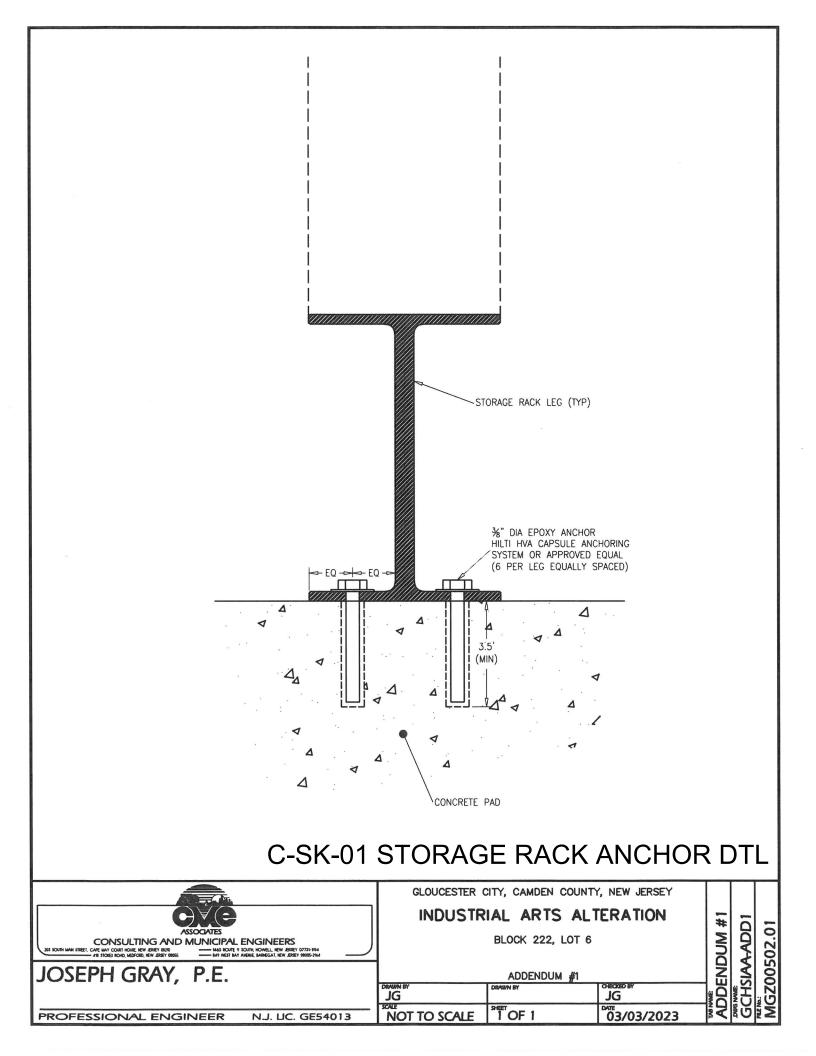
"RESET EXIST'G EXHAUST TO BE TIGHT TO BRICK. SEE MECH DWGS."

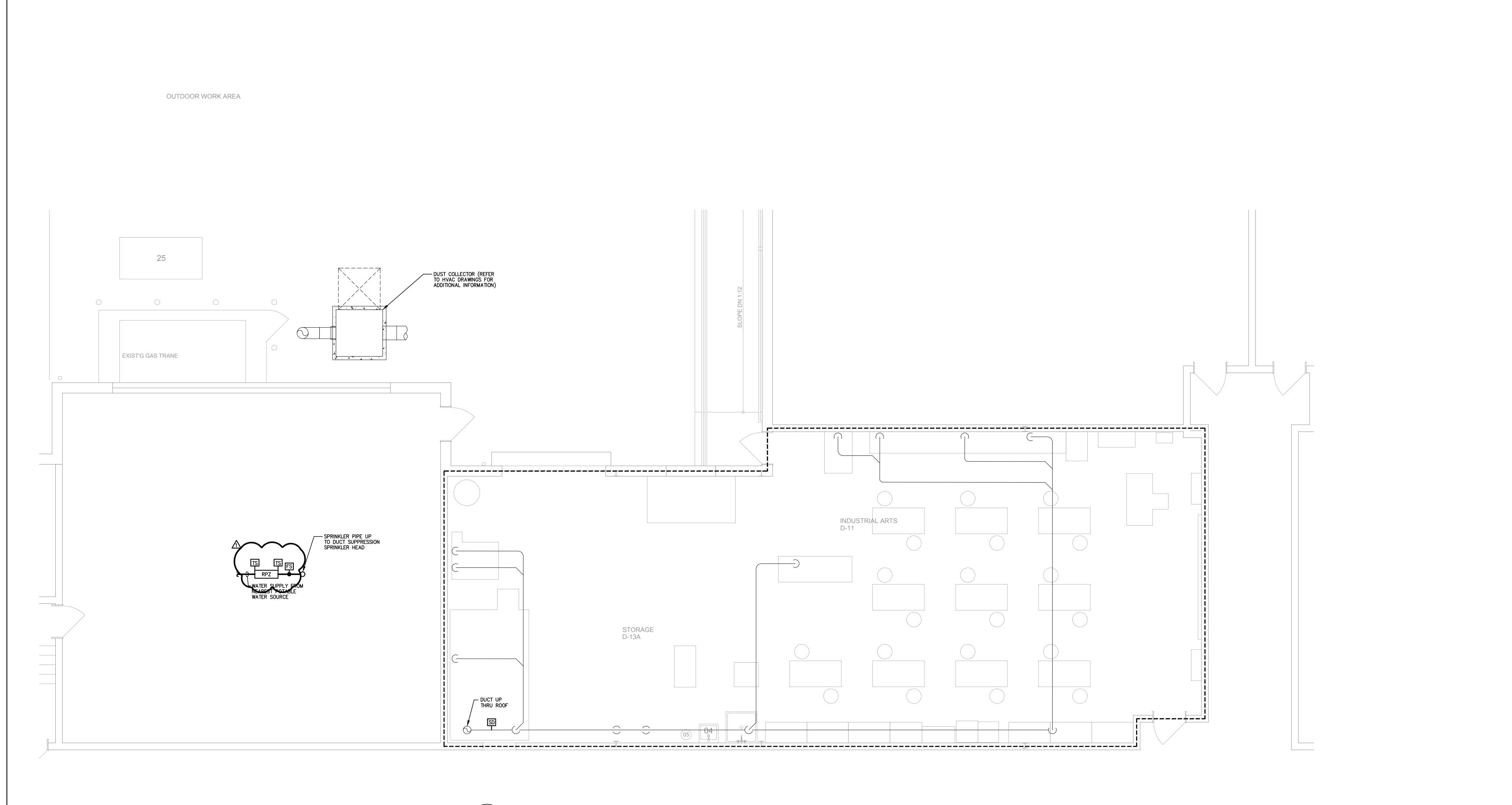
- 1.06. CHANGE: Fire extinguisher #28 on Sht ES-100 is currently wall mounted in Rm D-13A. The Contractor shall remove & relocated it where indicated on Sht ES-100.
- 1.07. CHANGE: The exist'g HVAC unit BC-64 indicate on Sht HD-100 shall be salvaged by the Contractor & returned to the Owner.
- 1.08. CHANGE: Detail-02/P101 reference to "South Jersey Gas" to "PSE&G".
- 1.09. REPLACE: Shts FP-100, FP-101, HD-100, H-100, H-101, H-200, H-300, & H-400 w/ the attached of the same sht numbers and dated 06 Mar 23.
- 1.10. The list of current plan holders and addenda can be found at www.ryebread.com under the "Bidding" tab.



Including this page, Addendum-01 consists of (11) page(s).

END OF ADDENDUM-01





# 1 FP100

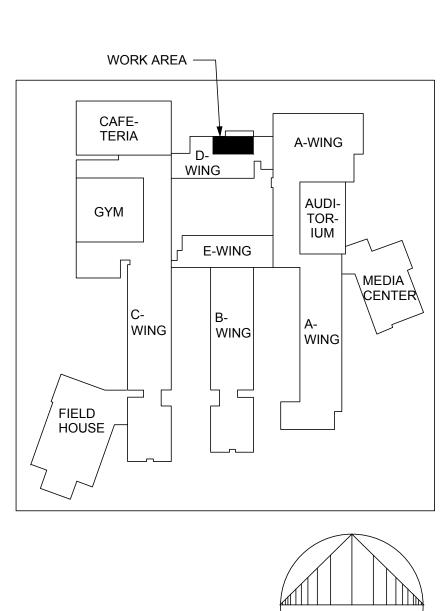
# ) PARTIAL FIRST FLOOR PLAN - FIRE PROTECTION SCALE 1/4" = 1'-0"

NOTES: 1. SPARK DETECTOR SD SHALL TIE BACK TO SPARK DETECTOR CONTROL PANEL; REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.

2. WET PIPING TO DUCT SUPPRESSION SYSTEM SHALL BE 38% GLYCOL BY VOLUME. GLYCOL LOOP SHALL BE ISOLATED FROM WATER SOURCE BY WATTS MODEL 4000B REDUCED PRESSURE ZONE ASSEMBLY OR APPROVED EQUAL.

GLYCOL SHALL BE NON-TOXIC, PROPYLENE GLYCOL BASED ANTIFREEZE SOLUTION DESIGNED FOR USE IN METAL PIPE WET SPRINKLER SYSTEMS AND COMPLYING WITH NFPA 2016 SECTION 7.6.2.1 AND 7.6.2.2. GLYCOL SHALL BE PREMIXED BY MANUFACTURER TO CORRECT CONCENTRATION WITH CORROSION INHIBITORS BLENDED INTO MIXTURE. FREEZE POINT SHALL BE 0°(F), FLOW POINT SHALL BE -15°(F), BURST POINT SHALL BE -50°(F), AND SPECIFIC GRAVITY AT 77°(F) SHALL BE 103.7.
 RPZ SHALL BE AMES MODEL 4000B-FP OR APPROVED EQUAL WITH THREADED CONNECTIONS, TOP ENTRY, CAPTURED

4. RPZ SHALL BE AMES MODEL 4000B-FP OR APPROVED EQUAL WITH THREADED CONNECTIONS, TOP ENTRY, CAPTURED SPRINGS, INTERNAL RELIEF VALVE, REPLACEABLE VALVE SEATS, BRONZE BODY, BALL-VALVED TEST COCKS, WITH FACTORY PRE-WIRED TAMPER SWITCHES. PROVIDE AIR GAP FITTING ON RELIEF PORT AND PIPE TO NEAREST EXISTING FLOOR DRAIN.



BLD'G NORTH



NJDOE SP #1770-050-XX-XXXX PROJECT TITLE: INDUSTRIAL ARTS ALTERATION

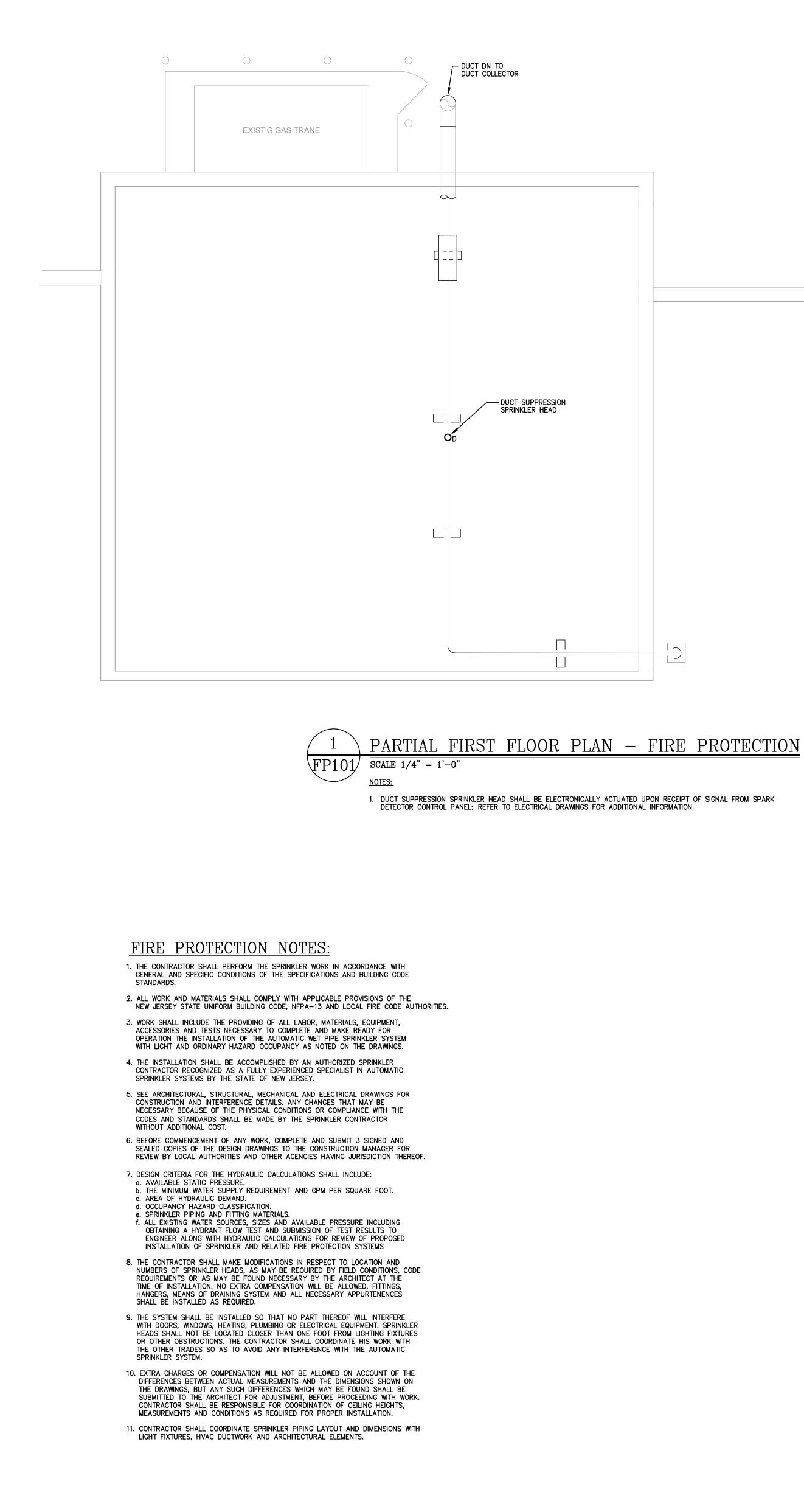
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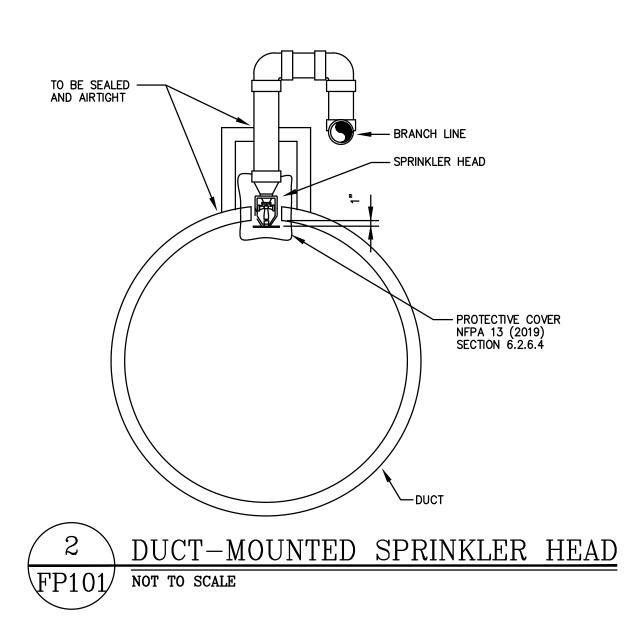
RAWING	24 FEB 2023
6 MAR 23	ADDENDUM 1
REVISION DATE:	
OUBMISSION DATE:	
PROJECT	5672G

RAWING ATE:	24 FEB 2023
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RAWN BY:	ACL
HEET TITLE:	PARTIAL FIRST FLOOR PLAN - FIRE PROTECTION

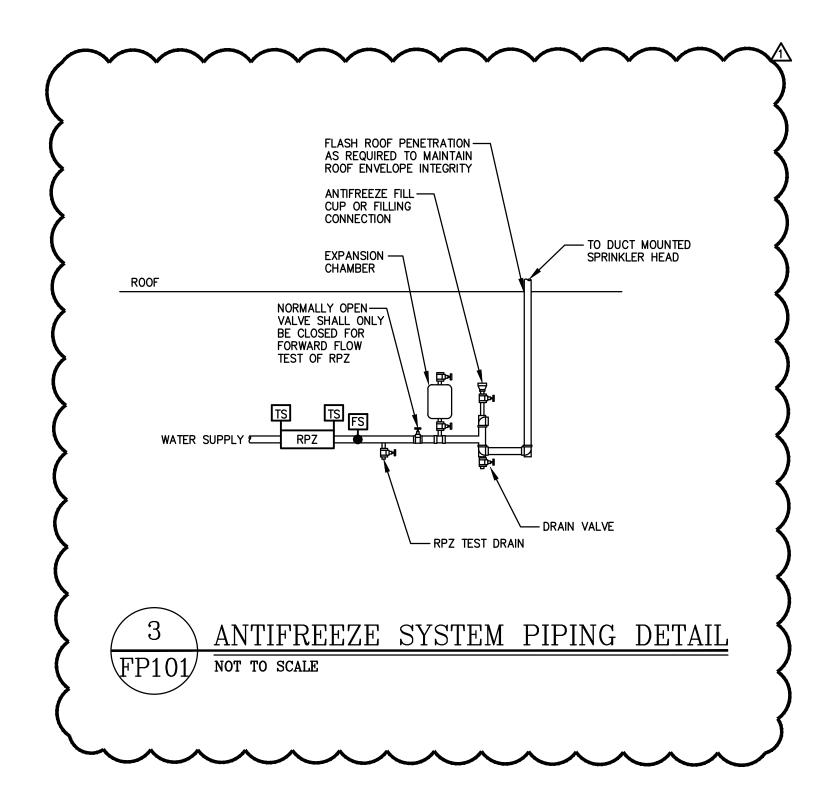


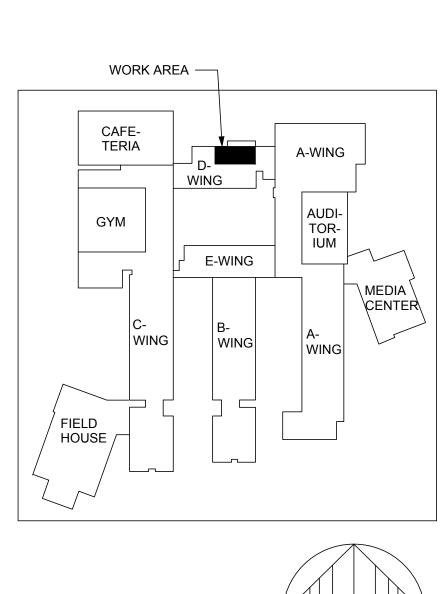
1 OF 3



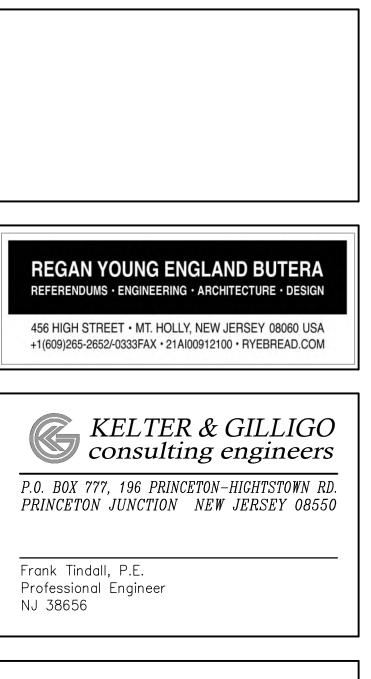


		FIRE PROTECTION	ON SY.	MBOL LIST	
ABBREVIATION	SYMBOL	DESCRIPTION	ABBREVIATION	SYMBOL	DESCRIPTION
	OD	ELECTRONIC RELEASE DUCT SUPPRESION SYSTEM SPRINKLER HEAD	PG	<u> </u>	PRESSURE GAUGE
BV	<b>-</b>	BALL VALVE	FC		FLEXIBLE CONNECTION
RCV	X	RISER CONTROL VALVE		<b></b>	PIPING DROP
ABD		FIRE DEPARTMENT SIAMESE CONNECTION AUTOMATIC BALL DRIP & CHECK VALVE		o	PIPING RISE
WFS	FS ••••	WATER FLOW SWITCH		J	BRANCH - TOP CONNECTION
PRV		PRESSURE REDUCING VALVE			BRANCH - BOTTOM CONNECTION
cv	<u>_</u>	CHECK VALVE	со		CAPPED OUTLET
AV	——·汝	ANGLE VALVE	PS	PS	PRESSURE SWITCH
		VALVE ON VERTICAL	TS		TAMPER SWITCH
PAV		PRE-ACTION VALVE (WITH ALL RELATED APPURTENANCES)	SD	SD	SPARK DETECTOR
FDC	<del>پ</del>	WALL MOUNTED FIRE DEPARTMENT SIAMESE CONNECTION	RPZ	RPZ	REDUCED PRESSURE ZONE VALVE ASSEMBLY





BLD'G NORTH



**NJDOE SP #1770-050-XX-XXXX** PROJECT TITLE: **INDUSTRIAL ARTS** ALTERATION

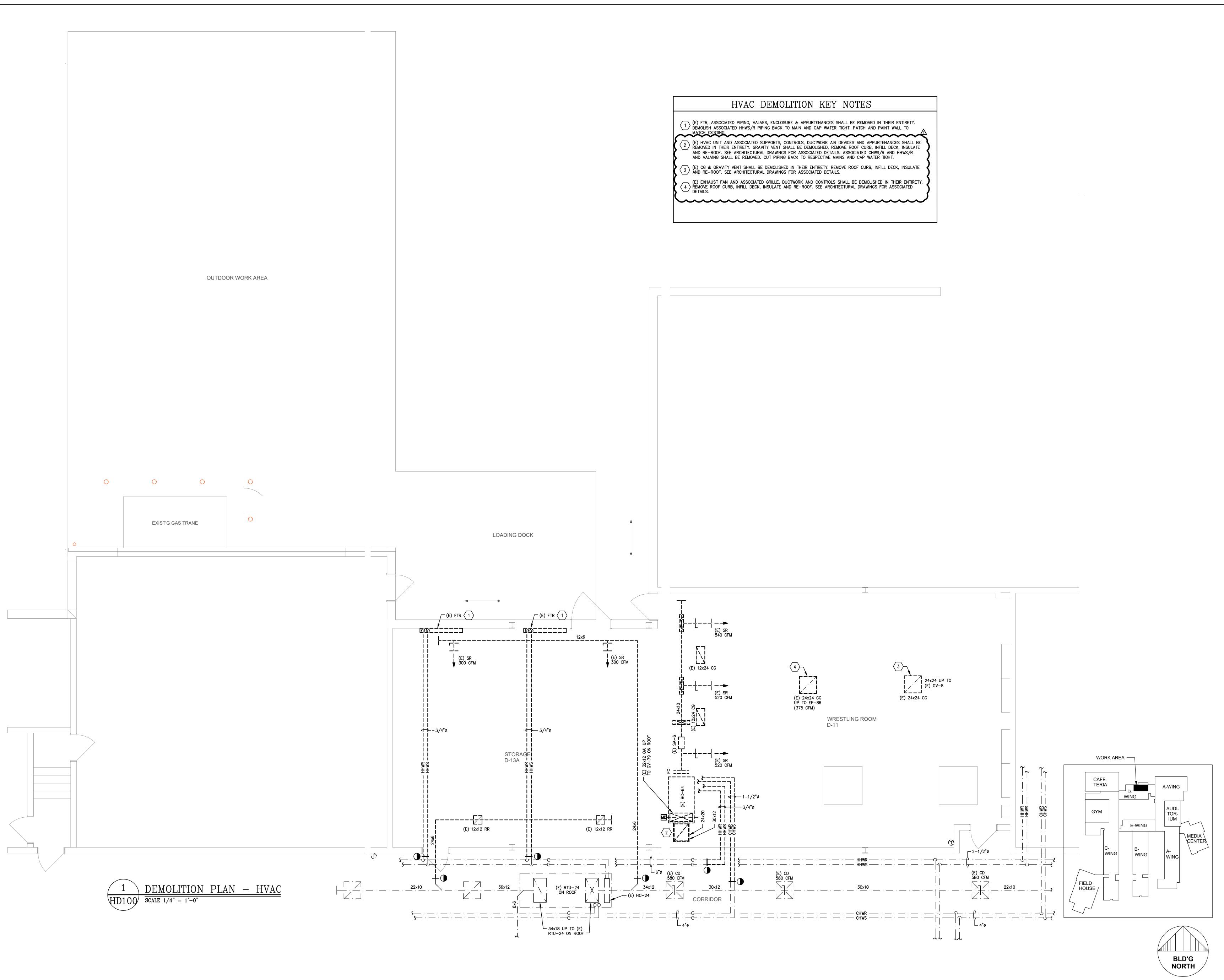
ADDRESS: GLOUCESTER CITY HIGH SCHOOL BLOCK 222 / LOT 6 1300 MARKET STREET GLOUCESTER CITY, NJ 08030

PROJECT NO.:	5672G
SUBMISSION DATE:	
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06 MAR 23	ADDENDUM 1
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DRAWING	24 FEB 2023

DRAWING DATE:	24 FEB 2023
PRINT DATE:	24 FEB 2023
RAWN BY:	ACL
SHEET TITLE:	PARTIAL ROOF PLAN, SYMBOLS LIST & DETAIL - FIRE PROTECTION



**2** OF **3** 



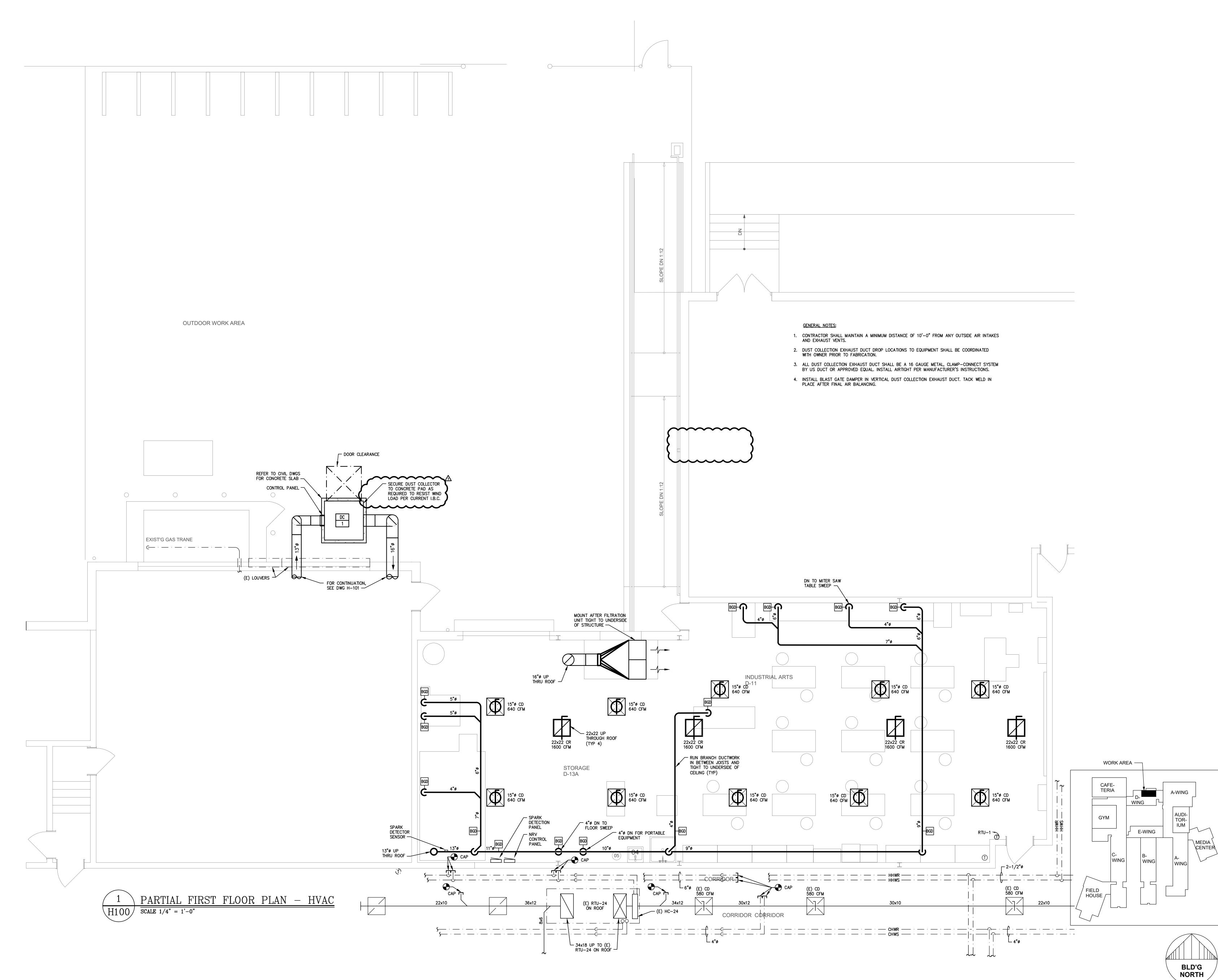
**REGAN YOUNG ENGLAND BUTERA** REFERENDUMS · ENGINEERING · ARCHITECTURE · DESIGN 456 HIGH STREET • MT. HOLLY, NEW JERSEY 08060 USA +1(609)265-2652/-0333FAX • 21Al00912100 • RYEBREAD.COM *KELTER & GILLIGO consulting engineers* P.O. BOX 777, 196 PRINCETON-HIGHTSTOWN RD. PRINCETON JUNCTION NEW JERSEY 08550 Frank Tindall, P.E. Professional Engineer NJ 38656

NJDOE SP #1770-050-XX-XXXX
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NDUSTRIAL ARTS
ALTERATION
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BLOCK 222 / LOT 6 1300 MARKET STREET
GLOUCESTER CITY, NJ 08030

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06 MAR 23	ADDENDUM 1
DRAWING DATE:	24 FEB 2023
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DRAWN BY:	SLB
SHEET TITLE:	<b>DEMOLITION PLAN - HVAC</b>



1 OF 6



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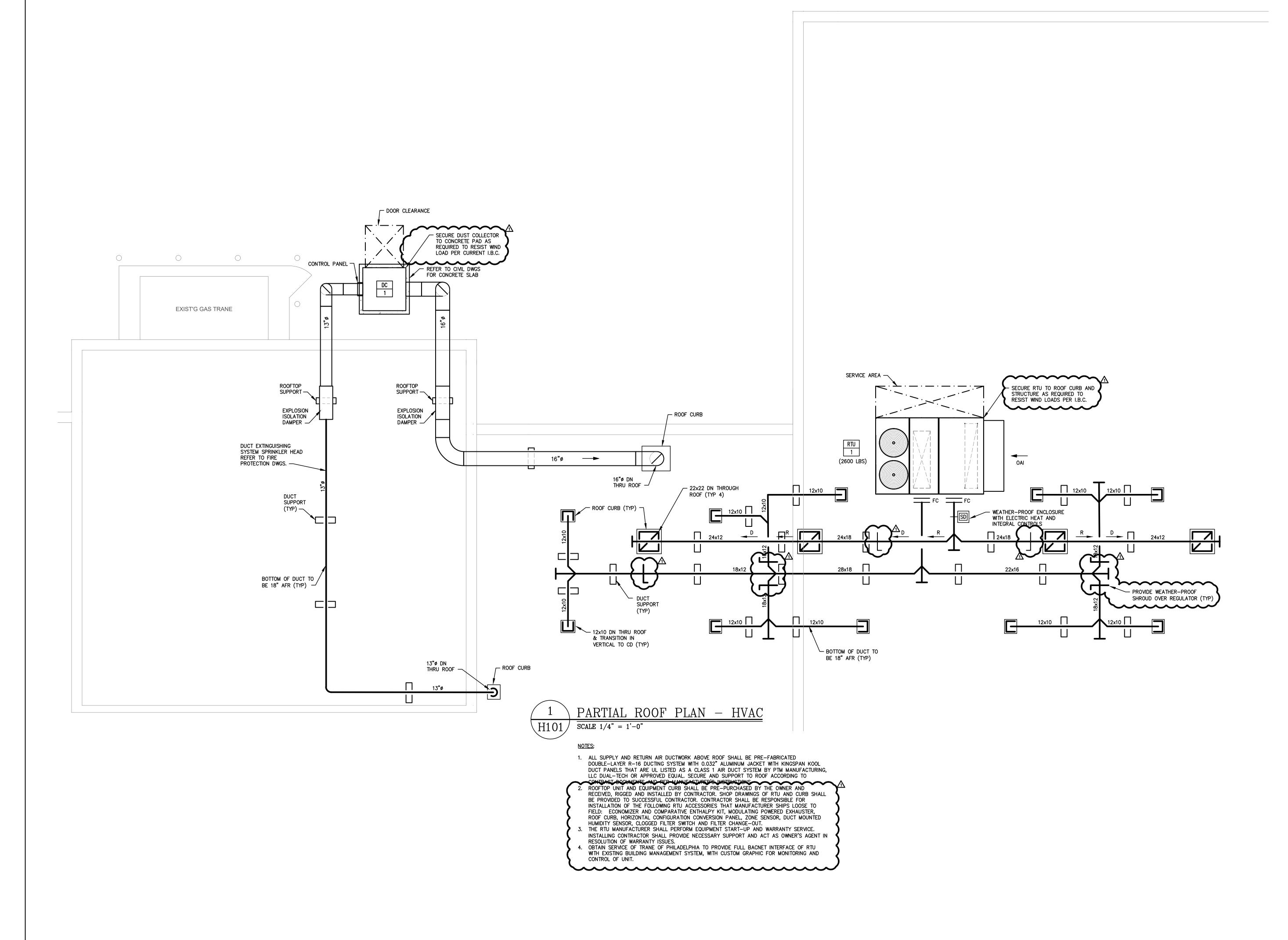
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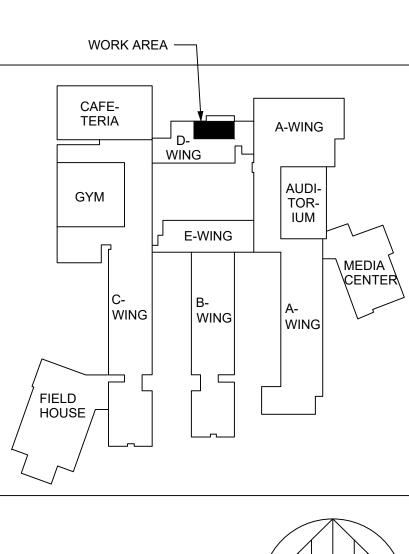
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RAWN BY:	SLB
HEET TITLE:	PARTIAL FIRST FLOOR PLAN - HVAC



**2** OF **6** 



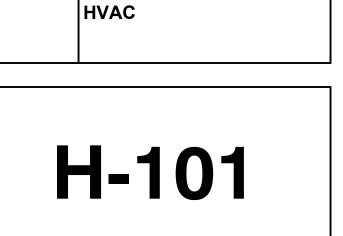




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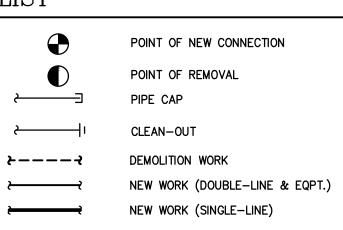


**3** OF **6** 

SHEET TITLE: PARTIAL ROOF PLAN -

AD ACCESS DOOR AFF ABOVE FINISHED FLOOR	BBKFAI	ATIONS	SYMBO	)L(
AMPSAMPERESAPPROXAPPROXIMATEARCHARCHITECTURALAPDAIR PRESSURE DROPATCAUTOMATIC TEMPERATURE&ANDOATBHPBRAKE HORSEPOWERBMSBUILDING MANAGEMENT S'CCCOOLING COILCDCEILING DIFFUSERCGCEILING GRILLECFMCUBIC FEET PER MINUTECOCLEANOUTCRCEILING REGISTERCHWRCHILLED WATER RETURNCHWSCHILLED WATER SUPPLYDDRAINDBDRY BULBDCDUST COLLECTORDIA,Ø DIAMETERDNDOWNDWGDRAWINGEAEACH, EXHAUST AIREATENTERING DRY BULBELECELECTRICALEQUIPEQUIPMENTEREXHAUST REGISTEREWBENTERING WET BULBESPEXTERNAL STATIC PRESSLEXIST./(E)EXISTING'FFAHRENHEITFAFACE AREAFCFLEXIBLE CONNECTORFLAFULL LOAD AMPSFPMFEET PER MINUTEFTFEETFTRFINNED TUBE RADIATIONGGASGCGENERAL CONTRACTORFVGASGCGENERAL CONTRACTORFHHEATING HOT WATER RETHWRHEATING HOT WATER SUPHPHORSE POWERHRHOURHTGHEATING HOT WATER SUPHPHORSE	E CONTROL YSTEM JRE JRE	LBS/HR POUNDS PER HOUR L LENGTH LBS POUNDS LxWxH LENGTH BY WDTH BY HEIGHT LWT LEAVING WATER TEMPERATURE MAX MAXIMUM MBH MAXIMUM MAX THOUSAND BTU PER HOUR MCA MINIMUM CIRCUIT AMPACITY MFR MANUFACTURER MIN MINIMUM MOCP MAX OVER CURRENT PROTECTION N/A NOT APPLICABLE NK NECK NOM NOMINAL #, NO NUMBER OA OUTSIDE AIR INTAKE OCP OVER CURRENT PROTECTION OD OUTSIDE AIR INTAKE OCP OVER CURRENT PROTECTION OD OUTSIDE AIR INTAKE OCP OVER CURRENT PROTECTION DO OUTSIDE AIR INTAKE OCP OVER CURRENT PROTECTION DD OUTSIDE DIAMETER OED OPEN ENDED DUCTWORK PC PUMPED CONDENSATE PD PRESSURE DROP % PERCENT PH PHASE QTY QUANTITY RA RETURN AIR RH RELATIVE HUMIDITY RL REFRIGERANT LINES RM ROOM RPM REVOLUTIONS PER MINUTE RR RETURN AIR RH RELATIVE HUMIDITY RL REFRIGERANT LINES RM ROOM RPM REVOLUTIONS PER MINUTE RR RETURN REGISTER SA SUPPLY AIR S/S STAINLESS STEEL SD SMOKE DETECTOR SENSIBLE SF SUPPLY FAN SQ FT SQUARE FOOT SPEC SPECIFICATIONS SP STATIC PRESSURE SR SUPPLY FAN SQ FT SQUARE FOOT SPEC SPECIFICATIONS SP STATIC PRESSURE SR SUPPLY REGISTER SS STAINLESS STEEL T THERMOSTAT TA THROW AWAY TEFC TOTALLY ENCLOSED, FAN COOLED TEMP TEMPERATURE (R) WUTH	SYMBU X EQUIPMENT DESIGNATION X ITEM NUMBER T HERMOSTAT ITEM NUMBER T HERMOSTAT BGD BLAST GATE DAMPER I MD MOTORIZED DAMPER I MD MOTORIZED DAMPER I MD MOTORIZED DAMPER SD SMOKE DETECTOR AIRFLOW THRU UNDERCUT DOO SUPPLY AIR FLOW AIRFLOW THRU UNDERCUT DOO SUPPLY AIR FLOW AIRFLOW THRU UNDERCUT DOO SUPPLY AIR FLOW I M RETURN OR EXHAUST AIRFLOW SD SUPPLY AIR FLOW I M RETURN OR EXHAUST AIRFLOW SD SHOKE DETECTOR AIRFLOW THRU UNDERCUT DOO SUPPLY AIR FLOW I M RETURN OR EXHAUST AIRFLOW I M RETURN OR EXHAUST	DR J WN ARRO
INSIDE DIAMETER INCH		(R) WATT	4-WAY 3-WAY 2-WAY 2-WAY 1-W/	١Y
SUCCESSFUL CONTRACTOR AS IND RK No. CATION RVICE NUFACTURER DDEL PPLY FAN DATA: TOTAL AIRFLOW MIN OUTSIDE AIR ESP TSP FAN SPEED BRAKE HORSEPOWER MOTOR HORSEPOWER QUANTITY / TYPE HAUST FAN DATA: TOTAL AIRFLOW ESP FAN SPEED BRAKE HORSEPOWER MOTOR HORSEPOWER MOTOR HORSEPOWER MOTOR HORSEPOWER TYPE COOLING COIL DATA: NET SENSIBLE CAPACITY NET TOTAL CAPACITY EAT DB/WB LAT DB/WB FACE VELOCITY		RTU-1 ROOF INDUSTRIAL ARTS D-11 TRANE YSJ180A4SAL 6400 610 1.25 1.57 1379 3.100 3.406 2 / PLENUM, DIRECT DRIVE 6400 1.25 1075 	DUST COLLECTOR DATA: MARK No. MANUFACTURER MODEL MAX. AIR VOLUME TYPE OF FILTER QUANTITY FILTER AREA FILTER EFFICIENCY @ 3 MICRONS AIR TO CLOTH RATIO @ DESIGN VOLUME DIMENSIONS (W x L x H) UNIT WEIGHT (APPROX.) BLOWER DATA: MANUFACTURER MODEL TYPE OF WHEEL ARRANGEMENT FLOW RATE TSP FAN SPEED BRAKE HORSEPOWER MOTOR HORSEPOWER MOTOR HORSEPOWER ELECTRICAL DATA: FAN MOTOR POWER SHAKER MOTOR HORSEPOWER UNIT AND FAN WEIGHT (APPROX.)	CF SG % IN LB ACI W RF BH HF LB
ROWS/FINS S HEAT DATA: INPUT OUTPUT CONNECTION QUANTITY EAT/LAT APD GAS PRESSURE MIN/MAX TURNDOWN HX MATERIAL T GAS REHEAT COIL DATA: TOTAL CAPACITY LAT DB/WB APD NDENSING DATA: REFRIGERANT TYPE EER MPRESSOR: QUANTITY FLA CAPACITY CONTROL NDENSER/EVAPORATOR FANS: NUMBER OF FANS/MOTORS FULL LOAD CURRENT	MBH MBH F IWC IWC MBH F IWC AMPS	2/18 250.00 175.00 1 54.2/83.49 0.12 4.5/14 10:1 STAINLESS STEEL 125.22 73.83/53.64 0.05 R-410A 10.8 2 16.7 + 8.2 INVERTER + FIXED SCROLL 2 1.0/4.6	<ul> <li>PROVIDE THE FOLLOWING:</li> <li>1. INVERTER DUTY MOTOR &amp; VFD W/ INTEGRAL NON-F</li> <li>2. FACTORY MOUNTED GFI CONVENIENCE OUTLET.</li> <li>3. COMPLETE DDC CONTROLS, WIRING, RELAYS, TRANSFI SATISFACTORY OPERATION.</li> <li>4. SOUND INSULATED FAN PLENUM, TWO (2) NFPA RAT 16" EXPLOSION ISOLATION DAMPERS WITH LOCKING M</li> <li>5. FACTORY START UP &amp; PERSONNEL TRAINING.</li> <li>6. AFTER FILTRATION UNIT MODEL AFS-F2.</li> </ul>	orme ed di
· · ·	V/PH/HZ AMPS AMPS	460/3/60 45.0 50.0		

# LS LIST



# DIFFUSER & REGISTER SCHEDULE

		-			
NO.	MARK	REMARKS			
1.	CD SHALL BE TITUS MODEL TMS-AA OR APPROVED "EQUAL".	1234			
2.	SR SHALL BE TITUS MODEL 300-FL OR APPROVED "EQUAL".	24			
3.	CG/TG, CR/ER/RR SHALL BE TITUS MODEL 350-FL OR APPROVED "EQUAL".	45			
REMARKS:					
1 LOUVERED FACE, HIGH CAPACITY, ALUMINUM DIFFUSER WITH ROUND NECK AND ADJUSTABLE DISCHARGE PATTERN.					

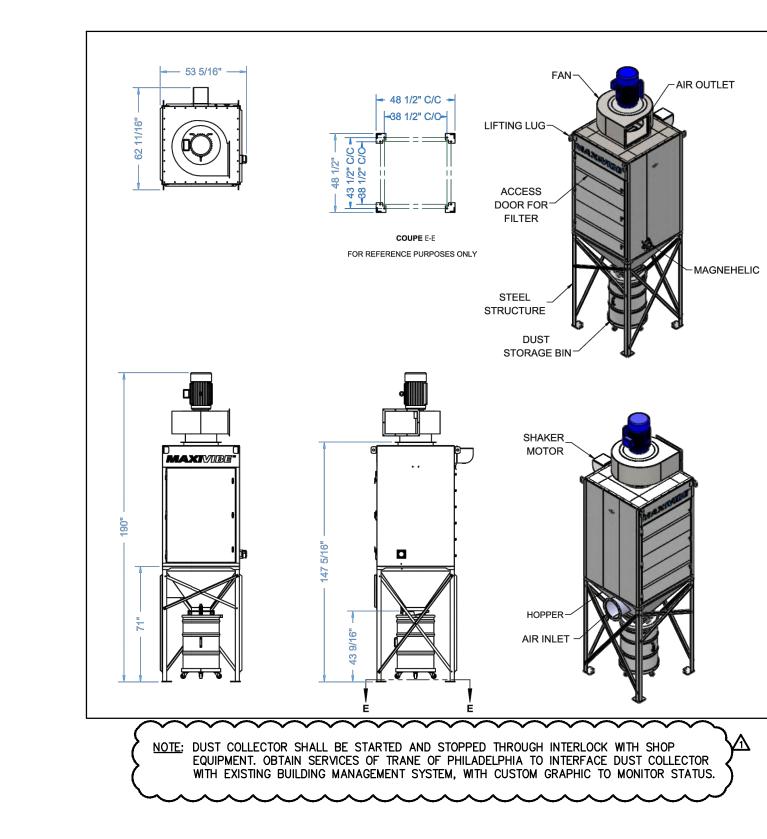
- 2 PROVIDE OPPOSED BLADE VOLUME DAMPER.
- 3 PROVIDE EQUALIZING GRID.
- 4 provide standard white finish.
- 5 ALUMINUM RETURN/EXHAUST REGISTER WITH BLADES AT 3/4" SPACING AND 35" FIXED DEFLECTION. REFER TO DRAWINGS FOR CORRECT MOUNTING STYLE.

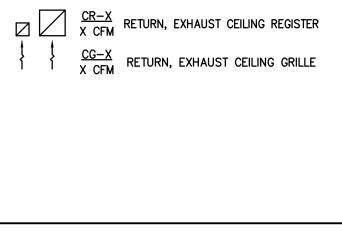
# VENTULATION COLLEDIUE

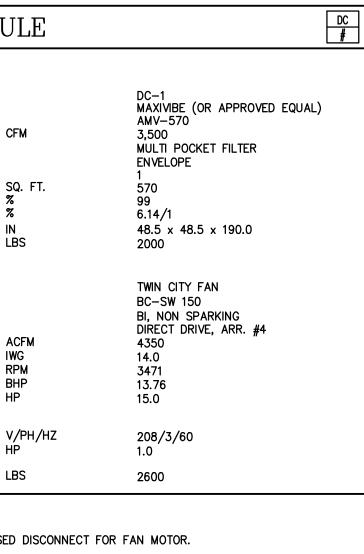
VENTILATION SCHEDULE													
	ROOM NUMBER	AREA SQ. FT.	No. OF PEOPLE	REQUIRED OUTSIDE (EXHAUST) AIR CFM PER CODE				PROVIDED VENTILATION AIR (CFM) PER DESIGN			EQUIPMENT		
ROOM NAME				OA PER PERSON	0A PER SQ. FT.	OA TOTAL (MINIMUM)	EA PER SQ. FT.	OA TOTAL (MINIMUM)	SUPPLY	RETURN	outside Air	EXHAUST	TAG No.
INDUSTRIAL ARTS	D-11	2014	25	10	0.18	613	0.05	101	6400	6400	610	610	RTU–1
-	-	-	-	-	-	-	-	-	-	-	-	-	-

VENTILATION SCHEDULE NOTES:

- NEW JERSEY STATE ADMINISTRATIVE CODE, EDUCATION ALL SCHOOL BUILDINGS SHALL BE EQUIPPED WITH A MECHANICAL AIR SUPPLY AND EXHAUST VENTILATION SYSTEM WHICH WILL PROVIDE DURING PERIODS OF OCCUPANCY, STANDARD TEMPERED OUTDOOR AIR SUPPLY AND MECHANICAL EXHAUST AT THE MINIMUM RATE SET FORTH IN THE INTERNATIONAL MECHANICAL CODE VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY.
- 2. VENTILATION RATES ARE BASED ON 2021 IMC, NJ EDITION.







ERS, PROGRAMMING, ETC. FOR DRUM LID KIT AND DRUM AND 14" AND ANISM.

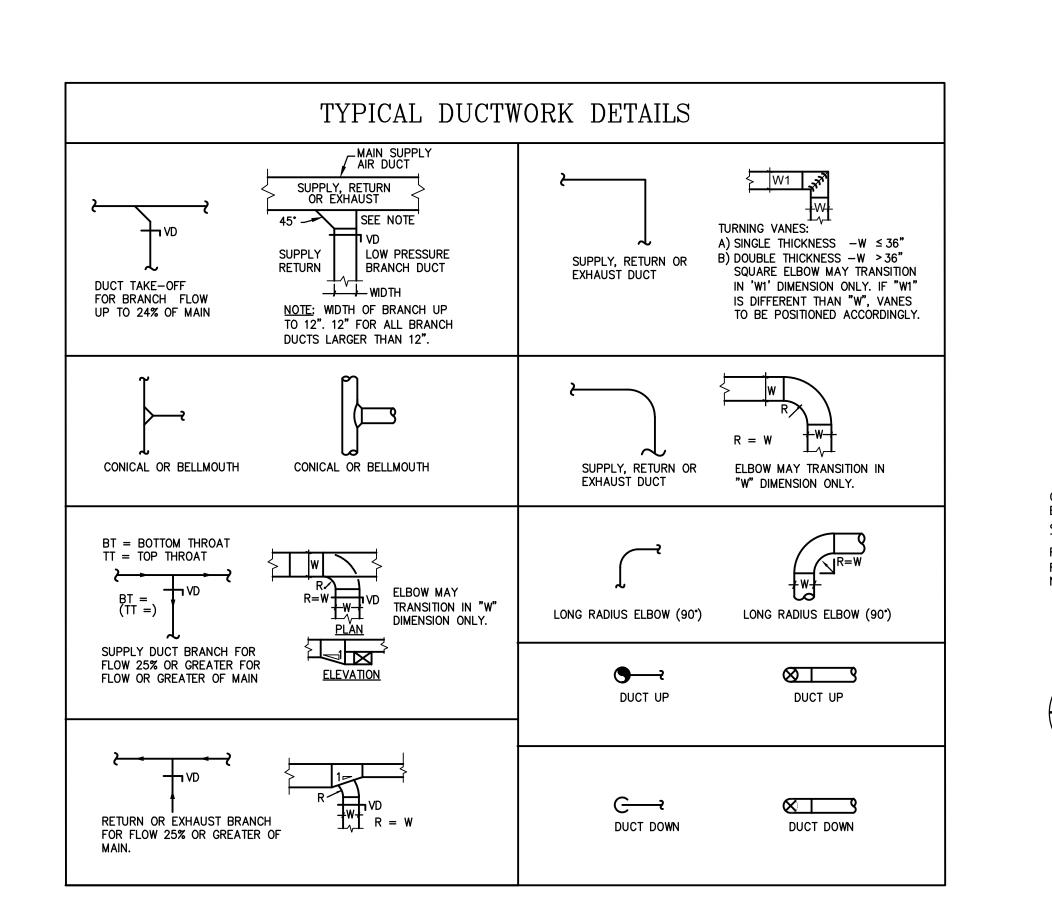
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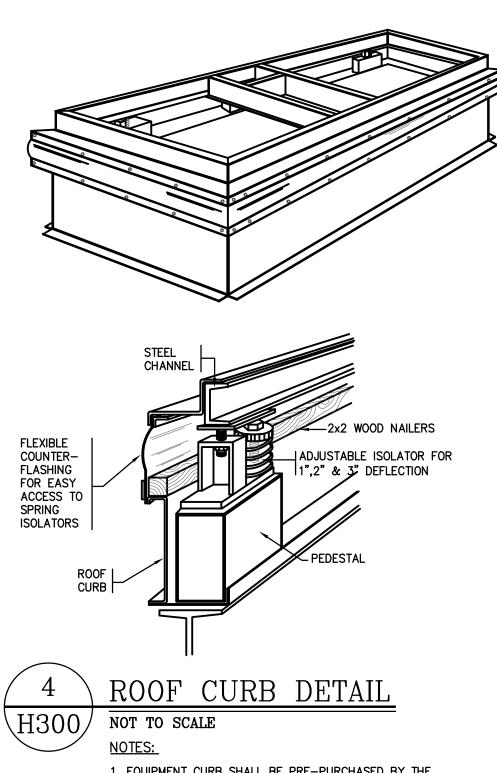
NJDOE S	NJDOE SP #1770-050-XX-XXXX						
PROJECT TITLE	PROJECT TITLE:						
	NDUSTRIAL ARTS ALTERATION						
ADDRESS:							
BLOCK 222 1300 MARK	TER CITY HIGH SCHOOL 2 / LOT 6 (ET STREET TER CITY, NJ 08030						
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6 MAR 23	ADDENDUM 1						

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SHEET TITLE:	SCHEDULES- HVAC

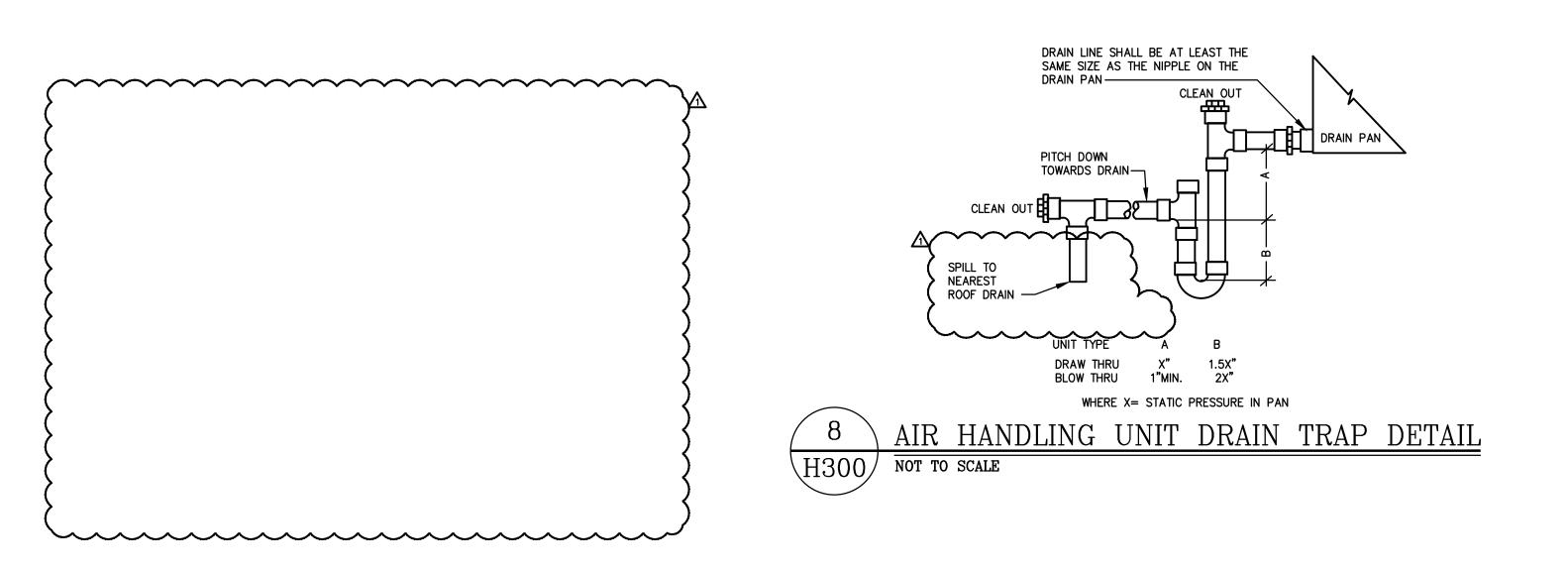


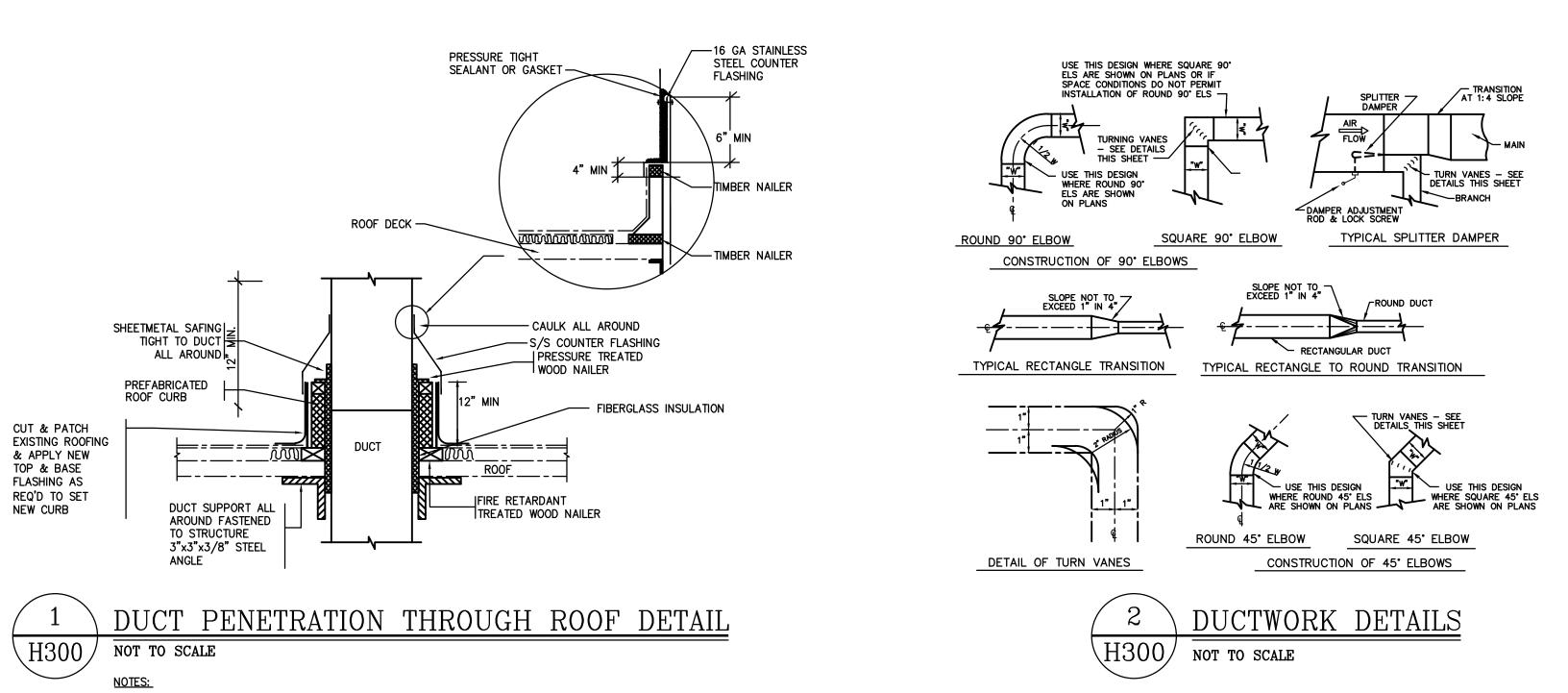
**4** OF **6** 



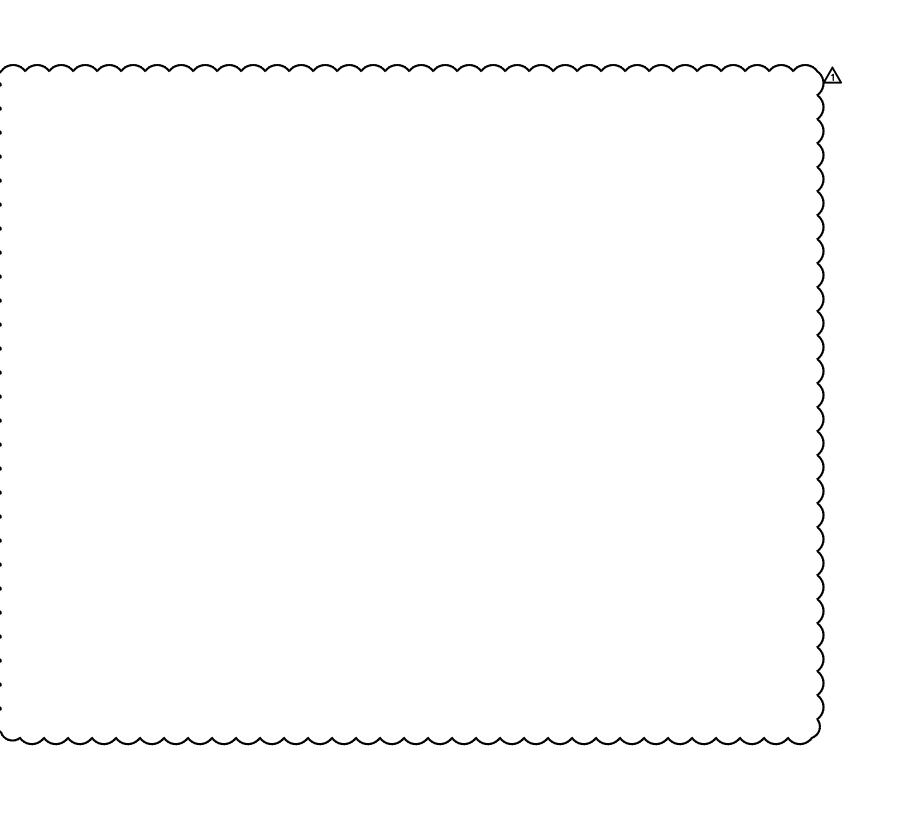


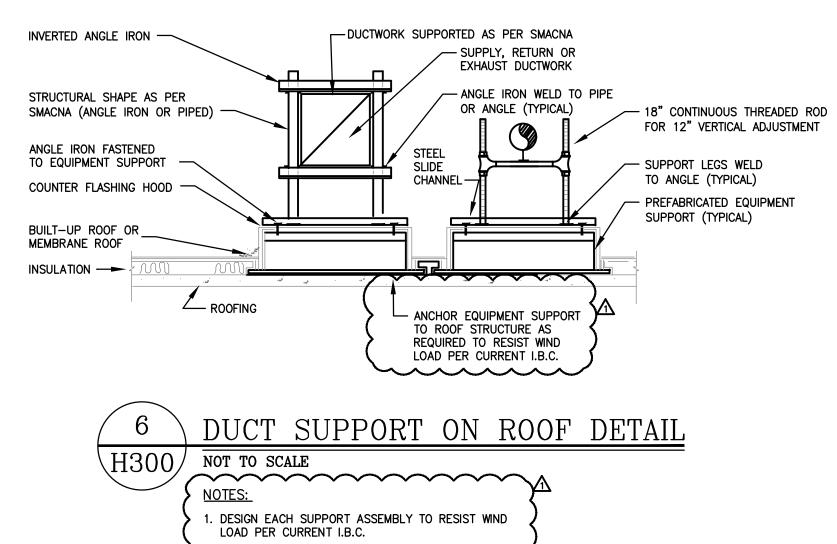


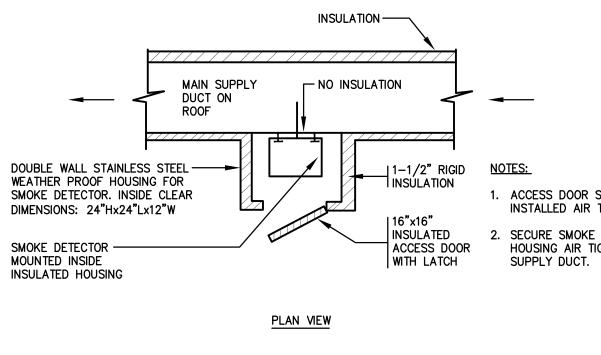


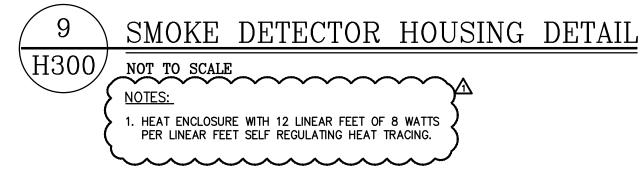


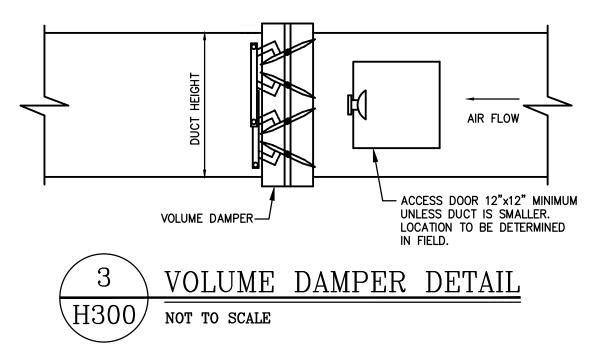
1. ALL WOOD SHALL BE PRESSURE TREATED FIRE RETARDANT.

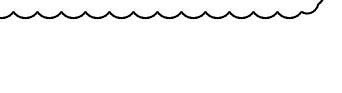










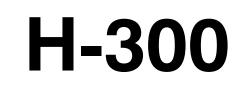


1. ACCESS DOOR SHALL BE INSTALLED AIR TIGHT. 2. SECURE SMOKE DETECTOR HOUSING AIR TIGHT TO MAIN

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6 MAR 23	ADDENDUM 1					

DRAWING DATE:	24 FEB 2023
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# HVAC SPECIFICATIONS:

### <u>1.0 GENERAL</u>

- A. GOVERNING CODES AND STANDARDS
  - a. NJ UNIFORM CONSTRUCTION CODE b. 2021 INTERNATIONAL BUILDING CODE, NJ EDITION
  - c. 2021 INTERNATIONAL MECHANICAL CODE d. NFPA STANDARDS 90A
  - e. ALL APPLICABLE ASHRAE STANDARDS
  - f. ALL APPLICABLE SMACNA STANDARDS
  - g. 2020 NATIONAL ELECTRICAL CODE h. UL (ALL EQUIPMENT MUST BE LABELED)
  - i. NEBB.
- B. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH RECOGNIZED INDUSTRY STANDARDS, GOVERNING CODES, APPROVED SHOP DRAWINGS AND MANUFACTURER'S INSTRUCTIONS.
- C. PERMITS: SEE "PERMITS" IN CONSTRUCTION NOTES ON SHEET CS D. WARRANTY: THE EQUIPMENT SHALL HAVE A MANUFACTURER'S WARRANTY FOR A PERIOD OF TWO (2) YEARS FROM DATE OF SUBSTANTIAL COMPLETION BY OWNER. IF DURING THIS PERIOD, ANY PART SHOULD FAIL TO FUNCTION PROPERLY DUE TO DEFECTS IN WORKMANSHIP OR MATERIAL, IT SHALL BE REPLACED OR REPAIRED AT THE DISCRETION OF THE MANUFACTURER. MANUFACTURER SHALL HAVE FIFTEEN YEARS EXPERIENCE IN THE U.S. MARKET.
- E. BEFORE SUBMITTING BIDS, CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND BECOME THOROUGHLY FAMILIAR WITH THE OBSERVABLE EXISTING CONDITIONS AFFECTING HIS WORK. NO ADDITIONAL COMPENSATION WILL BE GRANTED ON ACCOUNT OF EXTRA WORK MADE NECESSARY BY THE CONTRACTOR'S FAILURE TO INVESTIGATE EXISTING CONDITIONS.
- F. SUBMIT COMPOSITE COORDINATION SHOP DRAWINGS THAT SHOW ALL EXISTING AND NEW DUCTWORK HVAC PIPING. PLUMBING PIPING. CONDUITS. LIGHTING FIXTURES, BUILDING STRUCTURE, CEILING/ROOF
- MOUNTED EQUIPMENT\_ETC\_EXACT\_ELEVATION OF ALL COMPONENTS\_SHALL BE INDICATED G. CONTRACTOR SHALL PROVIDE ELECTRONIC AS-BUILTS BASED ON ORIGINAL AutoCAD FILES. I. CONTRACTOR SHALL PROVIDE OWNER WITH THREE (3) HARD COPIES AND ONE (1) ELECTRONIC VERSION OF OPERATION AND MAINTENANCE MANUALS PRIOR TO ACCEPTANCE OF FINAL PAYMENT.

### 2.0 SUBMITTALS

- A. SHOP DRAWINGS SHALL BE REQUIRED FOR: ALL EQUIPMENT, MATERIALS, MEANS & METHODS INTENDED FOR USE UNDER THIS CONTRACT.
- B. PRIOR TO DELIVERY TO THE JOB SITE, BUT SUFFICIENTLY IN ADVANCE OF REQUIREMENTS NECESSARY TO ALLOW ARCHITECT AMPLE TIME FOR REVIEW. SUBMIT SHOP DRAWINGS OF ALL EQUIPMENT, FIXTURES, MATERIAL, PIPING, DUCTWORK, SLEEVES, WIRING DIAGRAMS, ETC. AND FURTHER OBTAIN WRITTEN COMMENTS OF "APPROVED" OR "APPROVED AS NOTED" FOR THE SAME FROM ARCHITECT BEFORE INSTALLING ANY OF THESE ITEMS.
- C. SHOP DRAWINGS SHALL CONSIST OF MANUFACTURER'S CERTIFIED SCALE DRAWINGS, CUTS, OR CATALOGUES, INCLUDING DESCRIPTIVE LITERATURE AND COMPLETE CERTIFIED CHARACTERISTICS OF EQUIPMENT, FIXTURES, ETC. SHOWING DIMENSIONS, CAPACITY, CODE REQUIREMENTS, MOTOR AND DRIVE TESTING, AS INDICATED IN THE CONTRACT DOCUMENTS. D. CERTIFIED PERFORMANCE CURVES FOR ALL MECHANICAL EQUIPMENT SHALL BE SUBMITTED FOR REVIEW.
- E. SAMPLES, DRAWINGS, SPECIFICATIONS, CATALOGUES, ETC., SUBMITTED FOR REVIEW SHALL BE PROPERLY LABELED INDICATED PROJECT NAME, AND SPECIFIC SERVICE FOR WHICH MATERIAL OR EQUIPMENT IS TO BE USED.
- F. FAILURE TO SUBMIT SHOP DRAWINGS IN AMPLE TIME FOR CHECKING SHALL NOT ENTITLE AN EXTENSION OF CONTRACT TIME, AND NO CLAIM FOR EXTENSION BY REASON OF SUCH DEFAULT SHALL BE ALLOWED. G. PRIOR TO SUBMISSION OF SHOP DRAWINGS, CONTRACTOR SHALL THOROUGHLY CHECK EACH SHOP
- DRAWING, REJECT THOSE NOT CONFORMING TO THE SPECIFICATIONS, AND INDICATE BY SIGNED, STAMPED, & WRITTEN DECLARATION THAT THE SHOP DRAWINGS SUBMITTED MEET CONTRACT REQUIREMENTS. H. THE COMMENT "APPROVED" OR "APPROVED AS NOTED" RENDERED ON SHOP DRAWINGS SHALL NOT
- BE CONSIDERED AS A GUARANTEE OF MEASUREMENTS OR BUILDING CONDITIONS. WHERE DRAWINGS ARE REVIEWED, SAID REVIEW DOES NOT IN ANY WAY RELIEVE THE RESPONSIBILITY, OR NECESSITY, OF FURNISHING MATERIAL OR PERFORMING WORK AS REQUIRED BY THE CONTRACT DRAWINGS AND SPECIFICATIONS
- I. "APPROVED AS NOTED" MEANS, UNLESS OTHERWISE NOTED ON THE DRAWINGS, TO APPROVE FOR CONSTRUCTION, FABRICATION, AND/OR MANUFACTURE SUBJECT TO THE PROVISION THAT THE WORK SHALL BE CARRIED OUT IN COMPLIANCE WITH ALL ANNOTATIONS AND/OR CORRECTIONS INDICATED ON THE SHOP DRAWINGS AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. 1. WHERE THE COMMENT "APPROVED AS NOTED" INCLUDES DIRECTION TO THE CONTRACTOR TO RESUBMIT CORRECTED SHOP DRAWINGS FOR RECORD: FAILURE TO COMPLY WITH THE INSTRUCTION

TO RESUBMIT RECORD COPY SHALL RENDER ALL APPROVAL NULL AND VOID.

## 3.0 IDENTIFICATION

- A. PROVIDE IDENTIFICATION FOR DUCTWORK AND EQUIPMENT.
- B. IDENTIFICATION SHALL BE IN ACCORDANCE WITH "SCHEME FOR IDENTIFICATION OF PIPING SYSTEM ANSI A13.1" AND OSHA SAFETY COLOR REGULATION. . PROVIDE FOR EACH ITEM OF EQUIPMENT, A PERMANENTLY ATTACHED NAMEPLATE MADE OF BLACK
- SURFACE, WHITE CORE LAMINATED BAKELITE WITH INCISED LETTERS. SUBCONTRACTOR FURNISHING EQUIPMENT SHALL PROVIDE NAMEPLATE. NAMEPLATES SHALL BE A MINIMUM OF 3" LONG BY 1 1/2" WIDE AND SHALL BEAR THE EQUIPMENT NAME AND ITEM NUMBER OF 1/2" HIGH WHITE LETTERS AS DESIGNATED IN THE EQUIPMENT SCHEDULE. MOUNTING SCREWS SHALL HAVE CHROME PLATED ACORN HEADED SCREWS.

### 4.0 BALANCING

- A. NEBB CERTIFIED BALANCING COMPANY MUST BE A COMPANY WHICH IS INDEPENDENT OF THE CONTRACTOR AND BE APPROVED FOR USE BY THE OWNER PRIOR TO BALANCING THE SYSTEM. B. BALANCE THE HEATING AND COOLING SYSTEMS TO PROVIDE UNIFORM TEMPERATURES IN ALL HEATED OR COOLED AREAS AND ROOMS.
- C. BALANCE AIR SYSTEMS TO QUANTITIES INDICATED AND FURNISH A REPORT INDICATING DIFFUSER, REGISTER SIZES, LOCATIONS AND CFM VALUES INCLUDING ACTUAL FAN PERFORMANCE DATA.
- D. THE CONTRACTOR SHALL SUBMIT AN AIR BALANCE REPORT PRIOR TO FINAL ACCEPTANCE. E. THE FOLLOWING DATA SHALL BE OBTAINED AND RECORDED:
- 1. FAN AND MOTOR RPM. 2. MOTOR AND CURRENT VOLTAGE.
- 5. FAN, COIL AND FILTER STATICS. 4. NAMEPLATE DATA ON FAN AND MOTOR.
- 5. MOTOR SHEAVE, FAN PULLEY AND BELT SIZES.
- F. TRAVERSE MAIN SUPPLY AND RETURN DUCTS TO DETERMINE CFM DELIVERIES OF VENTILATION SYSTEM. G. MEASURE THE SYSTEM DUCT STATIC PRESSURE AT SELECTED POINTS THROUGHOUT THE SYSTEM. MONITORING POINTS SHALL BE IN THOSE DUCT RUNS THAT ARE OF THE LONGEST EQUIVALENT
- LENGTH (GREATEST FRICTION LOSS). MONITOR THESE POINTS DURING THE ADJUSTING AND BALANCING PROCEDURE TO ASSURE PROPER INLET STATIC PRESSURE IS BEING MAINTAINED TO TERMINAL BOXES. H. MAKE PRELIMINARY OUTLET READINGS AND BALANCE THE OUTLETS TO DESIGN CFM AND RECORD ALL READINGS.

### 5.0 SHEET METAL WORK

- A. FURNISH AND INSTALL ALL SHEET METAL DUCTWORK, PLENUMS, AND ITEMS OF METAL WORK AS NECESSARY TO COMPLETE THE VARIOUS AIR CONDITIONING, VENTILATING AND HEATING SYSTEMS OF THE BUILDING SO THEY ARE READY FOR SATISFACTORY OPERATION. WHILE THE INSTALLATION SHOULD ADHERE TO THE PLANS AND SPECIFICATIONS AS MUCH AS POSSIBLE, THE CONTRACTOR SHALL BE ENTITLED TO MODIFY THE RUNS AND SIZES OF THE DUCTWORK AND TO MAKE OFFSETS, WHERE NECESSARY TO ACCOMMODATE BUILDING CONDITIONS, ONLY AFTER RECEIPT OF WRITTEN APPROVAL FROM THE ENGINEER. ALL SUCH CHANGES OR OFFSETS SHALL BE INDICATED IN THE "AS-BUILT" DRAWINGS SUBMITTED AT THE END OF THE JOB.
- B. DUCTWORK SHALL BE CONSTRUCTED ACCORDING TO THE "EQUIPMENT HANDBOOK" PUBLISHED BY ASHRAE AND "HVAC DUCT CONSTRUCTION STANDARDS" PUBLISHED BY SMACNA. C. SHEET METAL GAUGES, TRANSVERSE JOINTS, LONGITUDINAL SEAMS AND INTERMEDIATE REINFORCING
- MUST BE IN CONFORMANCE WITH SMACNA STANDARDS FOR 6" W.G. AND SEAL CLASS A. D. ALL SUPPLY DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED STEEL OF U.S. D. STANDARD SHEET METAL GAUGE UNLESS NOTED OTHERWISE ON THE DRAWINGS. ALL JOINTS SHALL BE SEALED AIRTIGHT
- WITH 3MEC-800. CONNECTIONS TO FAN SHALL BE THRU ACID RESISTANT RUBBER NOT LESS THAN 4" LONG, FUME TIGHT AND SECURELY FASTENED WITH COPPER METAL BANDS. E. ALL CHANGES IN DIRECTION, HORIZONTAL OR VERTICAL, SHALL BE SHAPED TO PERMIT THE EASIEST POSSIBLE AIR FLOW. USING CENTERLINE RADIUS OF 1-1/2 X WIDTH. FOR ALL CASES WHERE 90 DEGREE SQUARE ELBOWS ARE USED, APPROVED DOUBLE THICKNESS TURNING VANES SHALL BE USED.
- HVAC CONTRACTOR SHALL SUBMIT DETAILS FOR APPROVAL. F. ALL DUCTWORK SHALL BE BUILT WITH APPROVED JOINTS AND SEAMS SMOOTH ON THE INSIDE WITH LAPS MADE IN THE DIRECTION OF THE AIR FLOW AND NO FLANGES PROJECTING INTO THE AIR STREAM. OUTSIDE SEAMS AND JOINTS SHALL BE AS NEAR TO AIR TIGHT AS POSSIBLE WITH A NEAT
- FINISH. THE CONTRACTOR SHALL CAULK ALL JOINTS WHICH ARE NOT MECHANICALLY TIGHT. G. LONGITUDINAL JOINTS SHALL BE PITTSBURGH LOCK AT CORNERS OR ACME LOCK ON FLAT SURFACES DOUBLE SEAMS HAMMERED TIGHT AND SHALL BE LOCATED ABOVE THE HORIZONTAL AXIS OF THE DUCT. A SNAP LOCK SEAM SHALL NOT BE PERMITTED AS A SUBSTITUTE FOR THE PITTSBURGH LOCK AT CORNERS OF DUCTS. H. TRAVERSE JOINTS SHALL BE MADE AIRTIGHT WITH ALL LAPS IN THE DIRECTIONS OF AIR FLOW.
- I. VOLUME DAMPERS AS SHOWN ON DRAWINGS AND AS REQUIRED FOR PROPER OPERATION SHALL BE INSTALLED IN THE VARIOUS BRANCHES FOR USE IN BALANCING THE SYSTEM. VOLUME DAMPERS SHALL BE OF MULTI-OPPOSED BLADE CONSTRUCTION WITH LOCKING QUADRANTS FOR ALL DUCTS OVER 12" IN DEPTH. MOUNTED OUTSIDE OF THE DUCT IN AN ACCESSIBLE PLACE. VOLUME DAMPERS SHALL BE RUSKIN MODEL MD35 OR APPROVED EQUAL WITH END BEARINGS, STAND OFF FOR INSULATED DUCTWORK AND CONTINUOUS AXLE & LOCKING QUADRANT. J. ALL DUCTWORK SHALL BE INSTALLED AS HIGH AS POSSIBLE TO MAXIMIZE HEADROOM.
- K. ALL DUCTWORK SHALL BE HUNG EROM THE BUILDING STRUCTURE.
- FIBERGLASS INSULATION AND VAPOR BARRIER. INSULATION WRAP SHALL MEET THE REQUIREMENTS OF NFPA 90A, WITH FLAME SPREAD, SMOKE DEVELOPMENT, AND FUEL CONTRIBUTED NOT EXCEEDING 25. 0, AND 50 RESPECTIVELY AS TESTED BY PROCEDURE ASTM-84, NFPA 255, AND UL 723 UNLESS OTHERWISE NOTED. INSULATION WRAP SHALL PROVIDE MINIMUM R VALUE OF 6.0 WHEN INSTALLED.

### \_\_\_\_\_ 6.0 SUPPORTS

A. ALL SUPPORTS AND HANGERS FOR EQUIPMENT, DUCTWORK AND PIPING UNDER THIS CONTRACT SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

B. ALL HANGERS, SUPPORTS, & HARDWARE SHALL BE GALVANIZED UNLESS OTHERWISE INDICATED. WHERE EXCESSIVE LOADING REQUIRES PROPER DISTRIBUTION OF THE WEIGHT, PROPER SUPPORTS MUST BE PROVIDED, SUBJECT TO THE ARCHITECT'S APPROVAL. ALL SUPPORTS SHALL BE OF STRUCTURAL STEEL.

## <u>7.0 PIPING</u>

- 7.1 CONDENSATE DRAIN PIPING
- A. ALL PIPES SHALL BE NEW, FREE FROM SCALE OR RUST, OF THE MATERIAL AND WEIGHT SPECIFIED UNDER THE VARIOUS SERVICES. EACH LENGTH OF PIPE SHALL BE PROPERLY MARKED AT THE MILL FOR PROPER IDENTIFICATION WITH NAME OR SYMBOL OF MANUFACTURER.
- B. ALL COPPER TUBING SHALL BE OF WEIGHT AS REQUIRED FOR SERVICE SPECIFIED, WITH CONFORMANCE WITH ASTM B-88 FOR TYPES "L" AND "K" TUBING, AS MANUFACTURED BY CHASE, ANACONDA, REVERE, OR APPROVED EQUAL. TUBING AND FITTINGS SHALL BE THOROUGHLY CLEANED WITH SAND CLOTH AND TREATED WITH AN APPROVED NON-CORROSIVE FLUX BEFORE SOLDER IS APPLIED.
- COPPER TUBING JOINTS SHALL BE MADE WITH 95-5 SOLDER FOR WATER APPLICATIONS. <u>SERVICE</u> <u>MATERIAL</u> <u>SCHEDULE</u> OVERFLOW AND DRAIN COPPER TYPE L (HARD)

## 7.2 FITTINGS

- A. FITTINGS SHALL BE OF MATERIAL CONFORMING TO THE FOLLOWING SCHEDULE: SOLDER FITTINGS ASTM B-88, 150 LBS. FOR WATER SERVICE & 300 LBS. FOR REFRIGERANT. B. ALL FITTINGS USED AT EXPANSION LOOPS OR BENDS SHALL BE EXTRA HEAVY. C. FLANGES SHALL BE RAISED FACE, OF THE SAME WEIGHT AS THE FITTINGS IN EACH SERVICE
- SHALL CONFORM TO ASTM 193 GRADE B-7, THREADS CLASS 7 FIT. NUTS SHALL BE SEMI-FINISHED HEXAGONAL, ANSI B18.2 ASTM A194 GRADE 2H.

### 7.3 PIPE HANGERS AND SUPPORTS

- A. PROVIDE NECESSARY STRUCTURAL MEMBERS, HANGERS AND SUPPORTS OF APPROVED DESIGN TO KEEP PIPING IN PROPER ALIGNMENT AND PREVENT TRANSMISSION OF INJURIOUS THRUSTS AND VIBRATIONS. IN ALL CASES WHERE HANGERS, BRACKETS, ETC., ARE SUPPORTED FROM CONCRETE CONSTRUCTION, CARE SHALL BE TAKEN NOT TO WEAKEN CONCRETE OR PENETRATE WATERPROOFING ALL HANGERS AND SUPPORTS SHALL BE CAPABLE OF SCREW ADJUSTMENT AFTER PIPING IS ERECTED. HANGERS SUPPORTING PIPING EXPANDING INTO LOOPS, BENDS AND OFFSETS SHALL BE SECURED TO THE BUILDING STRUCTURE IN SUCH A MANNER THAT HORIZONTAL ADJUSTMENT PERPENDICULAR TO THE RUN OF PIPING SUPPORTED MAY BE MADE TO ACCOMMODATE DISPLACEMENT DUE TO EXPANSION. ALL SUCH HANGERS SHALL BE FINALLY ADJUSTED, BOTH IN THE VERTICAL AND HORIZONTAL DIRECTION. WHEN THE SUPPORTED PIPING IS HOT. OR CHILLED. AS REQUIRED. ALL PIPE HANGERS SUPPORTS, & HARDWARE SHALL BE GALVANIZED UNLESS OTHERWISE INDICATED. METAL TO METAL CONTACT IS TO BE AVOIDED. HANGERS IN CONTACT WITH COPPER SHALL BE COPPER PLATED STEEL.
- B. PIPE HANGERS SHALL BE THE CLEVIS TYPE, EXCEPT WHERE OTHERWISE NOTED. PIPE HANGER SCHEDULE:

	PIPE 2"& SMALLER (COPPER)	MAKE AND MODEL <u>TYPE OF HANGER</u> ADJUSTABLE WROUGHT IRON	grinnell <u>Fig. No.</u> CT-65
C.	HANGER RODS SHA	LL BE OF THE FOLLOWING	DIAMETERS:
	PIPE SIZE	ROD DIAM	FTFR

- ROD DIAMETER: 3/8" 1 1/4" & BELOW 1 1/2" AND 2"
- D. BEAM CLAMPS HANGERS SUPPORTED FROM FLOOR STEEL SHALL BE APPROVED I BEAM CLAMPS. BEAM CLAMPS FOR HANGERS SUPPORTING PIPING 2" AND SMALLER SHALL BE C & P FIG. NO. 148
- ADJUSTABLE BEAM CLAMPS.
- E. ALL VERTICAL PIPING SHALL BE ANCHORED BY MEANS OF HEAVY STEEL CLAMPS SECURELY BOLTED OR WELDED TO THE PIPING, AND WITH END EXTENSION BEARING ON THE BUILDING. F. PIPING SHALL NOT BE HUNG FROM OTHER PIPING DUCTS, CONDUITS OR FROM EQUIPMENT OF OTHER
- TRADES AND NO VERTICAL EXPANSION SHIELDS WILL BE PERMITTED. HANGER RODS SHALL NOT PIERCE DUCTS. G. ALL WATER PIPING CONNECTED TO ROTATING EQUIPMENT WITHIN ALL MECHANICAL SPACES SHALL BE
- ISOLATED FROM THE BUILDING STRUCTURE BY MEANS OF VIBRATION HANGERS INSERTED IN THE HANGER RODS. THE VIBRATION HANGERS SHALL CONSIST OF A STEEL SPRING IN COMBINATION WITH A DOUBLE DEFLECTION NEOPRENE ELEMENT WITHIN A RECTANGULAR STEEL HOUSING. COMBINED STATIC DEFLECTION SHALL BE 1.375" MINIMUM. HANGERS SHALL HAVE CAPABILITY OF SUPPORTING THE PIPING AT A FIXED ELEVATION DURING INSTALLATION AND SHALL INCORPORATE AN ADJUSTING DEVICE TO TRANSFER THE LOAD TO THE SPRING. DEFLECTION SHALL BE INDICATED BY MEANS OF SCALE. VIBRATION HANGERS SHALL BE TYPE PCDNHS MADE BY MASON INDUSTRIES.
- H. WHERE ADDITIONAL STEEL IS REQUIRED FOR THE SUPPORT OF HANGERS, FURNISH AND INSTALL SAME SUBJECT TO THE APPROVAL OF THE ARCHITECT. PIPING RUNNING ON WALLS SHALL BE SUPPORTED BY MEANS OF HANGER SUSPENDED FROM HEAVY ANGLE IRON WALL BRACKETS. NO WALL HOOKS WILL BE PERMITTED.
- LATERAL BRACING OF HORIZONTAL PIPE SHALL BE PROVIDED WHERE REQUIRED TO PREVENT SIDE SWAY OR VIBRATION. THE LATERAL BRACING SHALL BE OF A TYPE APPROVED BY THE ARCHITECT AND SHALL BE INSTALLED WHERE DIRECTED BY THE ARCHITECT.

CATEGORY. ALL FLANGES SHALL BE DRILLED TO "US STANDARD" HEX NUTS AND WASHERS. BOLTING

F & M CARPENTER& PATERSON 364 100CT

MAXIMUM SPACING: 6' – 0" 10' – 0" (COPPER 8' - 0")

<u>9.0 – EXECUTION</u>

9.1 INSTALLATION

- A. COORDINATE WITH OTHER WORK AS NECESSARY TO INTERFACE INSTALLATION OF PIPING WITH OTHER COMPONENTS OF SYSTEMS. B. PROVIDE AND ERECT IN A WORKMANLIKE MANNER, ACCORDING TO THE BEST PRACTICES OF THE
- TRADE, ALL PIPING SHOWN ON THE DRAWINGS OR REQUIRED TO COMPLETE THE INSTALLATION INTENDED BY THESE SPECIFICATIONS.
- C. THE DRAWINGS INDICATE SCHEMATICALLY THE SIZE AND LOCATION OF PIPING. PIPING SHALL BE SET UP AND DOWN AND OFFSET TO MEET FIELD CONDITIONS AND TO PROVIDE ADEQUATE MAINTENANCE ROOM AND HEADROOM IN THE SERVICE CORRIDOR.
- D. TUBING SHALL BE ERECTED NEATLY IN A WORKMANLIKE MANNER. BENDS IN SOFT COPPER TUBING SHALL BE CREATED WITH BENDERS TO PREVENT DEFORMATION OF THE TUBING IN THE BENDS.
- THE ENDS OF ALL PIPE AND NIPPLES SHALL BE THOROUGHLY REAMED TO THE FULL INSIDE DIAMETER OF THE PIPE AND ALL BURRS FORMED IN THE CUTTING OF THE PIPES SHALL BE REMOVED. F. PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE ASME CODE FOR
- PRESSURE PIPING G. DISSIMILAR PIPING SHALL BE CONNECTED WITH DIELECTRIC FITTINGS BY THE PERFECTION CORPORATION (NO DIELECTRIC UNION).

9.2 TESTING OF PIPING

A. ALL NEW R-410A REFRIGERANT PIPING SHALL BE TESTED AS HEREINAFTER SPECIFIED: 1. SUCTION LINES FOR AIR-CONDITIONING APPLICATIONS: 300 PSIG 2. SUCTION LINES FOR HEAT-PUMP APPLICATIONS: 535 PSIG 3. HOT-GAS & LIQUID LINES: 535 PSIG

10.0 DUST COLLECTOR

<u>10.1 UNIT</u>

- A. 11 AND 14 GAUGE MILD STEEL EPOXY PRIMER COAT (4000 HOURS SALT SPRAY TEST) WITH TWO (2) COATS OF AIR DRIED POLYURETHANE FINAL PAINT; CABINET AND SUPPORT STRUCTURE WITH RE-DRILLED HOLES FOR FLOOR ANCHORING; HIGH EFFICIENCY MULTI-POCKET FILTER ENVELOPE SEALED FRAME ACCESS DOOR TO FILTER ENVELOPE; ELECTRONIC CONTROL PANEL WITH TIMER FOR SHAKER CLEANING IN NEMA 4 ENCLO SURE; DIRECT DRIVE TEFC MOTOR WITH NON-SPARKING BACKWARD INCLINED IMPELLER FOR WOOD DUSTS OR REACTIVE METALS; SOUND INSULATED FAN PLENUM: DIRTY AIR INLET WITH DUST DEFLECTOR IN HOPPER SECTION, CLEAN AIR OUTLET ON TOP OF COLLECTOR; LIFT LUGS FOR FILTER CABINET POSITIONING; 1 HP SHAKER MOTOR WITH OSCILLATING PATTERN FOR BETTER CLEANING EFFICIENCY, JOINTS AND FOLDS SEALED WITH GASKETS TO PREVENT AIR LEAKAGE
- B. DUST STORAGE CAPACITY SHOULD BE WITH DRUM DOLLY WITH SWIVEL CASTERS.
- C. UNIT TO BE EQUIPPED WITH THE FOLLOWING: 1. DEFLECTED EXPLOSION VENT PANEL.
  - a. EV-VS EXPLOSION VENT DEFLECTORS WITH EV-VL, EV-VD AND EV-VDSIL VENT PANELS.
  - b. CERTIFIED: ATEX II GD, EN 14491, EN 14994, EN 14797, EN 1127.1. c. MATERIAL: STEEL WITH SAFETY RED FINISH, PSTAT: 0.1 BAR (1.45 PSI) ± 15%.
- 2. NFPA RATED DRUM LID KIT AND DRUM QUANTITY (2).
- 3. TRANSITIONS AND STACK. 4. RAPTOR SPARK SINGLE ZONE DETECTION KIT IS FM APPROVED, CE LISTED AND IN AN IP65 ENCLOSURE AND TO INCLUDE THE FOLLOWING:
- a. MODEL RS-PCUSP1L CONTROL PANEL PER KIT.
- b. MODEL RS-SD02 SPARK DETECTOR FOR DUCTS < 40 H. c. MODEL RS-SD02 SPARK DETECTOR FOR DUCTS 0.40 h AND 0.68 h
- d. EXTINGUISHING KIT, FLEXIBLE HOSES, AUDIBLE ALARM AND WARNING LIGHT.
- 5. 14" EXPLOSION ISOLATION VALVE (VigiFLAP) WITH LOCKING MECHANISM, DOMED FLAP (304 STAINLESS STEEL), ANSI FLANGES INSPECTION/ACCESS DOOR, GROUNDING STRAPS AND ABILITY TO OPERATE NORMALLY OPEN OR AS A CHECK VALVE. ATEX EN 16447 CERTIFICATION. INDUCTIVE PROXIMATELY SHUTDOWN SWITCH PROVIDED STANDARD.
- 6. 16" EXPLOSION ISOLATION VALVE (VIGIFLAP) WITH LOCKING MECHANISM, DOMED FLAP (304 STAINLESS STEEL), ANSI FLANGES INSPECTION/ACCESS DOOR, GROUNDING STRAPS AND ABILITY TO OPERATE NORMALLY OPEN OR AS A CHECK VALVE. ATEX EN 16447 CERTIFICATION. INDUCTIVE PROXIMATELY SHUTDOWN SWITCH PROVIDED STANDARD.
- 7. CONTROL PANEL (CP04) UL698A CONTROL PANEL FOR USE WITH NFPA 69 COMPLIANT EXPLOSION ISOLATION VALVES. STANDARD PANEL INCLUDES STATUS LIGHTS, INTRINSIC CIRCUIT WITH BARRIER AND PHYSICAL SEPARATION (1 PER ZONE), MONITORED INPUTS (3 TOTAL / 2 PROGRAMMABLE). ABILITY TO ADD A SECONDARY CLEAN AIR ISOLATION VALVE. OUTPUT FOR SYSTEM SHUT DOWN AND MONITORING, DRAWINGS, INSTALLATION INSTRUCTIONS, NEMA 4 OUTDOOR RATED ENCLOSURE, UL AND CANADA UL LISTINGS. ALLOWS FOR 120VAC OR 24VDC INPUT POWER.

8. DUST LEVEL SENSOR - ADJUSTABLE SETPOINT MODEL FOR ORGANIC DUSTS.

11.0 SEQUENCE OF OPERATIONS

A. PROVIDE ALL NECESSARY CONTROLLERS, RELAYS, SPACE TEMPERATURE, RELATIVE HUMIDITY (RH) & CO2 SENSORS, OUTSIDE AIR TEMPERATURE SENSORS, CONTROL WIRING, TRANSFORMERS PROGRAMMING CO2 SENSORS, OUTSIDE AIR LEMPERATURE SENSORS, OUTTINE MEW BOOFTOP UNITS. VAV CONTROL CYCLE. WHEN SUPPLY FAN OPERATES, THE MODULATING POWERED EXHAUST FAN SHALL RUN TO MAINTAIN SHO P PRESSURE AT -0.02" WITH RESPECT TO CORRIDOR. THE DX COOLING OR GAS HEAT SHALL BE STAGED TO MAINTAIN THE SPACE COOLING SET POINT OF 75'F DB. 50% RH (ADJUSTABLE) AND SPACE HEATING SET POINT OF 72°F DB (ADJUSTABLE). WHEN OUTDOOR AIR ENTHALPY IS LESS THAN RETURN AIR ENTHALPY, THE MODULATING ECONOMIZER SHALL ACT AS FIRST STAGE OF COOLING.

- THE CO2 CONTROLLER SHALL MODULATE THE OUTSIDE AIR INTAKE (OAI) DAMPER TO MAINTAIN THE CO2 LEVEL SET POINT. THE EXHAUST FAN SHALL BE ENERGIZED TO RELIEVE EXCESSIVE AIR PRESSURE IN THE SPACE. D. WHEN THE RH IN THE SPACE RISES TO 60% (ADJUSTABLE), THE DX COOLING SHALL BE STAGED AND
- THE HOT GAS REHEAT SHALL BE ACTIVATED TO MAINTAIN THE SET POINT OF 75'F DB AND 50% RH. DURING UNOCCUPIED HOURS, THE DX COOLING OR GAS HEAT SHALL BE STAGED TO MAINTAIN THE UNOCCUPIED COOLING SET POINT OF 85'F (ADJUSTABLE) AND UNOCCUPIED HEATING SET POINT OF 60'F (ADJUSTABLE). THE OAI DAMPER SHALL BE FULLY CLOSED DURING UNOCCUPIED OPERATION OF

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H-400



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