



EDINBURG CISD

PURCHASING DEPARTMENT

411 N. 8th Ave., Edinburg, TX 78541
(956) 289-2311, (956) 38-7687

DOMINGA "MINGA" VELA, President
CARMEN GONZÁLEZ, Vice President
OSCAR SALINAS, Secretary
LUIS ALAMIA, Member
MIGUEL "MIKE" FARIAS, Member
LETICIA "LETTY" GARCIA, Member
XAVIER SALINAS, Member

Dr. Mario H. Salinas, Superintendent

ADDENDUM 3 CSP 22-134

Edinburg North High School Cafeteria Additions/Improvements August 18, 2022

I. INSTRUCTIONS:

- A. The following changes, omissions or alterations to the specification and drawings shall be made insofar as the specifications and drawings are inconsistent with following, this addendum shall govern.
- B. Acknowledge receipt of this addendum by inserting its number and date of issue in the place provided for same in the proposal. This addendum forms a part of the Contract Documents.
- C. It is imperative that this addendum be inserted INTO set of specifications.

II. SEE ADDENDUM BELOW:

1. Q & A Responses:

Question: We have not been able to locate the Seamless Vinyl Composite Tile specification. This type of flooring is identified on the floor finish schedule at the concession, dry storage, and new kitchen areas. Do you have a specification for that material or are we to use the VCT specification on the resilient flooring and base section 09 65 00?

Answer: Refer to the attached specification section 09 65 16.23 Resilient Flooring Vinyl Sheet Flooring.

2. Refer to attached MEP Addendum.

Respectfully Submitted,

Amaro Tijerina
Director of Purchasing

(Signature of authorized officer)

Date

Company Name

Nondiscrimination Statement

It is the policy of Edinburg CISD not to discriminate on the basis of gender, age, handicap, religion, race, color, or national origin in its educational programs.
Es poliza del Distrito Escolar de Edinburg el no discriminar por razones con base en genero, edad, religion, raza, color origen nacional, ni discapacidad dentro de sus programas educacionales.

SECTION 09 65 16.23 - RESILIENT FLOORING VINYL SHEET FLOORING

PART 1 - GENERAL

1.00 COORDINATION

- A. The General Conditions of the Contract for Construction and the Supplementary Conditions to the General Conditions of the Contract for Construction shall be considered as part of this section of the specifications.
- B. Each Bidder shall be responsible for determining during the bidding period the extent that any addenda issued during the bidding period may affect this section of the specifications.
- C. Reference Instructions to Bidders for requirements regarding substitutions of materials and products.
- D. Where conflicts occur between the drawings and specifications, between different drawings, between different portions of this section of the specifications, or between different sections of the specifications, the more stringent requirements and the greater quantity shall apply.

1.01 SUMMARY

- A. Section Includes:
 - 1. Flooring and accessories as shown on the drawings and schedules and as indicated by the requirements of this section.
- B. Related Documents
 - 1. Drawings and General Provisions of the Contract (including General and Supplementary Conditions and Division 1 sections) apply to the work of this section.
- C. Related Sections:
 - 1. Other Division 9 sections for floor finishes related to this section but not the work of this section
 - 2. Division 3 Concrete; not the work of this section
 - 3. Division 6 Wood and Plastics; not the work of this section
 - 4. Division 7 Thermal and Moisture Protection; not the work of this section

1.02 REFERENCES

- A. ASTM International:
 - 1. ASTM E 648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
 - 2. ASTM E 662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
 - 3. ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
 - 4. ASTM F 1913 Standard Specification for Sheet Vinyl Floor Covering without Backing
 - 5. ASTM F 1482, Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring
 - 6. ASTM F 1861 Standard Specification for Resilient Wall Base
 - 7. ASTM F 1869 Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
 - 8. ASTM F 2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes
- B. National Fire Protection Association (NFPA):
 - 1. NFPA 253 Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
 - 2. NFPA 258 Standard Test Method for Measuring the Smoke Generated by Solid Materials

1.03 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide flooring which has been manufactured, fabricated, and installed to performance criteria certified by manufacturer without defects, damage, or failure.
- B. Administrative Requirements
 - 1. Pre-installation Meeting: Conduct an on-site pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.
- C. Test Installations/ Mock-ups: Install at the project site a job mock-up using acceptable products and manufacturer approved installation methods, including concrete substrate testing. Obtain Owner's and Architect's acceptance of finish color, texture and pattern, and workmanship standards.
 - 1. Mock-Up Size: 10'-0" x 12'-0"
 - 2. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
 - 3. Incorporation: Mock-up may be incorporated into the final construction with Owner's approval.
- D. Sequencing and Scheduling
 - 1. Install flooring and accessories after the other finishing operations, including painting, have been completed. Close spaces to traffic during the installation of the flooring.
 - 2. Do not install flooring over concrete slabs until they are sufficiently dry to achieve a bond with the adhesive, in accordance with the manufacturer's recommended bond, moisture tests and pH test.

1.04 SUBMITTALS

- A. Submit shop drawings, seaming plan, coving details, and manufacturer's technical data, installation and maintenance instructions for flooring and accessories.
- B. Submit the manufacturer's standard samples showing the required colors for flooring, welding rods, and applicable accessories.
- C. Submit Safety Data Sheets (SDS) available for adhesives, weld rod, moisture mitigation systems, primers, patching/leveling compounds, floor finishes (polishes) and cleaning agents and Material Information Sheets for flooring products.
- D. Closeout Submittals: Submit the following:
 - 1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to finishes and performance.
 - 2. Warranty: Warranty documents specified herein

1.05 QUALITY ASSURANCE

- A. Single-Source Responsibility: provide types of flooring and accessories supplied by one manufacturer, including moisture mitigation systems, primers, leveling and patching compounds, and adhesives.
- B. Select an installer who is experienced and competent in the installation of Armstrong resilient sheet flooring using heat-welded seams and the use of Armstrong Flooring subfloor preparation products.
 - 1. Engage installers certified as Armstrong Commercial Flooring Certified Installers
 - 2. Confirm installer's certification by requesting their credentials.
- C. Fire Performance Characteristics: Provide resilient vinyl sheet flooring with the following fire performance characteristics as determined by testing material in accordance with ASTM test methods indicated below by a certified testing laboratory or other testing agency acceptable to authorities having jurisdiction:
 - 1. ASTM E 648 Critical Radiant Flux of 0.45 watts per sq. cm. or greater, Class I

2. ASTM E 662 (Smoke Generation) Maximum Specific Optical Density of 450 or less
3. CAN/ULC-S102.2 – Flame Spread Rating and Smoke Developed – Results as tested

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Comply with Division 1 Product Requirements Sections
- B. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- C. Deliver materials in good condition to the jobsite in the manufacturer's original unopened containers that bear the name and brand of the manufacturer, project identification, and shipping and handling instructions.
- D. Store materials in a clean, dry, enclosed space off the ground, protected from harmful weather conditions and at temperature and humidity conditions recommended by the manufacturer. Protect adhesives from freezing. Store flooring, adhesives, and accessories in the spaces where they will be installed for at least 48 hours before beginning installation.

1.07 PROJECT CONDITIONS

- A. Maintain a minimum temperature in the spaces to receive the flooring and accessories of 65°F (18°C) and a maximum temperature of 100°F (38°C) for at least 48 hours before, during, and for not less than 48 hours after installation. Thereafter, maintain a minimum temperature of 55°F (13°C) in areas where work is completed. Protect all materials from the direct flow of heat from hot-air registers, radiators, or other heating fixtures and appliances. Refer to product installation recommendations for a complete guide on project conditions.

1.08 WARRANTY

- A. Resilient Flooring: Submit a written warranty executed by the manufacturer, agreeing to repair or replace resilient flooring that fails within the warranty period.
- B. Warranty Period: 10 years.
- C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.
- D. For the Warranty to be valid, this product is required to be installed using the appropriate Armstrong Flooring Guaranteed Installation System. Product installed not using the specific instructions from the Guaranteed Installation System will void the warranty.

1.09 MAINTENANCE

- A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials from same production run as products installed. Packaged with protective covering for storage and identified with appropriate labels.
 1. Quantity: Furnish quantity of flooring units equal to 10% of amount installed.
 2. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage, and protection of extra material.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Resilient sheet flooring, wall base, adhesives, and accessories:

1. Armstrong Flooring Inc., 1770 Hempstead Road, Lancaster, PA 17605, www.armstrongflooring.com/commercial.
2. Manufacturer must have a headquarters in the United States of America.

2.02 RESILIENT SHEET FLOORING MATERIALS

- A. Provide Homogeneous Sheet Vinyl Flooring: Accolade Plus™ with Diamond 10® Technology manufactured by Armstrong Flooring Inc.
1. Description: An unbacked, nonlayered, homogeneous sheet vinyl flooring. Protected by a UV-cured polyurethane finish, the colors and pattern detail are dispersed uniformly throughout the thickness of the product. Color pigments are insoluble in water and resistant to cleaning agents and light.
 2. Homogeneous sheet flooring shall conform to the requirements of ASTM F1913 Standard Specification for Vinyl Sheet Floor Covering Without Backing
 3. Pattern and Color: in [%COLOR%] [color selected from the range currently available from Armstrong Flooring Inc.]
 4. Width: 6 ft. (1.83 m).
 5. Length: up to 65.6 lineal feet (20 meters)
 6. Thickness: 0.080 in. (2.0 mm)
 7. Wear layer thickness: 0.080 in. (2.0 mm)
- B. Weld Rod:
1. Provide solid color vinyl weld rod as produced by Armstrong Flooring Inc. and intended for heat welding of seams. Color shall be compatible with field color of flooring or as selected by Architect to contrast with field color of flooring. Color selected from the range currently available from Armstrong Flooring Inc.
- C. Seam Adhesive:
1. Provide Armstrong Flooring S-761 Seam Adhesive at seams as recommended by the resilient flooring manufacturer.

2.03 PRODUCT SUBSTITUTION

- A. Substitutions: No substitutions permitted because of the specific attributes listed in Section 2.02.

2.04 WALL BASE MATERIALS

- A. For top set wall base: Provide 1/8 in. (3.18 mm) thick, 4 in. (10.16 cm) high Armstrong Flooring Color-Integrated Wall Base with a matte finish, conforming to ASTM F 1861, Type TP - Rubber, Thermoplastic, Group 1 - Solid, Style B – Cove.

2.05 ADHESIVES

- A. Provide Armstrong S-995 Vinyl Sheet Flooring Adhesive Premium Commercial adhesive for field areas and Armstrong S-580 Flash Cove Adhesive at flash coving as recommended by the flooring manufacturer.

2.06 ACCESSORIES

- A. For patching, smoothing, and leveling monolithic subfloors (concrete, terrazzo, quarry tile, ceramic tile, and certain metals), provide Armstrong S-194 Cement-Based Patch, Underlayment and Embossing Leveler / S-195 Underlayment Additive.
- B. For priming porous substrates to aid in adhesive bond strength and reducing subfloor porosity, provide S-464 Prime Strong™ acrylic primer for porous substrates. For non-porous substrates, provide S-465 NP Prime Strong™ acrylic primer for non-porous substrates.
- C. For creating a moisture barrier, provide S-462 Seal Strong™ two-part moisture mitigation system.
- D. For sealing joints between the top of wall base or integral cove cap and irregular wall surfaces such as masonry, provide plastic filler applied according to the manufacturer's recommendations.
- E. Provide top edge trim caps of plastic for integral flash cove as approved by the Architect.
- F. Provide transition/reducing strips tapered to meet abutting materials.
- G. Provide threshold of thickness and width as shown on the drawings.
- H. Provide resilient edge strips of width shown on the drawings, of equal gauge to the flooring, homogeneous vinyl, or rubber composition, tapered or bullnose edge, with color to match or contrast with the flooring, or as selected by the Architect from standard colors available.

PART 3 - EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data, including technical bulletins, product catalog, installation instructions, and product carton instructions for installation and maintenance procedures as needed.

3.02 EXAMINATION

- A. Site Verification of Conditions: Verify substrate conditions are acceptable for product installation in accordance with manufacturer's instructions (i.e., moisture tests, bond test, pH test, etc.).
- B. Visually inspect flooring materials, adhesives, and accessories prior to installation. Flooring material with visual defects shall not be installed and shall not be considered as a legitimate claim.
- C. Examine subfloors prior to installation to determine that surfaces are smooth and free from cracks, holes, ridges, and other defects that might prevent adhesive bond or impair durability or appearance of the flooring material.
- D. Inspect subfloors prior to installation to determine that surfaces are free from curing, sealing, parting and hardening compounds; residual adhesives; adhesive removers; and other foreign materials that might prevent adhesive bond. Visually inspect for evidence of moisture, alkaline salts, carbonation, dusting, mold, or mildew.
- E. Report conditions contrary to contract requirements that would prevent a proper installation. Do not proceed with the installation until unsatisfactory conditions have been corrected.
- F. Failure to call attention to defects or imperfections will be construed as acceptance and approval of the subfloor. Installation indicates acceptance of substrates regarding conditions existing at the time of installation.

3.03 PREPARATION

- A. Subfloor Preparation: Smooth concrete surfaces, removing rough areas, projections, ridges, and bumps, and filling low spots, control or construction joints, and other defects with Armstrong Flooring S-194 Cement-Based Patch, Underlayment and Embossing Leveler / S-195 Underlayment Additive as

recommended by the flooring manufacturer. Refer to the product installation recommendations and ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring for additional information on subfloor preparation.

- B. Subfloor Cleaning: The surface shall be free of dust, solvents, varnish, paint, wax, oil, grease, sealers, release agents, curing compounds, residual adhesive, adhesive removers, and other foreign materials that might affect the adhesion of resilient flooring to the concrete or cause a discoloration of the flooring from below. Remove residual adhesives as recommended by the flooring manufacturer. Remove curing and hardening compounds not compatible with the adhesives used, as indicated by a bond test or by the compound manufacturer's recommendations for flooring. Avoid organic solvents. Spray paints, permanent markers and other indelible ink markers must not be used to write on the back of the flooring material or used to mark the concrete slab as they could bleed through, telegraphing up to the surface and permanently staining the flooring material. If these contaminants are present on the substrate, they must be mechanically removed prior to the installation of the flooring material. Refer to the product installation recommendations and ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring for additional information on subfloor preparation.
- C. When using S-995 Adhesive, perform subfloor moisture testing in accordance with ASTM F 2170, “Standard Test Method for Determining Relative Humidity in Concrete Slabs Using *in-situ* Probes” and Bond Tests as described in the Armstrong Flooring Guaranteed Installation System to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. Internal relative humidity of the concrete shall not exceed 95%. On installations where both the Percent Relative Humidity and the Moisture Vapor Emission Rate tests are conducted, results for both tests shall comply with the allowable limits listed above. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained.
- D. Concrete pH Testing: Perform pH tests on concrete floors regardless of their age or grade level. All test results shall be documented and retained.

3.04 INSTALLATION OF FLOORING

- A. Install flooring in strict accordance with the latest edition of the flooring installation recommendations.
- B. Install flooring wall to wall before the installation of floor-set cabinets, casework, furniture, equipment, movable partitions, etc. Extend flooring into toe spaces, door recesses, closets, and similar openings as shown on the drawings.
- C. If required, install flooring on pan-type floor access covers. Maintain continuity of color and pattern within pieces of flooring installed on these covers. Adhere flooring to the subfloor around covers and to covers.
- D. Scribe, cut, and fit or flash cove to permanent fixtures, columns, walls, partitions, pipes, outlets, and built-in furniture and cabinets.
- E. Adhere flooring to the subfloor without cracks, voids, raising and puckering at the seams. Roll with a 100-pound (45.36 kilogram) roller in the field areas. Hand-roll flooring at the perimeter and the seams to assure adhesion. Refer to specific rolling instructions of the flooring manufacturer.
- F. Lay flooring to provide a minimum number of seams. Avoid cross seams, filler pieces, and strips. Match edges for color shading and pattern at the seams in compliance with the manufacturer's recommendations.
- G. Install flooring with adhesives, tools, and procedures in strict accordance with the manufacturer's written instructions. Observe the recommended adhesive trowel notching, open times, and working times.
- H. Prepare sealed seams with special seam adhesive supplied for this purpose. Use methods and sequence of work in conformance with written instructions of the flooring manufacturer. Finish all seams flush and free from voids, recesses, and raised areas.
- I. Provide integral flash cove wall base where shown on the drawings, including cove fillet support strip and top edge cap trim. Construct flash cove base in accordance with the flooring manufacturer's instructions. Seam adhesive as specified for those on the floor].

3.05 INSTALLATION OF ACCESSORIES

- A. Apply top set wall base to walls, columns, casework, and other permanent fixtures in areas where top-set base is required. Install base in lengths if practical, with inside corners fabricated from base materials that are mitered or coped. Tightly bond base to vertical substrate with continuous contact at horizontal and vertical surfaces.
- B. Fill voids with plastic filler along the top edge of the resilient wall base or integral cove cap on masonry surfaces or other similar irregular substrates.
- C. Place resilient edge strips tightly butted to flooring, and secure with adhesive recommended by the edge strip manufacturer. Install edge strips at edges of flooring that would otherwise be exposed.

3.06 CLEANING

- A. Perform initial and on-going maintenance according to the latest edition of the maintenance recommendations for Homogeneous Sheet Flooring.

3.07 PROTECTION

- A. Protect installed flooring as recommended by the flooring manufacturer against damage from rolling loads, other trades, or the placement of fixtures and furnishings. See Finishing the Job in the latest edition of Armstrong Flooring Guaranteed Installation Systems manual.

END OF SECTION

8/18/2022



ADDENDUM #03

Architect: Milnet Architectural Services

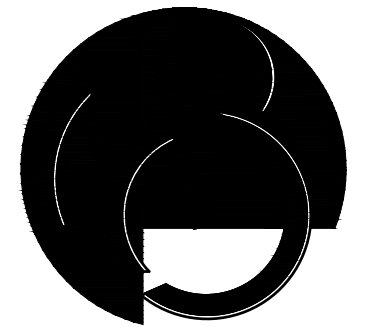
Project Name: Edinburg North H.S. Cafeteria & Kitchen Renovation
Addition

Project Number: 21.4.54

Date: 8/18/2022

Note: The work shall be carried out in accordance with the following supplemental instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time Proceeding with the Work in accordance with these instructions indicates your acknowledgement that there will be no change in the Contract Sum or Contract Time.

- I. Specifications:
- II. General: N/A
- III. Mechanical:
 - A. Sheet MG01 – Added sheet to index, refer to attached.
 - B. Sheet MDP01 – Adjusted keynotes, refer to attached.
 - C. Sheet MP01 – Adjusted keynotes & ductwork, refer to attached.
 - D. Sheet MC01 – Added controls sheet, refer to attached.
- IV. Electrical:
 - A. Add sheet EPS01 that include electrical panel schedules, refer to attached.
- V. Plumbing: N/A
- VI. Fire Protection:



MILNET
ARCHITECTURAL
SERVICES

AMERICAN INSTITUTE OF ARCHITECTS

GENERAL NOTES - MECHANICAL:

[1] THE MECHANICAL CONTRACTOR IS FULLY RESPONSIBLE FOR PERFORMING THE WORK IN FULL COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES UNDER THIS SECTION OF THE CONTRACT. IF THE CONTRACTOR DETERMINES THAT THE CONTRACT DOCUMENTS AND PLANS ARE NOT IN COMPLIANCE WITH THE APPLICABLE LOCAL CODES, HE/SHE SHALL INFORM THE ARCHITECT PRIOR TO CONSTRUCTION START FOR DIRECTION. FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO MEET APPLICABLE LOCAL CODES, AND RE-WORK SHALL BE AT CONTRACTOR'S EXPENSE.

[2] CONTRACTOR SHALL HANG AND INSTALL ALL DUCTWORK FLUSH WITH THE BUILDING STRUCTURE TO ACCOMMODATE NEW CEILINGS. CONTRACTOR SHALL COORDINATE ALL INSTALLATION WORK WITH ARCHITECTURAL AND ELECTRICAL DESIGN. ALL DUCTWORK SHALL BE MODIFIED AS NECESSARY AND REQUIRED TO FIT AROUND BUILDING STRUCTURES, ARCHITECTURAL BUILD-OUT AND ELECTRICAL CABLE TRAY INSTALLATIONS. MECHANICAL CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE WORK SCOPE OF OTHER TRADES AND PARTICIPATE IN COORDINATING ALL CONSTRUCTION EFFORTS.

[3] CONNECT EACH DIFFUSER TO THE MAIN DISTRIBUTION DUCTS WITH A FLEX-DUCT SECTION; CONNECTIONS SHALL BE COMPLETED IN ACCORDANCE WITH THE DETAIL. EACH FLEX-DUCT CONNECTION SHALL INCLUDE A BUTTERFLY DAMPER TO BE INSTALLED AT THE TRUNK DUCT.

[4] CONTRACTOR SHALL PROVIDE ALL DUCTWORK REQUIRED TO COMPLETE THE HVAC SYSTEM. TIE IN BRANCH DUCTS TO MAIN DUCTS WITH SHEET METAL FLANGES. FLANGE CONNECTION SHALL BE FASTENED WITH CRIMPED SHEET METAL STRIPS AND SEALED WITH SILICONE CAULK.

[5] CONTRACTOR SHALL SUPPLY AND INSTALL FIRE DAMPERS AND ACCESS DOORS IN THE HORIZONTAL DUCTS WHERE THEY PENETRATE FIRE WALLS & BARRIERS.

[6] ALL OPENINGS CUT IN MASONRY AND PLASTER WALLS OR CONCRETE FLOORS SHALL BE CORE DRILLED OR SAWED WHEN POSSIBLE. CONTRACTOR SHALL CHECK BUILDING CONSTRUCTION BEFORE MAKING PENETRATIONS TO AVOID CUTTING THROUGH STRUCTURAL BEAMS AND REINFORCING. CONTRACTOR SHALL INFORM THE ENGINEER IF REINFORCING IS CUT OR DAMAGED WHILE MAKING OPENINGS. CONTRACTOR SHALL REINFORCE ALL OPENINGS AS REQUIRED BY DRAWINGS AND SPECIFICATIONS. PATCH AND SEAL OPENINGS WITH 8000 PSI CEMENT GROUT. INSTALL DECORATIVE TRIM (EQUIPMENT FLANGES, FRAMING OR ESCUTCHEONS) AROUND OPENINGS IN FINISHED AREAS. COORDINATE ALL CUTTING AND PATCHING WITH THE OTHER TRADES.

[7] ON ANY WORK SHOWN ON MECHANICAL DRAWINGS REQUIRING DEMOLITION OF EXISTING OR NEW BUILDING STRUCTURES AND FINISHES, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETE THE NECESSARY DEMOLITION. CONTRACTOR SHALL PATCH AND REPAIR ALL DEMOLITION WORK. PATCHING SHALL BE COMPLETED WITH THE SAME MATERIALS AS THE SURROUNDING AREAS, OR WITH ARCHITECT-APPROVED PATCHING MATERIALS. REPAIRS SHALL BE COMPLETED ACCORDING TO ARCHITECTURAL SPECIFICATIONS. ALL REFINISHING SHALL BE APPROVED BY THE ARCHITECT.

[8] CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING THE INSTALLATION OF THE AIR DISTRIBUTION SYSTEM SHOWN, DUCTWORK, DUCT ACCESSORIES AND CONTROLS SHOWN AND REQUIRED SHALL BE SUPPLIED AND INSTALLED. ALL INSTALLATION WORK SHALL BE DONE IN ACCORDANCE WITH APPLICABLE CODES, INCLUDING NFPA 90A AND 90B, (NFPA 90A: STANDARD FOR THE INSTALLATION OF AIR-CONDITIONING AND VENTILATING SYSTEMS) (NFPA 90B: STANDARD FOR THE INSTALLATION OF WARM AIR HEATING AND AIR-CONDITIONING SYSTEMS).

[9] CONTRACTOR SHALL BALANCE ALL AIR DISTRIBUTION SYSTEMS TO ACHIEVE THE AIR VOLUME REQUIREMENTS INDICATED. BALANCING SHALL INCLUDE ADJUSTMENT OF ALL MANUAL VOLUME DAMPERS, SHUTTER DAMPERS, ZONE DAMPERS (IF REQUIRED), BUTTERFLY DAMPERS AND INDIVIDUAL DIFFUSER VOLUME DAMPERS (FINAL BALANCING ONLY). CONTRACTOR SHALL SUPPLY THE ENGINEER WITH A COMPLETE BALANCING REPORT WHICH INCLUDES, VOLUME, ROOM REFERENCE AND ZONE VOLUME TOTALS.

[10] MOUNT ALL THERMOSTATS (SENSORS) 48" ABOVE THE FINISHED FLOOR LEVEL. THERMOSTATS SHOWN SHALL BE IN CONTROL OF THE ZONE SYSTEM WHICH IS SUPPLYING AIR TO THE AREA WHERE THE THERMOSTAT IS LOCATED. CONTRACTOR SHALL SUPPLY AND INSTALL ALL CONTROL VOLTAGE WIRING AND CONDUIT FOR THERMOSTAT (DDC CONTROL) INSTALLATION.

[11] CONTRACTOR SHALL INSTALL NEW REFRIGERANT PIPING FLUSH WITH THE BUILDING STRUCTURE AND MECHANICAL ROOM BOUNDARIES AS SHOWN. CONTRACTOR SHALL COORDINATE ALL INSTALLATION WORK WITH DUCTS AND ELECTRICAL CONDUIT. MECHANICAL CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE WORK SCOPE OF OTHER TRADES AND PARTICIPATE IN COORDINATING ALL CONSTRUCTION EFFORTS.

[12] ALL PIPING SHALL BE INSULATED AND JACKETED. REFER TO THE SPECIFICATIONS. THE CONDENSING AND ROOF TOP CONDENSER COILS ARE TO BE COATED IN ACCORDANCE WITH THE SPECIFICATIONS.

[13] PROVIDE EACH HVAC SYSTEM OF 2000 CFM & GREATER W/ DUCT SMOKE DETECTOR(S) IN COMPLIANCE WITH IBC 907.2.13.1.2 & 907.3.1 IN RETURN AIR DUCTWORK TO SHUTDOWN CONTROLS ON AIR HANDLERS AND SUPPLY FANS. SMOKE DETECTORS SHALL BE PROVIDED BY MECHANICAL & INSTALLED BY ELECTRICAL (OR REGISTERED FIRE ALARM COMPANY WHERE APPLICABLE). COORDINATE W/ EQUIPMENT MANUFACTURER & AUTHORITY HAVING JURISDICTION FOR RECOMMENDED MOUNTING LOCATION AND METHOD. COORDINATE TO PROVIDE A COMPLETE SYSTEM. PROVIDE BOTH SUPPLY AND RETURN SIDE DEVICES.

[14] PROVIDE SEVEN DAY PROGRAMMABLE THERMOSTAT, 24 HOUR SINGLE/MULTI STAGE COMMERCIAL THERMOSTAT, DUAL SET POINTS, OCCUPIED AND UNOCCUPIED PERIODS, UNIT OPTIMIZATION, AUTO HEATING/COOLING AND AUTO CHANGE OVER, SUB-BASE BACK-UP BATTERY AND TEMPORARY OVER-RIDE, 24 VAC CONTROL VOLTAGE. PROVIDE PLASTIC SEE THRU PROTECTIVE COVER WITH KEY LOCK.

[15] **FILTER INSTALLATION AND REPLACEMENT**
A. INSTALL CONSTRUCTION RETURN FILTER AT EACH RETURN GRILLE BEFORE OPERATING PERMANENT AIR HANDLERS DURING CONSTRUCTION.
B. REPLACE FILTERS AFTER COMPLETING CONSTRUCTION AND BEFORE CONDUCTING BUILDING FLUSH-OUT.
1. REPLACE CONSTRUCTION RETURN FILTERS WITH FLUSH-OUT RETURN FILTERS.
2. REPLACE SUPPLY FILTERS.

MECHANICAL SYMBOL LEGEND	
	CFM A 325(2) 10(2)(B)
	SUPPLY AIR GRILLE
	SUPPLY AIR GRILLE-SLOT DIFFUSER
	RETURN AIR GRILLE ALL RETURN AIR DUCT DROPS TO INCLUDE A MANUAL DAMPER
	THERMOSTAT TEMPERATURE SENSOR TEMPERATURE OVERRIDE SENSOR/SWITCH
	FIRE DAMPER W/ ACCESSIBLE DUCT ACCESS DOOR FIRE/SMOKE DAMPER W/ ACCESSIBLE DUCT ACCESS DOOR
	FLOW DIRECTION
	PIPE DROP
	PIPE RISE
	RETURN AIR DUCT RISE/DROP
	SUPPLY AIR DUCT RISE/DROP
	WALL OR FLOOR SLEEVE
	CHILLED WATER SUPPLY/RETURN PIPING
	SQUARE TO ROUND DUCT TRANSITION

MECHANICAL ABBREVIATIONS			
A/C	AIR CONDITIONED	MAX	MAXIMUM
AD	ACCESS DOOR	MBD	MANUAL BALANCING DAMPER
AFF	ABOVE FINISHED FLOOR	MD	MOTORIZED DAMPER
AHU	AIR HANDLING UNIT	MECH	MECHANICAL
APPROX	APPROXIMATE	MIN	MINIMUM
ARCH	ARCHITECTURAL	MS	MOTOR STARTER
BDD	BACK DRAFT DAMPER	NA	NOT APPLICABLE
BHP	BRAKE HORSEPOWER	NC	NORMALLY CLOSED
BTU	BRITISH THERMAL UNIT	NIC	NOT IN CONTRACT
CFM	CUBIC FEET PER MINUTE	NO	NORMALLY OPEN
CH	CHILLER	NTS	NOT TO SCALE
CHP	CHILLED WATER PUMP		
CLG	CEILING	OA	OUTSIDE AIR
CWP	CONDENSER WATER PUMP	OAH	OUTSIDE AIR INTAKE HOOD
CO	CLEANOUT	OBD	OPPOSED BLADE DAMPER
CT	COOLING TOWER	OC	ON CENTER
CU	CONDENSING UNIT		
CW	COLD WATER	P	PUMP
CL	CENTER LINE	PBD	PARALLEL BLADE DAMPER
		PP	PRIMARY CHILLED WATER PUMP
		PRESS	PRESSURE
		PRV	PRESSURE REDUCING VALVE
		PSIG	POUNDS PER SQUARE INCH (GAUGE)
DB	DRY BULB	R	RETURN (AIR DEVICE)
DJA	DIAMETER	RA	RETURN AIR
DN	DOWN	RE-AM7,01	REFER TO DETAIL 4, SHEET M7.01
DWG	DRAWING	RET	RETURN
DX	DIRECT EXPANSION	RH	RELATIVE HUMIDITY
EA	EXHAUST AIR	RHD	RELIEF HOOD
EAT	ENTERING AIR TEMPERATURE	RPM	REVOLUTIONS PER MINUTE
EDH	ELECTRIC DUCT HEATER	RTU	ROOF TOP UNIT
EF	EXHAUST FAN		
ELEC	ELECTRICAL	S	SUPPLY (AIR DEVICE)
ELEV	ELEVATION	SA	SUPPLY AIR
F	DEGREES FAHRENHEIT	SCH	SCHEDULE
FC	FAN COIL	SCHP	SECONDARY CHILLED WATER PUMP
FD	FIRE DAMPER W/ DUCT ACCESS DOOR	SD	SMOKE DAMPER
FLEX	FLEXIBLE	SEC	SECOND
FLG	FLANGE	SF	SUPPLY FAN
FLR	FLOOR	SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
PPM	FEET PER MINUTE	SP	STATIC PRESSURE
FF	FEET, FOOT	SPEC	SPECIFICATION
FS	FLOW SWITCH	SF	SQUARE FOOT
GAL	GALLON	STD	STANDARD
GALV	GALVANIZED	TEMP	TEMPERATURE
GPM	GALLONS PER MINUTE	TSTAT	THERMOSTAT
HB	HOSE BIBB	TYP	TYPICAL
HP	HORSEPOWER	UF	UNDER FLOOR
HR	HEAT PUMP (WATER SOURCE)	UH	UNIT HEATER
HR	HOUR	UL	UNDERWRITERS LABORATORIES
HVAC	HEATING/VENTILATING/ AIR CONDITIONING	VEL	VELOCITY
HWP	HOT WATER PUMP	VENT	VENTILATE
HZ	HERTZ	VF	VENTILATION FAN
ID	INSIDE DIAMETER	VOL	VOLUME
IE	INVERT ELEVATION (FLOW LINE)	VOLT	VOLTAGE
IN	INCHES	W	WIDE, WIDTH
INSUL	INSULATION	W/	WITH
IN WG	INCHES OF WATER	WB	WET BULB
KW	KILOWATT(S)	W/O	WITHOUT
LAT	LEAVING AIR TEMPERATURE		
LB	POUND		
L	LOUVER		

INDEX OF SHEETS	
MG01	MECHANICAL NOTES & LEGEND
MDDP01	MECHANICAL DEMOLITION PLAN
MP01	MECHANICAL PLAN
MCO1	MECHANICAL CONTROLS
MS01	MECHANICAL SCHEDULES
MDD02	MECHANICAL DETAILS

3

EDINBURG C.I.S.D.
EDINBURG NORTH HS - CAFETERIA &
KITCHEN RENOVATION AND ADDITION
EDINBURG, TX.

PROJECT NUMBER
221022

DATE
AUG 18, 2022

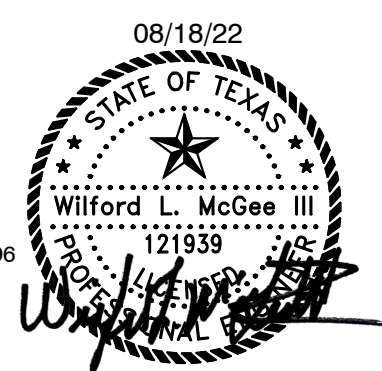
REVISION
ADD#3 AUG 18, 2022

SHEET NUMBER

MG01

TRINITY
MEP ENGINEERING

3533 Moreland Dr. Ste A 1 Westaco, Tx 78596
p:956.973.0500 | f:956.351-5750
www.trinitymep.com | Copyright 2022
Texas Registered Engineering Firm - F10362
Project number: 21.4.54

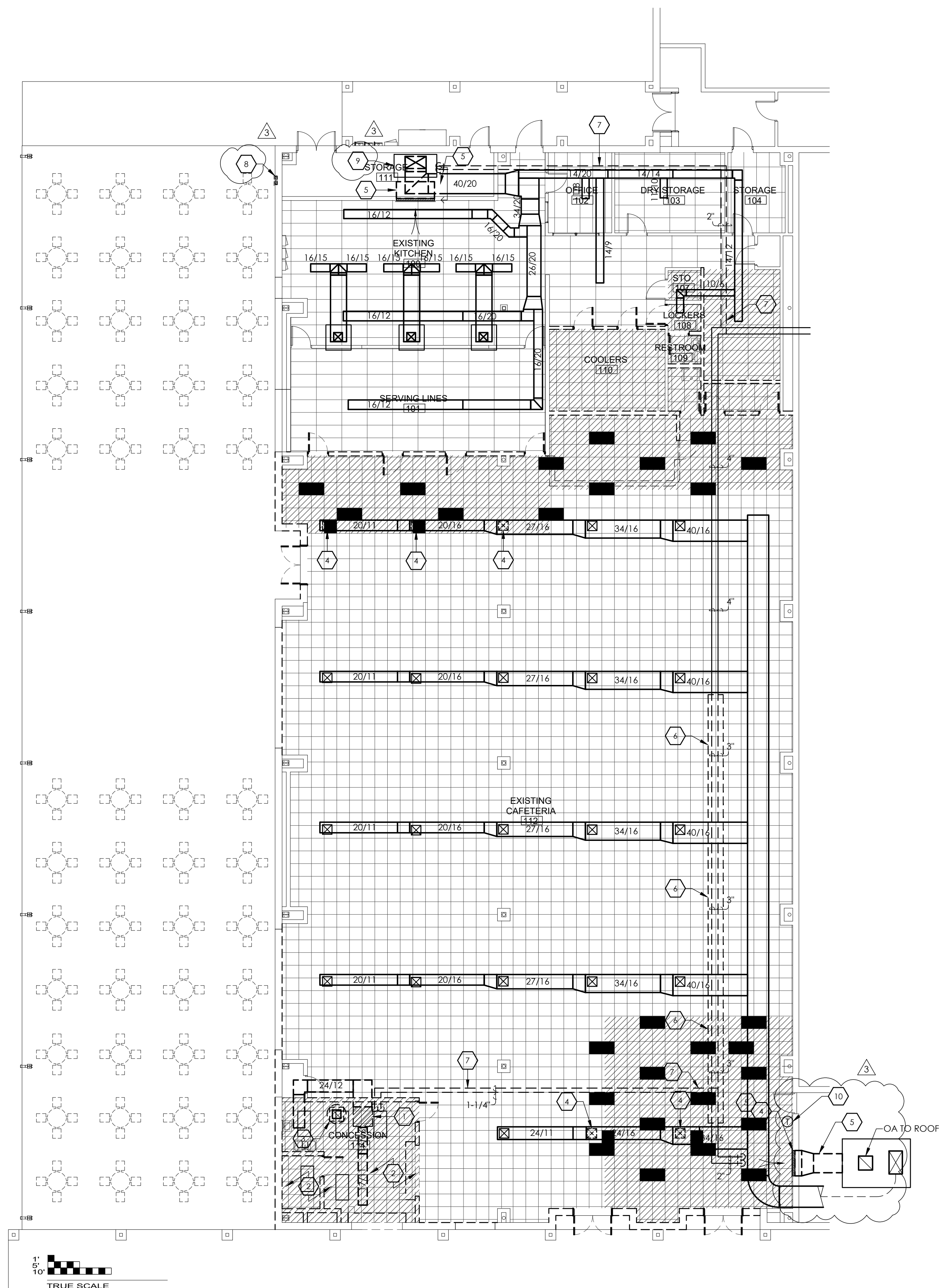


GENERAL DEMOLITION NOTES

- A. THE EXTENT OF DEMOLITION WORK IS INDICATED ON THE ARCHITECTURAL DRAWINGS AND BY THE REQUIREMENTS OF THIS SECTION. A VISIT TO THE SITE WILL BE REQUIRED TO PROPERLY BID THE DEMOLITION WORK.
- B. PROVIDE ALL DEMOLITION WORK REQUIRED FOR THE REMOVAL AND/OR RELOCATION OF HVAC FIXTURES AND EQUIPMENTS AND ASSOCIATED SERVICES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM UPON COMPLETION OF THE PROJECT.
- C. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW THE ARCHITECTURAL DOCUMENTS IN ADDITION TO THE DIVISION 15 AND 16 DOCUMENTS TO DETERMINE THE COMPLETE SCOPE OF WORK.
- D. WHERE EQUIPMENT IS INDICATED OR REQUIRED TO BE REMOVED, THE ASSOCIATED SERVICES SHALL BE CAPPED AT A CONCEALED LOCATION.
- E. WHERE SERVICES RUN ABOVE INACCESSIBLE CEILING OR IN WALLS WHICH ARE TO REMAIN UNDISTURBED, SERVICES SHALL BE CAPPED AT CONCEALED LOCATION AND ABANDONED.
- F. WHERE THE REMOVAL OF EQUIPMENT RENDERS EQUIPMENT DOWNSTREAM INOPERABLE, SERVICES SHALL BE EXTENDED TO THE DOWNSTREAM EQUIPMENT SO THAT THE FIXTURES ARE LEFT IN OPERATING CONDITION.
- G. COORDINATE DEMOLITION OF DIVISION 15 SYSTEMS AS REQUIRED WITH ALL OTHER TRADES.
- H. ALL EXISTING H.V.A.C. AND EQUIPMENT REMOVED DURING CONSTRUCTION THAT ARE NOT TO BE REUSED SHALL BE REMOVED FROM THE JOB SITE AND PROPERLY RETURNED TO THE OWNER, IF DESIRED BY OWNER.
- I. WHERE EXISTING EQUIPMENT IS TO BE RELOCATED, BE CAUTIOUS TO PREVENT DAMAGE DURING THE REMOVAL AND REINSTALLATION. WHERE DAMAGE OCCURS, THE EQUIPMENT SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION AND APPROVAL OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
- J. EXISTING EQUIPMENT TO BE REUSED SHALL BE CLEANED AND REPAIRED AT THE DISCRETION OF THE ARCHITECT WHERE APPLICABLE.
- K. ALL DEVICES ATTACHED TO WALLS OR CEILING SHALL BE REMOVED PER DEMOLITION NOTE A - L WHETHER SHOWN ON DRAWINGS OR NOT.

KEYED NOTES: MECHANICAL DEMOLITION

- 1 EXISTING CWAHU TO BE RELOCATED TO NEW CONCESSION LOCATION.
- 2 ALL EXISTING DUCTWORK, AIR DEVICES, HARDWARE & ASSOCIATED ACCESSORIES TO BE REMOVED & DEMOLISHED.
- 3 EXISTING EQUIPMENT TO BE REMOVED AND RETURNED TO OWNER. SEAL ALL ROOF PENETRATIONS WEATHER/ WATER TIGHT W/ CONSTRUCTION MATERIALS TO MATCH EXISTING.
- 4 EXISTING GRILLES TO BE REMOVED AND DEMOLISHED. PATCH OPENING IN DUCT WHERE NOT RE-USED.
- 5 EXISTING DUCTWORK TO BE DEMOLISHED.
- 6 EXISTING 3" CHILLED WATER LINE TO BE REMOVED AND REPLACED WITH 4" CHILLED WATER LINE. REFER TO REMODEL.
- 7 EXISTING CHILLED WATER LINES TO BE REMOVED.
- 8 EXISTING LOUVER TO BE REMOVED AND RETURNED TO OWNER.
- 9 EXISTING CWAHU TO BE DEMOLISHED AND REPLACED WITH NEW UNIT. RETURN TO OWNER.
- 10 REMOVE EXISTING CONTROLS THERMOSTAT (FIELD VERIFY LOCATION ON PLAN) AND RETURN TO OWNER.



5' 10' TRUE SCALE

1 MECHANICAL DEMOLITION PLAN
3/32"=1'-0"

EDINBURG C.I.S.D.
EDINBURG NORTH HS - CAFETERIA &
KITCHEN RENOVATION AND ADDITION
EDINBURG, TX.

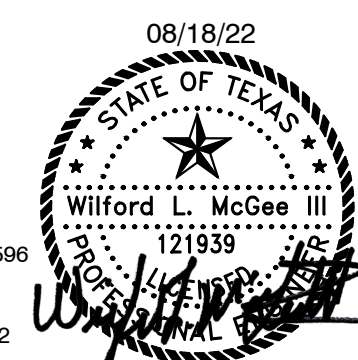
PROJECT NUMBER
221022

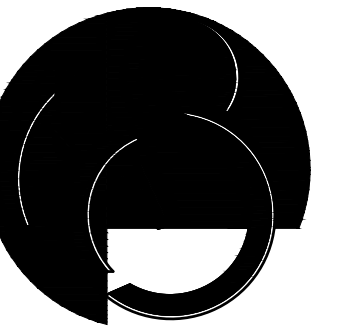
DATE
AUG 18, 2022

REVISION
ADD#3 AUG 18, 2022

SHEET NUMBER
MDP01

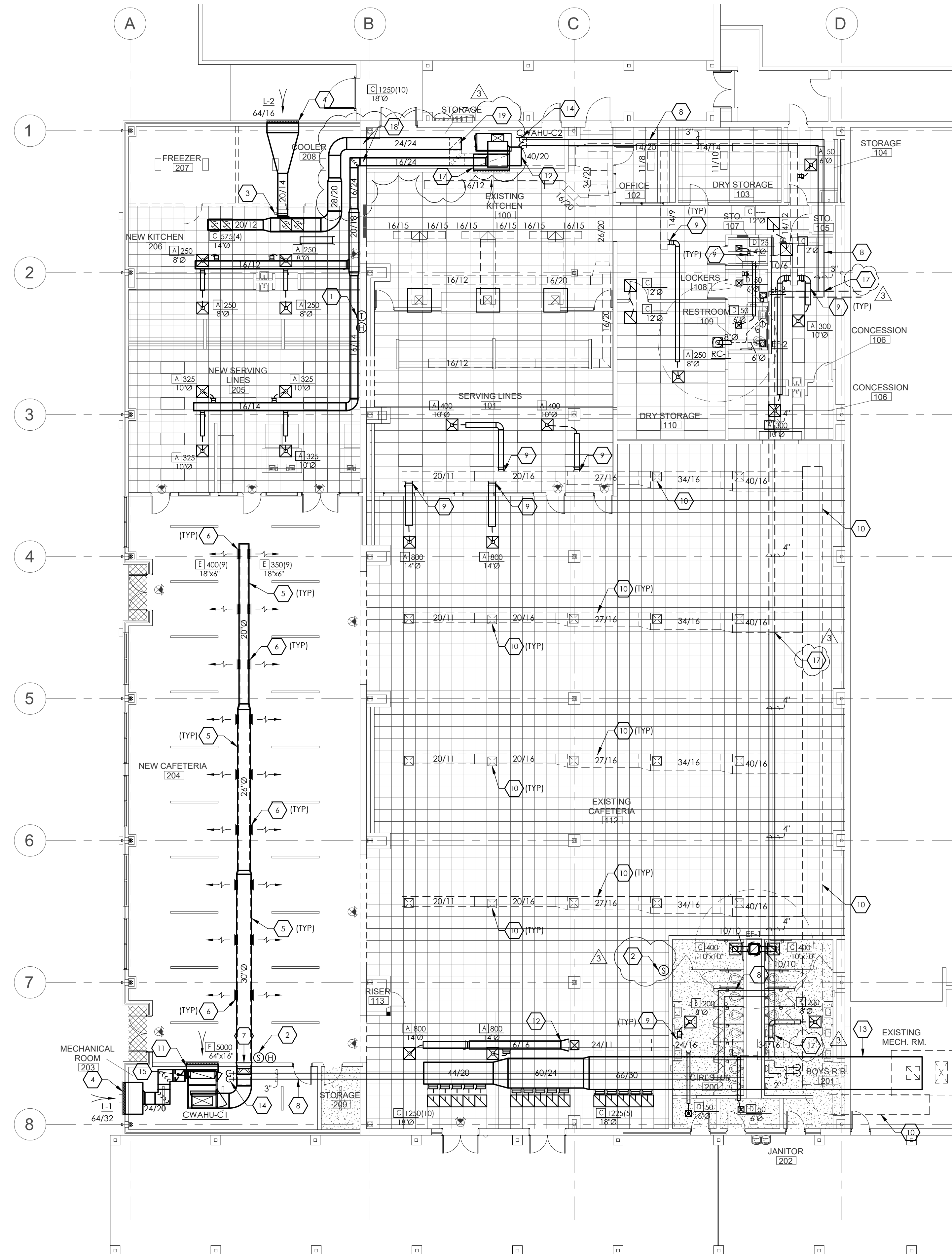
TRINITY
MEP ENGINEERING
3533 Moreland Dr. Ste A 1 Westaco, Tx 78596
p:956.973.0500 | f:956.351-5750
www.trinitymep.com | Copyright 2022
Texas Registered Engineering Firm - F10362
Project number: 21.4.54





MILNET
ARCHITECTURAL
SERVICES

AMERICAN INSTITUTE OF ARCHITECTS



KEYED NOTES: MECHANICAL

- 1 CONTROLS FOR A/C UNIT WILL BE BY MEANS OF HVAC CONTROLS THERMOSTAT SHOWN ON A DIGITAL DISPLAY. MOUNT THERMOSTAT AT 48" ABOVE FINISHED FLOOR. PROVIDE WITH KEYS CLEAR PLASTIC COVER. PROVIDE WITH HUMIDISTAT WHERE INDICATED.
- 2 REMOTE TEMPERATURE SENSOR @ 96" A.F.F.
- 3 PROVIDE W/ MOTORIZED DAMPER W/ OPEN/CLOSE OPERATION. DAMPER TO BE ACTUATED TO MAX ONLY WHEN COMPRESSOR OR HEATER IS ENERGIZED & ACTUATED TO THE CLOSED POSITION @ ALL OTHER TIMES. PROVIDE W/ ADDITIONAL MANUAL BALANCING DAMPER TO BALANCE CFM AMOUNTS OF OUTSIDE AIR. MECHANICAL CONTRACTOR TO PROVIDE W/ ANY ELECTRICAL HARDWARE TO POWER DAMPER.
- 4 COORDINATE LOCATION OF LOUVERS/WALLCAPS TO NOT CONFLICT WITH CONTROL JOINTS AND DOWNSPOUTS.
- 5 EXPOSED DUCT TO BE OF SINGLE WALL CONSTRUCTION. INTERNALLY LINE DUCT W/ 1" OF ACOUSTIC INSULATION EQUAL TO "KNAUFF INSULATION" SONIC XP DUCT LINER OR EQUAL. DUCT TO BE GALVANIZED SHEET METAL PHOSPHATIZED (PAINT GRP) OR OF GALVANNEALED CONSTRUCTION & PREPPED FOR PAINTING. COORDINATE W/ ARCH/OWNER FOR PAINT COLOR.
- 6 GRILLE TO BE MOUNTED AT 30" BELOW HORIZON. DUCT BOOT NOT ALLOWED.
- 7 PROVIDE W/ ROUND ESCUTCHEON PLATE WHERE ROUND DUCT PENETRATES WALL.
- 8 NEW 3" CHILLED WATER LINES.
- 9 CONNECT NEW SUPPLY AIR DEVICES TO EXISTING SUPPLY AIR DUCTS. REPAIR ANY INSULATION DAMAGE. PROVIDE WITH NEW CONICAL TAP AND DAMPER.
- 10 EXISTING NO WORK.
- 11 NEW RETURN AIR DUCT DOWN INTO UNIT RETURN AIR.
- 12 CONNECT NEW DUCT INTO EXISTING DUCT.
- 13 DROP NEW RETURN AIR DUCT DOWN TO EXISTING RETURN AIR.
- 14 DROP CHILLED WATER SUPPLY/ RETURN LINES DOWN TO COILS. PROVIDE WITH 2-WAY VALVES.
- 15 DROP OUTSIDE AIR INTO OUTSIDE AIR INLET ON SIDE CABINET.
- 16 NEW RETURN AIR DUCT DOWN INTO UNIT RETURN AIR. EXISTING MOUNTED RETURN AIR DEVICE TO REMAIN.
- 17 TIE IN NEW CHILLED WATER LINE INTO EXISTING CHILL WATERLINE. REPAIR ANY DAMAGED INSULATION WITHIN 5 FEET OF NEW LINE.
- 18 PROVIDE WITHOUT SLEEVES TO EXISTING WALL. FIELD COORDINATE ROUTING OF DUCTWORK PRIOR TO SUBMITTING DUCT SHOP DRAWINGS AND FABRICATING NEW DUCTWORK.
- 19 DROP RETURN AIR DUCT UNDER ADJACENT SUPPLY AIR DUCT AND TIE IN TO RETURN AIR PLENUM FROM EXISTING KITCHEN.

1 MECHANICAL PLAN
3/32"=1'-0"

EDINBURG C.I.S.D.
EDINBURG NORTH HS - CAFETERIA &
KITCHEN RENOVATION AND ADDITION
EDINBURG, TX.

PROJECT NUMBER
221022

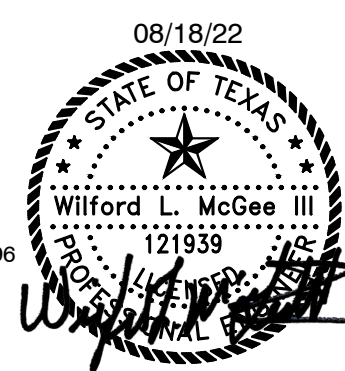
DATE
AUG 18, 2022

REVISION
ADD#3 AUG 18, 2022

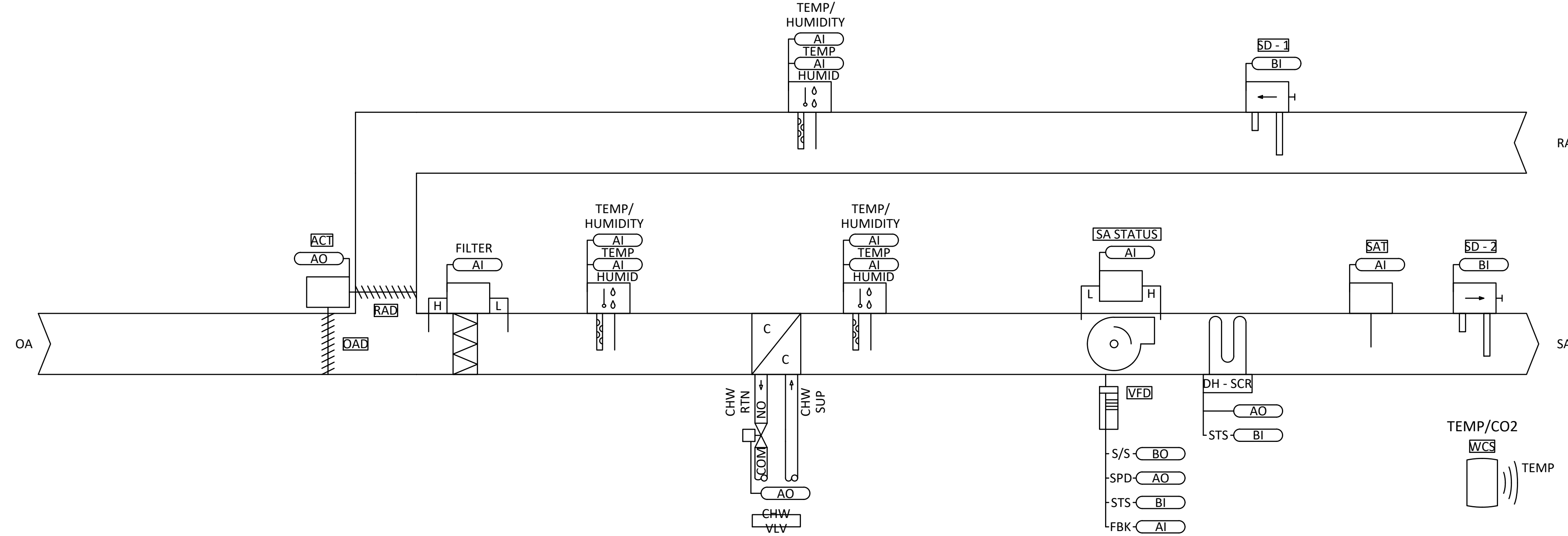
SHEET NUMBER

MP01

TRINITY
MEP ENGINEERING
3533 Moreland Dr. Ste A 1 Wylie, TX 75796
p:956.973.0500 | f:956.351.5750
www.trinitymep.com | Copyright 2022
Texas Registered Engineering Firm - F10362
Project number: 21.4.54



TYPICAL CWAHU



Sequence of Operations

Single Zone VAV RTU

Building Automation System Interface:

The Building Automation System (BAS) will send the controller Occupied Bypass, Morning Warm-up/Pre-Cool, Occupied/Unoccupied and Heat/Cool modes. If a BAS is not present, or communication is lost with the BAS the controller will operate using default modes and setpoints.

Occupied:

During occupied periods, the supply fan will run continuously and the outside air damper will open to maintain minimum ventilation requirements. The chilled water valve will modulate and the electric heat will stage to maintain the discharge air temperature setpoint. If economizing is enabled the outside air damper will modulate to maintain the discharge air temperature setpoint. The discharge air temperature setpoint will be dynamically reset based on the deviation of actual space temperature from the active space temperature setpoint. If the discharge air temperature sensor fails the chilled water valve will modulate and electric heat will stage to maintain the active space temperature setpoint and an alarm will be annunciated at the BAS. If the discharge air temperature sensor and the space temperature sensor fail the chilled water valve will close and electric heat will be disabled and an alarm will be annunciated at the BAS.

Unoccupied:

When the space temperature is below the unoccupied heating setpoint of 60.0 deg. F (adj.) the supply fan will start, the outside air damper will remain closed and the electric heat will be enabled. When the space temperature rises above the unoccupied heating setpoint of 60.0 deg. F (adj.) plus the unoccupied differential of 4.0 deg. F (adj.) the supply fan will stop and the electric heat will be disabled. When the space temperature is above the unoccupied cooling setpoint of 85.0 deg. F (adj.) the supply fan will start, the outside air damper will open if economizing is enabled and remain closed if economizing is disabled and the chilled water valve will open. When the space temperature falls below the unoccupied cooling setpoint of 85.0 deg. F (adj.) minus the Unoccupied differential of 4.0 deg. F (adj.) the supply fan will stop, the chilled water valve will close and the outside air damper will close.

Optimal Start:

The BAS will monitor the scheduled occupied time, occupied space setpoints and space temperature to calculate when the optimal start occurs.

Morning Warm-Up Mode:

During optimal start, if the space temperature is below the occupied heating setpoint a morning warm-up mode will be activated. When morning warm-up is initiated the unit will enable the heating and supply fan. The outside air damper will remain closed. When the space temperature reaches the occupied heating setpoint (adj.), the unit will transition to the occupied mode.

Pre-Cool Mode:

During optimal start, if the space temperature is above the occupied cooling setpoint, pre-cool mode will be activated. When pre-cool is initiated the unit will enable the fan and cooling or economizer. The outside air damper will remain closed, unless economizing. When the space temperature reaches occupied cooling setpoint (adj.), the unit will transition to the occupied mode.

Optimal Stop:

The BAS will monitor the scheduled unoccupied time, occupied setpoints and space temperature to calculate when the optimal stop occurs. When the optimal stop mode is active the unit controller will maintain the space temperature to the space temperature offset setpoint. Outside air damper will remain enabled to provide minimum ventilation.

Occupied Bypass:

The BAS will monitor the status of the "on" and "cancel" buttons of the space temperature sensor. When an occupied bypass request is received from a space sensor, the unit will transition from its current occupancy mode to occupied bypass mode and the unit will maintain the space temperature to the occupied setpoints (adj.).

Heat/Cool Mode:

When the space temperature rises above the occupied cooling setpoint the mode will transition to cooling. When the space temperature falls below the occupied heating setpoint the mode will transition to heating. When the space temperature is above the occupied cooling setpoint or below the occupied heating setpoint the mode will remain in its last state. If the space temperature sensor fails the mode will remain in its last state and an alarm will be annunciated at the BAS. If the local and communicated setpoints fail the controller will disable the supply fan and an alarm will be annunciated at the BAS.

Supply Air Temperature Reset Control:

On a rise in space temperature (+2.0 deg. F adj. or greater) above the space cooling setpoint (74.0 deg. F adj.); the supply fan speed will modulate from minimum (50% adj.) to maximum (or design) air flow to maintain space cooling temperature setpoint while keeping the discharge air temperature setpoint at minimum (55.0 deg. F adj.). As space temperature decreases below 76.0 deg. F (space cooling setpoint 74.0 deg. F + 2.0 deg. F); the fan speed will be locked at minimum air flow and the discharge air temperature setpoint remains at minimum. When space temperature decreases to 75.0 deg. F (cooling setpoint of 74.0 deg. F adj. + 1.0 deg. F) or below for a period of time (default 1 min. adj.); the fan speed will remain at minimum, the discharge air temperature setpoint remains at minimum, and control enters into discharge air temperature setpoint reset mode. As space temperature continues to drop below 75.0 deg. F (space temperature cooling setpoint + 1.0 deg. F); the fan speed will remain at minimum and the discharge air temperature setpoint will be reset from minimum (55.0 deg. F adj.) to maximum (65.0 deg. F adj.) as space temperature drops from 75.0 deg. F to 74.0 deg. F to maintain the space cooling temperature setpoint. On a continued drop of space temperature below the space cooling temperature setpoint (74.0 deg. F adj.) through (71.0 deg. F adj.) the space temperature control will be within its deadband; the fan speed remains at minimum and discharge air setpoint of (65.0 deg. F adj.) for cooling. As space temperature decreases to the heating setpoint (71.0 deg. F adj.) the control will switch to the heating discharge air temperature reset. In the heating mode, the staged heat will be enabled; the supply fan will remain at minimum air flow and the discharge air temperature setpoint will be reset from 70.0 deg. F to 90.0 deg. F as the space temperature drops from 71.0 deg. F to 70.0 deg. F. As space temperature continues to decrease to heating setpoint (71.0 deg. F adj.) - 1.0 deg. F; the discharge air temperature setpoint will remain at maximum (90.0 deg. F adj.), the fan will be modulated from minimum to maximum air flow to maintain the space temperature heating setpoint. When the space temperature increases the reverse control will be implemented.

Economizer:

The discharge air temperature sensor will measure the dry bulb temperature of the air leaving the cooling coil while economizing. When economizing is enabled and the unit is operating in the cooling mode, the economizer damper will be modulated between its minimum position and 100% to maintain the space temperature setpoint. The economizer damper will modulate toward minimum position in the event the mixed air temperature falls below the low temperature limit setting. Outside air (OA) enthalpy will be compared with the reference enthalpy control setpoint. The economizer will enable when OA enthalpy is 2.0 BTU/LB less than enthalpy control setpoint. The economizer will disable when OA enthalpy is greater than enthalpy control setpoint.

Supply Fan:

The supply fan will be enabled while in the occupied mode and cycled on during the unoccupied mode. The unit controller will vary the supply fan speed to optimize minimum fan speed in all cooling and heating modes. A differential pressure switch will monitor the differential pressure across the fan. If the switch does not open within 30 seconds after a request for fan operation a fan failure alarm will be annunciated, the unit will stop, requiring a manual reset.

Mixed Air Low Limit:

The initial damper opening rate will be limited to 2% per minute (adj.) until the damper has reached its minimum ventilation position. The outside air damper will modulate to a position less than the minimum damper position if the mixed air temperature drops below 50.0 deg. F (adj.). If the mixed air temperature sensor fails an alarm will be annunciated at the BAS and the outside air damper will return to the minimum position.

Freeze Protection:

A hardwired, low limit temperature switch will be electrically interlocked with the variable speed drive. If the low limit temperature switch is tripped 38.0 deg. F (adj.), the outside air damper will close, all valves will open to 100% (adjust per climate), the electric heat will be disabled and an alarm will be annunciated at the BAS. A manual reset of the low limit temperature switch will be required to restart the fan.

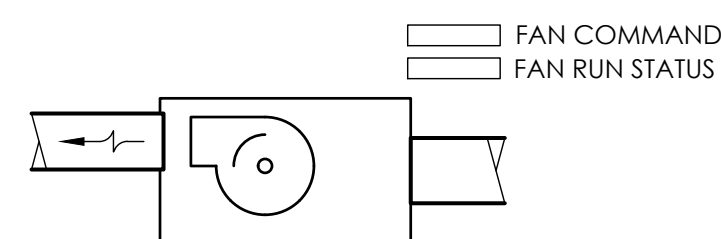
Filter Status:

A differential pressure switch will monitor the differential pressure across the filter when the fan is running. If the switch closes during normal operation a dirty filter alarm will be annunciated at the BAS.

Demand Control Ventilation:

1. The AHU outdoor-air damper shall be controlled to deliver required outdoor airflow at all load conditions. The actual outdoor airflow shall be sensed at the outdoor air intake.
2. The BAS shall include a time-of-day schedule to indicate whether a zone is normally occupied or unoccupied. When the schedule indicates that the zone is normally unoccupied, the required outdoor airflow for the zone shall be zero. When the schedule indicates that the zone is normally occupied, the required outdoor airflow for the zone shall equal the design outdoor airflow (based on design occupancy), unless the zone is equipped with an occupancy sensor and/or a carbon dioxide (CO2) sensor. a. For those zones equipped with an occupancy sensor, the required outdoor airflow for the zone shall be continuously determined based on whether people are present or not. When the occupancy sensor indicates that people are present in the zone, the required outdoor airflow shall equal the design outdoor airflow. When the occupancy sensor indicates that no people are present in the zone, the required outdoor airflow shall equal the "occupied standby" outdoor airflow. b. For those zones equipped with a CO2 sensor, the required outdoor airflow for the zone shall be continuously calculated using the measured CO2 concentration as an indicator of the current per-person ventilation rate.
3. The required outdoor-air flow shall be continuously calculated for the zone.
4. The BAS shall regularly determine the outdoor airflow requirements for the zone. The minimum outdoor airflow setpoint shall be recalculated every 15 minutes (adj).
5. This Ventilation Ratio Limit (adj.) of the AHU is dependent on the capacity of the AHU and the current outdoor air temperature and humidity conditions.
6. Prior to final system acceptance, a contractor shall provide a trend log of actual system operation to the engineer and owner. These conditions must be logged at 15-minute intervals over a typical 48-hour period.

EXHAUST FANS

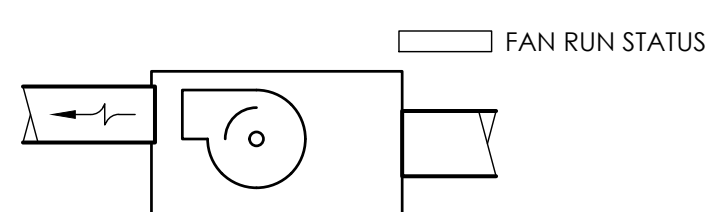


EXHAUST FAN CONTROLS:

- A. EXHAUST FAN OPERATION SHALL BE DICTATED BY THE BAS SYSTEM UNDER A TIME OF DAY SCHEDULE UNLESS INTERLOCKED WITH AN AIR HANDLER SYSTEM IN WHICH CASE THE AIR HANDLER OF OPERATION SHALL DICTATE OPERATION. THE FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN. AFTER THE DAMPER STATUS HAS PROVEN (IF APPLICABLE), UNLESS SHUTDOWN ON SAFETIES. THE BAS SHALL MONITOR THE FAN STATUS.
- B. ANY EXHAUST FAN CURRENTLY ON SWITCHES TO REMAIN, BUT NO TO BE DISABLED OUTSIDE OF OCCUPIED SCHEDULE.

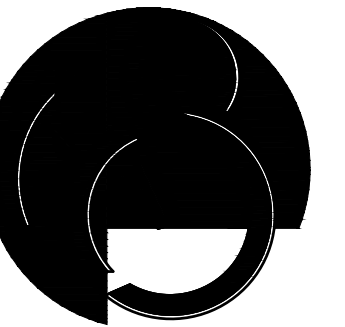
KITCHEN VENTILATION

EXHAUST FANS



EXHAUST FAN CONTROLS:

- A. KITCHEN VENTILATION FANS SHALL BE MONITORED BY BAS SYSTEM. AN ALARM SHALL BE REPORTED WHEN ANY ONE FAN OPERATES FOR GREATER THAN 12 HOURS (ADJ.).



MILNET
ARCHITECTURAL
SERVICES

AMERICAN INSTITUTE OF ARCHITECTS

EDINBURG C.I.S.D.
EDINBURG NORTH HS - CAFETERIA &
KITCHEN RENOVATION AND ADDITION
EDINBURG, TX.

PROJECT NUMBER
221022

DATE
AUG 18, 2022

REVISION
ADD#3 AUG 18, 2022

SHEET NUMBER

MC01

TRINITY
MEP ENGINEERING

3533 Moreland Dr. Ste A 1 Westlaco, Tx 78756
p:956.973.0500 f:956.351.5750
www.trinitymep.com | Copyright 2022
Texas Registered Engineering Firm - F10362
Project number: 21.4.54

