



Cunningham MS HVAC Upgrades

Galena Park ISD

Cunningham MS
14110 Wallisville Rd.
Houston, TX 77049

ISSUE FOR PROPOSAL
2025/12/05



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-
-

LEAF ENGINEERS
11 Greenway Plz,
Houston, TX 77046
T (713) 965-0608

ISSUE FOR PROPOSAL

Cunningham MS HVAC Upgrades

5'
1"

MECHANICAL PIPING LEGEND	
DESCRIPTION	ABBV.
PUMPED CONDENSATE RETURN	PCR
HOT WATER SUPPLY	HWS
HOT WATER RETURN	HWR
CONDENSER WATER SUPPLY	CWS
CONDENSER WATER RETURN	CWR
CHILLED WATER SUPPLY	CHS
CHILLED WATER RETURN	CHR
GEO THERMAL WATER SUPPLY	GS
GEO THERMAL WATER RETURN	GR
CONDENSATE DRAIN (INSULATED)	CD
REFRIGERANT LINE (LIQUID)	RL
REFRIGERANT LINE (SUCTION)	RS
REFRIGERANT LINE (HOT GAS)	RHG
LOW PRESSURE STEAM	LPS
LOW PRESSURE CONDENSATE	LPC
MEDIUM PRESSURE STEAM	MPS
MEDIUM PRESSURE CONDENSATE	MPC
HIGH PRESSURE STEAM	HPS
HIGH PRESSURE CONDENSATE	HPC

MECHANICAL PIPING SYMBOLS LEGEND		
DRAWINGS	DETAILS	DESCRIPTION
		DIRECTION OF FLOW
		DROP IN PIPE
		RISE IN PIPE
		GATE VALVE
		BALL VALVE
		CHECK VALVE
		SUPERVISED VALVE WITH FLOW SWITCH
		PLUG VALVE / GAS COCK
		BUTTERFLY VALVE
		HOT WATER BALANCING VALVE
		PIPE UNION
		PRESSURE CONTROL VALVE
		3-WAY VALVE
		SOLENOID VALVE
		FLOW SWITCH
		PRESSURE GAUGE WITH GAUGE COCK
		THERMOMETER
		T & P RELIEF VALVE
		STRAINER
		CAP
		FLEXIBLE CONNECTION
		NEW CONNECTION TO EXISTING PIPING
NOTES: 1. NOT ALL SYMBOLS MAY BE USED ON THESE DRAWINGS.		

MECHANICAL RENOVATIONS NOTES	
1.	CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID DATE.
2.	OWNER RETAINS SALVAGE RIGHTS. PROVIDE A MINIMUM OF 72 HOURS NOTICE PRIOR TO REMOVAL OF EQUIPMENT.
3.	PATCH AND SEAL ALL SLAB, ROOF AND WALL OPENINGS WITH LIKE MATERIAL, WHERE MECHANICAL EQUIPMENT ONCE PENETRATED.
4.	ALL FLOOR DRAINS EXISTING TO REMAIN. CONTRACTOR SHALL CLEAN AND KEEP FLOOR DRAINS UNOBSTRUCTED AND REUSE.
5.	UNLESS SHOWN OTHERWISE, CONTRACTOR SHALL UTILIZE EXISTING OPENINGS IN WALLS, ROOF AND FLOOR SLABS FOR PIPING ETC. PROVIDE NEW SLEEVES FOR PIPING AND INFILL ANNULAR SPACES.
6.	CONTRACTOR TO AVOID EXISTING CABLE RUNS DURING CONSTRUCTION.
7.	PROVIDE ALL NEW PIPE SUPPORTS WHERE PIPING IS SCHEDULED TO BE REPLACED.
8.	RE-INSTALL ANY CEILING AFTER COMPLETION OF WORK. REPLACE ANY EXISTING DAMAGED CEILING TILES IN THE AREAS OF CONSTRUCTION.
9.	CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN EXISTING BUILDING CLIMATE CONTROLLED DURING CONSTRUCTION. ALL REQUIRED EQUIPMENT AND ASSOCIATED POWER, WIRING SHALL BE PROVIDED BY THE CONTRACTOR.
10.	CONTRACTOR TO PROVIDE NEW DUCT DETECTOR AS REQUIRED BY CODE ON ALL AIR HANDLING UNITS EQUAL TO OR MORE THAN 2,000 CFM SUPPLY. DETECTOR MANUFACTURER TO MATCH EXISTING DEVICES AND BE COMPATIBLE WITH EXISTING FACP. CONTRACTOR TO PROVIDE AND INSTALL ALL CABLING AND EQUIPMENT/MODULES AS REQUIRED TO CONNECT ADDITIONAL DEVICES TO EXISTING FIRE ALARM CONTROL PANEL.

MECHANICAL DEMOLITION NOTES	
1.	DEMOLISH EQUIPMENT SCHEDULED FOR REPLACEMENT. EQUIPMENT NOT SCHEDULED FOR REPLACEMENT SHALL REMAIN IN WORKING CONDITION.
2.	PATCH AND SEAL ALL ROOF AND WALL OPENINGS WHERE MECHANICAL EQUIPMENT ONCE PENETRATED.
3.	DEMOLITION DOES NOT INCLUDE PLUMBING EQUIPMENT.
4.	CONTRACTOR TO FIELD VERIFY EXISTING CONDITION TO PRIOR TO DEMOLITION.
5.	COORDINATE ALL WORK WITH ALL OTHER TRADES.

MECHANICAL SYMBOLS LEGEND		
SYMBOL	DESCRIPTION	ABBV.
	SUPPLY AIR CEILING DIFFUSER	SAG/SAR
	RETURN AIR GRILLE / REGISTER	RAG / RAR
	EXHAUST GRILLE / REGISTER	EG / ER
	SUPPLY AIR CEILING DIFFUSER	CD
	LINEAR SLOT DIFFUSER	LD
	SIDEWALL SUPPLY AIR GRILLE/REGISTER	SAG/SAR
	SIDEWALL RETURN AIR GRILLE/REGISTER	RAG/RAR
	DUCT MTD. SIDEWALL SUPPLY AIR GRILLE/REGISTER	SAG/SAR
	SUPPLY DUCT RISE/DROP	
	RETURN DUCT RISE/DROP	
	EXHAUST DUCT RISE/DROP	
	DOOR GRILLE	DG
	UNDERCUT DOOR	UC
	LINED RETURN TRANSFER DUCT ABOVE CEILING (SIZE AS INDICATED)	TD
	SQUARE ELBOW WITH DOUBLE THICKNESS TURNING VANES	
	VOLUME DAMPER	MVD
	FLEXIBLE DUCT	FLEX.CONN.
	NEW DUCTWORK	
	EXISTING DUCTWORK / EQUIPMENT	
	DEMO DUCTWORK / EQUIPMENT	
	NEW MECHANICAL EQUIPMENT	
	THERMOSTAT SENSOR	
	HUMIDISTAT SENSOR	
	COMBINATION TEMPERATURE AND CO2 SENSOR	
	COMBINATION TEMPERATURE, HUMIDITY, & CO2 SENSOR	
	COMBINATION TEMPERATURE & HUMIDITY SENSOR	
	SMOKE DAMPER	SD
	FIRE DAMPER	FD
	COMBINATION FIRE AND SMOKE DAMPER	F/SD
	CARBON DIOXIDE SENSOR	CO2
	CARBON MONOXIDE SENSOR	CO
	BAROMETRIC DAMPER	BD
	SMOKE DETECTOR (BY DIVISION 28)	2
	PNEUMATIC DAMPER ACTUATOR	A
	BACKDRAFT DAMPER	BDD
	FLOW MEASURING STATION	FMS
	SPIN-IN VOLUME DAMPER	
	MOTORIZED DAMPER	M
	AIRFLOW DIRECTION	
	SUPPLY AIR	SA
	RETURN AIR	RA
	OUTSIDE AIR	OA
	EXHAUST AIR	EA
	OWNER-FURNISHED EQUIPMENT	OFE
	ABOVE FINISHED FLOOR	AFF
	BOTTOM OF DUCT	BOD
	NOT IN CONTRACT	NIC
	FURNISHED BY OTHERS	FBO
	REFLECTIVE CEILING PLAN	RCP
	EXISTING	(E)
	SCOPE OF WORK	SOW
	VARIABLE FREQUENCY DRIVE	VFD
	DISCONNECT FROM EXISTING	FBO
	CONNECT TO EXISTING	
	PLAN SECTION	
	SECTION NUMBER	
	SHEET NUMBER	
	DIFFUSER SCHEDULE	
	CFM	
	DRAWING REFERENCE	
	DETAIL NUMBER	
	SHEET NUMBER	
NOTES: 1. NOT ALL SYMBOLS MAY BE USED ON THESE DRAWINGS.		

MECHANICAL GENERAL NOTES	
1.	ALL WORK SHALL BE PERFORMED AS PER THE LOCAL MECHANICAL CODE, THE LOCAL BUILDING CODES AND LOCAL ENERGY CONSERVATION CODE.
2.	PROVIDE ALL MATERIALS, LABOR, EQUIPMENT AND ANY OTHER INCIDENTALS ESSENTIAL FOR A COMPLETE AND OPERATIONAL INSTALLATION OF THE HVAC WORK SHOWN ON THE PLANS.
3.	ALL DUCTWORK SHALL BE FABRICATED PER THE LATEST SMACNA STANDARDS.
4.	DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL INFO FOR COORDINATION AND POTENTIAL CONFLICTS. THE MECHANICAL SUBCONTRACTOR SHALL, WITHOUT EXTRA COST TO THE PROJECT SHALL MAKE REASONABLE MODIFICATIONS IN THE LAYOUT AS NEEDED TO PREVENT CONFLICTS WITH OTHER TRADES, OR FOR PROPER EXECUTION OF THE WORK.
5.	DUCT DIMENSIONS INDICATED ON DRAWINGS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.
6.	ALL NEW HVAC EQUIPMENT SHALL BE CLEANED AFTER THE FINISHING OF DRYWALL AND PRIOR TO THE RELEASE OF BUILDING TO THE OWNER. IF THE DUCTWORK AND AIR DEVICES ARE NOT PROPERLY PROTECTED DURING CONSTRUCTION THAN IT SHALL BE CLEANED AS WELL. CONTRACTOR TO PROVIDE DOCUMENTATION WITH DATE AND TIME OF ALL THE PERFORMED SERVICES.
7.	ALL WALL MOUNTED TEMPERATURE, HUMIDITY AND CO2 SENSORS SHALL BE MOUNTED AT THE SAME ELEVATION AS THE LIGHT SWITCHES. COORDINATE WITH ELECTRICAL DRAWINGS AND ARCHITECTURAL ELEVATION PLAN.
8.	REFER TO MECHANICAL ROOF PLAN FOR ROOF MOUNTED EQUIPMENTS.
9.	REFER TO CHILLED WATER AND HEATING WATER PIPING DIAGRAMS FOR PIPE SIZES.
10.	NEW PIPING TO BE INSTALLED AS TO NOT BLOCK ANY ACCESS DOORS FROM FULL SWING OPENING.
11.	PRIOR TO INSTALLATION OF EQUIPMENT, VERIFY MANUFACTURER'S RECOMMENDED AND CODE REQUIRED CLEARANCES ARE AVAILABLE.
12.	COORDINATE ALL WORK WITH ALL OTHER TRADES.
13.	PROVIDE FIRE DAMPERS, SMOKE DAMPERS, OR COMBINATION FIRE/SMOKE DAMPERS IN ALL DUCTWORK AND RETURN AIR OPENINGS WHICH PENETRATE FIRE OR SMOKE RATED WALL OR FLOOR SLABS. FIRE OR SMOKE RATED WALLS CAN INCLUDE BUT NOT LIMITED TO CORRIDOR WALLS, MECHANICAL ROOMS, ELECTRICAL ROOMS, AND STORAGE ROOMS. REFER TO ARCHITECTURAL PLANS FOR PARTITION AND WALL TYPES INDICATING FIRE OR SMOKE RATED WALL LOCATION AND RATING.
14.	REFER TO ARCHITECTURAL LOUVER SCHEDULE AND ELEVATION PLANS FOR EXACT SIZE, LOCATION AND ELEVATION.
15.	ALL FAN POWERED BOXES SHALL BE EQUIPPED WITH FACTORY PROVIDED AND MOUNTED INDUCED AIR INLET ELBOW SOUND ATTENUATOR.
16.	ALL TERMINAL UNITS AND INLINE EXHAUST FANS SHALL BE INSTALLED IN PROPER ACCESSIBLE AREA.
17.	PROVIDE 24"x24" ACCESS PANEL IN THE GYP BOARD CEILING WHERE TERMINAL UNITS AND INLINE EXHAUST FANS ARE INSTALLED. COORDINATE WITH ARCHITECTURAL CEILING PLANS.
18.	COORDINATE ALL AIR DEVICES LOCATIONS WITH FINAL ARCHITECTURAL REFLECTED CEILING PLAN.
19.	ALL SUPPLY AND RETURN AIR CEILING DEVICES SHALL BE INSULATED ON TOP OF DEVICES TO PREVENT CONDENSATION. INSULATE DEVICES WITH 1-1/2" WRAP AROUND INSULATION AND TOTALLY COVER ALL SURFACES. SECURE INSULATION IN PLACE AND APPLY INSULATION PRIOR TO MOUNTING AIR DEVICES.
20.	PROVIDE TURNING VANES ON ALL RECTANGULAR ELBOWS.
21.	ALL EXPOSED DUCTWORK SHALL BE DOUBLE WALL DUCT. REFER TO SPECIFICATION. PAINT DUCTWORK. COORDINATE COLOR WITH THE ARCHITECT.
22.	PROVIDE 16x16 RETURN AIR OPENING IN WALL ABOVE CEILING WHERE WALLS GO UP TO DECK AND RETURN OPENING NOT SHOWN ON THE DRAWINGS. SHOW RETURN AIR OPENINGS IN DUCT SHOP DRAWINGS.
23.	PROVIDE INTERNALLY LINED DUCT FOR THE FOLLOWING DUCTWORK UNLESS OTHERWISE NOTED ON THE DRAWINGS: -FIRST 20'-0" OF SUPPLY AND RETURN DUCT FROM ROOF MOUNTED AIR HANDLING UNITS. -ALL RETURN AIR BOOTS AND TRANSFER DUCTS.
24.	BUILDING AUTOMATION SYSTEM THERMOGRAPHICS SHALL BE UPDATED TO REFLECT CURRENT FLOOR PLAN, ROOM NAMES AND ALL ASSOCIATED HVAC EQUIPMENT.
25.	CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE ELECTRICAL AND PLUMBING CHANGES FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF DESIGN.
26.	ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO COORDINATE BETWEEN CONTRACTORS SHALL BE WITHOUT ANY ADDITIONAL COST TO THE PROJECT.
27.	ALL DUCTWORK (SUPPLY, RETURN, EXHAUST AND OUTSIDE AIR) IN UNCONDITIONED / NON-RETURN PLENUM SHALL BE PROVIDED WITH DUCT WRAP INSULATION.
28.	REFER TO SNAP 'N' SHIELD REFRIGERANT PIPING SUPPORT DETAIL FOR REFRIGERANT PIPING SUPPORT.
29.	PROVIDE INSULATED CONDENSATE DRAIN PIPE FROM FLOOR MOUNTED OR SUSPENDED UNIT TO NEAREST FLOOR DRAIN. REFER TO PLUMBING DRAWINGS FOR EXACT DRAIN LOCATION.
30.	PROVIDE CLEAR, WEATHERPROOF ENCLOSURE FOR THE CONTROL VALVE ACTUATORS LOCATED OUTDOORS.
31.	ALL EXPOSED AND OUTDOOR REFRIGERANT AND CONDENSATE PIPING SHALL BE PROVIDED WITH INSULATION AND ALUMINUM JACKET.
32.	ALL OUTSIDE AIR INTAKE OPENINGS SHALL BE LOCATED A MINIMUM OF 10'-0" FROM ANY PLUMBING VENT, FUEL-FIRED APPLIANCE VENT OR EXHAUST AIR DISCHARGE.
33.	FOR ALL OPEN SPACES (MAIN CORRIDOR, GYM, CAFETERIA, LIBRARY ETC.), PROVIDE SENSORS IN CLEAR LOCKABLE PROTECTIVE ENCLOSURE.
34.	NOT ALL SYMBOLS OR ABBREVIATIONS MAY BE USED ON THESE DRAWINGS.
35.	CONTRACTOR SHALL FIELD VERIFY EXISTING EQUIPMENT TAG / DESIGNATION NOTATIONS PRIOR TO ORDERING NEW EQUIPMENT SCHEDULED FOR REPLACEMENT.
36.	GENERAL CONTRACTOR TO COORDINATE WITH FIRE ALARM AND MECHANICAL SUB-CONTRACTOR ON INTERLOCKING FIRE ALARM TO VARIABLE FREQUENCY DRIVES.

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GALENA PARK ISD - CUNNINGHAM MS - HVAC UPGRADES -
ISSUE FOR PROPOSAL

CLIENT LOGO

STATE OF TEXAS
MITAL J. PATEL
111622
2025/12/05
LEAF ENGINEERS
F-18872

CLIENT
GALENA PARK ISD

DATE
2025/12/05

PROJECT NUMBER
25037301

DRAWING HISTORY

No.	Description	Date

ISSUE FOR PROPOSAL

BUILDING NUMBER

MECHANICAL
GENERAL NOTES
AND LEGENDS

M-001



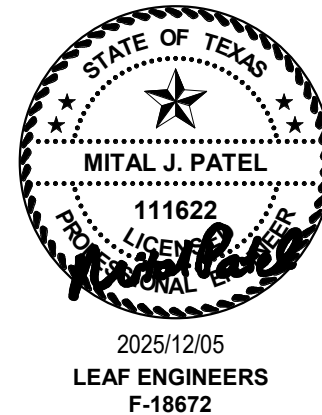
KEYED NOTES:

- 1 EXISTING FAN POWERED TERMINAL UNIT. ASSOCIATED DUCTWORK TO REMAIN. REPLACE EXISTING CONTROLS AND ASSOCIATE WIRING WITH NEW AND UPGRADE TO FULL DCU CONTROLS. ALL CONTROL REPLACEMENT COMPONENTS SHALL FIT INSIDE THE EXISTING TERMINAL UNIT. EXCLUDING REFER TO EXISTING FAN POWERED TERMINAL UNIT SCHEDULE FOR REFERENCE.
- 2 REPLACE EXISTING SENSORS. ASSOCIATED WIRING AND CONTROLS WITH NEW. REUSE EXISTING CONDUITS.
- 3 LIQUID A SUCCTION REFRIGERANT PIPING FROM INDOOR FAN COIL UNIT TO OUTDOOR CONDENSING UNIT ON ROOF. SIZE PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE 1/2" MINIMUM SCHEDULE REFRIGERANT PIPING SUPPORTS. PROVIDE LONG-RADIUS ELBOWS AT ALL PIPE TURNS. REFER TO DETAILS. ALL EXPOSED AND OUTDOOR REFRIGERANT PIPING SHALL BE WRAPPED WITH ALUMINUM JACKET.
- 4 EXISTING EXHAUST FAN ON ROOF AND ASSOCIATED DUCTWORK TO REMAIN. REPLACE EXISTING CONTROLS AND ASSOCIATED WIRING WITH NEW AND UPGRADE TO FULL DCU CONTROLS.
- 5 EXISTING 12" x 12" DUCTWORK TO INTAKE OHF MEASURING STATION. AND ASSOCIATED ACTUATOR AND PROVIDE NEW. CONTRACTOR TO FIELD VERIFY EXISTING DAMPER SIZE. PRIOR TO BID. PROVIDE NEW DUCT INSULATION AT THE AREA OF CONSTRUCTION CONTROL WIRING TO BE REPLACED.
- 6 EXISTING AIR HANDLING UNIT. ASSOCIATED DUCTWORK TO REMAIN. REPLACE EXISTING DAMPER AND HEATING AND COOLING WATER CONTROL VALVES. DUCT DAMPERS. ASSOCIATED ACTUATORS. CONTROLS. WIRING AND REPLACE WITH NEW. UNIT SHALL BE UPGRADED TO NEW CONTROL SYSTEM. REPLACE EXISTING CHILLED AND HEATING WATER CONTROL VALVES. CONTRACTOR TO FIELD VERIFY EXISTING VALVE SIZES INCLUDING ISOLATION VALVE. REFER TO PIPING DIAGRAMS. ANY NEW PIPING TO BE INSTALLED AS NOT TO BLOCK ANY ACCESS DOORS FROM FLOW SWING OPENING.
- 7 EXISTING PIPING TO REMAIN.
- 8 REMOVE EXISTING MOTORIZED DAMPER AND ASSOCIATED ACTUATOR AND PROVIDE NEW. CONTRACTOR TO FIELD VERIFY EXISTING DAMPER SIZE. PRIOR TO BID. PROVIDE NEW DUCT INSULATION AT THE AREA OF CONSTRUCTION. CONTROL WIRING TO BE REPLACED.
- 9 EXISTING UNIT HEATER TO REMAIN. REPLACE EXISTING CONTROLS. CONTROL WIRING WITH NEW.



**GALENA PARK ISD - CUNNINGHAM MS - HVAC UPGRADES -
ISSUE FOR PROPOSAL**

14705 Woodforest Blvd, Houston, TX 77015

[illegible]

ISSUE FOR PROPOSAL

**1ST FLOOR
MECHANICAL PLAN -
AREA A -
CUMMINGHAM**

M-111A

KEYED NOTES

- 1

REPLACE EXISTING AHU, ASSOCIATED CONTROLS, WIRING WITH NEW. REUSE EXISTING EQUIPMENT CONCRETE PAD, EXTEND EXISTING EQUIPMENT CONCRETE PAD AS REQUIRED TO MATCH EXISTING PAD THICKNESS AND SHALL BE 6" WIDER THAN NEW AHU DIMENSIONS. CONTRACTOR SHALL EXTEND CONCRETE PAD SUCH AS TO NOT BLOCK EXISTING FLOOR DRAINS, ROUTE NEW CONDENSATE DRAIN LINE TO EXISTING FLOOR DRAIN AS SHOWN. REPLACE EXISTING CHILLED AND HEATING WATER PIPING FROM COIL CONNECTION TO EXISTING MANUAL ISOLATION VALVE INCLUDING ISOLATION VALVE. REFER TO PIPING DETAIL. ANY NEW PIPING TO BE INSTALLED AS TO NOT BLOCK ANY ACCESS DOORS FROM FULL SWING OPENING
- 2

EXISTING FAN POWERED TERMINAL UNIT AND ASSOCIATED DUCTWORK TO REMAIN. REPLACE EXISTING CONTROLS, ASSOCIATED WIRING WITH NEW AND UPGRADE TO FULL DDC CONTROLS. ALL CONTROL REPLACEMENT COMPONENTS SHALL FIT INSIDE THE EXISTING CONTROL ENCLOSURE. REFER TO EXISTING FAN POWERED TERMINAL UNIT SCHEDULE FOR REFERENCE.
- 3

REPLACE EXISTING SENSORS, ASSOCIATED WIRING AND CONTROLS WITH NEW. REUSE EXISTING CONDUITS.
- 4

EXISTING EXHAUST FAN ON ROOF AND ASSOCIATED DUCTWORK TO REMAIN. REPLACE EXISTING CONTROLS AND ASSOCIATED WIRING WITH NEW AND UPGRADE TO FULL DDC CONTROLS.
- 5

LIQUID & SUCTION REFRIGERANT PIPING FROM INDOOR FAN COIL UNIT TO OUTDOOR CONDENSING UNIT ON ROOF. SIZE PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE SNAP-N-SHIELD REFRIGERANT PIPING SUPPORTS. PROVIDE LONG RADIUS ELBOWS AT ALL PIPE TURNS. REFER TO DETAILS. ALL EXPOSED AND OUTDOOR REFRIGERANT PIPING SHALL BE WRAPPED WITH ALUMINUM JACKET.
- 6

CONDENSATE PIPING TO NEARBY FLOOR DRAIN IN MECHANICAL ROOM.
- 7

REPLACE EXISTING VARIABLE FREQUENCY DRIVE, ASSOCIATED CONTROLS, WIRING WITH NEW.
- 8

EXISTING 60" x 60" RETURN AIR GRILLE TO REMAIN.
- 9

NEW DUCTWORK TO CONNECT TO EXISTING. CONTRACTOR TO VERIFY EXISTING DUCTWORK SIZE. PROVIDE NECESSARY DUCT TRANSITIONS AND FITTINGS AS REQUIRED TO CONNECT NEW DUCTWORK TO EXISTING.
- 10

EXISTING CEILING EXHAUST FAN TO REMAIN. UPGRADE TO FULL DDC CONTROLS.
- 11

REMOVE EXISTING MOTORIZED DAMPER AND ASSOCIATED ACTUATOR AND PROVIDE NEW. CONTRACTOR TO FIELD VERIFY EXISTING DAMPER SIZE PRIOR TO BID. PROVIDE NEW DUCT INSULATION AT THE AREA OF CONSTRUCTION. CONTROL WIRING TO BE REPLACED.
- 12

EXISTING AIR HANDLING UNIT, ASSOCIATED DUCTWORK TO REMAIN. REMOVE EXISTING CONTROLS, CHILLED AND HEATING WATER CONTROL VALVES, DUCT DAMPERS, ASSOCIATED ACTUATORS, CONTROL WIRING AND REPLACE WITH NEW. UNIT SHALL BE UPGRADED TO NEW CONTROLS SYSTEM. REPLACE EXISTING CHILLED AND HEATING WATER PIPING FROM COIL CONNECTION TO EXISTING MANUAL ISOLATION VALVE INCLUDING ISOLATION VALVE. REFER TO PIPING DIAGRAMS. ANY NEW PIPING TO BE INSTALLED AS TO NOT BLOCK ANY ACCESS DOORS FROM FULL SWING OPENING. ASSOCIATED TEMPERATURE SENSORS, WIRING AND CONTROLS TO BE REPLACED WITH NEW.
- 13

EXISTING PIPING TO REMAIN.
- 14

UNITS ARE SHIPPED KNOCKED DOWN. MECHANICAL CONTRACTOR TO ENSURE ALL PIECE AND PART CAN FIT THRU 3'-0" WIDE DOOR AND ASSEMBLE WITHIN SPACE. PROVIDE LEAK TEST REPORT AFTER COMPLETION OF UNIT ASSEMBLY. NO FURTHER PENETRATION TO UNIT'S CABINET SHALL BE PERMITTED AFTER LEAK TEST. NEW PIPING TO BE INSTALLED AS TO NOT BLOCK ANY ACCESS DOORS FROM FULL SWING OPENING.
- 15

REPLACE EXISTING DX COIL SECTION WITH NEW COIL. PROVIDE LEAK TEST REPORT AFTER COMPLETION OF UNIT ASSEMBLY. NO FURTHER PENETRATION TO UNIT'S CABINET SHALL BE PERMITTED AFTER LEAK TEST. NEW PIPING TO BE INSTALLED AS TO NOT BLOCK ANY ACCESS DOORS FROM FULL SWING OPENING. ROUTE NEW LIQUID & SUCTION REFRIGERANT PIPING FROM INDOOR AIR HANDLING UNIT TO OUTDOOR CONDENSING UNIT ON ROOF. SIZE PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE SNAP-N-SHIELD REFRIGERANT PIPING SUPPORTS. PROVIDE LONG RADIUS ELBOWS AT ALL PIPE TURNS. REFER TO DETAILS. ALL EXPOSED AND OUTDOOR REFRIGERANT PIPING SHALL BE WRAPPED WITH ALUMINUM JACKET.
- 16

EXISTING SUPPLY FAN ON ROOF TO REMAIN. UPGRADE TO FULL DDC CONTROLS.
- 17

EXISTING VARIABLE FREQUENCY DRIVE TO BE REMOVED AND REPLACED WITH NEW. REUSE EXISTING CONDUIT. CONTRACTOR SHALL FIELD VERIFY HORSEPOWER.
- LEAF ENGINEERS

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MEPT

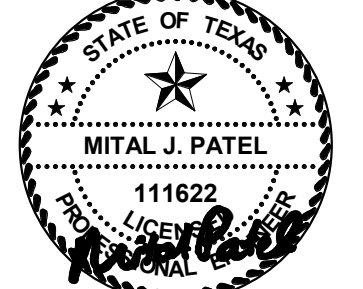
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GALENA PARK ISD - CUNNINGHAM MS - HVAC UPGRADES -
ISSUE FOR PROPOSAL

14705 Woodforest Blvd, Houston, TX 77015

CLIENT LOGO





2025/12/05
LEAF ENGINEERS
F-18672

CLIENT
GALENA PARK ISD

DATE
2025/12/05

PROJECT NUMBER
25037301

DRAWING HISTORY

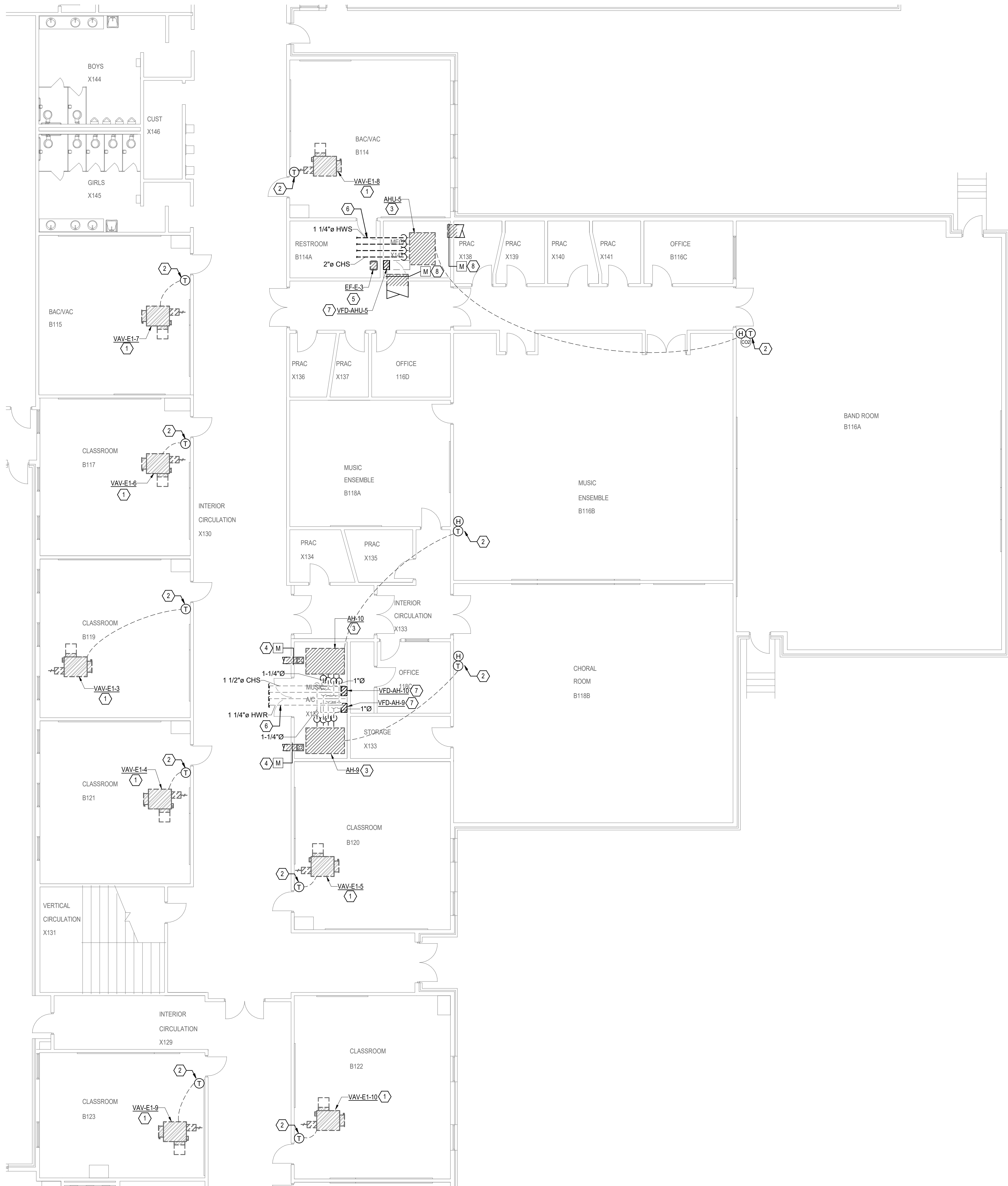
No.	Description	Date

ISSUE FOR PROPOSAL

BUILDING NUMBER

1ST FLOOR
MECHANICAL PLAN -
AREA B -
CUMMINGHAM

M-111B



KEYED NOTES:

- 1 EXISTING FAN POWERED TERMINAL UNIT AND ASSOCIATED DUCTWORK TO REMAIN. REPLACE EXISTING CONTROLS, ASSOCIATED WIRING WITH NEW AND UPGRADE TO FULL DDC CONTROLS. ALL CONTROL REPLACEMENT COMPONENTS SHALL FIT INSIDE THE EXISTING CONTROL ENCLOSURE. REFER TO EXISTING FAN POWERED TERMINAL UNIT SCHEDULE FOR REFERENCE.
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- 3 EXISTING AIR HANDLING UNIT, ASSOCIATED DUCTWORK TO REMAIN. REMOVE EXISTING CONTROLS, CHILLED AND HEATING WATER CONTROL VALVES, DUCT DAMPERS, ASSOCIATED ACTUATORS, CONTROL WIRING AND REPLACE WITH NEW. UNIT SHALL BE UPGRADED TO NEW CONTROLS SYSTEM. REPLACE EXISTING CHILLED AND HEATING WATER PIPING FROM COIL CONNECTION TO EXISTING MANUAL ISOLATION VALVE INCLUDING ISOLATION VALVE. REFER TO PIPING DIAGRAMS. ANY NEW PIPING TO BE INSTALLED AS TO NOT BLOCK ANY ACCESS DOORS FROM FULL SWING OPENING.
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- 5 EXISTING CEILING EXHAUST FAN TO REMAIN. UPGRADE TO FULL DDC CONTROLS.
- 6 EXISTING PIPING TO REMAIN.
- 7 EXISTING VARIABLE FREQUENCY DRIVE TO BE REMOVED AND REPLACED WITH NEW. REUSE EXISTING CONDUIT. CONTRACTOR SHALL FIELD VERIFY HORSEPOWER.
- 8 REMOVE EXISTING MOTORIZED DAMPER AND ASSOCIATED ACTUATOR AND PROVIDE NEW. CONTRACTOR TO FIELD VERIFY EXISTING DAMPER SIZE PRIOR TO BID. PROVIDE NEW DUCT INSULATION AT THE AREA OF CONSTRUCTION. CONTROL WIRING TO BE REPLACED.

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2025/12/05
LEAF ENGINEERS
F-18672

CLIENT
GALENA PARK ISD
DATE
2025/12/05
PROJECT NUMBER
25037301

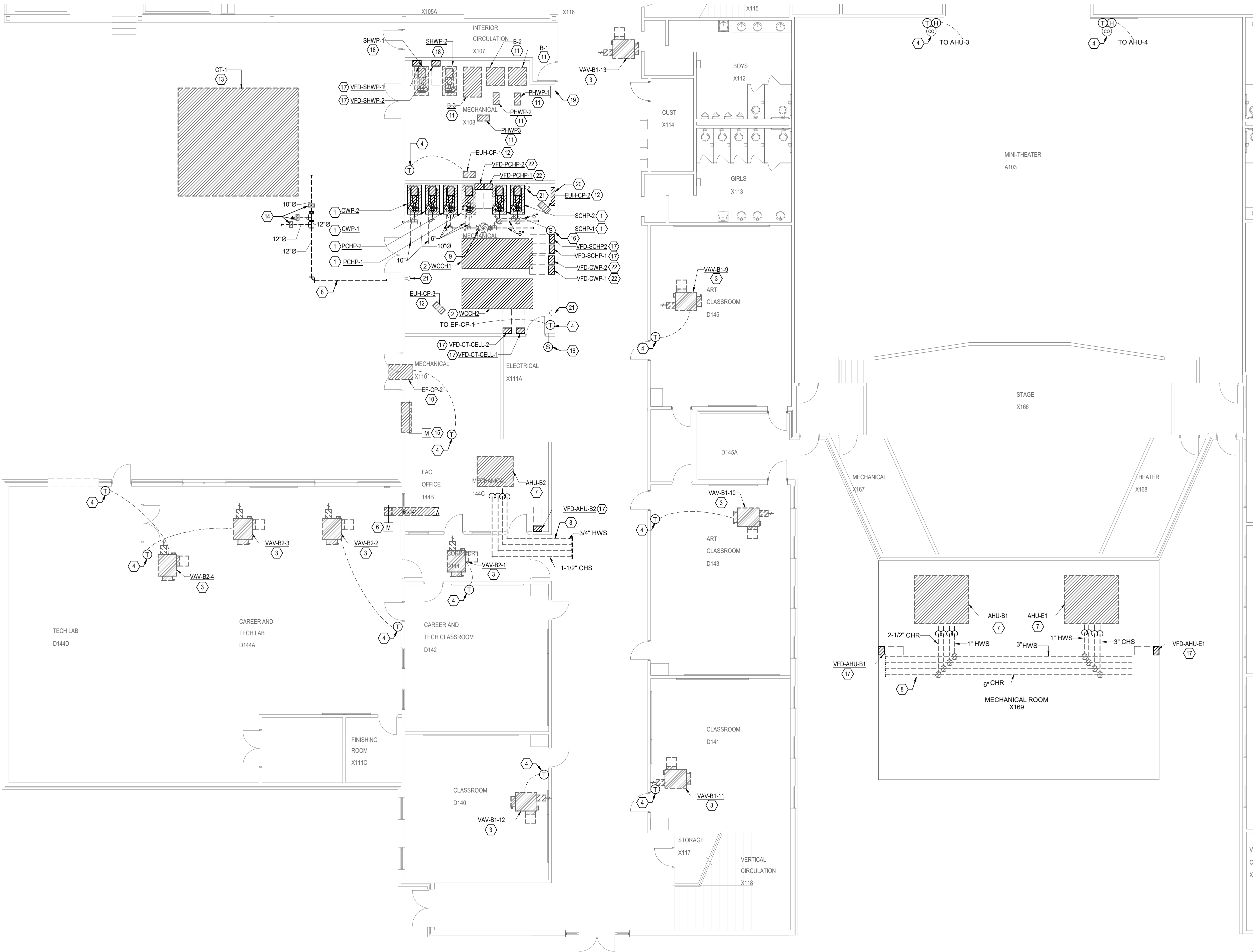
DRAWING HISTORY

No.	Description	Date

ISSUE FOR PROPOSAL
BUILDING NUMBER

1ST FLOOR
MECHANICAL PLAN -
AREA C -
CUMMINGHAM

M-111C



KEYED NOTES

- 1

EXISTING PUMP, ASSOCIATED ISOLATION VALVE AND PIPING DOWNSTREAM OF ISOLATION VALVE TO BE REPLACED WITH NEW. REPLACE EXISTING CONTROLS, ASSOCIATED WIRING WITH NEW. PROVIDE NEW / REPLACE VARIABLE FREQUENCY DRIVE.
- 2

EXISTING WATER-COOLED CHILLERS, ASSOCIATED PIPING TO REMAIN. REPLACE EXISTING CONTROLS, ASSOCIATED WIRING WITH NEW. REMOVE EXISTING EVAPORATOR INSULATION AND PROVIDE NEW INSULATION AS SPECIFIED. CONTRACTOR SHALL FIELD VERIFY EXISTING EVAPORATOR DIMENSIONS PRIOR TO BID DATE.
- 3

EXISTING FAN POWERED TERMINAL UNIT AND ASSOCIATED DUCTWORK TO REMAIN. REPLACE EXISTING CONTROLS, ASSOCIATED WIRING WITH NEW AND UPGRADE TO FULL DDC CONTROLS. ALL CONTROL REPLACEMENT COMPONENTS SHALL FIT INSIDE THE EXISTING CONTROL ENCLOSURE. REFER TO EXISTING FAN POWERED TERMINAL UNIT SCHEDULE FOR REFERENCE.
- 4

REPLACE EXISTING SENSORS, ASSOCIATED WIRING AND CONTROLS WITH NEW. REUSE EXISTING CONDUITS.
- 5

REPLACE EXISTING AIR-COOLED CONDENSING UNIT ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING WITH NEW. PROVIDE NEW INSULATION AND ALUMINUM JACKETING ON ALL PIPING.
- 6

EXISTING 16" x 14" DUCTWORK UPTO INTAKE HOOD DALS2 TO REMAIN. REMOVE EXISTING MOTORIZED DAMPER AND ASSOCIATED ACTUATOR AND PROVIDE NEW. CONTRACTOR TO FIELD VERIFY EXISTING DAMPER SIZE PRIOR TO BID. PROVIDE NEW DUCT INSULATION AT THE AREA OF CONSTRUCTION.
- 7

EXISTING AIR HANDLING UNIT, ASSOCIATED DUCTWORK TO REMAIN. REMOVE EXISTING CONTROLS, CHILLED AND HEATING WATER CONTROL VALVES, DUCT DAMPERS, ASSOCIATED ACTUATORS, CONTROL WIRING AND REPLACE WITH NEW. UNIT SHALL BE UPGRADED TO NEW CONTROLS SYSTEM. REPLACE EXISTING CHILLED AND HEATING WATER PIPING FROM COIL CONNECTION TO EXISTING MANUAL ISOLATION VALVE INCLUDING ISOLATION VALVE. REFER TO PIPING DIAGRAMS. ANY NEW PIPING TO BE INSTALLED AS TO NOT BLOCK ANY ACCESS DOORS FROM FULL SWING OPENING.
- 8

EXISTING PIPING TO REMAIN.
- 9

EXISTING AIR SEPARATOR TO REMAIN.
- 10

EXISTING EXHAUST FAN ON TO REMAIN. REPLACE EXISTING CONTROLS AND ASSOCIATED WIRING WITH NEW AND UPGRADE TO FULL DDC CONTROLS.
- 11

EXISTING BOILER AND ASSOCIATED HOT WATER PUMP TO REMAIN. REPLACE EXISTING CONTROLS, CONTROL WIRING WITH NEW.
- 12

EXISTING UNIT HEATER TO REMAIN. REPLACE EXISTING CONTROLS, CONTROL WIRING WITH NEW.
- 13

EXISTING COOLING TOWER TO REMAIN. REPLACE EXISTING CONTROLS, CONTROL WIRING WITH NEW.
- 14

EXISTING CONTROL VALVE TO BE REPLACED. PROVIDE NEW CONTROL VALVE AND ACTUATOR. PROVIDE IN OUTDOOR RATED ENCLOSURE.
- 15

REMOVE EXISTING MOTORIZED DAMPER AND ASSOCIATED ACTUATOR AND PROVIDE NEW. CONTRACTOR TO FIELD VERIFY EXISTING DAMPER SIZE PRIOR TO BID. PROVIDE NEW DUCT INSULATION AT THE AREA OF CONSTRUCTION. CONTROL WIRING TO BE REPLACED.
- 16

EXISTING REFRIGERANT SENSOR TO BE REPLACED WITH NEW. REPLACE EXISTING CONTROLS, CONTROL WIRING WITH NEW.
- 17

EXISTING VARIABLE FREQUENCY DRIVE TO BE REMOVED AND REPLACED WITH NEW. REUSE EXISTING CONDUIT. CONTRACTOR SHALL FIELD VERIFY HORSEPOWER.
- 18

EXISTING PUMP TO REMAIN. ASSOCIATED PIPING TO REMAIN. REPLACE EXISTING CONTROLS, ASSOCIATED WIRING WITH NEW.
- 19

PROVIDE NEW CARBON MONOXIDE MONITORING PANEL.
- 20

REPLACE EXISTING REFRIGERANT MONITORING PANEL AND ASSOCIATED SENSORS AND SWITCHES WITH NEW.
- 21

PROVIDE SWITCHES AT EACH EXIT FROM THE REFRIGERATION MACHINERY ROOM AS REQUIRED BY THE INTERNATIONAL MECHANICAL CODE. REFER TO MECHANICAL DRAWINGS FOR SEQUENCE OF OPERATION FOR CHILLER MACHINE ROOM "PURGE" SYSTEM.
- 22

PROVIDE NEW VARIABLE FREQUENCY DRIVE.
- LOCATION: IMMEDIATELY ADJACENT TO AND WITHIN TWO FEET OF EACH REFRIGERATION MACHINERY ROOM EXIT. REFER TO ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.
- FUNCTION: COMPLY WITH INTERNATIONAL MECHANICAL CODE 1106.5.1. PROVIDE A BREAKGLASS SWITCH ARRANGED FOR ON-OFFLY CONTROL OF ALL ELECTRICALLY OPERATED MACHINERY IN THE REFRIGERATION MACHINERY ROOM. EXCEPT THE EXHAUST VENTILATION SYSTEM. LIGHTING FIXTURES SHALL NOT BE AFFECTED BY THE ERS. UPON ACTIVATION, THE ERS SHALL IMMEDIATELY SHUTDOWN MACHINERY. AFTER SHUTDOWN, MANUAL RESETTING SHALL BE REQUIRED TO RESTORE POWER TO EACH CHILLER AND MOTOR AFFECTED. LOSS OF POWER FROM THE ELECTRIC UTILITY, TEMPORARY OR SUSTAINED BLACKOUT, SHALL NOT CAUSE THE ERS TO REQUIRE RESET.
- COLOR: SWITCH SHALL BE PAINTED BRIGHT RED.
- LABEL: SWITCH SHALL BE PERMANENTLY LABELED "EMERGENCY REFRIGERATION SWITCH".
- LOCATION: IMMEDIATELY ADJACENT TO AND WITHIN TWO FEET OF EACH REFRIGERATION MACHINERY ROOM EXIT. REFER TO ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

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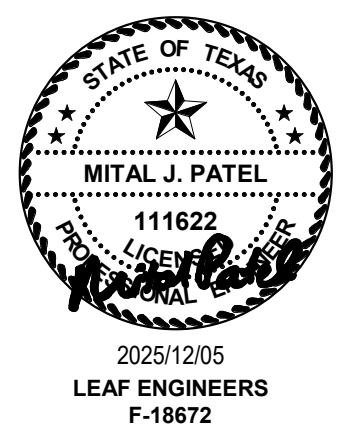
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GALENA PARK ISD - CUNNINGHAM MS - HVAC UPGRADES -
ISSUE FOR PROPOSAL

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CLIENT LOGO





2025/12/05
LEAF ENGINEERS
F-18672

CLIENT
GALENA PARK ISD

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PROJECT NUMBER
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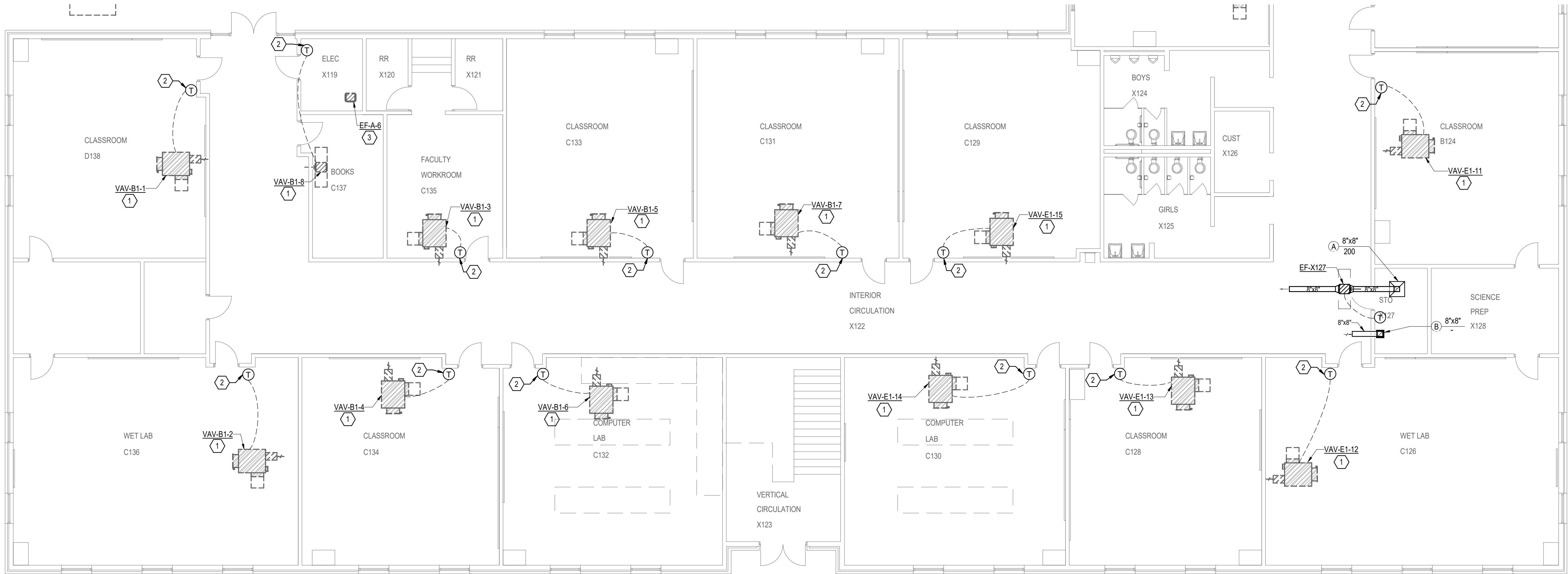
No.	Description	Date

ISSUE FOR PROPOSAL

BUILDING NUMBER

1ST FLOOR
MECHANICAL PLAN -
AREA D -
CUMMINGHAM

M-111D



KEYED NOTES:

- 1 EXISTING FAN POWERED TERMINAL UNIT AND ASSOCIATED DUCTWORK TO REMAIN. REPLACE EXISTING CONTROLS, ASSOCIATED WIRING WITH NEW AND UPGRADE TO FULL DDC CONTROLS. ALL CONTROL REPLACEMENT COMPONENTS SHALL FIT INSIDE THE EXISTING CONTROL ENCLOSURE. REFER TO EXISTING FAN POWERED TERMINAL UNIT SCHEDULE FOR REFERENCE.
- 2 REPLACE EXISTING SENSORS, ASSOCIATED WIRING AND CONTROLS WITH NEW. REUSE EXISTING CONDUITS.
- 3 EXISTING CEILING EXHAUST FAN TO REMAIN. UPGRADE TO FULL DDC CONTROLS.

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BUILDING NUMBER

1ST FLOOR
MECHANICAL PLAN -
AREA E -
CUMMINGHAM

M-111E



KEYED NOTES

- 1 REPLACE EXISTING AHU, ASSOCIATED CONTROLS, WIRING WITH NEW. REUSE EXISTING EQUIPMENT CONCRETE PAD. EXTEND EXISTING EQUIPMENT CONCRETE PAD AS REQUIRED TO MATCH EXISTING PAD THICKNESS AND SHALL BE 6" WIDER THAN NEW AHU DIMENSIONS. CONTRACTOR SHALL EXTEND CONCRETE PAD SUCH AS TO NOT BLOCK EXISTING FLOOR DRAINS. ROUTE NEW CONDENSATE DRAIN LINE TO EXISTING NEARBY FLOOR DRAIN. REPLACE EXISTING CHILLED AND HEATING WATER PIPING FROM COIL CONNECTION TO EXISTING MANUAL ISOLATION VALVE INCLUDING ISOLATION VALVE. REFER TO PIPING DIAGRAMS. ANY NEW PIPING TO BE INSTALLED AS TO NOT BLOCK ANY ACCESS DOORS FROM FULL SWING OPENING.
- 2 EXISTING FAN POWERED TERMINAL UNIT AND ASSOCIATED DUCTWORK TO REMAIN. REPLACE EXISTING CONTROLS, ASSOCIATED WIRING WITH NEW AND UPGRADE TO FULL DDC CONTROLS. ALL CONTROL REPLACEMENT COMPONENTS SHALL FIT INSIDE THE EXISTING CONTROL ENCLOSURE. REFER TO EXISTING FAN POWERED TERMINAL UNIT SCHEDULE FOR REFERENCE.
- 3 REPLACE EXISTING SENSORS, ASSOCIATED WIRING AND CONTROLS WITH NEW. REUSE EXISTING CONDUITS.
- 4 EXISTING PIPING TO REMAIN.
- 5 CONNECT NEW PIPING TO EXISTING.
- 6 EXISTING AIR HANDLING UNIT, ASSOCIATED DUCTWORK TO REMAIN. REMOVE EXISTING CONTROLS, CHILLED AND HEATING WATER CONTROL VALVES, DUCT DAMPERS, ASSOCIATED ACTUATORS, CONTROL WIRING AND REPLACE WITH NEW. UNIT SHALL BE UPGRADED TO NEW CONTROLS SYSTEM. REPLACE EXISTING CHILLED AND HEATING WATER PIPING FROM COIL CONNECTION TO EXISTING MANUAL ISOLATION VALVE INCLUDING ISOLATION VALVE. REFER TO PIPING DIAGRAMS. ANY NEW PIPING TO BE INSTALLED AS TO NOT BLOCK ANY ACCESS DOORS FROM FULL SWING OPENING.
- 7 UNITS ARE SHIPPED KNOCKED DOWN. MECHANICAL CONTRACTOR TO ENSURE ALL PIECE AND PART CAN FIT THRU 3'-0" WIDE DOOR AND ASSEMBLE WITHIN SPACE. PROVIDE LEAK TEST REPORT AFTER COMPLETION OF UNIT ASSEMBLY. NO FURTHER PENETRATION TO UNIT'S CABINET SHALL BE PERMITTED AFTER LEAK TEST. NEW PIPING TO BE INSTALLED AS TO NOT BLOCK ANY ACCESS DOORS FROM FULL SWING OPENING.
- 8 EXISTING DUCTWORK TO REMAIN. CONTRACTOR TO VERIFY EXISTING DUCTWORK SIZING AND LOCATION. PROVIDE NEW TRANSITIONS AND FITTINGS AS REQUIRED.
- 9 EXISTING VARIABLE FREQUENCY DRIVE TO BE REMOVED AND REPLACED WITH NEW. REUSE EXISTING CONDUIT. CONTRACTOR SHALL FIELD VERIFY HORSEPOWER.

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GALENA PARK ISD

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DRAWING HISTORY

No.	Description	Date

ISSUE FOR PROPOSAL

BUILDING NUMBER

2ND FLOOR
MECHANICAL PLAN -
AREA A -
CUMMINGHAM

M-112A



KEYED NOTES:

- 1 EXISTING FAN POWERED TERMINAL UNIT AND ASSOCIATED DUCTWORK TO REMAIN. REPLACE EXISTING CONTROLS, ASSOCIATED WIRING WITH NEW AND UPGRADE TO FULL DDC CONTROLS. ALL CONTROL REPLACEMENT COMPONENTS SHALL FIT INSIDE THE EXISTING CONTROL ENCLOSURE. REFER TO EXISTING FAN POWERED TERMINAL UNIT SCHEDULE FOR REFERENCE.
- 2 REPLACE EXISTING SENSORS, ASSOCIATED WIRING AND CONTROLS WITH NEW. REUSE EXISTING CONDUITS.
- 3 EXISTING CEILING EXHAUST FAN TO REMAIN. UPGRADE TO FULL DDC CONTROLS.

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LEAF ENGINEERS
F-18672

CLIENT
GALENA PARK ISD

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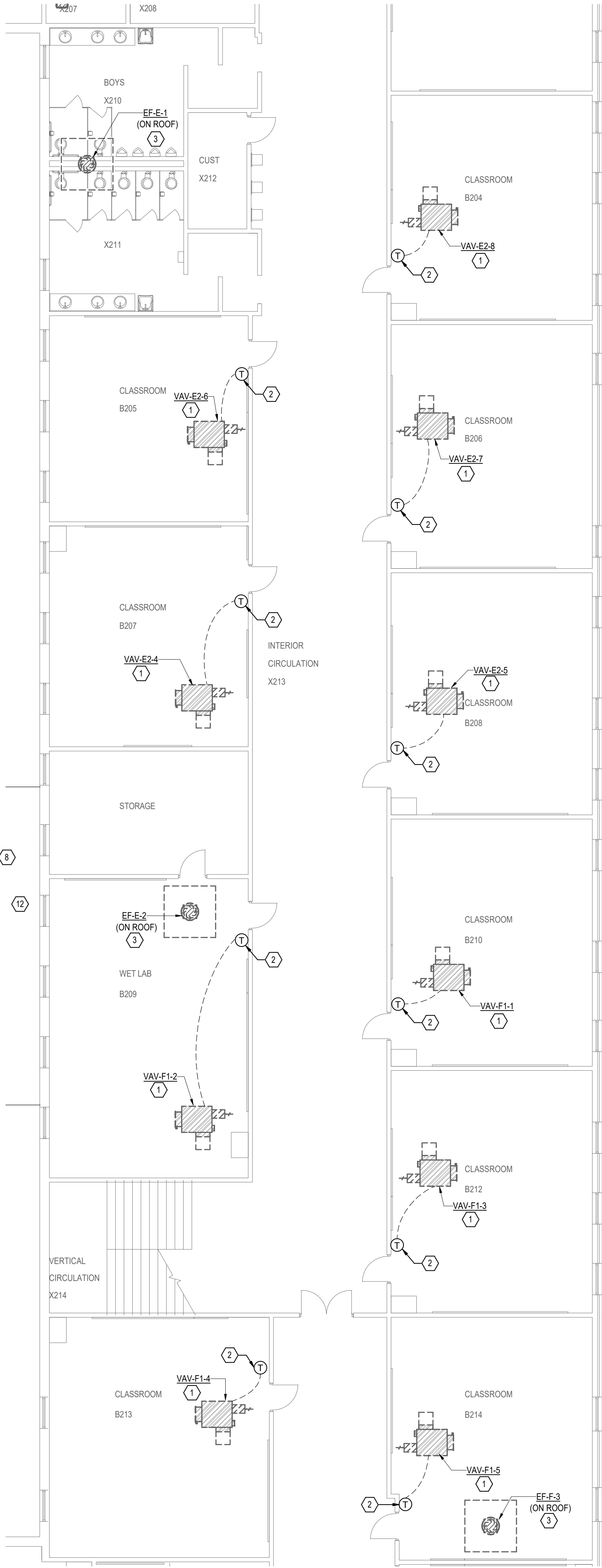
No.	Description	Date

ISSUE FOR PROPOSAL

BUILDING NUMBER

2ND FLOOR
MECHANICAL PLAN -
AREA B -
CUMMINGHAM

M-112B



KEYED NOTES:

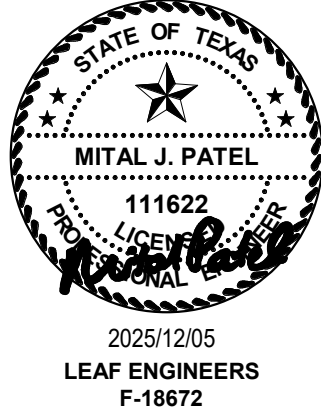
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- 2 REPLACE EXISTING SENSORS, ASSOCIATED WIRING AND CONTROLS WITH NEW. REUSE EXISTING CONDUITS.
- 3 EXISTING EXHAUST FAN TO REMAIN ON ROOF. UPGRADE TO FULL DDC CONTROLS.



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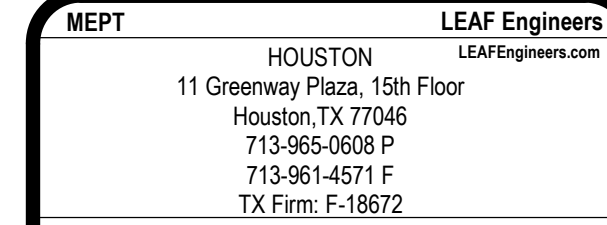
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ISSUE FOR PROPOSAL
BUILDING NUMBER
2ND FLOOR
MECHANICAL PLAN -
AREA C -
CUMMINGHAM

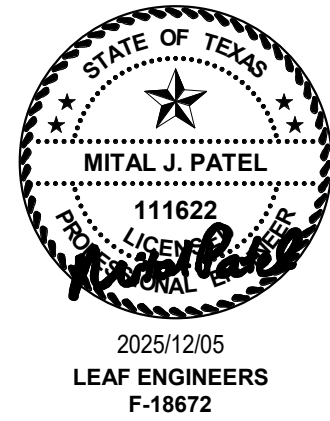
M-112C



- 4 EXISTING FAN POWERED TERMINAL UNIT AND ASSOCIATED DUCTWORK TO REMAIN. REPLACE EXISTING CONTROLS, ASSOCIATED WIRING WITH NEW AND UPGRADE TO FULL DCX CONTROL. FIELD VERIFY EXISTING DAMPER SIZE PRIOR TO BID. PROVIDE NEW DUCT INSULATION AT THE AREA OF CONSTRUCTION. CONTROL WIRING TO BE REPLACED FOR SCHEDULING FOR REFERENCE.
- 5 REPLACE EXISTING SENSORS, ASSOCIATED WIRING AND CONTROLS WITH NEW. REUSE EXISTING CONDUCITS.
- 6 EXISTING EXHAUST FAN TO REMAIN ON ROOF. UPGRADE TO FULL DCX CONTROLS.
- 7 EXISTING 24" x 24" DUCTWORK UP TO ASSOCIATED INTAKE HOOD TO REMAIN. REMOVE EXISTING MOTORIZED DAMPER AND ASSOCIATED ACTUATOR AND PROVIDE NEW. CONTRACTOR TO FIELD VERIFY EXISTING DAMPER SIZE PRIOR TO BID. PROVIDE NEW DUCT INSULATION AT THE AREA OF CONSTRUCTION. CONTROL WIRING TO BE REPLACED FOR SCHEDULING FOR REFERENCE.
- 8 EXISTING 22" x 22" DUCTWORK UP TO ASSOCIATED INTAKE HOOD TO REMAIN. REMOVE EXISTING MOTORIZED DAMPER AND ASSOCIATED ACTUATOR AND PROVIDE NEW. CONTRACTOR TO FIELD VERIFY EXISTING DAMPER SIZE PRIOR TO BID. PROVIDE NEW DUCT INSULATION AT THE AREA OF CONSTRUCTION. CONTROL WIRING TO BE REPLACED FOR SCHEDULING FOR REFERENCE.
- 9 EXISTING 6" x 20" DUCTWORK UP TO ASSOCIATED INTAKE HOOD TO REMAIN. REMOVE EXISTING MOTORIZED DAMPER AND ASSOCIATED ACTUATOR AND PROVIDE NEW. CONTRACTOR TO FIELD VERIFY EXISTING DAMPER SIZE PRIOR TO BID. PROVIDE NEW DUCT INSULATION AT THE AREA OF CONSTRUCTION. CONTROL WIRING TO BE REPLACED FOR SCHEDULING FOR REFERENCE.
- 10 EXISTING 16" x 16" DUCTWORK UP TO ASSOCIATED INTAKE HOOD TO REMAIN. REMOVE EXISTING MOTORIZED DAMPER AND ASSOCIATED ACTUATOR AND PROVIDE NEW. CONTRACTOR TO FIELD VERIFY EXISTING DAMPER SIZE PRIOR TO BID. PROVIDE NEW DUCT INSULATION AT THE AREA OF CONSTRUCTION. CONTROL WIRING TO BE REPLACED FOR SCHEDULING FOR REFERENCE.
- 11 EXISTING AIR HANDLING UNIT. ASSOCIATED DUCTWORK TO REMAIN. REMOVE EXISTING CONTROLS, CHILLED AND HEATING WATER CONTROL VALVES. DUCT DAMPERS. ASSOCIATED ACTUATOR. CONTROL WIRING AND REPLACE WITH NEW. UNIT SHALL UPGRADED TO VARIABLE AIR VOLUME CONTROL SYSTEM. REPLACE EXISTING CHILLED AND HEATING WATER PIPING FROM COIL CONNECTION TO EXISTING MANUAL ISOLATION VALVE. RELOCATING UNIT SHALL REQUIRE TO PIPING DIAGRAMS. ANY NEW PIPING TO BE INSTALLED AS TO NOT BLOCK ANY ACCESS DOORS FROM FULL SWING OPENING.
- 12 EXISTING PIPING TO REMAIN.
- 13 REPLACE EXISTING ROOF MOUNTED AIR COOLED CONDENSING UNITS WITH NEW.
- 14 REPLACE EXISTING DX COIL SECTION WITH NEW COIL. PROVIDE LEAK TEST REPORT AFTER COMPLETION OF UNIT ASSEMBLY. NO FURTHER PENETRATION INTO S/S CABINET SHALL BE ALLOWED. CONTRACTOR TO FIELD VERIFY EXISTING DAMPER SIZE PRIOR TO BID. BLOCK ANY ACCESS DOORS FROM FULL SWING OPENING. ROUTE NEW LIQUID & SUCOR REFRIGERANT PIPING FROM INDOOR AIR HANDLING UNIT TO OUTDOOR CONDENSING UNIT. CONTRACTOR TO FIELD VERIFY EXISTING DAMPER SIZE PRIOR TO BID. PROVIDE SNAPELW REFRIGERANT PIPING SUPPORTS. PROVIDE LONG RADIIUS ELBOWS AT PIPE TURNS. REFER TO DETAILS. ALL EXPOSED AND OUTDOOR REFRIGERANT PIPING SHALL BE WELDED TO ALUMINUM.
- 15 EXISTING VARIABLE FREQUENCY DRIVE TO BE REMOVED AND REPLACED WITH NEW. REUSE EXISTING CONDUIT. CONTRACTOR SHALL FIELD VERIFY HOSERPOWER.



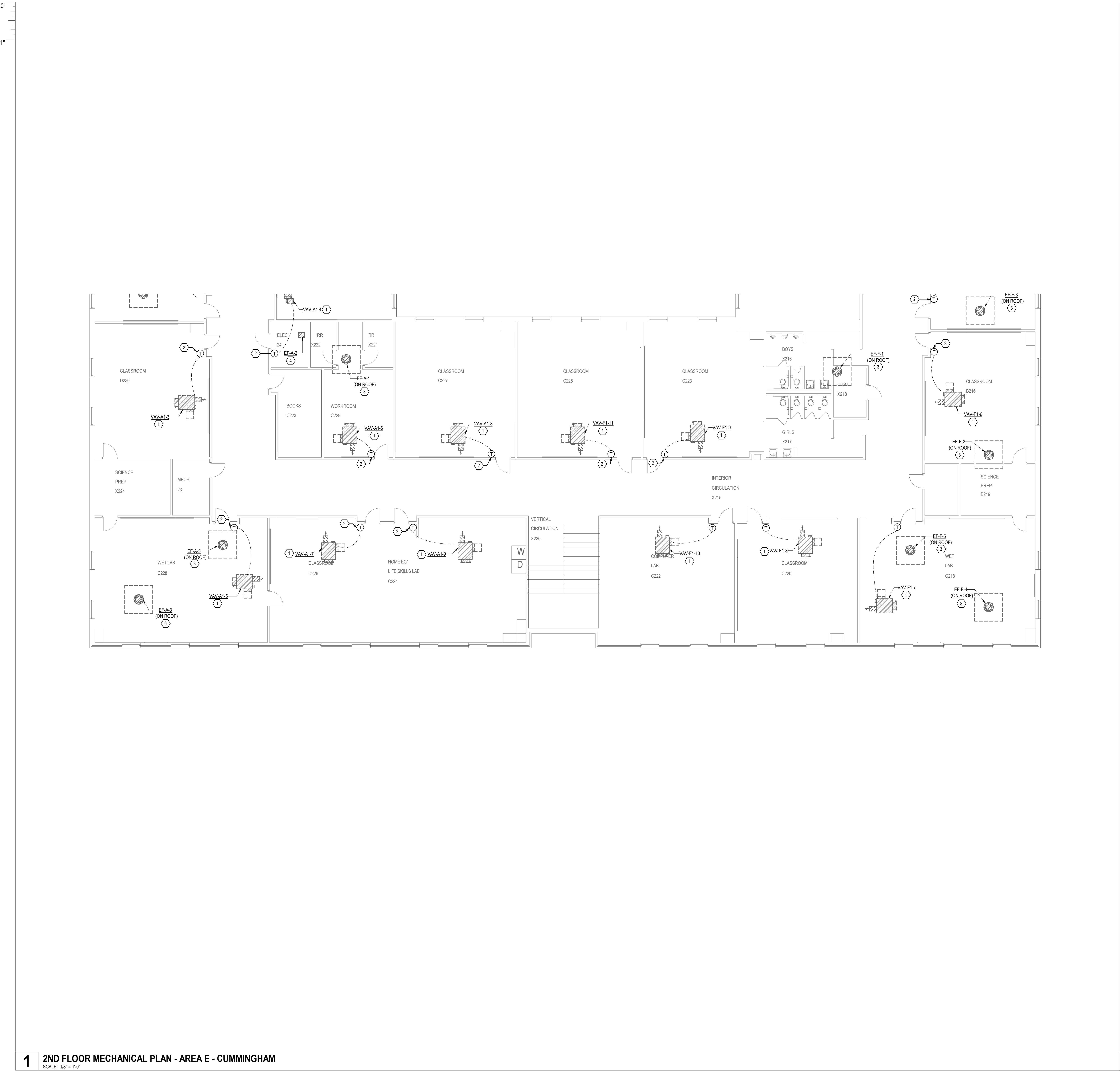
14705 Woodforest Blvd, Houston, TX 77015



ISSUE FOR PROPOSAL

BUILDING NUMBER

M-112D



KEYED NOTES:

- 1 EXISTING FAN POWERED TERMINAL UNIT AND ASSOCIATED DUCTWORK TO REMAIN. REPLACE EXISTING CONTROLS, ASSOCIATED WIRING WITH NEW AND UPGRADE TO FULL DDC CONTROLS. ALL CONTROL REPLACEMENT COMPONENTS SHALL FIT INSIDE THE EXISTING CONTROL ENCLOSURE. REFER TO EXISTING FAN POWERED TERMINAL UNIT SCHEDULE FOR REFERENCE.
- 2 REPLACE EXISTING SENSORS, ASSOCIATED WIRING AND CONTROLS WITH NEW. REUSE EXISTING CONDUITS.
- 3 EXISTING EXHAUST FAN TO REMAIN ON ROOF. UPGRADE TO FULL DDC CONTROLS.
- 4 EXISTING CEILING EXHAUST FAN TO REMAIN. UPGRADE TO FULL DDC CONTROLS.

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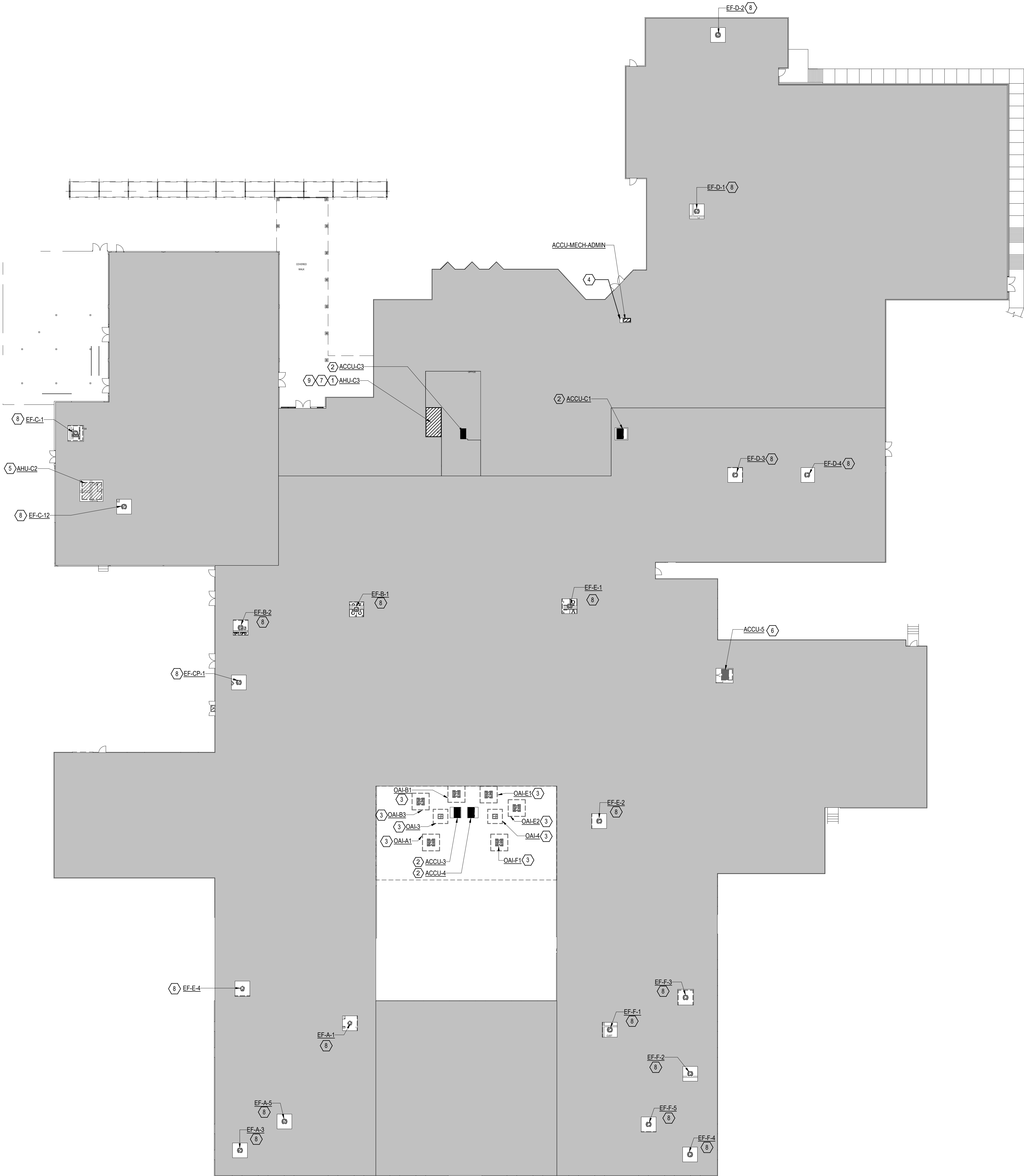
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ISSUE FOR PROPOSAL

BUILDING NUMBER

2ND FLOOR
MECHANICAL PLAN -
AREA E -
CUMMINGHAM

M-112E



KEYED NOTES

- DX COIL TO BE REPLACED IN EXISTING RTU.
- REPLACE EXISTING ROOF MOUNTED ACCU, ASSOCIATED ROOF SUPPORTS WITH NEW.
- EXISTING INTAKE AIR HOOD TO REMAIN.
- PROVIDE STAINLESS STEEL HOOD, REFRIGERANT PIPE FROM LOWER LEVEL, SIZE PER MANUFACTURER RECOMMENDATION, REFER TO DETAIL. PROVIDE PORTABLE PIPE SUPPORTS EVERY 5'. ALL OUTDOOR EXPOSED REFRIGERANT PIPING SHALL BE PROVIDED WITH ALUMINUM JACKETING.
- EXISTING AIR HANDLING UNIT, ASSOCIATED DUCTWORK TO REMAIN. REMOVE EXISTING CONTROLS, CHILLED AND HEATING WATER CONTROL VALVES, DUCT DAMPERS, ASSOCIATED ACTUATORS, CONTROL WIRING AND REPLACE WITH NEW. UNIT SHALL BE UPGRADED TO NEW CONTROLS SYSTEM. REPLACE EXISTING CHILLED AND HEATING WATER PIPING FROM COIL CONNECTION TO EXISTING MANUAL ISOLATION VALVE INCLUDING ISOLATION VALVE. REFER TO PIPING DIAGRAMS. ANY NEW PIPING TO BE INSTALLED AS TO NOT BLOCK ANY ACCESS DOORS FROM FULL SWING OPENING. PROVIDE NEW ACTUATORS LOCATED OUTDOORS IN WEATHERPROOF ENCLOSURES.
- EXISTING ROOF MOUNTED CONDENSING UNIT TO REMAIN. REPLACE EXISTING CONTROLS, WIRING WITH NEW.
- REPLACE EXISTING DX COIL SECTION WITH NEW COIL. PROVIDE LEAK TEST REPORT AFTER COMPLETION OF UNIT ASSEMBLY. NO FURTHER PENETRATION TO UNITS CABINET SHALL BE PERMITTED AFTER LEAK TEST. NEW PIPING TO BE INSTALLED AS TO NOT BLOCK ANY ACCESS DOORS FROM FULL SWING OPENING. ROUTE NEW LIQUID & SUCTION REFRIGERANT PIPING FROM INDOOR AIR HANDLING UNIT TO OUTDOOR CONDENSING UNIT ON ROOF. SIZE PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE SNAP-N-SHIELD REFRIGERANT PIPING SUPPORTS. PROVIDE LONG RADIUS ELBOWS AT ALL PIPE TURNS. REFER TO DETAILS. ALL EXPOSED AND OUTDOOR REFRIGERANT PIPING SHALL BE WRAPPED WITH ALUMINUM JACKET.
- EXISTING EXHAUST FAN AND ASSOCIATED DUCTWORK TO REMAIN. REPLACE EXISTING CONTROLS AND ASSOCIATED WIRING WITH NEW AND UPGRADE TO FULL DDC CONTROLS.
- MANUFACTURER SHALL VERIFY THAT NEW VARIABLE FREQUENCY DRIVE SHALL FIT INSIDE UNIT CABINET WHERE EXISTING VARIABLE FREQUENCY DRIVE IS.

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GALENA PARK ISD - CUNNINGHAM MS - HVAC UPGRADES -
ISSUE FOR PROPOSAL

CLIENT LOGO

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MECHANICAL ROOF
PLAN - COMPOSITE

M-301

MODULAR INDOOR CENTRAL-STATION AIR-HANDLING UNIT SCHEDULE																																				
DESIGNATION	SERVICE	TYPE	ARRANGEMENT	MANUFACTURER	MODEL	DIMENSIONS (L x W x H) INCHES	OPERATING WEIGHT (LBS.)	SEE NOTE	BLOWER DATA						COOLING COIL DATA										HEATING COIL DATA											
									TOTAL CFM	OUTSIDE AIR CFM	EST. EXT. SP. (IN. WG.)	MAX. ALLOWABLE TOTAL BRAKE H.P.	MOTOR QTY / MAX. MOTOR H.P. (EACH)	VARIABLE FREQUENCY DRIVE H.P.	TYPE	VOLTAGE	CFM OVER COIL	MAX. FACE VELOCITY (FPM)	SENSIBLE BTUH	TOTAL BTUH	EAT (°F DB)	EAT (°F WB)	LAT (°F DB)	GPM	EWT (°F)	LWT (°F)	2-WAY OR 3-WAY VALVES	CFM OVER COIL	MAX. FACE VELOCITY (FPM)	TOTAL BTUH	EAT (°F DB)	LAT (°F DB)	GPM	EWT (°F)	LWT (°F)	2-WAY OR 3-WAY VALVES
AHJL08	LOCKERS	SINGLE ZONE VAV	HORIZONTAL DRAW-THRU	TEMPROL	ITF	78" x 61" x 50"	2,000	1-14	5,350	375	1.0	4.14	1 / 5.0	5	DIRECT DRIVE - PF	460 / 3 / 60	5,350	500	145,962	198,713	79°F	69°F	54°F	25	42°F	58°F	2-WAY	5,350	750	144,450	60°F	89°F	10	180°F	150°F	2-WAY
AHJL09	GYM	SINGLE ZONE VAV	HORIZONTAL DRAW-THRU	TEMPROL	ITF	74" x 67" x 53"	2,300	1-14	6,640	1,000	1.0	6.04	1 / 7.5	7 / 12	DIRECT DRIVE - PF	460 / 3 / 60	6,640	500	191,549	265,147	81°F	67°F	54°F	33	42°F	58°F	2-WAY	6,640	750	179,280	60°F	89°F	12	180°F	150°F	3-WAY
AHJL10	GYM	SINGLE ZONE VAV	HORIZONTAL DRAW-THRU	TEMPROL	ITF	74" x 67" x 53"	2,200	1-14	6,090	1,000	1.0	5.16	1 / 7.5	7 / 12	DIRECT DRIVE - PF	460 / 3 / 60	6,090	500	177,293	244,794	81°F	67°F	54°F	31	42°F	58°F	2-WAY	6,090	750	164,430	60°F	89°F	11	180°F	150°F	3-WAY
AHJL11	CAFETERIA	SINGLE ZONE VAV	VERTICAL DRAW-THRU	TEMPROL	ITF	72" x 61" x 123"	4,100	1-14	8,400	1,875	1.0	5.40	1 / 10.0	10	DIRECT DRIVE - PF	460 / 3 / 60	8,400	500	254,178	367,847	82°F	68°F	54°F	46	42°F	58°F	2-WAY	8,400	750	228,900	60°F	89°F	15	180°F	150°F	3-WAY
1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL CHARACTERISTICS.																																				
2. ESTIMATED EXTERNAL STATIC PRESSURE INCLUDES LOSSES THROUGH DUCTWORK, AIR DEVICES, SOUND ATTENUATORS, ETC.																																				
3. AIR HANDLING UNIT INTERNAL STATIC PRESSURE SHALL INCLUDE LOSSES THROUGH COILS, CASING, INTERNAL DAMPERS, AND 0.75" W.G. FOR DIRTY FILTERS.																																				
4. COILS PRESSURE DROP THROUGH COIL SHALL NOT EXCEED 15 FT. AT SCHEDULED GPM.																																				
5. PROVIDE VARIABLE FREQUENCY DRIVE.																																				
6. FAN CONSTRUCTION SHALL BE MINIMUM AMCA CLASS II.																																				
7. PROVIDE FACTORY MOUNTED AND WIRED EXTERNAL JUNCTION BOXES ON FAN SECTION. J-BOX SHALL ALLOW ELECTRICAL CONTRACTOR TO LAND POWER TO DEVICE WITHOUT PENETRATING THROUGH CABINET. FIELD INSTALLED JUNCTION BOXES ARE NOT ACCEPTABLE.																																				
8. PROVIDE FACTORY MOUNTED SHAFT GROUNDING KIT FOR AIR HANDLING UNIT MOTOR, NO EXCEPTIONS.																																				
9. PROVIDE WITH FLAT MERV 13 FILTERS.																																				
10. UNITS WITH MULTIPLE FANS AND MOTORS, PROVIDE FACTORY INSTALLED AND WIRED MOTOR OVERLOAD PANEL FOR CONNECTION TO A SINGLE VFD.																																				
11. ALL COILS SHALL BE FULLY DIPPED AND BAKED (E-COAT) WITH UV TOP COAT.																																				
12. PROVIDE HOT WATER COIL IN RE-HEAT POSITION.																																				
13. PROVIDE A RAPID KNOCK-DOWN UNIT. UNIT SHALL FIT THRU 36" EXISTING DOOR. CONTRACTOR TO FIELD VERIFY EXISTING CONDITION PRIOR TO ORDERING.																																				
14. AHU MANUFACTURER TO PROVIDE UV-C LIGHT SECTION DOWNSTREAM OF COOLING COIL, TO BE FIELD INSTALLED WITH STAINLESS STEEL DRAIN PAN. PROVIDE WITH ACCESS DOOR KILL SWITCHES FOR THE UV-C LIGHT.																																				

AIR COOLED REFRIGERANT CONDENSER SCHEDULE													
DESIGNATION	SERVICE	MANUFACTURER	MODEL NUMBER	NOTES	CAPACITY (TONS)	DIMENSIONS (LxWxH) INCHES	WEIGHT (lbs)	EER AT AHWI CONDITIONS	COMPRESSOR DATA			CONDENSER DATA	
									REFRIGERANT	NUMBER OF CIRCUITS	NUMBER OF COMPRESSORS	AMBIENT TEMP. (°F)	NUMBER OF FANS
ACCU1	AHJL1	LG	ARIUM	1-5	12.5	49" x 30" x 61"	700	10.4	R-410a	2	2	105°F	2
ACCU1	AHJL1	LG	ARIUM	1-5	15	49" x 30" x 61"	700	10.5	R-410a	2	2	105°F	2
ACCU1	AHJL1	LG	ARIUM	1-5	20	49" x 30" x 61"	700	9.7	R-410a	2	2	105°F	2
ACCU1	AHJL1	LG	ARIUM	1-5	20	49" x 30" x 61"	700	9.7	R-410a	2	2	105°F	2
1. REFERENCE ELECTRICAL DRAWINGS FOR FURTHER ELECTRICAL INFORMATION 2. PROVIDE LOW AMBIENT CONTROL TO 0°F. 3. PROVIDE WITH EPOXY COATED CONDENSER COILS. 4. PROVIDE WITH VARIABLE SCROLL COMPRESSOR. 5. CONDENSING UNIT SHALL BE PROVIDED WITH EEV KIT, STAT, AND ALL NECESSARY CONTROLS FOR OPERATION.													

DX COIL SCHEDULE													
DESIGNATION	SERVICE	TYPE	MANUFACTURER	MODEL	DIMENSIONS (L x W x H) INCHES	REFRIGERANT	SEE NOTE	COOLING COIL DATA					
								CFM OVER COIL	MAX. FACE VELOCITY (FPM)	SENSIBLE BTUH	TOTAL BTUH	EAT (°F DB)	EAT (°F WB)
AHJL1	ADMIN	SINGLE DUCT VAV	TEMPROL	4DX	12" x 54" x 27.5"	R-410a	1-4	4,810	500	133,800	142,900	78.9°F	64.0°F
AHJL1	LIBRARY	SINGLE ZONE VAV	TEMPROL	4DX	14" x 63" x 35"	R-410a	1-4	4,460	500	150,400	189,900	75.0°F	62.4°F
AHJL1	AUDITORIUM	SINGLE ZONE VAV	TEMPROL	4DX	12" x 53" x 27.5"	R-410a	1-4	4,455	500	163,400	227,000	75.0°F	62.4°F
AHJL1	AUDITORIUM	SINGLE ZONE VAV	TEMPROL	4DX	12" x 53" x 27.5"	R-410a	1-4	4,455	500	163,400	227,000	75.0°F	62.4°F
1. PROVIDE MATCHING CONDENSING UNIT. 2. PROVIDE INTERTWINED COIL. 3. CONTRACTOR TO FIELD VERIFY EXISTING COIL DIMENSION AND MATCH EXACTLY. 4. UNIT IS EQUIPPED WITH DX COIL FOR AFTER HOUR USE.													

DUCTLESS MINI-SPLIT SYSTEM AIR-CONDITIONERS SCHEDULE	
EVAPORATOR SECTION	
INDOOR EVAPORATOR DESIGNATION	EQU-MECH-ADMIN
SERVICE	MECH ROOM - ADMIN
MANUFACTURER	MTSUBISHI
MODEL NUMBER	PKA-AK3SNL
TYPE	WALL MOUNTED
WEIGHT (LBS.)	100
NOTES	1-7
FAN DATA	
SUPPLY CFM	550
COOLING / HEATING COIL	
	DX
NOMINAL TONNAGE	1.6 TONS
ENTERING AIR EVAP (DBWB) °F - COOLING MODE	80°F / 67°F
ENTERING AIR EVAP (DBWB) °F - HEATING MODE	70°F / 60°F
TOTAL BTUH COOLING	33,800
TOTAL BTUH HEATING	-
AIR-COOLED CONDENSER	
DESIGNATION	ACCU - MECH-ADMIN
SERVES	EQU-MECH-ADMIN
LOCATION	ROOF
MANUFACTURER	MTSUBISHI
MODEL NUMBER	PULY-AK3SNL
EFFICIENCY (SEER)	18.5
VOLTS/PH/Hz	208 / 1 / 60
MCA	34.0
MOCP	56
REFRIGERANT	R-454B
AMBIENT TEMPERATURE °F	95°F
WEIGHT (LBS.)	250
NOTES	
1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.	
2. UNIT SHALL BE RATED FOR 144 MPH WIND SPEED.	
3. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.	
4. PROVIDE REMOTE WALL MOUNTED PROGRAMMABLE THERMOSTAT WITH BACnet INTERFACE.	
5. PROVIDE INVERTER DRIVEN COMPRESSOR.	
6. INDOOR UNIT IS POWERED BY THE OUTDOOR UNIT. INTERCONNECTING POWER WIRING FROM OUTDOOR TO INDOOR UNIT IS BY ELECTRICAL CONTRACTOR. REFER TO ELECTRICAL DRAWINGS.	
7. PROVIDE MATCHING CONDENSING UNIT FROM SAME MANUFACTURER.	

EXISTING HVAC FANS SCHEDULE				
DESIGNATION	NOTES	LOCATION	SERVICE	CFM
EF-A-1	1	ROOF	RESTROOMS	300
EF-A-2	1	CEILING	ELEC	200
EF-A-3	1	ROOF	SCIENCE	1,695
EF-A-4	1	ROOF	SCIENCE	1,665
EF-A-5	1	ROOF	SCIENCE	1,695
EF-A-6	1	CEILING	RESTROOMS	200
EF-B-1	1	ROOF	RESTROOMS	1,850
EF-B-2	1	ROOF	SCIENCE	2,270
EF-C-1	1	ROOF	KITCHEN HOOD	2,245
EF-C-1, A-5, A-6	1	CEILING	RESTROOMS	90
EF-C-2, B-5, B-11	1	CEILING	RESTROOMS	200
EF-C-12	1	ROOF	DISHWASHER	600
EF-D-1	1	ROOF	LOCKERS	1,440
EF-D-2	1	ROOF	LOCKERS	830
EF-D-3	1	ROOF	LOCKERS	1,065
EF-D-4	1	ROOF	LOCKERS	1,060
EF-E-1	1	ROOF	RESTROOMS	1,850
EF-E-2	1	ROOF	SCIENCE	1,275
EF-E-3	1	PLENUM	RESTROOMS	100
EF-F-1	1	ROOF	RESTROOMS	1,550
EF-F-2	1	ROOF	SCIENCE	1,785
EF-F-3	1	ROOF	SCIENCE	1,785
EF-F-4	1	ROOF	SCIENCE	1,630
EF-F-5	1	ROOF	SCIENCE	1,785
EF-CP-1	1	ROOF	CHILLER ROOM	2650 / 1325
EF-CP-2	1	WALL	MAN ELEC	1,580
BSE-CE-1	1	ROOF	KITCHEN MAKEUP	1,800
1. EXISTING EXHAUST FAN TO REMAIN. UPGRADE TO FULL DDC CONTROLS.				

EXISTING AIR HANDLING UNIT SCHEDULE																	
DESIGNATION	SERVICE	NOTES	CFM	OUTSIDE AIR CFM	H.P.	MAIN CHILLED WATER COIL			MAIN HEATING WATER COIL			PRE-COOL CHILLED WATER COIL			PRE-HEATING WATER COIL		
						GPM	2-WAY OR 3-WAY CONTROL VALVE	PIPE SIZE (IN)	GPM	2-WAY OR 3-WAY CONTROL VALVE	PIPE SIZE (IN)	GPM	2-WAY OR 3-WAY CONTROL VALVE	PIPE SIZE (IN)	GPM	2-WAY OR 3-WAY CONTROL VALVE	PIPE SIZE (IN)
AHJL-A1	S/W CLASSROOMS	1-5	12,000	3,365	15	61.6	2-WAY	2-1/2	3.6	2-WAY	3/4	-	-	-	-	-	
AHJL-B1	WEST CLASSROOMS	1-5	13,950	4,325	20	61.6	3-WAY	2-1/2	4.7	3-WAY	1	-	-	-	-	-	
AHJL-B2	TECH LAB AREA	1-5	4,230	1,280	5	23.8	3-WAY	1-1/2	1.5	3-WAY	3/4	-	-	-	-	-	
AHJL-B3	N/W CLASSROOMS	1-5	11,895	3,420	15	64.4	3-WAY	2-1/2	3.7	3-WAY	3/4	-	-	-	-	-	
AHJL-C1	ADMIN	1-5	4,810	665	5	17.9	3-WAY	1-1/2	1.2	3-WAY	3/4	-	-	-	-	-	
AHJL-E1	EAST CLASSROOMS	1-5	15,195	4,850	20	80.8	3-WAY	3	5.2	3-WAY	1	-	-	-	-	-	
AHJL-E2	N/E CLASSROOMS	1-5	9,750	2,040	15	54.8	3-WAY	2-1/2	3.3	3-WAY	3/4	-	-	-	-	-	
AHJL-F1	S/E CLASSROOMS	1-5	12,750	3,990	15	69.4	2-WAY	2-1/2	4.3	2-WAY	1	-	-	-	-	-	
AHJL-3	AUDITORIUM	1-5	5,830	1,375	7 / 12	13.9	3-WAY	1-1/4	9.9	3-WAY	1-1/4	14.5	3-WAY	1-1/4	3.5	3-WAY	3/4
AHJL-4	AUDITORIUM	1-5	5,830	1,375	7 / 12	13.9	3-WAY	1-1/4	9.9	3-WAY	1-1/4	14.5	3-WAY	1-1/4	3.5	3-WAY	3/4
AHJL-5	BAND HALL	1-5	5,315	1,050	5	31.0	2-WAY	2	11.1	2-WAY	1-1/4	-	-	-	-	-	
AHJL-7	GYM	1-5	11,520	3,875	15	26.4	3-WAY	2	19.7	3-WAY	1-1/2	29.1	3-WAY	2	7.3	3-WAY	1
AHJL-D2	KITCHEN	1-5	7,055	1,300	7 / 12	17.6	3-WAY	1-1/2	11.6	3-WAY	1-1/4	13.2	3-WAY	1-1/4	3.3	3-WAY	3/4
AHJL-C3	LIBRARY	1-5	5,570	1,110	7 / 12	13.6	3-WAY	1-1/4	11.3	3-WAY	1-1/4	11.7	3-WAY	1-1/4	2.8	3-WAY	3/4
AHJL-D1	LOCKERS	1-5	2,725	740	2	16.2	3-WAY	1-1/2	6.0	3-WAY	1	-	-	-	-	-	-
AHJ-9	CHORAL ROOM	1-5	2,875	300	3	12.0	3-WAY	1-1/4	6.0	3-WAY	1	-	-	-	-	-	-
AHJ-10	MUSIC	1-5	2,875	300	3	12.0	3-WAY	1-1/4	6.0	3-WAY	1	-	-	-	-	-	-
1. EXISTING AIR HANDLING UNIT TO REMAIN. UPGRADE WITH NEW DDC CONTROLS.																	
2. CONTRACTOR TO FIELD VERIFY EXISTING PIPE SIZE PRIOR TO SUBMITTING CONTROL VALVE FOR REVIEW.																	
3. CONTRACTOR TO PROVIDE NEW PIPING INSULATION FOR ENTIRE SUPPLY AND RETURN BRANCH PIPING. MATCH EXISTING ADJACENT PIPING THICKNESS.																	
4. REFER TO EXISTING COIL PIPING ACCESSORY DETAIL 02 / 04 / M-01.																	
5. REPLACE EXISTING VFD WITH NEW; MATCH EXISTING N.P.																	

EXISTING FAN POWERED TERMINAL BOX WITH HOT WATER HEAT SCHEDULE					
DESIGNATION	NOTES	COOLING CFM	2-WAY OR 3-WAY CONTROL VALVE	PIPE SIZE (IN)	HEATING GPM
WAV-A1-1	1	1,320	2-WAY	3/4"	2.4
WAV-A1-2	1	1,160	2-WAY	3/4"	2.1
WAV-A1-3	1	990	2-WAY	3/4"	1.8
WAV-A1-4	1	200	2-WAY	3/4"	-
WAV-A1-5	1	1,730	2-WAY	3/4"	3.1
WAV-A1-6	1	550	2-WAY	3/4"	1.5
WAV-A1-7	1	900	2-WAY	3/4"	1.7
WAV-A1-8	1	820	2-WAY	3/4"	1.5
WAV-A1-9	1	1,350	2-WAY	3/4"	2.4
WAV-A1-10	1	1,190	2-WAY	3/4"	2.4
WAV-A1-11	1	730	2-WAY	3/4"	1.3
WAV-A1-12	1	1,040	2-WAY	3/4"	1.9
WAV-B1-1	1	1,130	2-WAY	3/4"	2.0
WAV-B1-2	1	1,730	2-WAY	3/4"	3.1
WAV-B1-3	1	600	2-WAY	3/4"	1.5
WAV-B1-4	1	920	2-WAY	3/4"	1.7
WAV-B1-5	1	760	2-WAY	3/4"	1.5
WAV-B1-6	1	1,450	2-WAY	3/4"	2.6
WAV-B1-7	1	780	2-WAY	3/4"	1.5
WAV-B1-8	1	200	2-WAY	3/4"	-
WAV-B1-9	1	930	2-WAY	3/4"	1.7
WAV-B1-10	1	1,550	2-WAY	3/4"	2.8
WAV-B1-11	1	1,180	2-WAY	3/4"	2.1
WAV-B1-12	1	1,030	2-WAY	3/4"	1.9
WAV-B1-13	1	830	2-WAY	3/4"	1.0
WAV-B1-14	1	1,480	2-WAY	3/4"	2.6
WAV-B2-1	1	960	2-WAY	3/4"	1.7
WAV-B2-2	1	1,045	2-WAY	3/4"	1.9
WAV-B2-3	1	1,260	2-WAY	3/4"	2.6
WAV-B2-4	1	960	2-WAY	3/4"	1.7
WAV-B3-1	1	740	2-WAY	3/4"	1.5
WAV-B3-2	1	1,340	2-WAY	3/4"	1.9
WAV-B3-3	1	740	2-WAY	3/4"	1.5
WAV-B3-4	1	1,190	2-WAY	3/4"	2.1
WAV-B3-5	1	1,910	2-WAY	3/4"	3.4
WAV-B3-6	1	1,215	2-WAY	3/4"	2.2
WAV-B3-7	1	1,040	2-WAY	3/4"	1.9
WAV-B3-8	1	1,170	2-WAY	3/4"	2.1
WAV-B3-9	1	730	2-WAY	3/4"	1.5
WAV-B3-10	1	1,980	2-WAY	3/4"	3.6
WAV-C1-1	1	680	2-WAY	3/4"	1.5
WAV-C1-2	1	845	2-WAY	3/4"	1.7
WAV-C1-3	1	820	2-WAY	3/4"	1.6
WAV-C1-4	1	810	2-WAY	3/4"	1.5
WAV-C1-5	1	430	2-WAY	3/4"	1.0
WAV-C1-6	1	1,100	2-WAY	3/4"	2.0
WAV-E1-1	1	880	2-WAY	3/4"	1.6
WAV-E1-2	1	350	2-WAY	3/4"	1.0
WAV-E1-3	1	1,020	2-WAY	3/4"	1.8
WAV-E1-4	1	1,070	2-WAY	3/4"	1.9
WAV-E1-5	1	1,160	2-WAY	3/4"	2.1
WAV-E1-6	1	1,030	2-WAY	3/4"	1.9
WAV-E1-7	1	950	2-WAY	3/4"	1.8
WAV-E1-8	1	1,150	2-WAY	3/4"	2.1
WAV-E1-9	1	810	2-WAY	3/4"	1.5
WAV-E1-10	1	970	2-WAY	3/4"	1.7
WAV-E1-11	1	950	2-WAY	3/4"	1.7
WAV-E1-12	1	1,065	2-WAY	3/4"	3.0
WAV-E1-13	1	1,070	2-WAY	3/4"	1.9
WAV-E1-14	1	1,300	2-WAY	3/4"	2.3
WAV-E1-15	1	1,080	2-WAY	3/4"	1.9
WAV-E2-1	1	1,170	2-WAY	3/4"	2.1
WAV-E2-2	1	1,450	2-WAY	3/4"	2.6
WAV-E2-3	1	1,090	2-WAY	3/4"	2.0
WAV-E2-4	1	800	2-WAY	3/4"	1.5
WAV-E2-5	1	1,020	2-WAY	3/4"	1.8
WAV-E2-6	1	1,820	2-WAY	3/4"	3.5
WAV-E2-7	1	1,050	2-WAY	3/4"	1.9
WAV-E2-8	1	1,350	2-WAY	3/4"	2.4
WAV-F1-1	1	900	2-WAY	3/4"	1.7
WAV-F1-2	1	1,260	2-WAY	3/4"	2.3
WAV-F1-3	1	1,050	2-WAY	3/4"	1.9
WAV-F1-4	1	1,280	2-WAY	3/4"	2.3
WAV-F1-5	1	970	2-WAY	3/4"	1.7
WAV-F1-6	1	950	2-WAY	3/4"	1.7
WAV-F1-7	1	1,700	2-WAY	3/4"	3.1
WAV-F1-8	1	1,090	2-WAY	3/4"	2.0
WAV-F1-9	1	980	2-WAY	3/4"	1.8
WAV-F1-10	1	1,770	2-WAY	3/4"	3.2
WAV-F1-11	1	820	2-WAY	3/4"	1.5
1. EXISTING FAN POWERED TERMINAL UNIT TO REMAIN. REPLACE EXISTING CONTROLS. ASSOCIATED WIRING WITH NEW AND UPGRADE TO FULL DDC CONTROLS.					

DIFFUSERS, REGISTERS & GRILLES SCHEDULE				
DESIGNATION	MODEL NUMBER	NOISE CRITERIA (NC)	DESCRIPTION	
A	TITUS PAR	25	24x24 MODULE SIZE, LAY-IN BORDER TYPE, 22"x22" NECK SIZE UNLESS NOTED OTHERWISE. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION. FOR SHEETROCK CEILING INSTALLATION, PROVIDE WITH TITUS TRM ALUMINUM RAPID MOUNT FRAME.	
B	TITUS PAR	25	12x12 MODULE SIZE, LAY-IN BORDER TYPE, 10"x10" NECK SIZE UNLESS NOTED OTHERWISE. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION. FOR SHEETROCK CEILING INSTALLATION, PROVIDE WITH TITUS TRM ALUMINUM RAPID MOUNT FRAME.	
1. PROVIDE ROTO-TWIST CABLE OPERATED DAMPERS AT IN GYP BOARD CEILINGS.				

EXISTING NON-CONDENSING BOILER SCHEDULE									
DESIGNATION	TYPE	LOCATION	NOTES	BURNER FUEL	MIN. OUTPUT (BTUH)	E.W.T. (°F)	L.W.T. (°F)	GPM	CIRCULATING PUMP ELECTRICAL INFORMATION
B-01	NON-CONDENSING	BOILER ROOM	1	NAT. GAS	1,275,000	180°F	180°F	128	DESIGNATION PUMP-01 MAX H.P. 1 1/2
B-02	NON-CONDENSING	BOILER ROOM	1	NAT. GAS	1,275,000	180°F	180°F	128	DESIGNATION PUMP-02 MAX H.P. 1 1/2
1. EXISTING BOILER TO REMAIN. UPGRADE TO NEW DDC CONTROLS.									

EXISTING WATER-COOLED CHILLER SCHEDULE						
DESIGNATION	LOCATION	CAPACITY (TONS)	EVAPORATOR		CONDENSER	
			GPM	EWT / LWT (°F)	GPM	EWT / LWT (°F)
WCOH-1	MECHANICAL ROOM	394.6	482.1	58 / 42	921.7	86 / 96
WCOH-2	MECHANICAL ROOM	394.6	482.1	58 / 42	921.7	86 / 96
1. EXISTING WATER-COOLED CHILLERS, ASSOCIATED PIPING TO REMAIN. REPLACE EXISTING CONTROLS, ASSOCIATED WIRING WITH NEW.						

EXISTING CONDENSING BOILER SCHEDULE									
DESIGNATION	TYPE	LOCATION	NOTES	BURNER FUEL	MIN. OUTPUT (BTUH)	GPM	E.W.T. (°F)	L.W.T. (°F)	CIRCULATING PUMP ELECTRICAL INFORMATION
B-03	CONDENSING	BOILER ROOM	1	NAT. GAS	1,328,000	67	140°F	189°F	DESIGNATION PUMP-03 MAX H.P. 3/4
1. EXISTING BOILER TO REMAIN. UPGRADE TO NEW DDC CONTROLS.									

EXISTING PUMP SCHEDULE						
DESIGNATION	LOCATION	NOTES	SERVICE	HORSEPOWER	GPM	HEAD (FT.)
SHWP-1	MAIN BOILER ROOM	1.2	BUILDING HEATING SYSTEM	7 1/2	161.5	84
SHWP-2	MAIN BOILER ROOM	1.2	BUILDING HEATING SYSTEM	7 1/2	161.5	84
1. EXISTING PUMP. ASSOCIATED PIPING TO REMAIN. REPLACE EXISTING CONTROLS. ASSOCIATED WIRING WITH NEW. 2. REPLACE EXISTING VFD WITH NEW. MATCH EXISTING H.P.						

EXISTING ELECTRIC UNIT HEATER SCHEDULE			
DESIGNATION	SERVICE	NOTES	KW
EUH-E-1	FIRE RISER	1	3.3
EUH-ECP-1	CENTRAL PLANT	1	5.0
EUH-ECP-2	CENTRAL PLANT	1	5.0
EUH-ECP-3	CENTRAL PLANT	1	5.0
1. EXISTING UNIT HEATER TO REMAIN. UPGRADE TO NEW DDC CONTROLS.			

EXISTING HOT WATER COIL SCHEDULE				
DESIGNATION	SERVICE	GPM	PIPE SIZE (INCHES)	2-WAY OR 3-WAY CONTROL VALVE
RSC-C-01	KITCHEN HOOD SUPPLY FAN	4.1	1	3-WAY
1. EXISTING DATA IS FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY EXISTING DATA PRIOR TO BID DATE.				

EXISTING COOLING TOWER SCHEDULE						
DESIGNATION	LOCATION	NOTES	NO. OF CELLS	MOTOR H.P.	CAPACITY (TONS) / CELL	GPM / CELL
CT-1	MECH YARD	1.2	2	20	382.6	921.7
1. EXISTING COOLING TOWER. ASSOCIATED PIPING TO REMAIN. REPLACE EXISTING CONTROLS. ASSOCIATED WIRING WITH NEW. 2. REPLACE EXISTING VFD WITH NEW. MATCH EXISTING H.P.						

VARIABLE FREQUENCY DRIVE SCHEDULE						
TAG	LOCATION	EQUIPMENT TYPE	SEE NOTE	MAX. HORSEPOWER	BYPASS	VOLTS / Ø / HZ
VFD-AHU-08	GYM MEZZANINE	AIR HANDLING UNIT	1.4	5	YES	480 / 3 / 60
VFD-AHU-09	GYM MEZZANINE	AIR HANDLING UNIT	1.4	7 1/2	YES	480 / 3 / 60
VFD-AHU-10	GYM MEZZANINE	AIR HANDLING UNIT	1.4	7 1/2	YES	480 / 3 / 60
VFD-AHU-11	DINING STORAGE ROOM	AIR HANDLING UNIT	1.4	10	YES	480 / 3 / 60
VFD-PCWP-1	MAIN MECH ROOM	PUMP	1-3.5	15	YES	480 / 3 / 60
VFD-ECHP-2	MAIN MECH ROOM	PUMP	1-3.5	15	YES	480 / 3 / 60
VFD-CWP-1	MAIN MECH ROOM	PUMP	1-3.5	30	YES	480 / 3 / 60
VFD-CWP-2	MAIN MECH ROOM	PUMP	1-3.5	30	YES	480 / 3 / 60
VFD-SCHP-1	MAIN MECH ROOM	PUMP	1-3.5	20	YES	480 / 3 / 60
VFD-SCHP-2	MAIN MECH ROOM	PUMP	1-3.5	20	YES	480 / 3 / 60
VFD-SHWP-1	MAIN MECH ROOM	PUMP	1-3.5	7 1/2	YES	480 / 3 / 60
VFD-SHWP-2	MAIN MECH ROOM	PUMP	1-3.5	7 1/2	YES	480 / 3 / 60
VFD-AHU-B1	MECH ROOM X109	AIR HANDLING UNIT	1.4	20	YES	480 / 3 / 60
VFD-AHU-E1	MECH ROOM X169	AIR HANDLING UNIT	1.4	20	YES	480 / 3 / 60
VFD-CT-CELL-1	MAIN MECH ROOM	COOLING TOWER CELL	1-3.5	20	YES	480 / 3 / 60
VFD-CT-CELL-2	MAIN MECH ROOM	COOLING TOWER CELL	1-3.5	20	YES	480 / 3 / 60
VFD-AHU-5	MECH ROOM X142	AIR HANDLING UNIT	1.4	5	YES	480 / 3 / 60
VFD-AHU-C1	ADMIN MECH ROOM	AIR HANDLING UNIT	1.4	5	YES	480 / 3 / 60
VFD-AHU-7	MECH ROOM 21	AIR HANDLING UNIT	1.4	15	YES	480 / 3 / 60
VFD-AHU-B3	MECH ROOM X269	AIR HANDLING UNIT	1.4	15	YES	480 / 3 / 60
VFD-AHU-A1	MECH ROOM X269	AIR HANDLING UNIT	1.4	15	YES	480 / 3 / 60
VFD-AHU-3	MECH ROOM X269	AIR HANDLING UNIT	1.4	7 1/2	YES	480 / 3 / 60
VFD-AHU-4	MECH ROOM X269	AIR HANDLING UNIT	1.4	7 1/2	YES	480 / 3 / 60
VFD-AHU-E2	MECH ROOM X269	AIR HANDLING UNIT	1.4	15	YES	480 / 3 / 60
VFD-AHU-C2	MECH ROOM	AIR HANDLING UNIT	1.4	7 1/2	YES	480 / 3 / 60
VFD-AHU-F1	MECH ROOM X269	AIR HANDLING UNIT	1.4	15	YES	480 / 3 / 60
VFD-AHU-C3	IN UNIT AHU-C3	AIR HANDLING UNIT	1-3.5	7 1/2	YES	480 / 3 / 60
VFD-AHU-B1	MECH ROOM	AIR HANDLING UNIT	1.4	20	YES	480 / 3 / 60
VFD-AHU-B2	MECH ROOM	AIR HANDLING UNIT	1.4	5	YES	480 / 3 / 60
VFD-AHU-E1	MECH ROOM	AIR HANDLING UNIT	1.4	20	YES	480 / 3 / 60
VFD-AHU-2 (CHORAL)	MECH ROOM	AIR HANDLING UNIT	1.4	3	YES	480 / 3 / 60
VFD-AHU-10 (MUSIC)	MECH ROOM	AIR HANDLING UNIT	1.4	3	YES	480 / 3 / 60
1. PROVIDE VARIABLE FREQUENCY DRIVE WITH BYPASS. 2. REFER TO SPECIFICATION SECTION 23 05 14 FOR FURTHER REQUIREMENTS. 3. VFD HORSEPOWER RATING SHALL MATCH EXISTING & NEW UNIT MOTOR H.P. 4. PROVIDE VFD IN NEMA 1 ENCLOSURE. 5. PROVIDE VFD IN NEMA 3R ENCLOSURE.						

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GALENA PARK ISD - CUNNINGHAM MS - HVAC UPGRADES -
ISSUE FOR PROPOSAL

14705 Woodforest Blvd. Houston, TX 77015

CLIENT LOGO

2025/12/05
LEAF ENGINEERS
F-18672

CLIENT
GALENA PARK ISD

DATE
2025/12/05

PROJECT NUMBER
25037301

DRAWING HISTORY

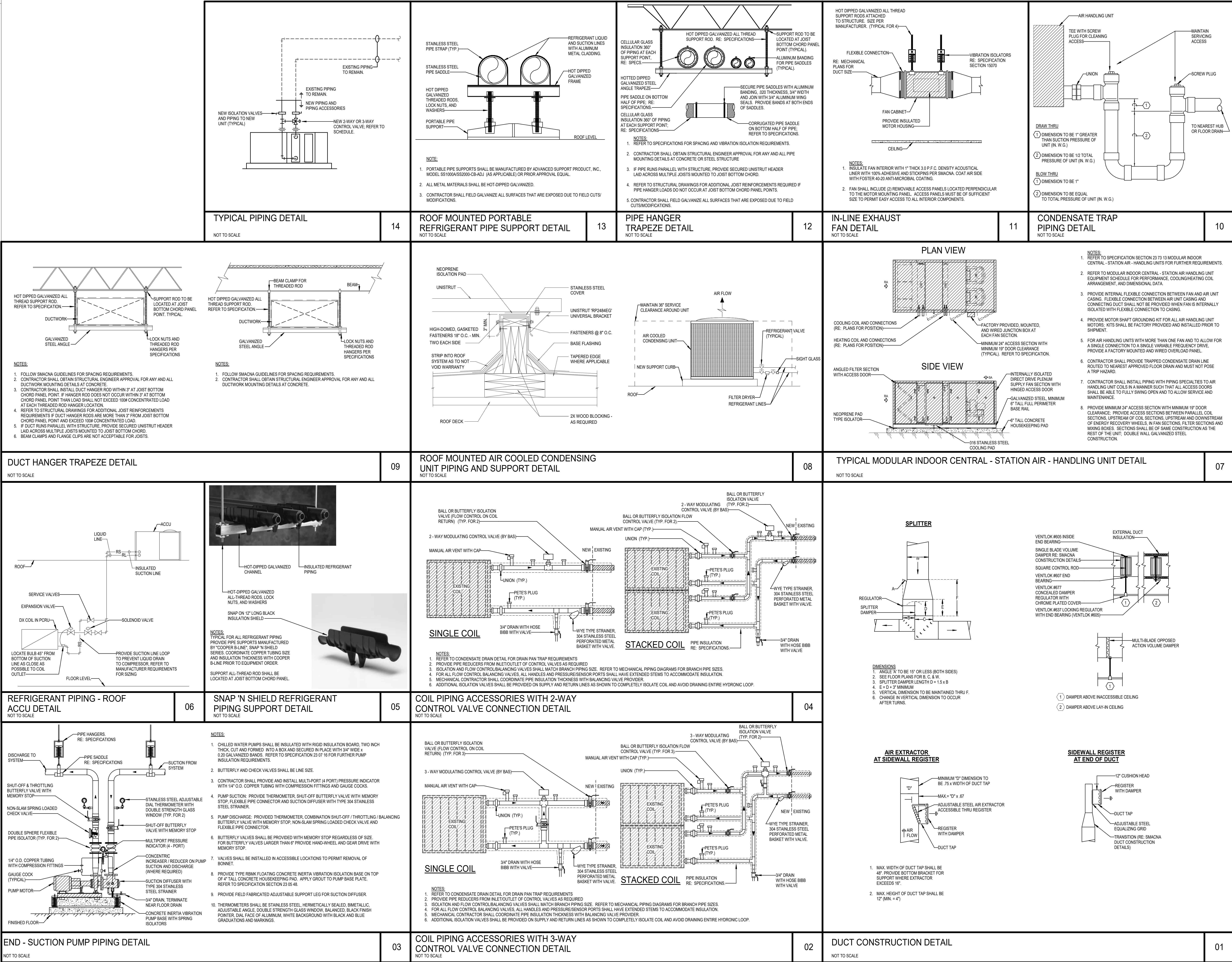
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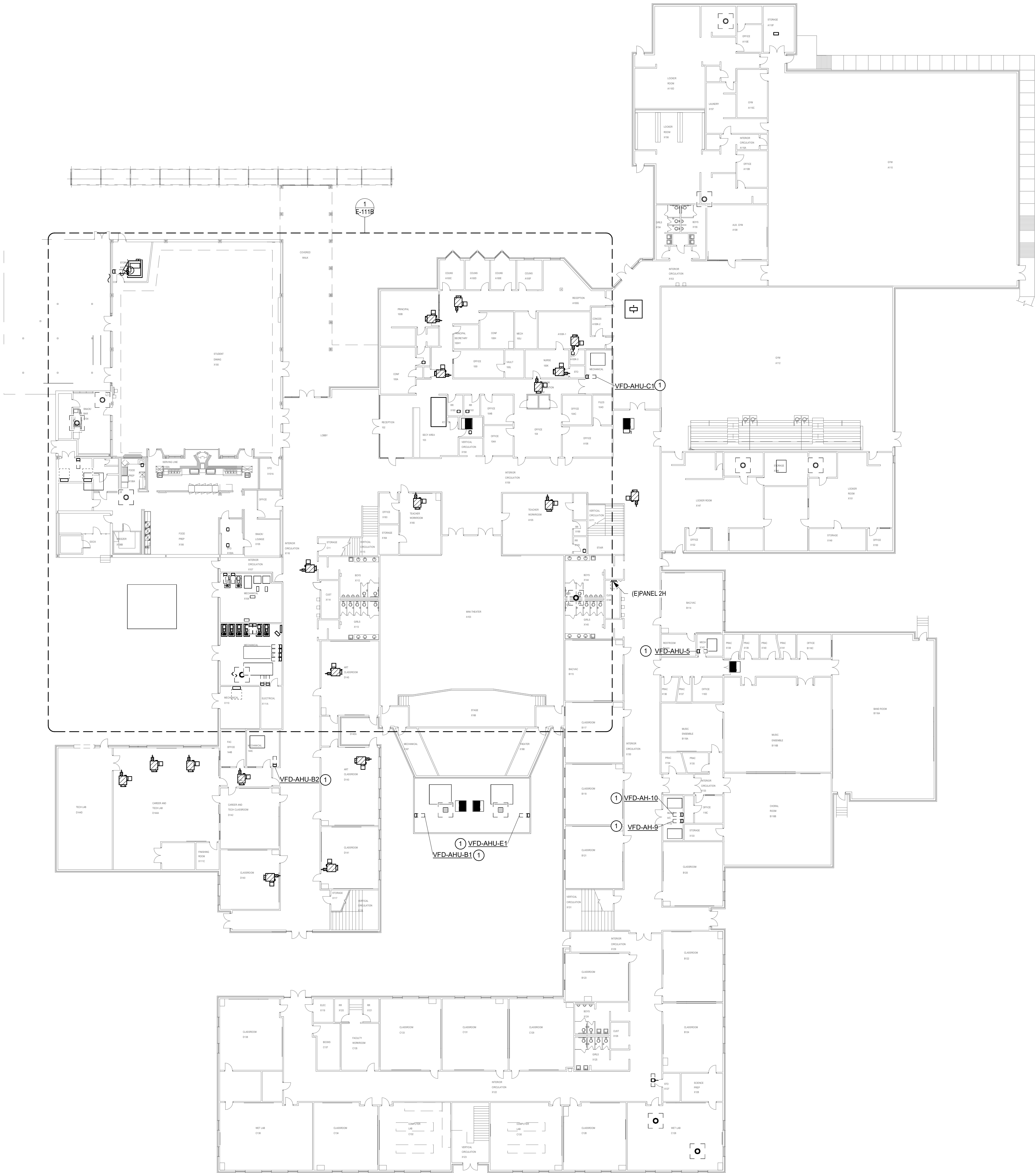
ISSUE FOR PROPOSAL

BUILDING NUMBER

MECHANICAL
SCHEDULES

M-502





- POWER PLAN GENERAL NOTES:**
- FOR EQUIPMENT OR DEVICES SHOWN ON ARCHITECTURAL DRAWINGS THAT REQUIRE POWER AND NOT IDENTIFIED ON ELECTRICAL PLANS, ASSUME AT A MINIMUM A DUPLEX OUTLET, A DEDICATED CIRCUIT WITH 20/12, 11/20, 3/4" C, WITH HOMERUN TO NEAREST 120/208V PANEL. ITEMS SUCH AS BUT NOT LIMITED TO ROLL DOWN DOORS, COUNTER DOORS, OVERHEAD GRILLES, DISPLAY CASES, HAND DRYERS, WATER COOLERS, ICE MAKERS, GARBAGE DISPOSALS, OSCILLATING FANS, LCD'S, PROJECTORS, DISHWASHERS, MOTORIZED PROJECTION SCREENS, ETC.
 - DATA/COMMUNICATION OUTLETS ARE SHOWN ON THIS DRAWING FOR COORDINATION PURPOSES ONLY. PROVIDE AND INSTALL ALL CONDUITS AND BACK BOXES REQUIRED BY LOW VOLTAGE SYSTEMS. COORDINATE WITH TS DRAWINGS, DETAILS, ETC. AND ARCHITECTURAL DRAWINGS FOR EXACT QUANTITIES, LOCATIONS, AND REQUIREMENTS PRIOR TO ROUGH-IN.
 - CONTRACTOR TO PROVIDE CONNECTION FROM EXHAUST FANS TO ALL MOTORIZED BACKDRAFT DAMPERS AS REQUIRED. COORDINATE WITH MECHANICAL.
 - UNLESS OTHERWISE NOTED, ALL DISCONNECT SHOWN SHALL BE 30IN/3 DISCONNECT.
 - CONTRACTOR SHALL NOTE THAT ALL 15 AMP AND 20 AMP NON-LOCKING TYPE RECEPTACLES THAT ARE NOT LOCATED WITHIN DEDICATED APPLIANCE SPACE AND ARE BELOW 6' ABOVE FINISHED FLOOR SHALL BE TAMPER RESISTANT TYPE RECEPTACLES. PER NEC 408.12.
- ELECTRICAL SHEET NOTES**
- EXISTING VFD SHALL BE REPLACED ONE FOR ONE.

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DATE
2025/12/05

PROJECT NUMBER
250373.01

DRAWING HISTORY

No.	Description	Date

ISSUE FOR PROPOSAL

BUILDING NUMBER

1ST FLOOR POWER
PLAN - CUNNINGHAM

E-111



- POWER PLAN GENERAL NOTES:**
- FOR EQUIPMENT OR DEVICES SHOWN ON ARCHITECTURAL DRAWINGS THAT REQUIRE POWER AND NOT IDENTIFIED ON ELECTRICAL PLANS, ASSUME AT A MINIMUM A DUPLEX OUTLET, A DEDICATED CIRCUIT WITH 20A, 120V, 3-4C, WITH HOMERUN TO NEAREST 120/208V PANEL. ITEMS SUCH AS BUT NOT LIMITED TO ROLL DOWN DOORS, COUNTER DOORS, OVERHEAD GRILLES, DISPLAY CASES, HAND DRYERS, WATER COOLERS, ICE MAKERS, GARBAGE DISPOSALS, OSCILLATING FANS, LCD's, PROJECTORS, DISHWASHERS, MOTORIZED PROJECTION SCREENS, ETC.
 - DATA/COMMUNICATION OUTLETS ARE SHOWN ON THIS DRAWING FOR COORDINATION PURPOSES ONLY. PROVIDE AND INSTALL ALL CONDUITS AND BACK BOXES REQUIRED BY LOW VOLTAGE SYSTEMS, COORDINATE WITH TS DRAWINGS, DETAILS, ETC. AND ARCHITECTURAL DRAWINGS FOR EXACT QUANTITIES, LOCATIONS, AND REQUIREMENTS PRIOR TO ROUGH-IN.
 - CONTRACTOR TO PROVIDE CONNECTION FROM EXHAUST FANS TO ALL MOTORIZED BACKDRAFT DAMPERS AS REQUIRED. COORDINATE WITH MECHANICAL.
 - UNLESS OTHERWISE NOTED, ALL DISCONNECT SHOWN SHALL BE 30IN/3 DISCONNECT.
 - CONTRACTOR SHALL NOTE THAT ALL 15 AMP AND 20 AMP NON-LOCKING TYPE RECEPTACLES THAT ARE NOT LOCATED WITHIN DEDICATED APPLIANCE SPACE AND ARE BELOW 6' ABOVE FINISHED FLOOR SHALL BE TAMPER RESISTANT TYPE RECEPTACLES. PER NEC 408.12.
- ELECTRICAL SHEET NOTES**
- EXISTING VFD AND AHU TO BE DEMOLISHED. DISCONNECT EXISTING CIRCUIT AND MAKE SAFE FOR REUSE.
 - NEW VFD AND AHU. EXTEND EXISTING CIRCUITRY AS REQUIRED FOR NEW CONNECTIONS.
 - UVI LIGHT. ACCESS DOOR KILL SWITCH BY MECHANICAL. CONTRACTOR SHALL FIELD VERIFY MANUFACTURER ELECTRICAL REQUIREMENTS. PROVIDE 120V, 20A CONTACTOR FOR CIRCUIT. CONTACTOR SHALL BE CONTROLLED BY THE BMS.
 - INDICATED EQUIPMENT TO BE REPLACED ONE FOR ONE. EXISTING WIRING, CONDUIT, DISCONNECT, STARTER AND RELATED APPURTENANCES TO BE DEMOLISHED BACK TO PANEL. PROVIDE NEW POWER AS SHOWN.
 - EXISTING VFD SHALL BE REPLACED ONE FOR ONE.

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DATE
2025/12/05

PROJECT NUMBER
250373.01

DRAWING HISTORY

No.	Description	Date

ISSUE FOR PROPOSAL

BUILDING NUMBER

1ST FLOOR POWER
PLAN - AREA B -
CUNNINGHAM

E-111B



1. FOR EQUIPMENT OR DEVICES SHOWN ON ARCHITECTURAL DRAWINGS THAT REQUIRE POWER AND NOT IDENTIFIED ON ELECTRICAL PLANS, ASSUME AT A MINIMUM A DUPLEX OUTLET, A DEDICATED CIRCUIT WITH 20/2, 30/3, 3/4" WITH HOMERUN TO NEAREST PANEL OR DISCONNECT, BUT NOT LIMITED TO LOCK DOWN DOGS, COUNTER DOGS, OVERHEAD GRILLS, DISPLAY CASES, HAND DRYERS, WATER COOLERS, ICE MAKERS, GARBAGE DISPOSALS, OSCILLATING FANS, LCD'S, PROJECTORS, DISHWASHERS, MOTORIZED PROJECTION SCREENS, ETC.
2. DATA/COMMUNICATION OUTLETS ARE SHOWN ON THIS DRAWING FOR COORDINATION PURPOSES ONLY. THEY ARE NOT TO BE INSTALLED UNLESS SPECIFICALLY REQUIRED BY LOW VOLTAGE SYSTEMS. COORDINATE WITH TS DRAWINGS, DETAILS, ETC. AND ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS, LOCATIONS, AND REQUIREMENTS PRIOR TO RUGH-IN.
3. CONTRACTOR TO PROVIDE CONNECTION ON EXHAUST FANS TO ALL MOTORIZED BURNER/GRILL DAMPERS AS REQUIRED. COORDINATE WITH MECHANICAL.
4. UNLESS OTHERWISE NOTED, ALL DISCONNECT SHOWN SHALL BE 30NFP DISCONNECT.
5. CONTRACTOR SHALL NOTE THAT ALL 15 AMP AND 20 AMP NON-LOCKING TYPE RECEPTACLES THAT ARE NOT LOCATED WITHIN DEDICATED APPLIANCE SPACE AND ARE BELOW THE FINISHED FLOOR SHALL BE TAMPER RESISTANT TYPE RECEPTACLES PER NEC 406.12.

1. EXISTING VFD SHALL BE REPLACED ONE FOR ONE.

1. EXISTING VFD SHALL BE REPLACED ONE FOR ONE.



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2025/12/05
LEAF ENGINEERS
F-18672

PROJECT NUMBER
250373.01

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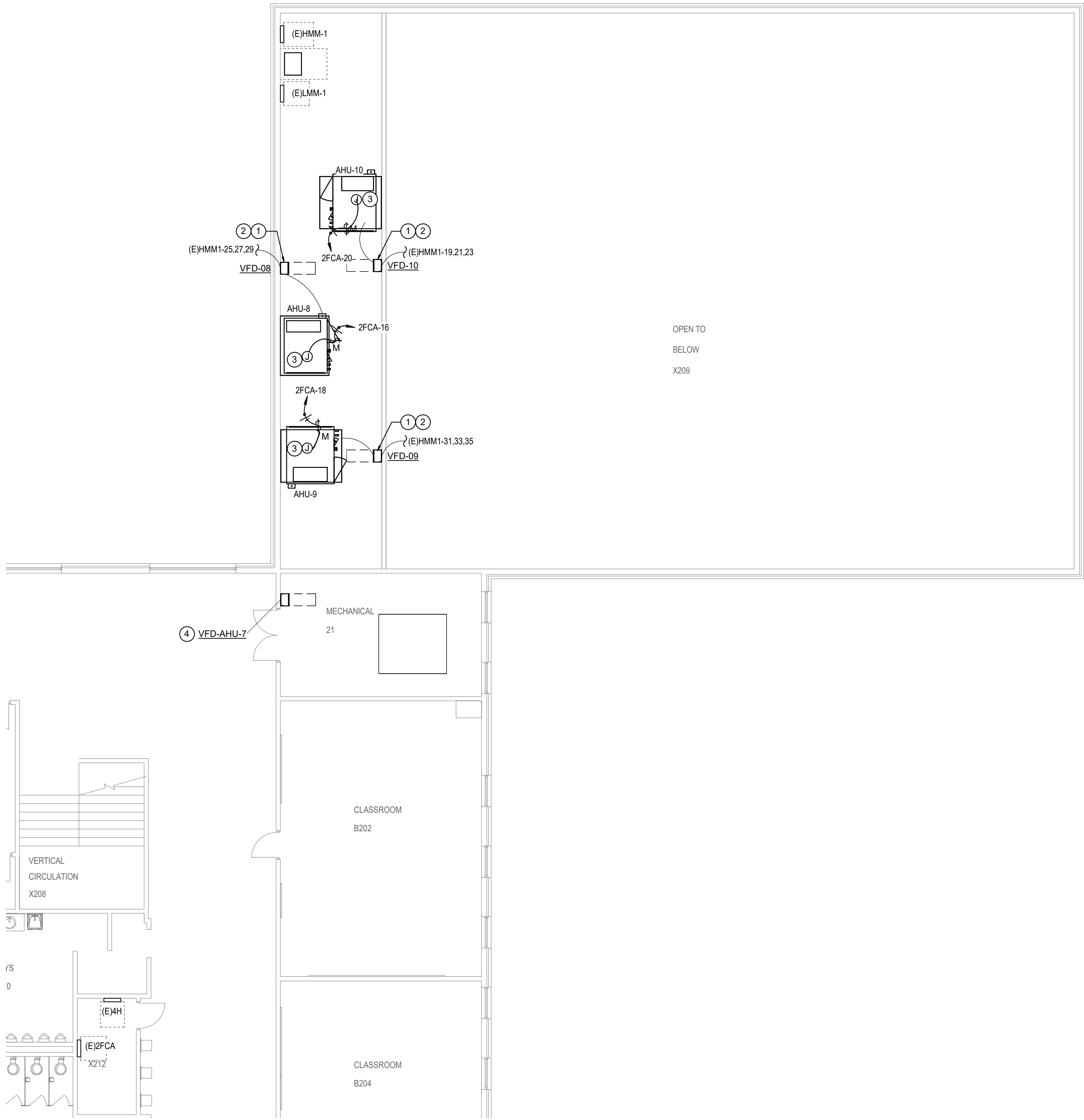
BUILDING NUMBER

2ND FLOOR POWER PLAN - CUMMINGHAM

E-112

FILE PATH: Autodesk Docs://Galena Park ISD_240539_Galena Park HS Master Plan/E25-GPISD-HVAC Upgrades.rvt

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- POWER PLAN GENERAL NOTES:**
- FOR EQUIPMENT OR DEVICES SHOWN ON ARCHITECTURAL DRAWINGS THAT REQUIRE POWER AND NOT IDENTIFIED ON ELECTRICAL PLANS, ASSUME AT A MINIMUM A DUPLEX OUTLET, A DEDICATED CIRCUIT WITH 2412.1#12G.3/4"C. WITH HOMERUN TO NEAREST 120/208V PANEL. ITEMS SUCH AS BUT NOT LIMITED TO ROLL DOWN DOORS, COUNTER DOORS, OVERHEAD GRILLES, DISPLAY CASES, HAND DRYERS, WATER COOLERS, ICE MAKERS, GARBAGE DISPOSALS, OSCILLATING FANS, LCD's, PROJECTORS, DISHWASHERS, MOTORIZED PROJECTION SCREENS, ETC.
 - DATA/COMMUNICATION OUTLETS ARE SHOWN ON THIS DRAWING FOR COORDINATION PURPOSES ONLY. PROVIDE AND INSTALL ALL CONDUITS AND BACK BOXES REQUIRED BY LOW VOLTAGE SYSTEMS. COORDINATE WITH TS' DRAWINGS, DETAILS, ETC. AND ARCHITECTURAL DRAWINGS FOR EXACT QUANTITIES, LOCATIONS, AND REQUIREMENTS PRIOR TO ROUGH-IN.
 - CONTRACTOR TO PROVIDE CONNECTION FROM EXHAUST FANS TO ALL MOTORIZED BACKDRAFT DAMPERS AS REQUIRED. COORDINATE WITH MECHANICAL.
 - UNLESS OTHERWISE NOTED, ALL DISCONNECT SHOWN SHALL BE 30INF/3 DISCONNECT.
 - CONTRACTOR SHALL NOTE THAT ALL 15 AMP AND 20 AMP NON-LOCKING TYPE RECEPTACLES THAT ARE NOT LOCATED WITHIN DEDICATED APPLIANCE SPACE AND ARE BELOW 6' ABOVE FINISHED FLOOR SHALL BE TAMPER RESISTANT TYPE RECEPTACLES. PER NEC 408.12.
- ELECTRICAL SHEET NOTES**
- EXISTING VFD AND AHU TO BE DEMOLISHED. DISCONNECT EXISTING CIRCUIT AND MAKE SAFE FOR REUSE.
 - NEW VFD AND AHU. EXTEND EXISTING CIRCUITRY AS REQUIRED FOR NEW CONNECTIONS.
 - UVC LIGHT. ACCESS DOOR KILL SWITCH BY MECHANICAL. CONTRACTOR SHALL FIELD VERIFY MANUFACTURER ELECTRICAL REQUIREMENTS. PROVIDE 120V, 20 A CONTACTOR FOR CIRCUIT. CONTRACTOR SHALL BE CONTROLLED BY THE BMS.
 - EXISTING VFD SHALL BE REPLACED ONE FOR ONE.

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GALENA PARK ISD - CUNNINGHAM MS - HVAC UPGRADES -

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CLIENT LOGO

2025/12/05

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GALENA PARK ISD

DATE

2025/12/05

PROJECT NUMBER

250373.01

DRAWING HISTORY

No.	Description	Date

ISSUE FOR PROPOSAL

BUILDING NUMBER

2ND FLOOR POWER PLAN - AREA A - CUNNINGHAM

E-112A


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DATE
2025/12/05

PROJECT NUMBER
250373.01

DRAWING HISTORY

No.	Description	Date

ISSUE FOR PROPOSAL

BUILDING NUMBER

ELECTRICAL ROOF
PLAN - COMPOSITE

E-301

- POWER PLAN GENERAL NOTES:
1. FOR EQUIPMENT OR DEVICES SHOWN ON ARCHITECTURAL DRAWINGS THAT REQUIRE POWER AND NOT IDENTIFIED ON ELECTRICAL PLANS, ASSUME AT A MINIMUM A DUPELX OUTLET, A DEDICATED CIRCUIT WITH 2#12, 1#12G, 3#4"C, WITH HOMERUN TO NEAREST 120/208V PANEL, ITEMS SUCH AS BUT NOT LIMITED TO ROLL DOWN DOORS, COUNTER DOORS, OVERHEAD GRILLES, DISPLAY CASES, HAND DRYERS, WATER COOLERS, ICE MAKERS, GARBAGE DISPOSALS, OSCILLATING FANS, LCD'S, PROJECTORS, DISHWASHERS, MOTORIZED PROJECTION SCREENS, ETC.

2. DATA COMMUNICATION OUTLETS ARE SHOWN ON THIS DRAWING FOR COORDINATION PURPOSES ONLY. PROVIDE AND INSTALL ALL CONDUITS AND BACK BOXES REQUIRED BY LOW VOLTAGE SYSTEMS, COORDINATE WITH T'S DRAWINGS, DETAILS, ETC. AND ARCHITECTURAL DRAWINGS FOR EXACT QUANTITIES, LOCATIONS, AND REQUIREMENTS PRIOR TO ROUGH-IN.

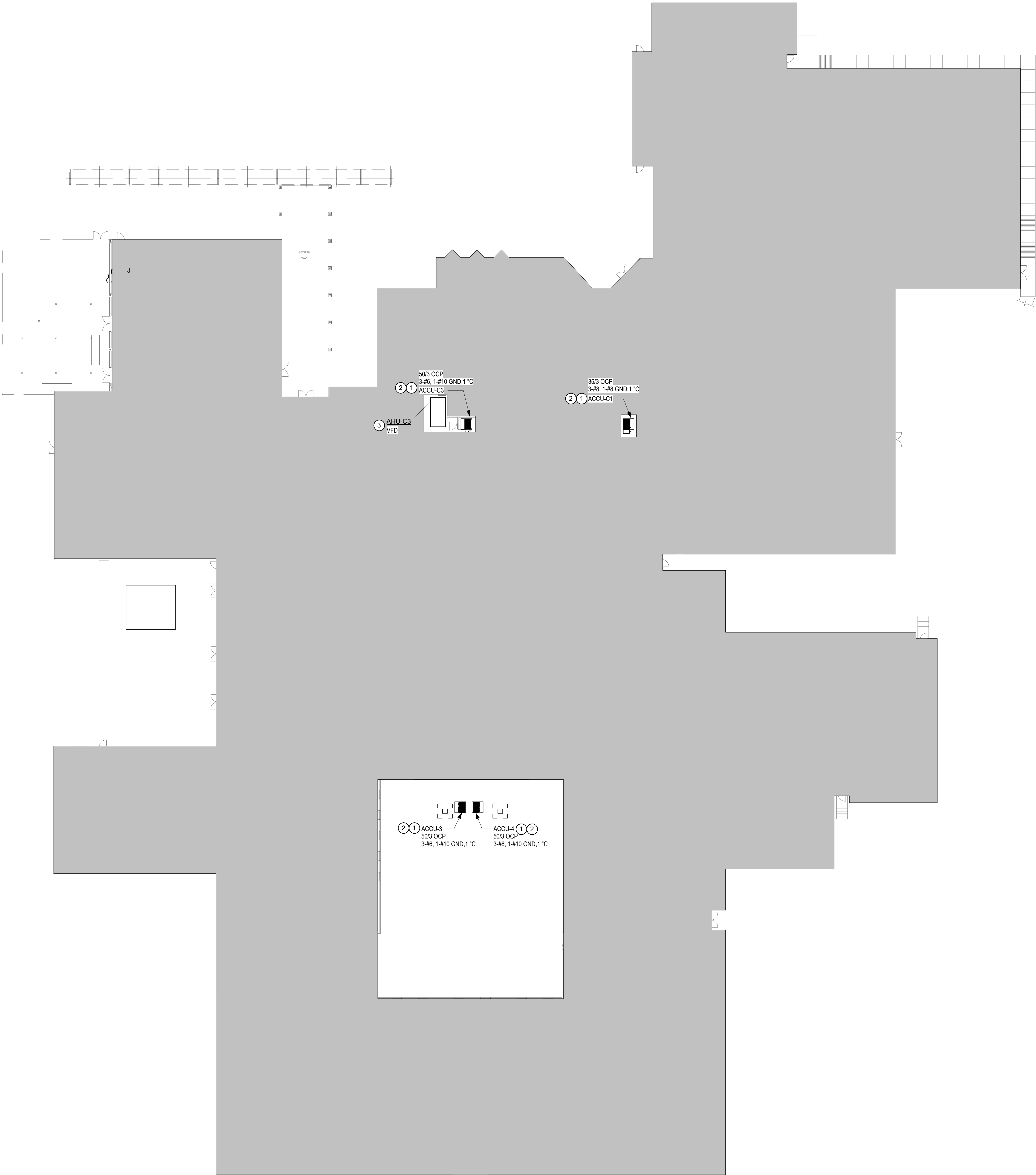
3. CONTRACTOR TO PROVIDE CONNECTION FROM EXHAUST FANS TO ALL MOTORIZED BACKDRAFT DAMPERS AS REQUIRED. COORDINATE WITH MECHANICAL.

4. UNLESS OTHERWISE NOTED, ALL DISCONNECT SHOWN SHALL BE 30N/F3 DISCONNECT.

5. CONTRACTOR SHALL NOTE THAT ALL 15 AMP AND 20 AMP NON-LOCKING TYPE RECEPTACLES THAT ARE NOT LOCATED WITHIN DEDICATED APPLIANCE SPACE AND ARE BELOW 8'6" ABOVE FINISHED FLOOR SHALL BE TAMPER RESISTANT TYPE RECEPTACLES. PER NEC 406.12.
- ELECTRICAL SHEET NOTES
1. EXISTING ACCU TO BE DEMOLISHED. DISCONNECT EXISTING CIRCUIT AND MAKE SAFE FOR REUSE.

2. NEW ACCU. EXISTING CIRCUITRY AND OCP MAY BE REUSED IF SIZE MATCHES SIZE SHOWN FOR NEW ACCU. UNIT SHALL BE POWERED FROM SAME PANEL AS ORIGINAL ACCU.

3. EXISTING VFD SHALL BE REPLACED ONE FOR ONE.



Mounting SURFACE
Main: WCB (600A)
Neutral: 200%

Job: GPISD Cunningham

Job No.: 250373.01

A/C: Equipment Ground
Ground Lugs: FEED THRU

Voltage: 208Y/120V-3PH 4W
Main: 400 AMPS

ALL LOADS IN VA

Panel:	EqL	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	
								0.00	(E)KITCH RR & STOR	201	1	A	2			502	(E)								0.00	
								0.00	(E)REC - FOOD PREP	201	3	B	4			201	(E)								0.00	
								0.00	(E)DRYER	201	5	C	6			201	(E)								0.00	
								0.00	EXIST	201	7	A	8			302	(E)								0.00	
								0.00	(E)KITCH DOORBELL	201	9	B	10												0.00	
								0.00	(E)REC SNACK BAR	201	11	C	12	12	201	UV AHJ-11							1200	0.00		
								0.00	(E)REC BLN WARMER	201	13	A	14			201	(E)RM X100 N WALL FOOD							0.00		
								0.00	(E)REC BLN WARMER	202	15	B	16			201	(E)REC SERV LINE S WALL							0.00		
								0.00	(E)REC SNACK LOUNGE	201	17	C	18			201	(E)							0.00		
								0.00	(E)REC SNACK LOUNGE	201	19	A	20			201	(E)							0.00		
								0.00	(E)REC SNACK LOUNGE	201	21	B	22			201	(E)GARBAGE DISPOSAL							0.00		
								0.00	(E)	201	23	C	24			201	(E)							0.00		
								0.00	SPACE		25	A	26			202	(E)							0.00		
								0.00	(E)AC	202	27	B	28											0.00		
								0.00	--	--	29	C	30			202	(E)							0.00		
								0.00	(E)	202	31	A	32			--								0.00		
								0.00	--	--	33	B	34			202	(E)							0.00		
								0.00	SPD		35	C	36											0.00		
								0.00	--	--	37	A	38			201	(E)DEEP FRYER							0.00		
								0.00	--	--	39	B	40											0.00		
								0.00	--	--	41	C	42			201	(E)REC GPI EXTERIOR							0.00		
0	0	0	0	0	0	0	0	0.00	TOTALS	201							TOTALS	0	0	0	0	0	0	1200	0	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	Connected KVA
1.25	--	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	Design KVA

Phase Load
Ph KVA
A 0.0
B 0.0
C 1.2

Panel Remarks:

Input div. factor per descriptions as required for calculations.
**100% of 1st 10 KVA, 50% of remaining.

Con. KVA	Con. Amps	Des. KVA	Des. Amps
1.2	3.3	1.2	3.3

DATE: 12/4/2025 By: Designer

Panel: (E)BL

Mounting SURFACE
Main: MLO
Neutral: 200%

Job: GPISD Cunningham

Job No.: 250373.01

A/C: Equipment Ground
Ground Lugs: FEED THRU

Voltage: 208Y/120V-3PH 4W
Main: 125 AMPS

ALL LOADS IN VA

Panel:	EqL	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	
								0.00	(E)	201	1	A	2			201	(E)								0.00	
								0.00	(E)	201	3	B	4			201	(E)								0.00	
								0.00	(E)	201	5	C	6			201	(E)								0.00	
								0.00	(E)	201	7	A	8			201	(E)								0.00	
								0.00	(E)	201	9	B	10			201	(E)								0.00	
								0.00	(E)	201	11	C	12			201	(E)								0.00	
								0.00	(E)	201	13	A	14			201	(E)								0.00	
								0.00	(E)	202	15	B	16	12	201	UV AHJ-8							1200	0.00		
								0.00	(E)	201	17	C	18	12	201	UV AHJ-9							1200	0.00		
								0.00	(E)	201	19	A	20	12	201	UV AHJ-10							1200	0.00		
								0.00	(E)	201	21	B	22											0.00		
								0.00	(E)	201	23	C	24											0.00		
								0.00	(E)	201	25	A	26											0.00		
								0.00	(E)	201	27	B	28											0.00		
								0.00	(E)	201	29	C	30											0.00		
								0.00	(E)	201	31	A	32			502	(E)RANGE							0.00		
								0.00	--	--	33	B	34			--								0.00		
								0.00	--	--	35	C	36											0.00		
								0.00	--	--	37	A	38			303	(E)							0.00		
								0.00	--	--	39	B	40			--								0.00		
0	0	0	0	0	0	0	0	0.00	TOTALS	201							TOTALS	0	0	0	0	0	0	3600	0	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	Connected KVA
1.25	--	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	Design KVA

Phase Load
Ph KVA
A 1.2
B 1.2
C 1.2

Panel Remarks:

Input div. factor per descriptions as required for calculations.
**100% of 1st 10 KVA, 50% of remaining.

Con. KVA	Con. Amps	Des. KVA	Des. Amps
3.6	10.0	3.6	10.0

DATE: 12/4/2025 By: Designer

Panel: (E)2FCA

Electrical...

A/C Rating:

Job: GPISD Cunningham

DISTRIBUTION: (E)MDP

Job No.: 250373.01

Served From:

Volts - Phase: 480Y/277V-3PH 4W

Connected Load (KVA)

Cir. No.	Load Served	Amp/Poles	Wire and Conduit Size	Lighting	Conv. Outlets	Motors	Heating	Cooling	Others	Elect. Cooking	Spans/ Spaces	Elevators	Residential	Total KVA	Total Amps
1	(E)EUPH-CP-3	153				10.0								10.0	12.0
2	(E)EUPH-CP-1	153				10.0								10.0	12.0
3	(E)SPARE	153												0.0	0.0
4	(E)EUPH-CP-2	153				10.0								10.0	12.0
5	(E)SPARE	153												0.0	0.0
6	(E)SPARE	153												0.0	0.0
7	(E)SHWP-2	203				13.3								13.3	16.0
8	(E)SHWP-1	203				13.3								13.3	16.0
9	(E)BASIN HEATER 1	253					16.6							16.6	20.0
10	PCHP-1	303	4-#10, #10 GND, 3/4"			16.7								16.7	20.1
11	(E)BASIN HEATER 2	253					16.6								
12	PCHP-2	303	4-#10, #10 GND, 3/4"			16.7									
13	(E)CT-1 CELL #1	603				39.9									
14	SCHP-1	403	4-#6, #10 GND, 3/4"			21.5								39.9	48.0
15	(E)CT-1 CELL #1	603				39.9									
16	SCHP-2	403	4-#6, #10 GND, 3/4"			21.5								21.5	25.9
17	CWP-1	603	4-#6, #10 GND, 3/4"			31.9								31.9	38.3
18	CWP-2	603	4-#6, #10 GND, 3/4"			31.9								31.9	38.3
Total...				0.0	0.0	276.5	33.2	0.0	0.0	0.0	0.0	0.0	0.0	215.0	256.6
Demand...				1.25	--	--	--	1.0	1.0	1.00	0.65	0.5	---	---	---
Total...				0.0	0.0	276.5	33.2	0.0	0.0	0.0	0.0	0.0	0.0	309.8	372.6

Largest... KVA

DISTRIBUTION PANEL: (E)MDP

MAINS (1)

TYPE: MAIN LUGS ONLY

SIZE: 800 AMP

PHASE: 800 AMP

NEUTRAL: 800 AMP

GROUND: PER NEC

DATE: 12/4/2025 By: Designer

FILE PATH: Autodeskt Doss:\Galena Park ISD_24\6330_Galena Park ISD Master Plan\E25-GPISD-HVAC Upgrades.rvt

CHECKED BY: Checker
DRAWN BY: Author
PLOT STAMP: 12/4/2025 2:45:36 PM

LEAF ENGINEERS

HOUSTON
11 Greenway Plaza, 15th Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: F-18672


MEPT

LEAF Engineers
LEAFEngineers.com

GALENA PARK ISD - CUNNINGHAM MS - HVAC UPGRADES -
ISSUE FOR PROPOSAL

14705 Woodforest Blvd, Houston, TX 77015

CLIENT LOGO



STATE OF TEXAS
DONALD C. RICHARDS
61525
2025/12/05
LEAF ENGINEERS
F-18672

CLIENT
GALENA PARK ISD
DATE
2025/12/05
PROJECT NUMBER
250373.01

DRAWING HISTORY

No.	Description	Date

ISSUE FOR PROPOSAL

BUILDING NUMBER

ELECTRICAL PANEL
SCHEDULES

E-701



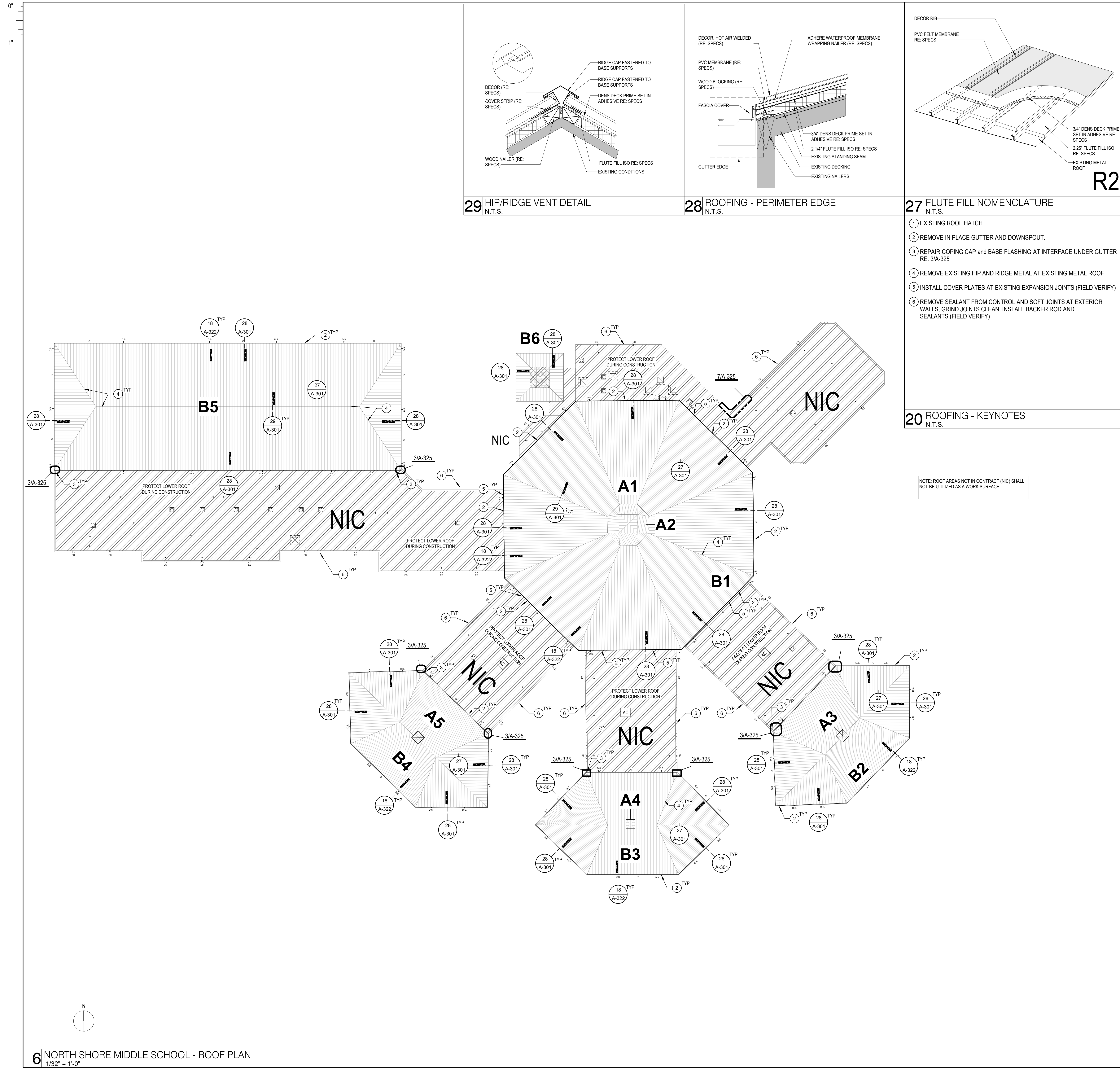
Package II
North Shore Middle School Roof Upgrade
120 Castlegory Rd.
Houston, TX 77015
Cunningham Middle School Roof Replacement and HVAC Upgrades
14110 Wallisville Rd.
Houston, TX 77049
Galena Park Independent School District
Issue For Proposal
2025/12/05



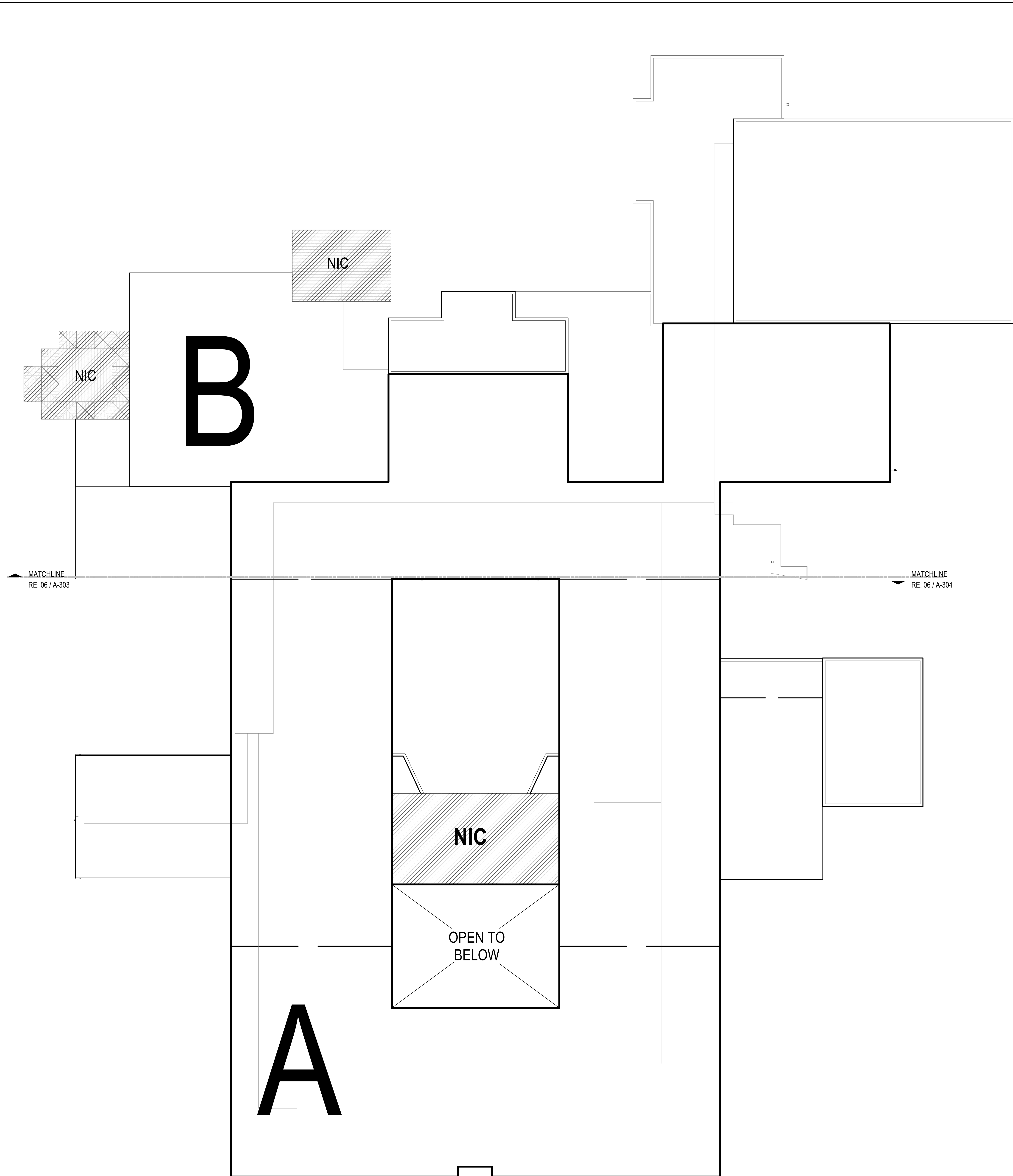
BOARD OF TRUSTEES		ADMINISTRATION		ADMINISTRATION	
Mr. Ramon Garza	Board President	Dr. John C. Moore	Superintendent of Schools	Mr. Lee Ramirez	Executive Director for School Operations
Mrs. Linda Clark Sherrard	Board Vice President	Dr. Wanna Giacona	Chief Administrative Officer	Dr. Kimberly Martin	Executive Director for Accountability & Academic Support
Mr. Jose Jimenez	Board Secretary	Mr. Ben Pape	Chief Financial Officer	Ms. Vivian Dancy	Director for Athletics
Mrs. Adrian Stephens	Board Trustee	Dr. Mechelle Epps	Assistant Superintendent for Student Support Services	Mr. Ed Martir	Director for Facilities, Planning & Construction
Mr. Noe Esparza	Board Trustee	Mr. Mike McKay	Assistant Superintendent for Operations	Mr. Trey Kraemer	Campus Liaison
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Mrs. Amanda Erebia	Board Trustee	Mr. Jerid Link	Assistant Superintendent for Human Resources		
		Mr. Bryan Clements	Chief of Police/Executive Director for Security & Tech.		








































BEAM PROFESSIONALS
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
T (713) 965-0608

Package II
North Shore Middle School Roof Upgrade
Cunningham Middle School Roof Replacement and HVAC Upgrades
Issue For Proposal

[illegible]

CUNNINGHAM MIDDLE SCHOOL - COMPOSITE ROOF



	EXIST. ROOF DRAIN WITH NEW SUMP (UNLESS NOTED OTHER WISE)		JUNCTION BOX W/ HOOD		EXHAUST AND SUPPLY FAN ON SINGLE CURB
	AC		CURB MOUNTED AC		NIC
	EXIST. ROOF DRAIN		SPLASH BLOCK		NEW TAPERED INSULATION / CRICKET
	OVERFLOW DRAINS		SPLASH PAN		LIMITED WORK
	FLANGE VENT		AC ON POSTS		
	PITCH PAN		ROOF HATCH		
	VENT THROUGH ROOF		ROOF AREA DESIGNATION		
	CURB MOUNTED VENT				
	CURB MOUNTED INTAKE		SKYLIGHTS		
	ABANDONED CURB TO BE REMOVED / PATCHED				
	ABANDON EQUIP.		ANTENNA		RAISED EDGE
	POWER VENT		SATELLITE DISH		AREA DIVIDER
	HEATER VENT		SCUPPER		CONDENSATE LINE
	BOILER VENT		OVER FLOW SCUPPER		WATER LINE
	DOWNSPOUT		GUTTER		ELEC. LINE
			WALL LADDER		GAS LINE

ROOF LEGEND				
N.T.S.				
CUNNINGHAM MS ROOF SCHEDULE				
MARK	APPROX. SQ. FT.	EXISTING NOMENCLATURE	PROPOSED NOMENCLATURE	Comments
A1	66,488 SF	CONC DECK, 12" GYP 2-4.5' POLYSIO, 12" WOOD FIBER, HYLOAK, 12" 3' PLY, GRAVEL	R1	
A2	11,528 SF	MTL DECK 12" GYP 2-4.5' POLYSIO, 12" WOOD FIBER, HYLOAK, 12" 3' PLY, GRAVEL	R1	
A3	2,196 SF	CONC DECK 12" GYP 2-4.5' POLYSIO, 12" WOOD FIBER, HYLOAK, 12" 3' PLY, GRAVEL	R1	
B1	7,403 SF	CONC DECK 12" GYP 2-4.5' POLYSIO, 12" WOOD FIBER, HYLOAK, 12" 3' PLY, GRAVEL	R1	
B2	7,047 SF	MTL DECK 12" GYP 2-4.5' POLYSIO, 12" WOOD FIBER, HYLOAK, 12" 3' PLY, GRAVEL	R1	
B3	2,794 SF	MTL DECK 12" GYP 2-4.5' POLYSIO, 12" WOOD FIBER, HYLOAK, 12" 3' PLY, GRAVEL	R1	
C1	3,913 SF	CONC DECK 12" GYP 2-4.5' POLYSIO, 12" WOOD FIBER, HYLOAK, 12" 3' PLY, GRAVEL	R2	REMOVE EXISTING ROOF SYSTEM TO EXISTING DECK
C2	2,961 SF	CONC DECK 12" GYP 2-4.5' POLYSIO, 12" WOOD FIBER, HYLOAK, 12" 3' PLY, GRAVEL	R2	REMOVE EXISTING ROOF SYSTEM TO EXISTING DECK
C3	2,688 SF	CONC DECK 12" GYP 2-4.5' POLYSIO, 12" WOOD FIBER, HYLOAK, 12" 3' PLY, GRAVEL	R2	REMOVE EXISTING ROOF SYSTEM TO EXISTING DECK
C5	3,928 SF	MTL DECK 12" GYP 2-4.5' POLYSIO, 12" WOOD FIBER, HYLOAK, 12" 3' PLY, GRAVEL	R1	
C6	5,592 SF	MTL DECK 12" GYP 2-4.5' POLYSIO, 12" WOOD FIBER, HYLOAK, 12" 3' PLY, GRAVEL	R1	
C7	3,452 SF	CONC DECK 12" GYP 2-4.5' POLYSIO, 12" WOOD FIBER, HYLOAK, 12" 3' PLY, GRAVEL	R1	
C8	8,832 SF	CONC DECK 12" GYP 2-4.5' POLYSIO, 12" WOOD FIBER, HYLOAK, 12" 3' PLY, GRAVEL	R1	
C9	747 SF	MTL DECK 12" GYP 2-4.5' POLYSIO, 12" WOOD FIBER, HYLOAK, 12" 3' PLY, GRAVEL	R3	REMOVE EXISTING ROOF SYSTEM TO EXISTING DECK
C10	772 SF	MTL DECK 12" GYP 2-4.5' POLYSIO, 12" WOOD FIBER, HYLOAK, 12" 3' PLY, GRAVEL	R3	REMOVE EXISTING ROOF SYSTEM TO EXISTING DECK
D1	90 SF		R1	CANOPY
Grand total	125,431 SF			

- [illegible]



PROFESSIONALS

A DIVISION OF **PBR**

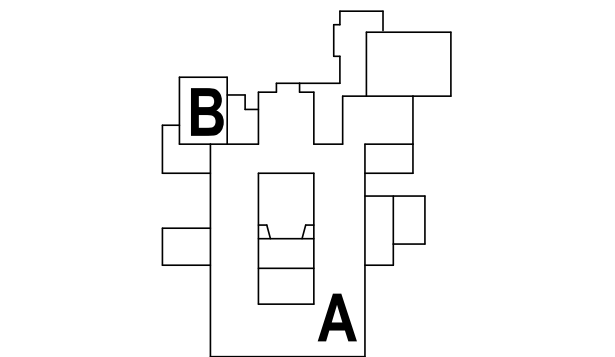
HOUSTON, TX

713.965.6008

TX: FIRM BR: 1688

www.pbr.com

Package II North Shore Middle School Roof Upgrade Cunningham Middle School Roof Replacement and HVAC Upgrades Issue For Proposal



KEY PLAN

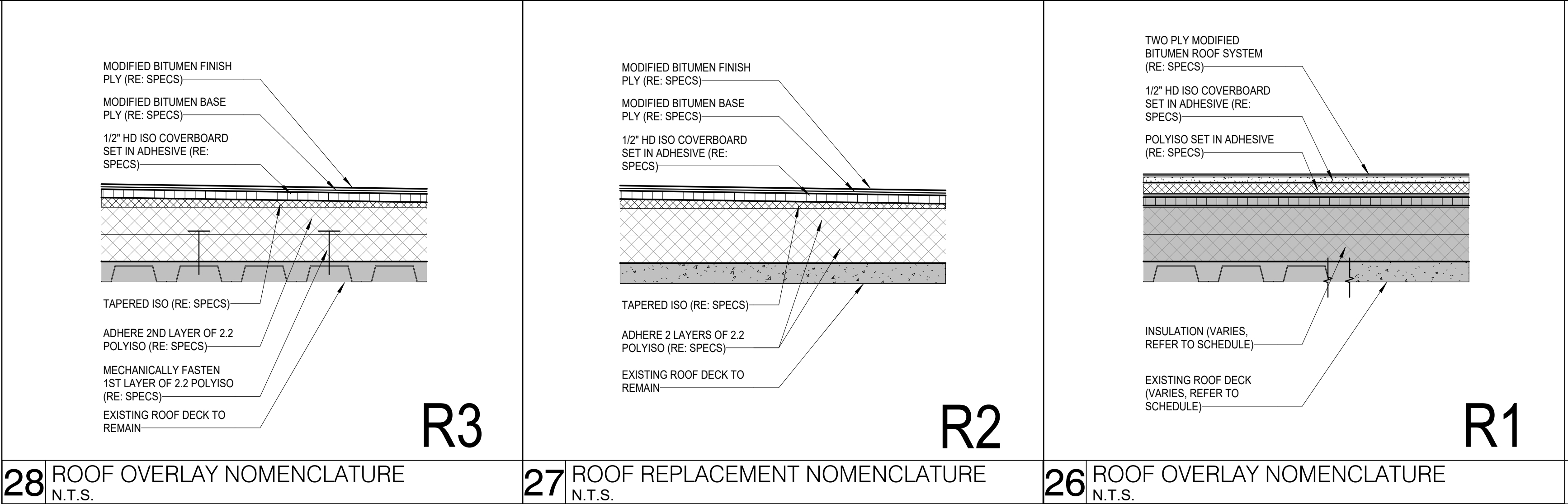
NORTH:  PLAN  TRUE



CLIENT		
Galena Park Independent School District		
DATE	PROJECT NUMBER	
2025/12/05	250373	
DRAWING HISTORY		
No.	Description	Date
CHECKED BY: ES,MS		
DRAWN BY: JT		

**CUNNINGHAM MIDDLE
SCHOOL -
COMPOSITE ROOF
PLAN**

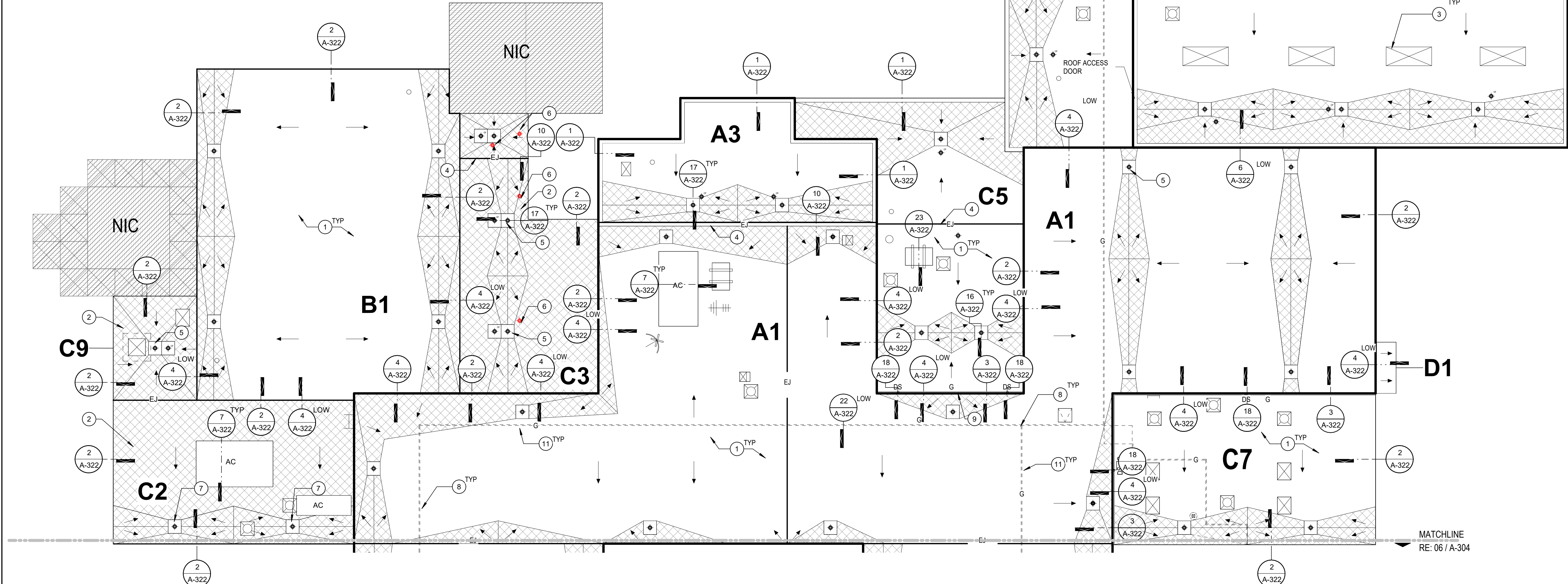
A-302



EXIST. ROOF DRAIN WITH NEW SUMP (UNLESS NOTED OTHERWISE)	JUNCTION BOX W/HOOD	EXHAUST AND SUPPLY FAN ON SINGLE CURB
EXIST. ROOF DRAIN	AC CURB MOUNTED	NIC
OVERFLOW DRAINS	SPLASH BLOCK	NEW TAPERED INSULATION / CRICKET
FLANGE VENT	SPLASH PAN	LIMITED WORK
PITCH PAN	A/C ON POSTS	
VENT THROUGH ROOF	ROOF HATCH	A1 ROOF AREA DESIGNATION
CURB MOUNTED VENT INTAKE	SKYLIGHTS	— RE — RAISED EDGE
ABANDONED CURB TO BE REMOVED / PATCHED	ANTENNA	— AD — AREA DIVIDER
ABANDON EQUIP.	SATELLITE DISH	— EJ — EXPANSION JOINT
HEATER VENT	SCUPPER	— C — CONDENSATE LINE
BOILER VENT	OVER FLOW SCUPPER	— W — WATER LINE
PIPE BOX	GUTTER	— E — ELEC. LINE
DOWNSPOUT	WALL LADDER	— G — GAS LINE

CUNNINGHAM MS ROOF SCHEDULE				
MARK	APPROX SQ. FT.	EXISTING NOMENCLATURE	PROPOSED NOMENCLATURE	Comments
A1	66,488 SF	CONC DECK, 1/2" GYP, 2'-4.5" POLYISO, 1/2" WOOD FIBER, HYLOAD, 1/2" 3 PLY, GRAVEL	R1	
A2	11,529 SF	MTL DECK, 1/2" GYP, 2'-4.5" POLYISO, 1/2" WOOD FIBER, HYLOAD, 1/2" 3 PLY, GRAVEL	R1	
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B2	7,047 SF	MTL DECK, 1/2" GYP, 2'-4.5" POLYISO, 1/2" WOOD FIBER, HYLOAD, 1/2" 3 PLY, GRAVEL	R1	
B3	2,794 SF	MTL DECK, 1/2" GYP, 2'-4.5" POLYISO, 1/2" WOOD FIBER, HYLOAD, 1/2" 3 PLY, GRAVEL	R1	
C1	3,913 SF	CONC DECK, 1/2" GYP, 2'-4.5" POLYISO, 1/2" WOOD FIBER, HYLOAD, 1/2" 3 PLY, GRAVEL	R2	REMOVE EXISTING ROOF SYSTEM TO EXISTING DECK
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C6	5,592 SF	MTL DECK, 1/2" GYP, 2'-4.5" POLYISO, 1/2" WOOD FIBER, HYLOAD, 1/2" 3 PLY, GRAVEL	R1	
C7	3,452 SF	CONC DECK, 1/2" GYP, 2'-4.5" POLYISO, 1/2" WOOD FIBER, HYLOAD, 1/2" 3 PLY, GRAVEL	R1	
C8	3,832 SF	CONC DECK, 1/2" GYP, 2'-4.5" POLYISO, 1/2" WOOD FIBER, HYLOAD, 1/2" 3 PLY, GRAVEL	R1	
C9	747 SF	MTL DECK, 1/2" GYP, 2'-4.5" POLYISO, 1/2" WOOD FIBER, HYLOAD, 1/2" 3 PLY, GRAVEL	R3	REMOVE EXISTING ROOF SYSTEM TO EXISTING DECK
C10	772 SF	MTL DECK, 1/2" GYP, 2'-4.5" POLYISO, 1/2" WOOD FIBER, HYLOAD, 1/2" 3 PLY, GRAVEL	R3	REMOVE EXISTING ROOF SYSTEM TO EXISTING DECK
D1	90 SF		R1	CANOPY
Grand total	125,431 SF			

- CONTRACTOR SHALL VISIT SITE TO ASCERTAIN EXISTING CONDITIONS AND COMPONENTS RELATED TO THE WORK DESCRIBED BY THESE DOCUMENTS. AFTER AWARD OF THE CONTRACT, CHANGE ORDER REQUEST FOR ADDITIONAL MONEY SHALL NOT BE APPROVED IF THE WORK COULD HAVE BEEN ANTICIPATED DURING THE SITE VISIT BY THE CONTRACTOR. WORK SHALL BE COMPLETED IN ACCORDANCE WITH ACCEPTED MANUFACTURER'S PRINTED INSTRUCTIONS AND WARRANTY REQUIREMENTS.
- DIMENSIONS, DETAILS, EQUIPMENT SIZE AND LOCATION SHOWN IN THESE CONSTRUCTION DOCUMENTS ARE FOR CONVEYANCE OF DESIGN INTENT ONLY. EXACT SIZE, LOCATION, TYPE OF MATERIAL AND TYPE OF CONSTRUCTION OF EXISTING CONDITIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR TO ASCERTAIN AND CONFIRM.
- INDICATED ROOF HEIGHTS ARE GENERAL IN NATURE.
- REFER TO NOMENCLATURE FOR TYPE OF ROOF SYSTEM. AREAS ARE MARKED WITH DESIGNATED LETTER ON ROOF PLAN.
- NOTE THAT THE DETAILS DRAWN ARE GENERIC IN NATURE AND ARE NOT NECESSARILY LOCATED AND KEYS TO THE ROOF PLANS.
- REMOVE EQUIPMENT IDENTIFIED ON SITE AND AS SHOWN OTHERWISE ON THESE DOCUMENTS.
- CRICKETS AND TAPERED INSULATION SHALL BE INSTALLED WITH A FINISHED 1/4" PER FOOT MIN. SLOPE. CRICKET THE UP SLOPE SIDE OF SQUARE CURBS AND PROJECTIONS OVER 20" IN WIDTH.
- REPLACE ROTTED AND / OR OTHERWISE DETERIORATED ROOF DECK MATERIALS (MATCH EXISTING).
- REPLACE ROTTEN AND / OR OTHERWISE DETERIORATED WOOD NAILED MATERIAL.
- PATCH EXISTING METAL ROOF DECK (AS APPLICABLE) FOR HOLES LESS THAN 1/2" WIDE BY ANCHORING 22 GA. STAINLESS STEEL SHEET METAL TO BOTTOM OF EXISTING METAL ROOF DECK AND ADDING NEW INSULATION TO MATCH THICKNESS. PATCH EXISTING METAL ROOF DECK FOR HOLES GREATER THAN 1/2" WIDE BY ANCHORING 22 GA. STAINLESS STEEL SHEET METAL TO BOTTOM OF EXISTING METAL ROOF DECK SPANNING FROM JOIST TO JOIST.
- AS APPLICABLE, HVAC AND / OR DX UNITS, ELECTRICAL TRANSFORMERS, ROOF TOP EQUIPMENT, ETC. THAT ARE ON SLEEPERS SHALL BE DISCONNECTED, REMOVED, RAISED, AND PLACED ON NEW CURBED PLATFORMS AS DETAILED AND REINSTALLED / RECONNECTED. CURB MOUNTED HVAC UNITS, EQUIPMENT, ETC. SHALL HAVE A MINIMUM 10" CURB HEIGHT AND ARE TO BE RAISED AS REQUIRED.
- WORK TO UTILITY CONDUIT OR PIPE SHALL BE PERFORMED BY SPECIFIC LICENSED SUBCONTRACTORS SPECIALIZING IN HVAC, PLUMBING AND ELECTRICAL WORK. PERMITS AND INSPECTIONS ARE REQUIRED. REROUTE AND / OR MODIFY UTILITY CONDUIT OR PIPE AS REQUIRED TO BE INSTALLED AS DETAILED.
- UNLESS INDICATED OTHERWISE ON THE CONSTRUCTION DOCUMENTS, REPLACE AND RAISE EXISTING EXPANSION JOINTS / AREA DIVIDERS / CURB MOUNTED EQUIPMENT / SKYLIGHTS (AS APPLICABLE) A MIN. 10" ABOVE ROOF DECK.
- SOIL STACK FLASHING SHALL BE A MIN. 10" ABOVE FINISHED ROOF SURFACE. COUPLE PVC PIPE ABOVE DECK AND COUPLE CAST IRON PIPE BELOW DECK.
- ISOLATE HEAT PIPES / FLUES AS DETAILED AND RECOMMENDED IN THE NRCA MANUAL FOR HOT STACK FLASHING AND AS DETAILED.
- OUTSIDE AIR INTAKES SHALL BE COVERED TO ELIMINATE ODORS AND FUMES FROM ENTERING INTO THE BUILDING DURING CONSTRUCTION WORK.
- AFTER SUBSTANTIAL COMPLETION, THE GENERAL CONTRACTOR SHALL EXAMINE AND CLEAN DRAIN LINES DEBRIS AND BLOCKAGE. FLUSH WITH WATER TO ENSURE THAT DRAINS AND GUTTERS FLOW FREELY.
- OWNER WILL VERIFY PROPER OPERATION OF ROOF TOP EQUIPMENT BEFORE AND AFTER THE PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING INOPERABLE EQUIPMENT PRIOR TO RELEASE OF RETAINAGE.
- PRIOR TO COMMENCEMENT OF WORK, COORDINATE WALK OF ENTIRE ROOF WITH ROOFING MANUFACTURER'S TECHNICAL REPRESENTATIVE TO IDENTIFY AND LOCATE AREAS OF HIGH SLOPE OR OTHER CONDITIONS WHICH MIGHT REQUIRE SPECIAL PROCEDURES FOR SYSTEM ATTACHMENT.
- REFER TO GENERAL DETAILS FOR TYPICAL SPLASH PAN, ROOF DRAIN AND OVERFLOW DRAIN DETAILS.
- REPLACE RUSTED AND / OR DETERIORATED EXISTING METAL VENT FLASHING AND FLUES.
- LOCATE PERIMETER DRAINS MAX. 6'-0" FROM EDGE TYPICAL, UNLESS SHOWN OTHERWISE. (GENERAL CONTRACTOR TO COORDINATE WITH ROOFING AND PLUMBING CONTRACTOR).
- THROUGH WALL BASE FLASHING MIN. HEIGHT 10" AND MAX. HEIGHT 20" FROM FINISH DECK. DO NOT STEP THROUGH WALL FLASHING CLOSER THAN 5'-0" FROM CORNERS.
- CONTRACTOR SHALL COORDINATE LOCATION AND ORIENTATION OF ROOF HATCH AND ACCESS LADDER.
- GENERAL CONTRACTOR SHALL VERIFY ROOF SLOPES WILL PROPERLY DRAIN AS SHOWN. TAPERED INSULATION HATCHING SHOWN IS NOT INTENDED TO ILLUSTRATE THE ENTIRE LIMITS OF TAPERED INSULATION. ROOF AREAS NOT SLOPED BY STRUCTURE SHALL BE SLOPED WITH TAPERED INSULATION TO ACHIEVE PROPER DRAINAGE.
- PAINT EXISTING GAS PIPE TO REMAIN.
- PROVIDE RETROFIT DRAIN KIT FOR EACH EXISTING ROOF DRAIN. RE: SPECS.
- ROOFING WORK SHALL OCCUR IN SUCH A MANNER AS NOT TO VOID ANY EXISTING ROOF WARRANTIES. CONTRACTOR TO CONTACT ROOFING MANUFACTURER PRIOR TO COMMENCING THE WORK. NO EXCEPTIONS.



BEAM PROFESSIONALS
A DIVISION OF P&H

Package II
North Shore Middle School Roof Upgrade
120 Castlegory Rd.
Houston, TX 77015

Cunningham Middle School Roof Replacement and HVAC Upgrades
14110 Walleysville Rd.
Houston, TX 77049

Issue For Proposal

KEY PLAN
NORTH: PLAN TRUE

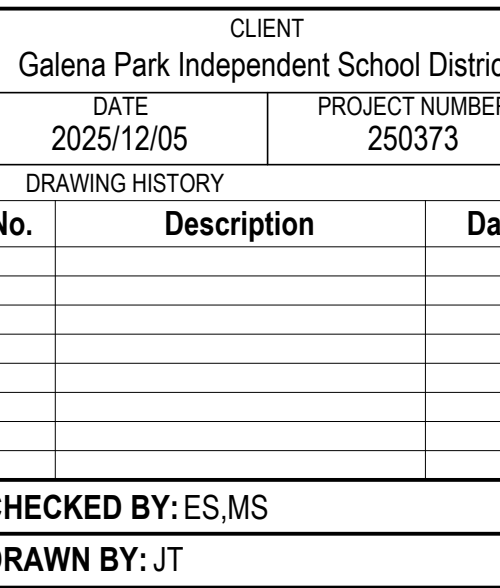
ARCHITECT
REGISTERED ARCHITECT
12/05/2025

CLIENT Galena Park Independent School District		
DATE 2025/12/05	PROJECT NUMBER 250373	
DRAWING HISTORY		
No.	Description	Date
CHECKED BY: ES,MS		
DRAWN BY: JT		

CUNNINGHAM MIDDLE SCHOOL - ROOF AREA B

A-303

Issue For Proposal



A-304



26	ROOF OVERLAY NOMENCLATURE N.T.S.
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ROOF LEGEND
N.T.S.

CONTRACTOR SHALL VISIT SITE TO ASCERTAIN EXISTING CONDITIONS AND COMPONENTS RELATIONED TO THE WORK DESCRIBED BY THESE DOCUMENTS. AFTER AWARD OF THE CONTRACT, CONTRACTOR SHALL CONDUCT VISUAL SURVEY OF THE WORK AREA TO DETERMINE THE WORK COULD HAVE BEEN ANTICIPATED DURING THE SITE VISIT BY THE CONTRACTOR. WORK SHALL BE COMPLETED IN ACCORDANCE WITH ACCEPTED MANUFACTURER'S PRINTED INSTRUCTIONS AND SPECIFICATIONS.

2. DIMENSIONS, DETAILS, EQUIPMENT SIZE AND LOCATION SHOWN IN THESE CONSTRUCTION DOCUMENTS ARE FOR CONVEYANCE OF DESIGN INTENT ONLY. EXACT SIZE, LOCATION, TYPE OF EQUIPMENT AND LOCATION OF EQUIPMENT IN EXISTING CONDITIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR TO ASCERTAIN AND CONFIRM.

3. INDICATED ROOF HEIGHTS ARE GENERAL IN NATURE.

4. ROOF TO NOMINATE LOCATION OF THE ROOF SYSTEM AREAS ARE MARKED WITH DESIGNATED LETTER ON ROOF PLAN.

5. NOTE THAT THE DETAILS DRAWN ARE GENERIC IN NATURE AND ARE NOT NECESSARILY LOCATED ADJACENT TO THE ROOF SYSTEM AREAS.

6. REMOVE EQUIPMENT LOCATED ON SITE AND AS SHOWN OTHERWISE ON THESE DOCUMENTS. CRACKS AND TAPERED INSULATION SHALL BE INSTALLED WITH A FINISHED 1/4" PER FOOT MIN. SLOPE TO DRAIN. REMOVE AND REPAIR ALL EXISTING CRACKS AND REPAIRS TO EXISTING ROOF FLASHING NOTED. / OR OTHERWISE DETEROGRAED ROOF DECK MATERIALS (MATCH EXISTING)

7. REPLACE ROTTEN AND / OR OTHERWISE DETEROGRAED WOOD NAILER MATERIAL.

8. PATCH EXISTING METAL ROOF DECK (AS APPLICABLE) FOR HOLES LESS THAN 10" WIDE BY REPAIRING WITH 2" STAINLESS STEEL PLATE. PATCH EXISTING ROOF FLASHING WITH 2" STAINLESS STEEL PLATE. PATCH EXISTING METAL ROOF DECK FOR HOLES GREATER THAN 10" WIDE BY ARCHINGING 2" GA. STAINLESS STEEL SHEET OVER THE HOLES AND SECURE WITH 1/2" DIA. STAINLESS STEEL BOLTS AND WASHERS. / OR OTHERWISE DETEROGRAED ROOF DECK MATERIALS (MATCH EXISTING)

9. AS IS APPLICABLE, HVAC AND / OR DX UNITS, ELECTRICAL TRANSFORMERS, ROOF TOP EQUIPMENT, ETC. THAT ARE ON SLEEPERS SHALL BE DISCONNECTED / REMOVED, RAISED AND RELOCATED TO ADEQUATELY SUPPORTED SLEEPERS. / OR OTHERWISE DETEROGRAED ROOF DECK MATERIALS (MATCH EXISTING)

10. MOUNTED HVAC UNITS, EQUIPMENT, ETC. SHALL HAVE A MINIMUM 10" CURB HEIGHT AND ARE TO BE RAISED AS REQUIRED.

11. CONDUIT TO RENTAL CONDUIT OR PIPE SHALL BE PERFORMED BY SPECIFIC LICENSED SUBCONTRACTOR SPECIALIZING IN HVAC, PLUMBING AND ELECTRICAL WORK. PERMITS AND INSPECTIONS ARE REQUIRED. / REQUOTE AND / OR MODIFY UTILITY CONDUIT OR PIPE AS REQUIRED.

12. UNLESS INDICATED OTHERWISE ON THE CONSTRUCTION DOCUMENTS, REPLACE AND RAISE EXISTING EXPANSION JOINTS / AREA DRAINS / CURB MOUNTED EQUIPMENT / SKYLIGHTS / AS SHOWN ON THE ROOF PLAN.

13. UNLESS INDICATED OTHERWISE ON THE CONSTRUCTION DOCUMENTS, REPLACE AND RAISE EXISTING EXPANSION JOINTS / AREA DRAINS / CURB MOUNTED EQUIPMENT / SKYLIGHTS / AS SHOWN ON THE ROOF PLAN.

14. SOIL SALT FLASHING SHALL BE A MIN. 10" ABOVE FINISHED ROOF SURFACE. COUPLE PVC PIPE ABOVE DECK AND COUPLE CAST IRON PIPE BELOW DECK.

15. REPLACE EXISTING FLASHING AND / OR EQUIPMENT ETC. THAT ARE ON ROOF SURFACE, NEW AND EXISTING. PROVIDE PORTABLE PIPE HANGERS WITH PROTECTION PADS AS SPECIFIED. RAISE EXISTING PIPING CONDUIT ETC. AS REQUIRED. MEP CONTRACTORS SHALL PROVIDE SUPPORTS FOR ALL PIPES.

16. PROVIDE PERMANENTLY FASTENED MULTIPLE PENETRATED VAULT

17. PROVIDE WALKWAY / PROTECTION PADS AS SPECIFIED ABOVE ROOF HATCHES, HVAC UNITS, CURB MOUNTED EQUIPMENT, ETC. THAT ARE ON ROOF SURFACE. TOP AND BOTTOM OF ROOF ACCESS LOCATIONS.

18. PROVIDE DRAIN FLASH PANS AT LOCATIONS WHERE ROOF DRAINAGE DISCHARGES OUT ROOF AREA. INSTALL NEW FLUSH PADS BLOCKS WHERE ROOF DRAINAGE DISCHARGES ON GROUND.

19. ISOLATE HEAT WELLS / FLUES AS DETAILLED AND RECOMMENDED IN THE NRCA MANUAL FOR ROOF FLASHING AND / OR EQUIPMENT ETC. THAT ARE ON ROOF SURFACE.

20. OUTSIDE AIR INTAKES SHALL BE COVERED TO ELIMINATE ODORS AND FUMES FROM ENTERING INTO THE BUILDING DURING CONSTRUCTION WORK.

21. PROVIDE TEMPORAL ENCLOSURE TO PROTECT THE CONTRACTOR SHALL EXAMINE AND CLEAR DRAIN LINES DEBRIS AND BLOCKAGE. FLUSH WITH WATER TO ENSURE THAT DRAINS AND GUTTERS FLOW FREELY.

22. PROVIDE TEMPORAL PROTECTION OF ROOF TOP EQUIPMENT BEFORE AND AFTER THE PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING INOPERABLE EQUIPMENT PRIOR TO RELEASE OF RETAINAGE.

23. PROVIDE COORDINATE ROOF WORK, COORDINATE WALK OF ENTIRE ROOF WITH ROOFING MANUFACTURERS TECHNICAL REPRESENTATIVE TO IDENTIFY AND LOCATE AREAS OF HIGH SLOPE OR OTHER CONDITIONS WHICH MIGHT REQUIRE SPECIAL PROCEDURES FOR SYSTEM ATTACHMENT.

24. REFER TO GENERAL DETAILS FOR TYPICAL FLASH PAN, ROOF DRAIN AND OVERFLOW DRAIN DETAILS.

25. REMOVE ROTTEN AND / OR DETEROGRAED EXISTING METAL VENT FLASHING AND FLUES.

26. LOCATE PERIMETER DRAINS MAX. 6" FROM EDGE TYPICAL UNLESS SHOWN OTHERWISE.

27. GENERAL CONTRACTOR TO COORDINATE WITH ROOFING AND PLUMBING CONTRACTOR / SUBS TO PROVIDE WALK WAY / PROTECTION PADS AS SPECIFIED ABOVE ROOF HATCHES, HVAC UNITS, CURB MOUNTED EQUIPMENT, ETC. THAT ARE ON ROOF SURFACE. TOP AND BOTTOM OF ROOF ACCESS LOCATIONS.

28. CONTRACTOR SHALL COORDINATE LOCATION AND ORIENTATION OF ROOF HATCH AND ROOF ACCESS LOCATIONS.

29. GENERAL CONTRACTOR SHALL VERIFY ROOF SLOPES WILL PROPERLY DRAIN AS SHOWN ON THE ROOF PLAN.

30. PROVIDE TAPERED INSULATION ROOF SLOPES WITH PROPER DRAINAGE SLOPES. LIMITS OF TAPERED INSULATION, ROOF AREAS NOT SLOPED BY STRUCTURE SHALL BE SLOPED WITH TAPERED INSULATION TO ACHIEVE PROPER DRAINAGE.

31. PROVIDE EXISTING PIPING TO BE REMOVED AND RELOCATED TO ADEQUATELY SUPPORTED SLEEPERS.

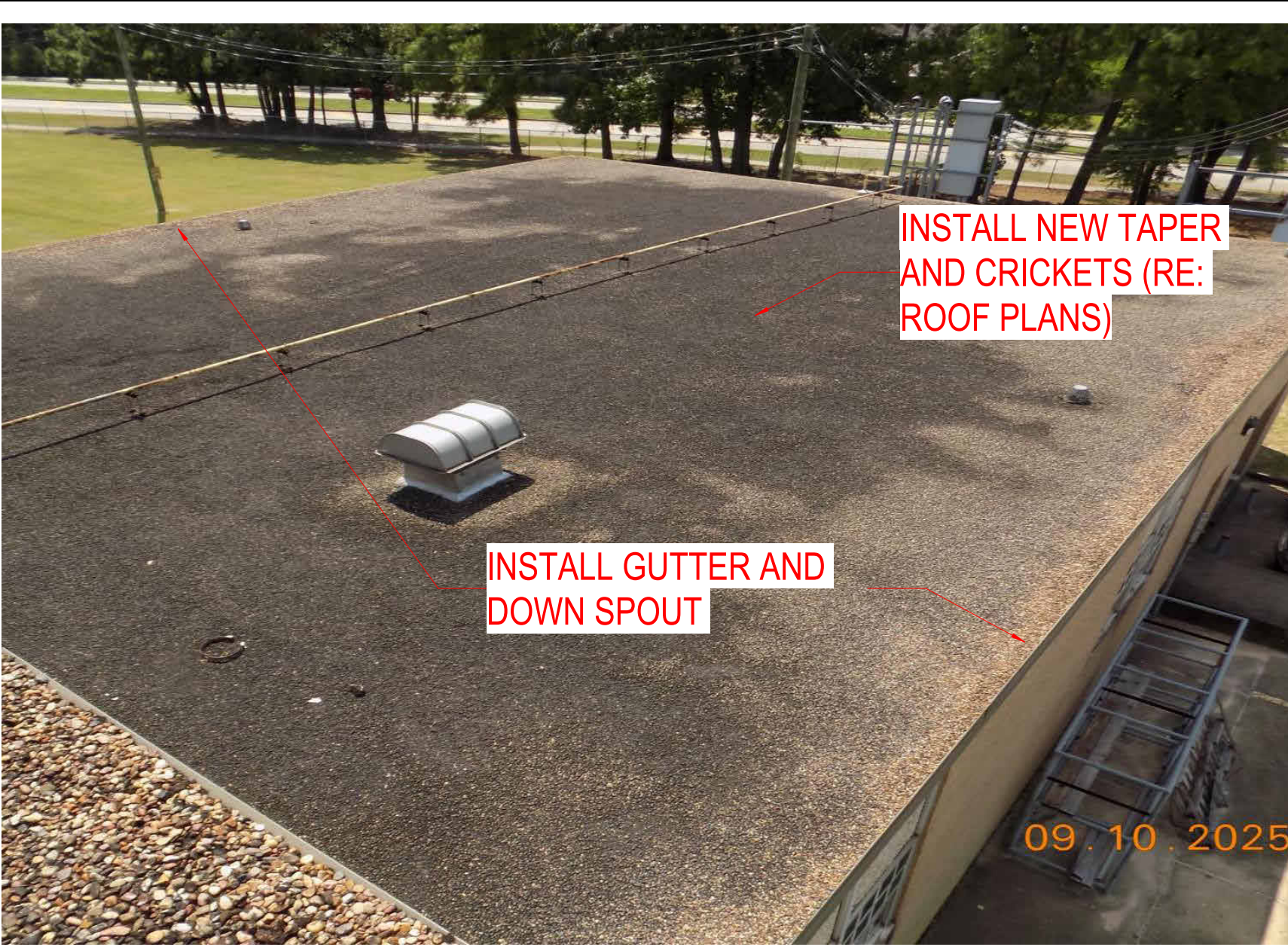



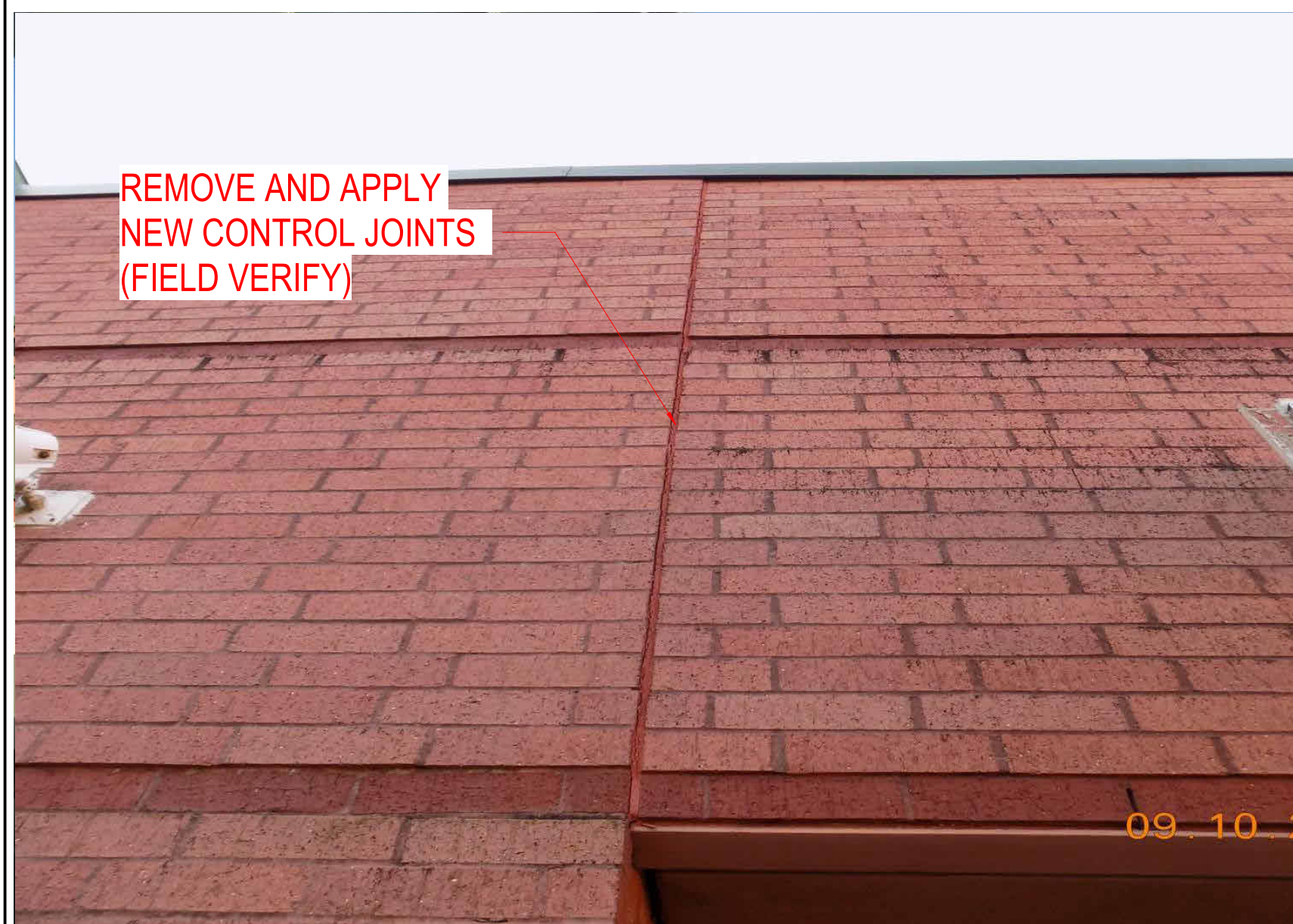







32. PROVIDE RETROFIT DRAIN KIT FOR EACH EXISTING ROOF DRAIN. RE: SPECS.

33. ROOFING WORK SHALL OCCUR IN SUCH A MANNER AS NOT TO VOID ANY EXISTING ROOF WARRANTY. CONTRACTOR TO CONTACT ROOFING MANUFACTURER PRIOR TO COMMENCING THE WORK. NO EXCEPTIONS.

GENERAL NOTES
N.T.S.



WN BY: JT

	 <p>INSTALL NEW TAPER AND CRICKETS (RE: ROOF PLANS)</p> <p>INSTALL GUTTER AND DOWN SPOUT</p> <p>09.10.2025</p>	 <p>VERIFY AND REMOVE ABANDONED GAS LINES</p>	 <p>INSTALL GUTTER AND DOWN SPOUT</p>
	15 CUNNINGHAM MIDDLE SCHOOL N.T.S.	14 CUNNINGHAM MIDDLE SCHOOL N.T.S.	13 CUNNINGHAM MIDDLE SCHOOL N.T.S.
			 <p>REMOVE METAL RIDGE AND APPLY NEW FLUTE FILL ROOF SYSTEM (RE: ROOF PLAN)</p>
			9 NORTH SHORE MIDDLE SCHOOL N.T.S.
 <p>REMOVE AND APPLY NEW CONTROL JOINTS (FIELD VERIFY)</p> <p>09.10.2025</p>	 <p>REPAIR DAMAGED COPING CAP (FIELD VERIFY)</p> <p>09.10.2025</p>	 <p>INSTALL FLUTE FILL ROOF SYSTEM RE: ROOF PLANS</p> <p>09.10.2025</p>	 <p>REMOVE HIP AND RIDGE METAL (FIELD VERIFY)</p>
8 NORTH SHORE MIDDLE SCHOOL N.T.S.	7 NORTH SHORE MIDDLE SCHOOL N.T.S.	6 NORTH SHORE MIDDLE SCHOOL N.T.S.	5 NORTH SHORE MIDDLE SCHOOL N.T.S.
 <p>PROVIDE NEW BASE FLASHING (FIELD VERIFY)</p>	 <p>REPAIR COPING CAP and BASE FLASHING AT INTERFACE UNDER GUTTER (FIELD VERIFY)</p>	 <p>REPAIR/SEAL COUNTER FLASHING (FIELD VERIFY)</p> <p>09.10.2025</p>	 <p>REPLACE GUTTER (FIELD VERIFY)</p> <p>09.10.2025</p>
4 NORTH SHORE MIDDLE SCHOOL N.T.S.	3 NORTH SHORE MIDDLE SCHOOL N.T.S.	2 NORTH SHORE MIDDLE SCHOOL N.T.S.	1 NORTH SHORE MIDDLE SCHOOL N.T.S.

Package II

North Shore Middle School Roof Upgrade

120 Castlegory Rd.
Houston, TX 77016

Cunningham Middle School Roof Replacement and HVAC Upgrades

14110 Wallisville Rd.
Houston, TX 77049

Issue For Proposal



ARCHITECT

12/05/2025

CLIENT		
Galena Park Independent School District		
DATE	PROJECT NUMBER	
2025/12/05	250373	
DRAWING HISTORY		
No.	Description	Date
CHECKED BY: ES,MS		
DRAWN BY: JT		

REFERENCE PHOTOS