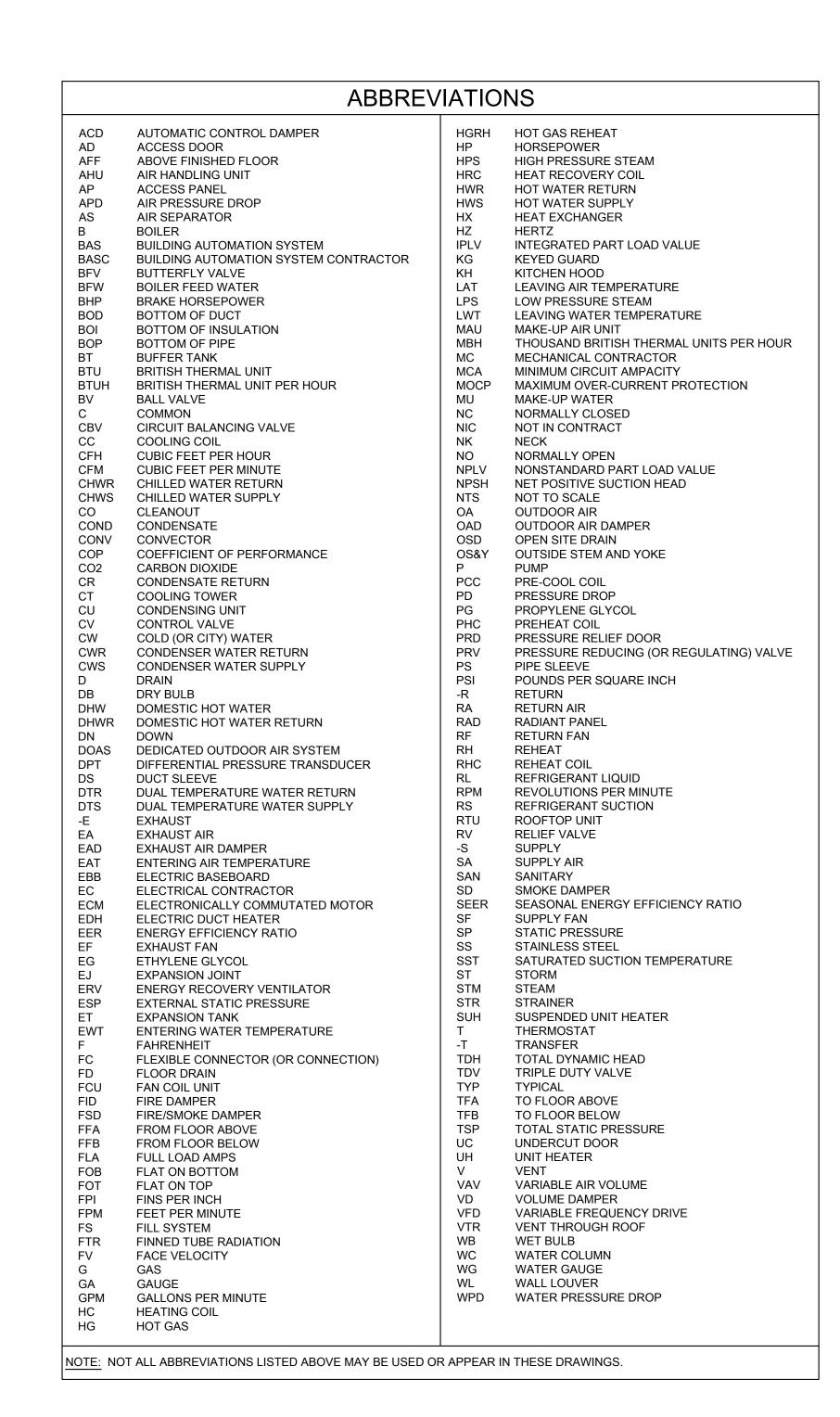
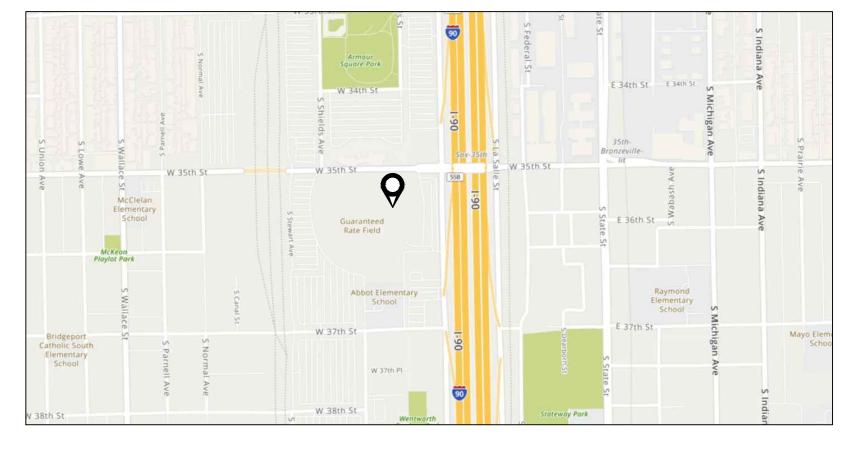
ISFA - GUARANTEED RATE STADIUM - HVAC/AHU RENOVATION PHASE XI

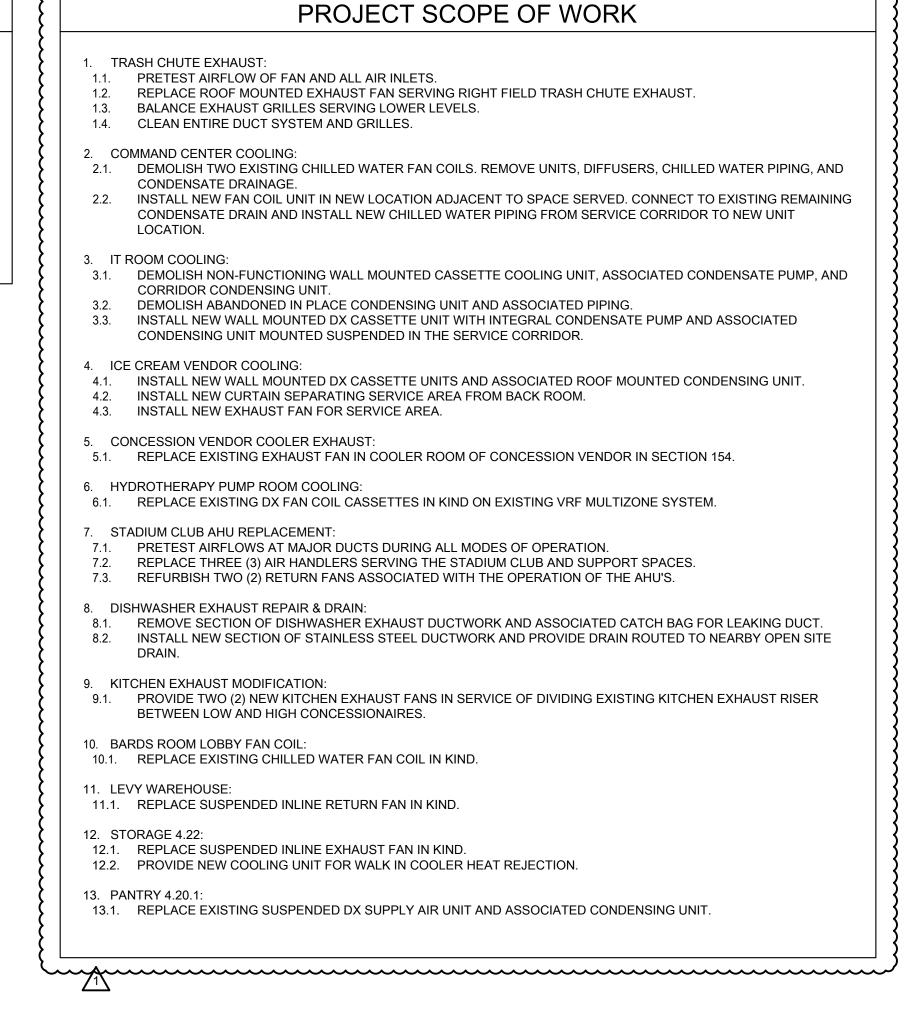
333 W 35TH STREET CHICAGO, ILLINOIS 60616

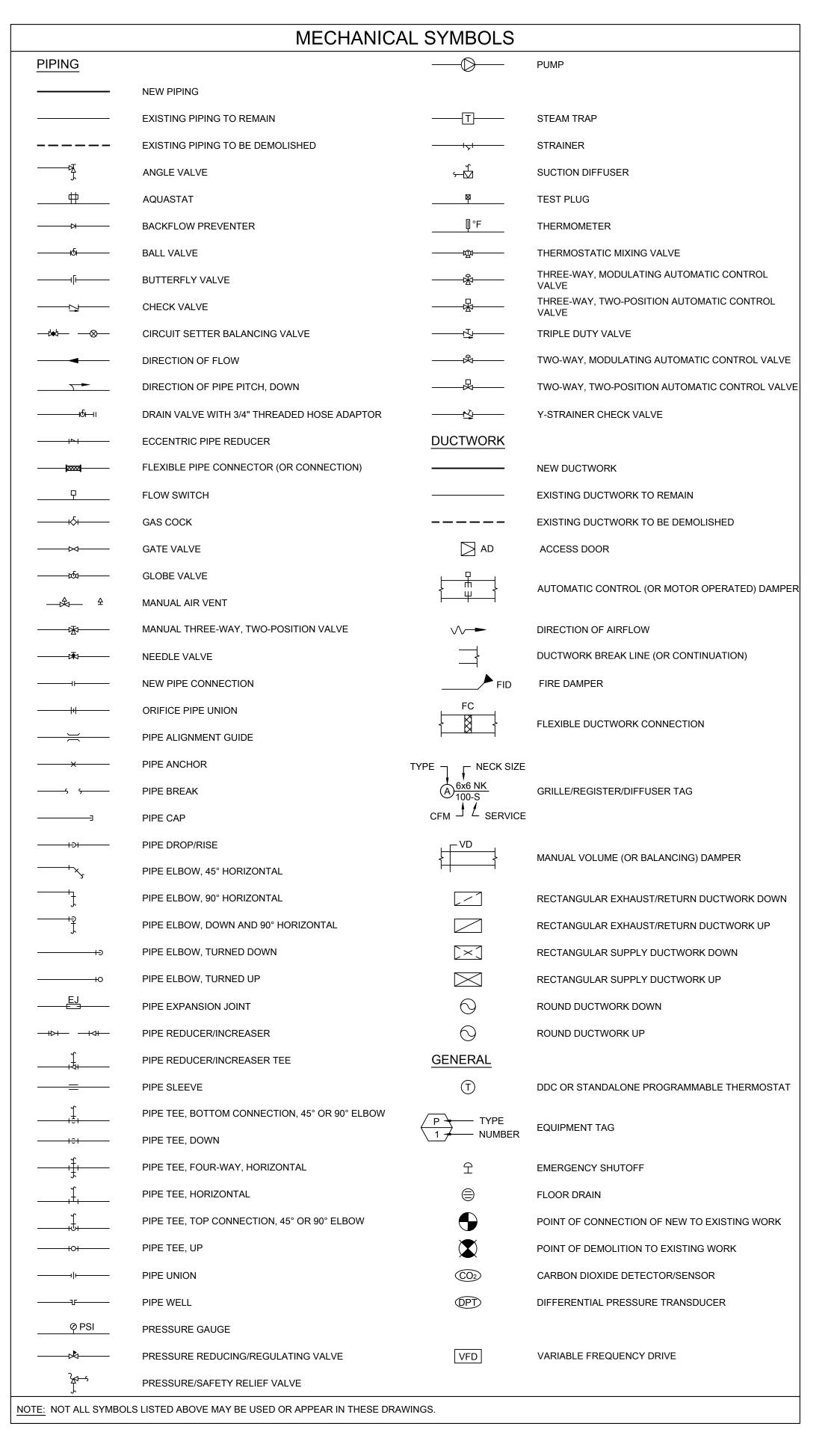






CITY OF CHICAGO NOTES . ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF 5. ALL OUTSIDE AIR INTAKES SHALL BE A MINIMUM OF 15'-0" CHICAGO BUILDING CODE REQUIREMENTS. FROM ANY EXHAUST LOUVERS, PLUMBING VENTS OR ANY OTHER POSSIBLE CONTAMINANTS AND SHALL BE A 2. ALL EQUIPMENT FURNISHED AND INSTALLED SHALL BE IN MINIMUM OF 10'-0" ABOVE GRADE. FULL COMPLIANCE WITH THE CURRENT STANDARDS SET BY THE CITY OF CHICAGO DEPARTMENT OF 6. IF FLEXIBLE DUCTS ARE USED, DO NOT EXCEED 5'-0" IN INSPECTIONAL SERVICES. LENGTH. ALL FLEXIBLE DUCTWORK TO BE CITY OF 3. ALL NEW DUCTWORK INSTALLED SHALL BE OF 7. NOISE FROM ALL MECHANICAL EQUIPMENT INSTALLED GALVANIZED METAL. ALL SHEETMETAL INSTALLATION SHALL COMPLY WITH THE LATEST STANDARDS OF SHALL NOT EXCEED 55 DB AT THE PROPERTY LINE. SMACNA AND ASHRAE. 4. ALL NEW EQUIPMENT PROVIDED SHALL BE U.L. LISTED AND SHALL BEAR THE U.L. LABEL.



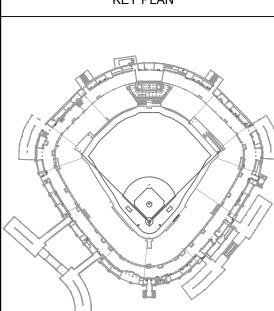








KEY PLAN



ISSU	JE/REVIS	SION:
REV.	DATE	DESCRIPTION
-	11/05/21	ISSUED FOR BID
1	11/15/21	ISSUED FOR BID ADDENDUM

PROJECT:
GUARANTEED RATE FIELD HVAC REPLACEMENT PHASE XI

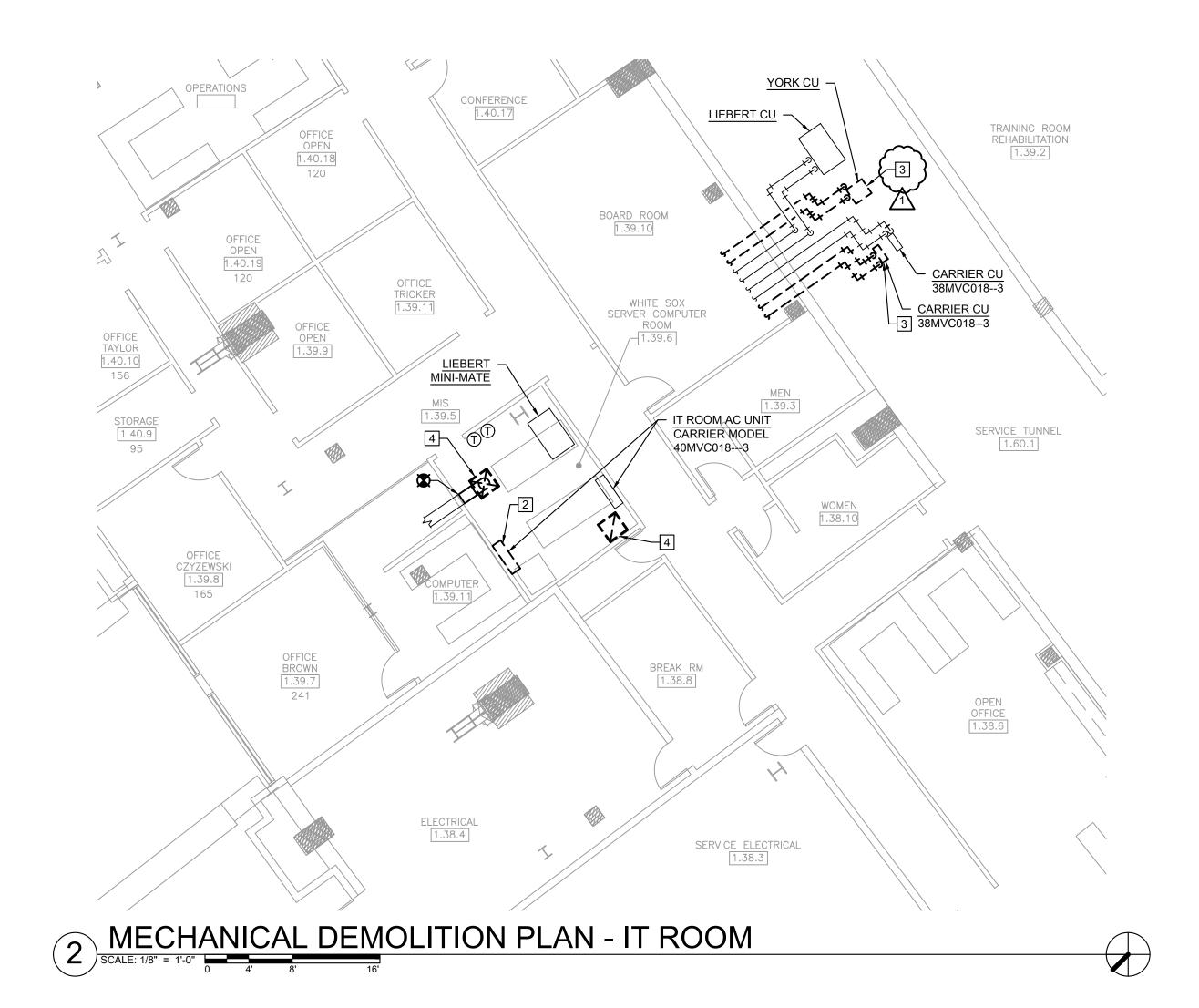
333 W 35TH STREET, CHICAGO, ILLINOIS 60616

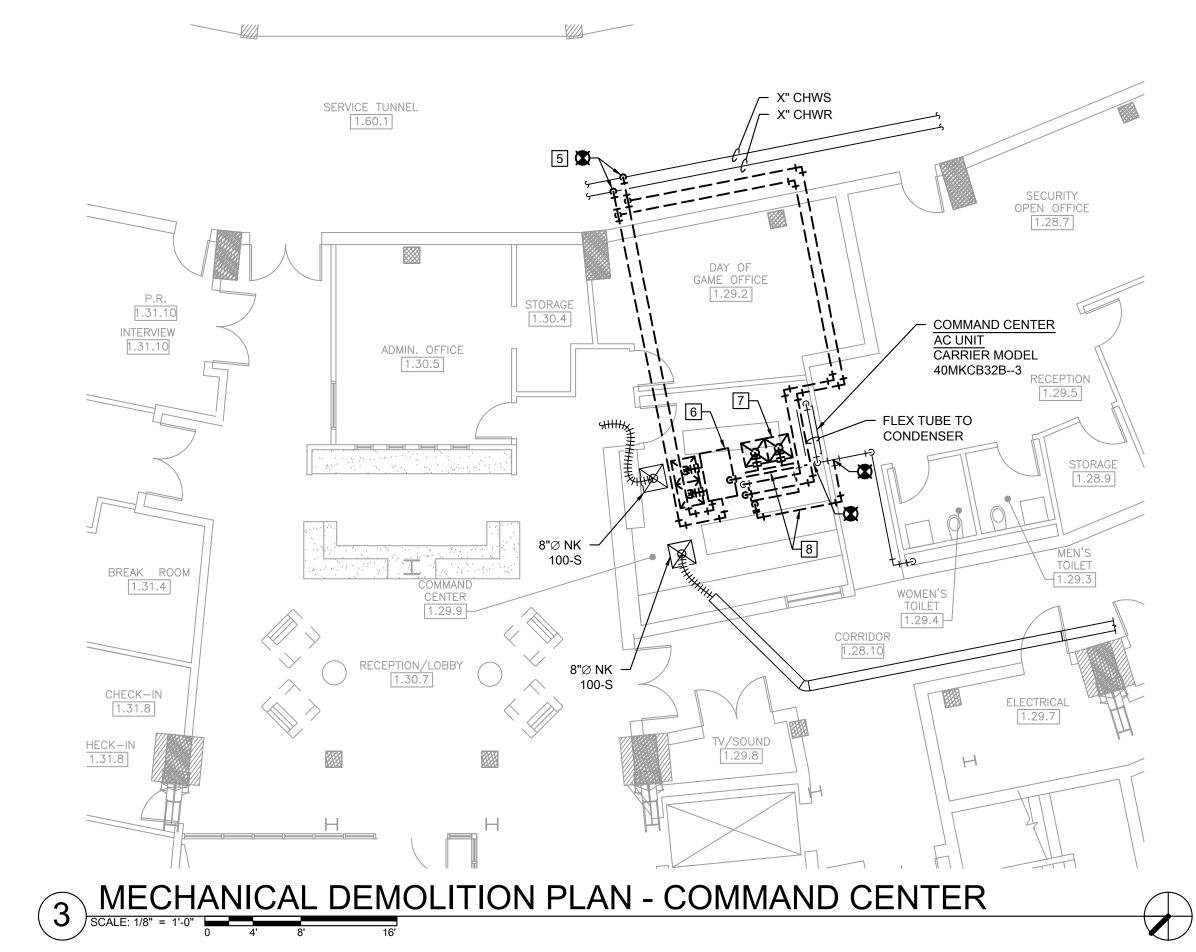
DRAWING TITLE:

MECHANICAL TITLE SHEET

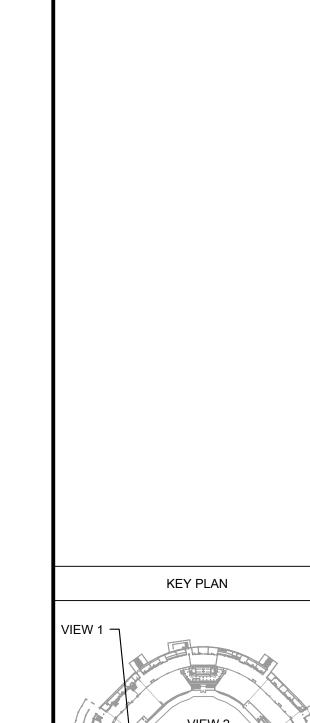
DESIGNED BY:	DA
CHECKED BY:	MS
PROJECT NO:	21276
SCALE:	NO SCALE
SHEET NO.	











30 N. Wolf Rd., Second Floor Hillside, IL 60162 (708) 236-0300 (708) 236-0330 FAX

VIEW 1

VIEW 2

VIEW 4

VIEW 3

ISSUE/REVISION:

ISS	ISSUE/REVISION:		
REV.	DATE	DESCRIPTION	
-	11/05/21	ISSUED FOR BID	
$\overline{1}$	11/15/21	ISSUED FOR BID ADDENDUM	

PROJECT:
GUARANTEED RATE FIELD HVAC REPLACEMENT PHASE XI

333 W 35TH STREET, CHICAGO, ILLINOIS 60616

DRAWING TITLE:

MECHANICAL DEMOLITION
PLAN - CONCOURSE
ENLARGED PLANS

DESIGNED BY:	DA
CHECKED BY:	MS
PROJECT NO:	21276
SCALE:	1/8" = 1'-0"
SHEET NO.	

MD1.02

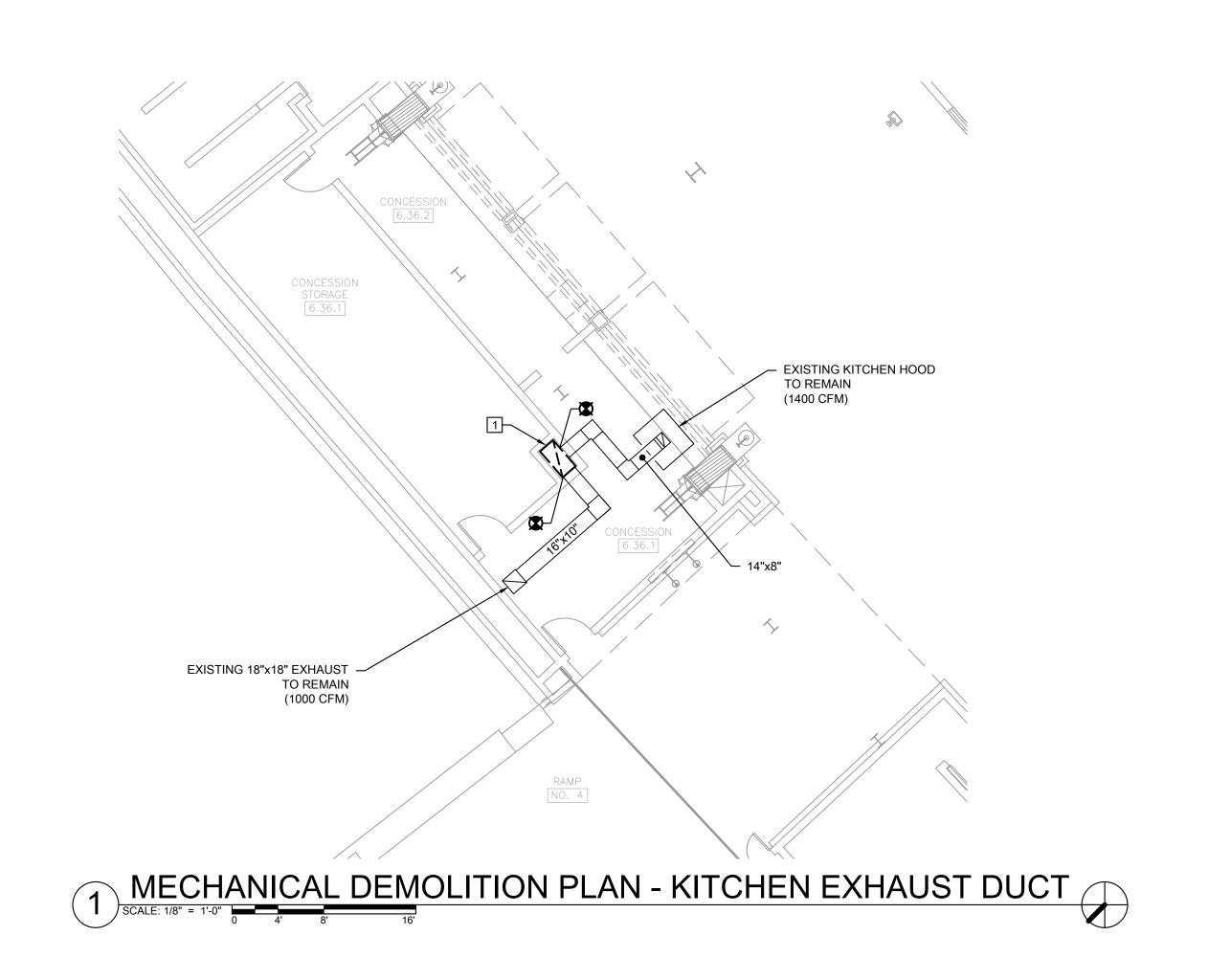
5. DISCONNECT EXISTING CHILLED WATER PIPING UPSTREAM OF SPLIT. CAP AND RETAIN FOR USE BY NEW FAN COIL SHOWN IN THE NEW WORK PLAN.

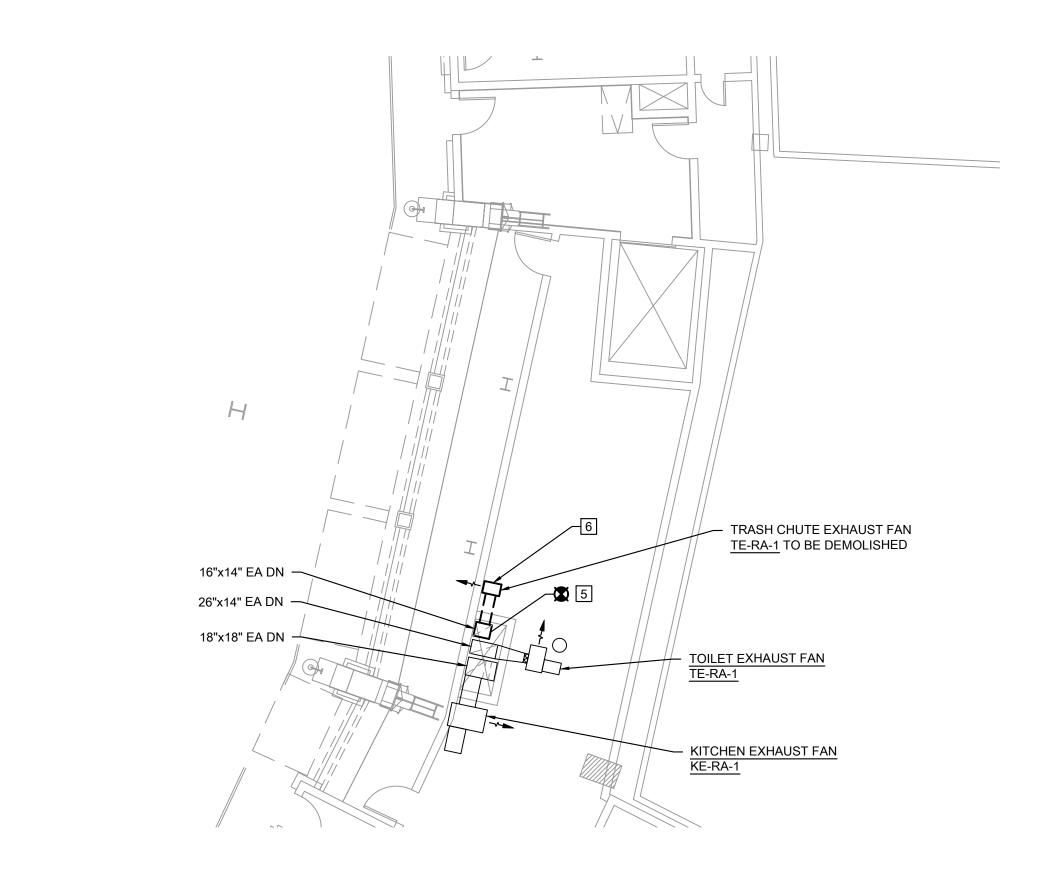
KEYED MECHANICAL DEMOLITION SHEET NOTES

1. DISCONNECT AND DEMOLISH EXISTING DX CASSETTES LOCATED IN SPACE BELOW FLOOR CONTAINING POOL EQUIPMENT AND

ASSOCIATED ELECTRICAL EQUIPMENT. EQUIPMENT IS DIRECTLY SUPPORTED FROM FLOOR STRUCTURE ABOVE.

- DISCONNECT AND DEMOLISH TWO (2) EXISTING DUCTED FAN COILS ABOVE CEILING, INCLUDING SUPPORTS AND HANGERS.
 DEMOLISH EXISTING SUPPLY DIFFUSERS. REMOVE FLEX DUCT AND ANY SUPPORTS OR CONNECTORS ABOVE CEILING.
- 8. DISCONNECT AND DEMOLISH EXISTING CONDENSATE DRAIN LINES ASSOCIATED WITH EACH FAN COIL. CAP AT THE EXISTING TO REMAIN SHARED DRAIN LINE.
- DISCONNECT AND DEMOLISH EXISTING INLINE RETURN FAN LOCATED ROUGHLY 15'+ ABOVE GRADE AND ASSOCIATED FLEX CONNECTORS.
- 10. CONTRACTOR SHALL TAKE CARE TO AVOID DAMAGING SUSPENDED SUPPLY DUCTS AND GRILLES DIRECTLY BELOW FAN TO BE



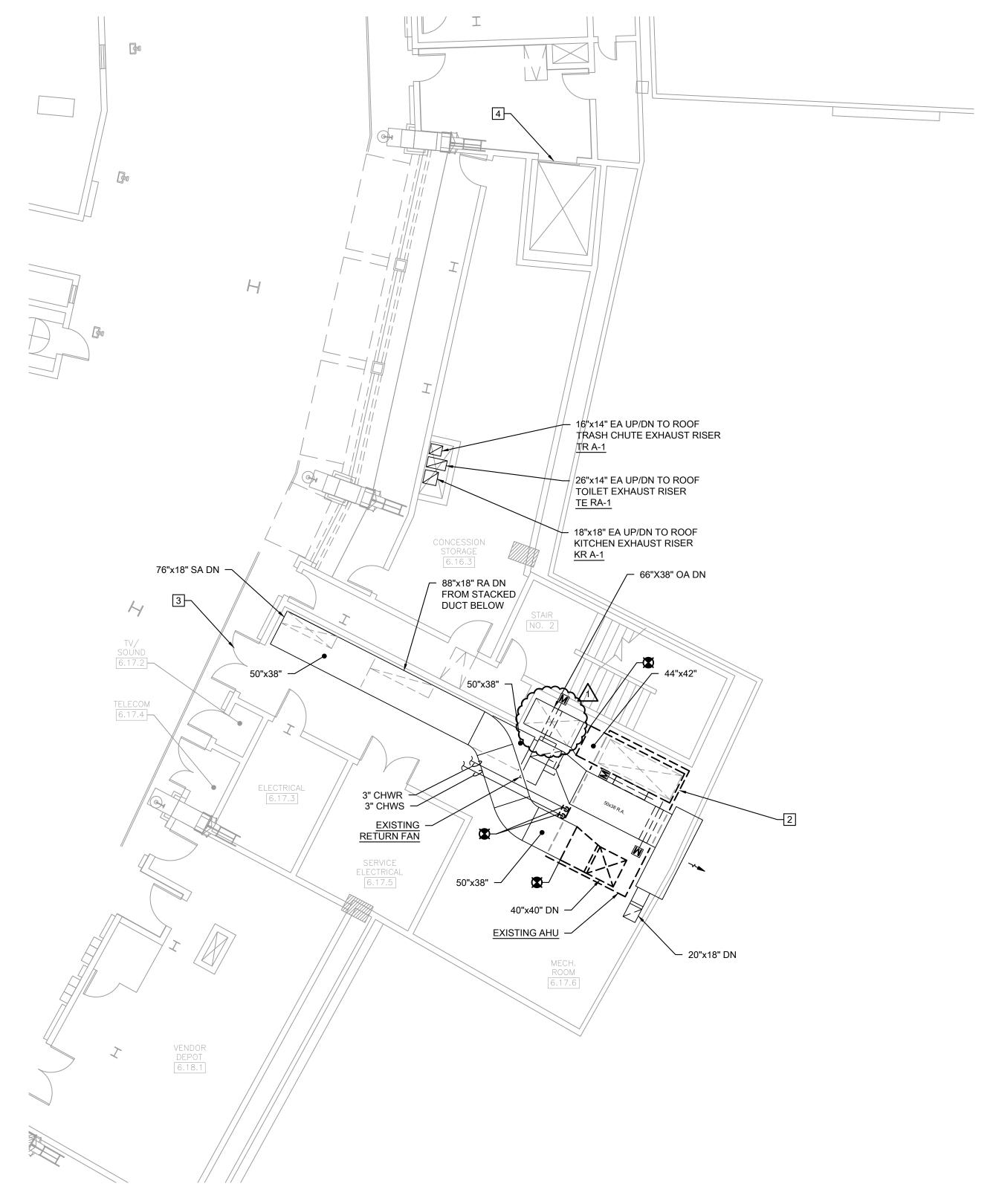


KEYED MECHANICAL DEMOLITION SHEET NOTES

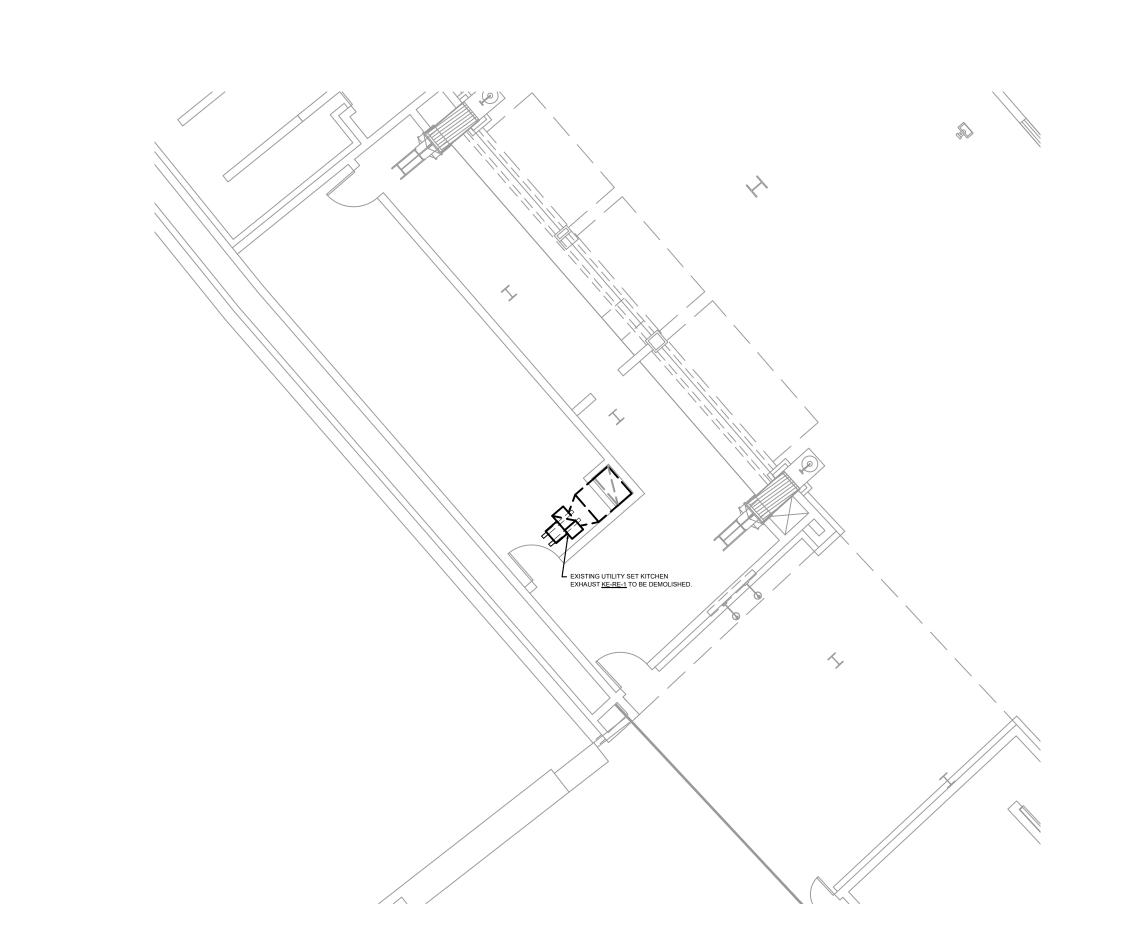
EXISTING 36"x14" KR-E1 EXHAUST RISER DN. CAP AT FLOOR AND ABANDON IN PLACE.

REQUIREMENTS.

- 2. DISCONNECT AND DEMOLISH EXISTING ELECTRIC HEAT, CHILLED WATER AIR HANDLER. REMOVE SUPPLY AND OUTSIDE AIR DUCTWORK TO FACILITATE NEW CONNECTIONS FOR NEW AIR HANDLER.
- DOUBLE DOORS CONNECTING MECHANICAL ROOM TO 500 LEVEL CONCOURSE IS RECOMMENDED FOR REMOVAL OF DEMOLISHED MECHANICAL EQUIPMENT AND OTHER MATERIALS.
- 4. SERVICE ELEVATOR REACHES ALL FLOORS. COORDINATE WITH ISFA AND CHICAGO WHITE SOX FOR ACCESS LIMITATIONS AND
- 5. DEMOLISH EXISTING 16"X14" EXHAUST DUCT STUB ABOVE ROOF AS PART OF DEMOLITION OF TRASH CHUTE FAN. PROTECT OPEN DUCT WITH WEATHERTIGHT SEALED COVER DURING CONSTRUCTION PRIOR TO INSTALLATION OF NEW DUCTWORK.
- 6. PERFORM PREREAD OF EXISTING EXHAUST FAN PRIOR TO DEMOLITION. FINAL REPORT SHALL INCLUDE A READING AT THE FAN, READINGS AT ALL THREE INLETS, AND CONFIRMATION OF EXISTING DAMPERS AND AIR INLETS.



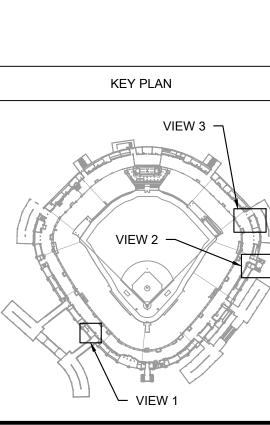












	VIEW 1			
ISS	UE/REVIS	SION:		
REV.	DATE	DESCRIPTION		
-	11/05/21	ISSUED FOR BID		
1	11/15/21	ISSUED FOR BID ADDENDUM		

PROJECT:
GUARANTEED RATE FIELD HVAC REPLACEMENT PHASE XI

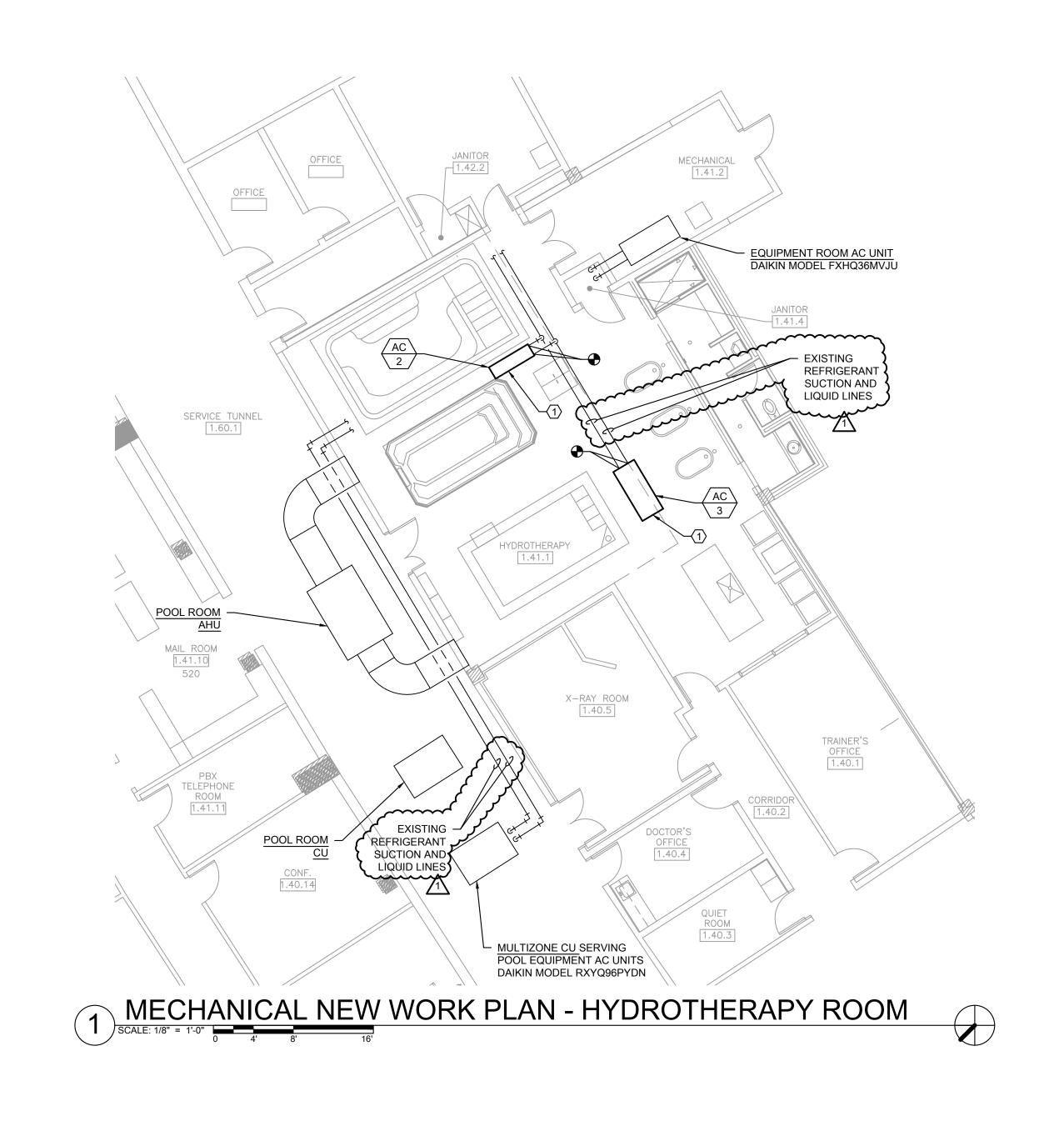
333 W 35TH STREET, CHICAGO, ILLINOIS 60616

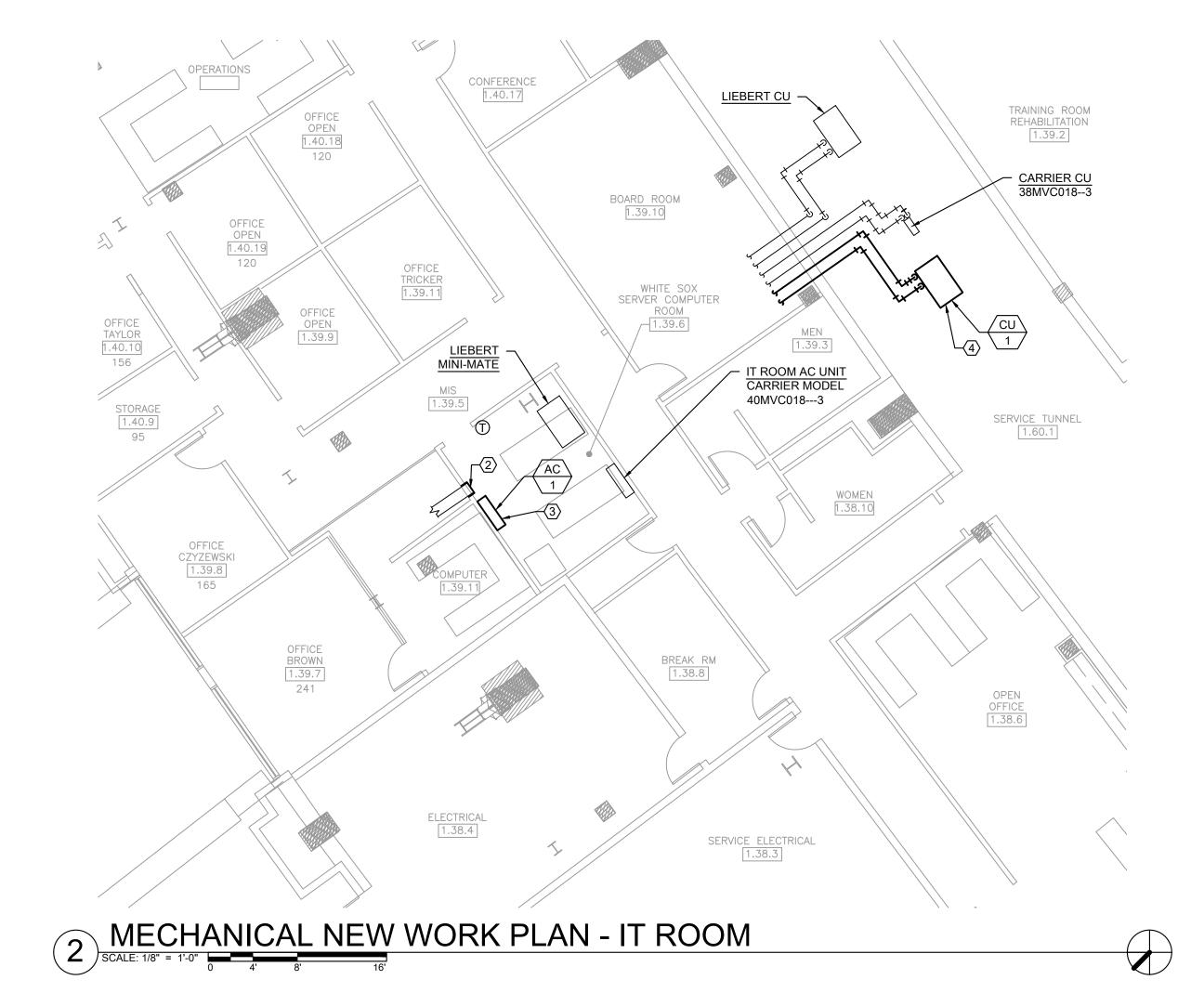
DRAWING TITLE:

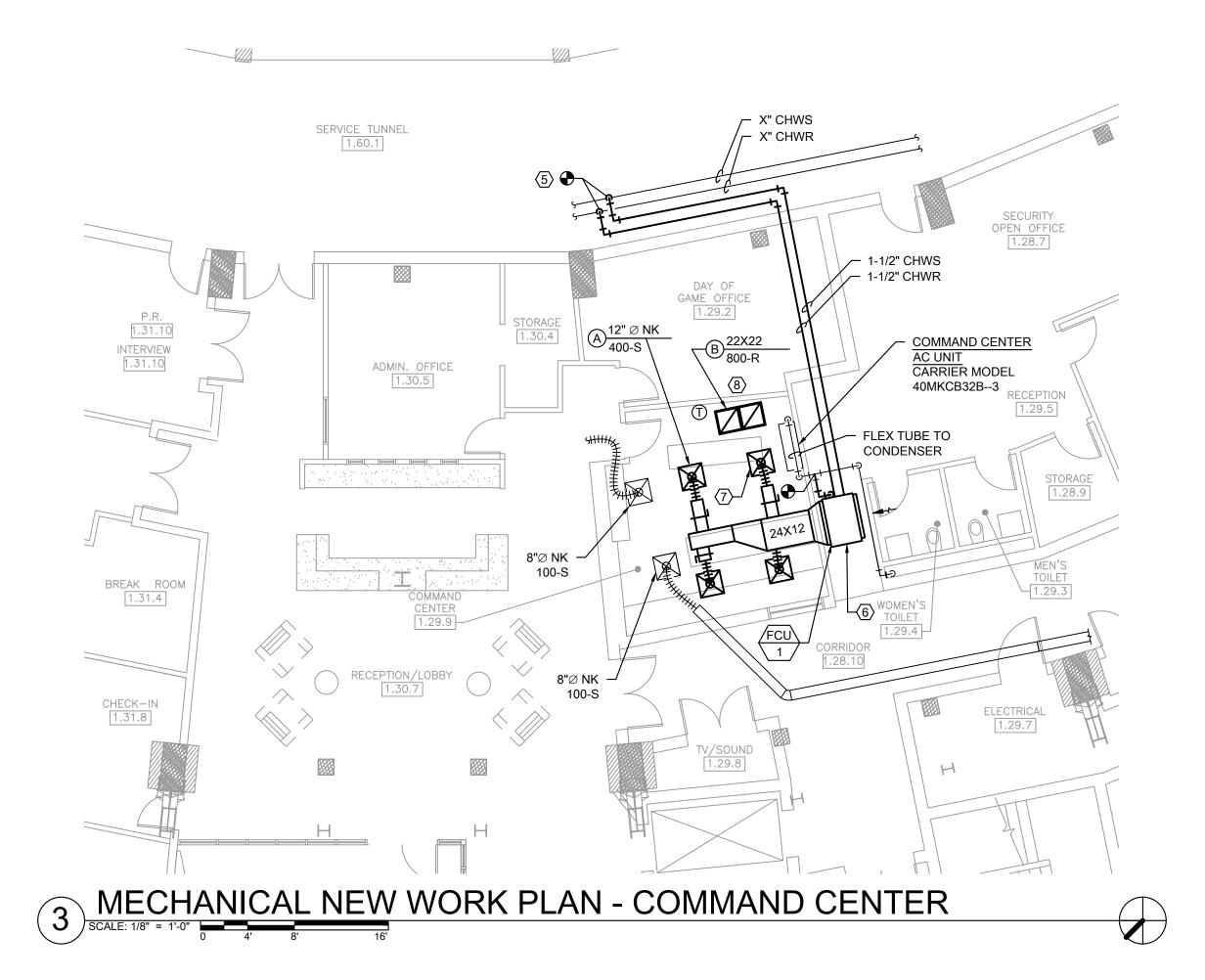
MECHANICAL DEMOLITION
PLAN - LEVEL 500 ENLARGED
PLANS

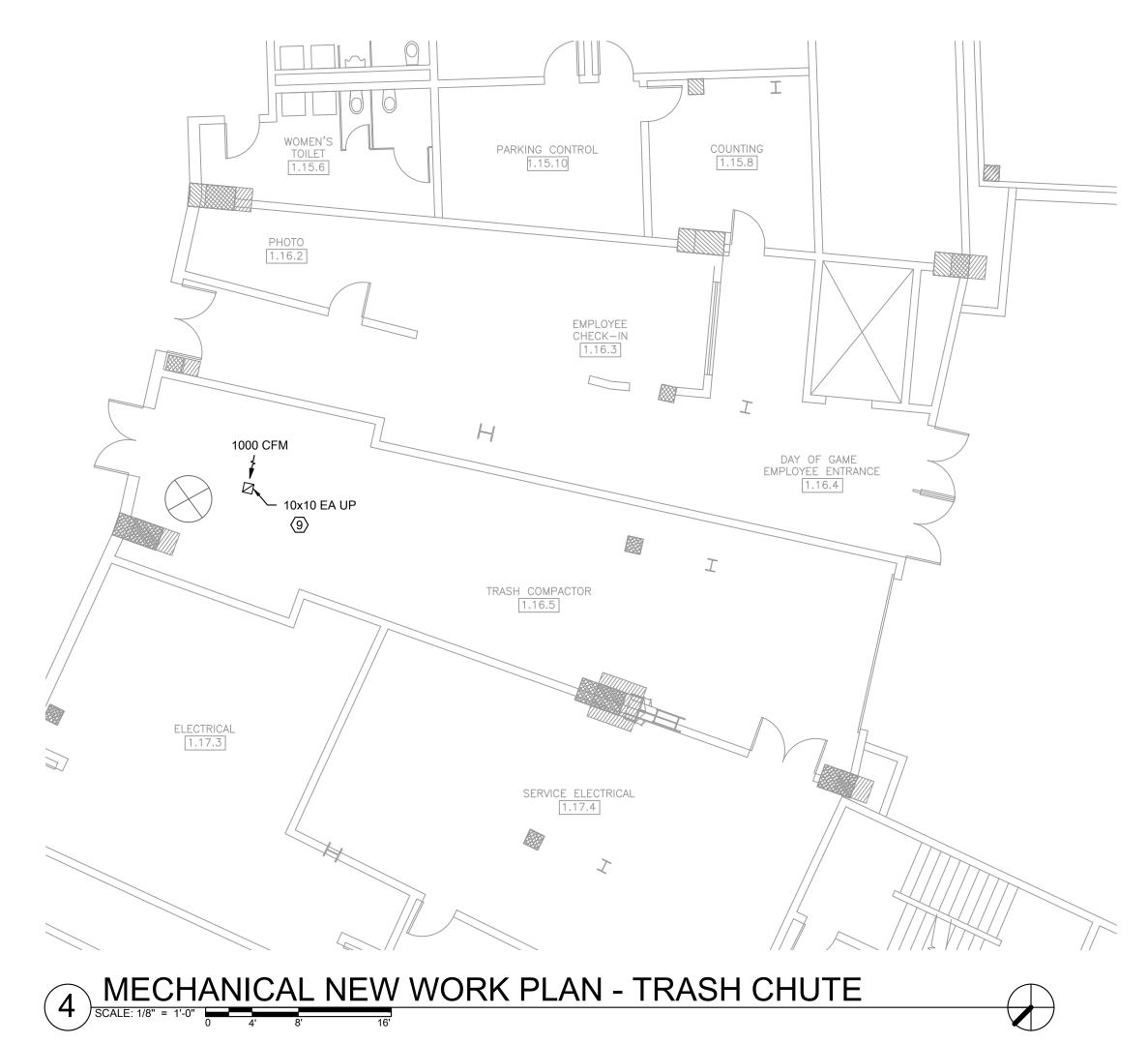
DESIGNED BY:	DA
CHECKED BY:	MS
PROJECT NO:	21276
SCALE:	1/8" = 1'-0"
SHEET NO.	

MD1.12













- 1. MOUNT TWO (2) NEW CASSETTE UNITS IN LOCATIONS OF PREVIOUS UNITS. CONNECT TO EXISTING REFRIGERANT LIQUID, REFRIGERANT SUCTION, AND CONDENSATE DRAIN LINES. TIE TO EXISTING CONTROLS AND RECHARGE WITH REFRIGERANT. 2. CAP SUPPLY DUCT ABOVE CEILING.
- 3. INSTALL NEW WALL MOUNTED CASSETTE UNIT JUST BELOW CEILING. ROUTE DISCHARGE FROM INTEGRAL CONDENSATE PUMP TO EXISTING CONDENSATE DRAIN LINE ABOVE CEILING WITH NEW TEE. ROUTE INSULATED REFRIGERANT LINES UP TO ABOVE CEILING AND OUT TO CORRIDOR FOR FINAL CONNECTION TO NEW CONDENSING UNIT. INSTALL NEW THERMOSTAT IN LOCATION SHOWN, COORDINATED WITH EXISTING AVAILABLE WALL SPACE.
- 4. LOCATE NEW CONDENSING UNIT ON STRUCTURAL PLATFORM ELEVATED ABOVE THE SERVICE CORRIDOR. SUPPORT PLATFORM FROM STRUCTURE ABOVE.
- CONNECT NEW 1-1/2" CHWS/R LINES TO EXISTING TAPS IN CORRIDOR. PROVIDE NEW ISOLATION VALVES AND OTHER PIPING ACCESSORIES IN ACCORDANCE WITH THE PROVIDED DETAIL. INSULATE PER SPECIFICATION.
- 6. INSTALL NEW FAN COIL UNIT ABOVE ADJACENT CORRIDOR. SUPPORT INDEPENDENTLY FROM STRUCTURE ABOVE PER SPECIFICATIONS. PROVIDE DRAIN PAN AND UNIT MOUNTED RETURN FILTER TO DRAW AIR FROM PLENUM. CONNECT NEW 1 CONDENSATE LINE FROM NEW FAN COIL UNIT TO EXISTING COMMON DRAIN LINE. 7. INSTALL NEW DUCT DISTRIBUTION AND SUPPLY DIFFUSERS IN EXISTING CEILING. SUPPORT FLEX AT FINAL CONNECTION TO DELIVER AIR DIRECTLY DOWN ONTO DIFFUSER. REPLACE ANY CEILING TILES DAMAGED DURING WORK. REPLACEMENT TILES MUST MATCH EXISTING OR IF MATCHING TILES ARE UNAVAILABLE OR CANNOT BE OBTAINED, REPLACE ALL CEILING TILES IN THE

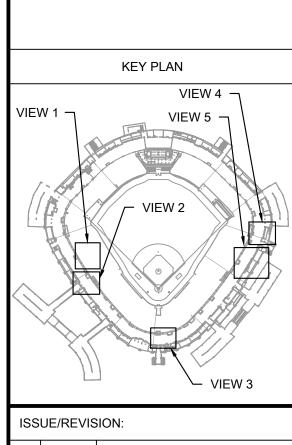
ROOM.

- 8. INSTALL NEW RETURN GRILLES IN EXISTING CEILING. REPLACE ANY CEILING TILES DAMAGED DURING WORK. REPLACEMENT TILES MUST MATCH EXISTING OR IF MATCHING TILES ARE UNAVAILABLE OR CANNOT BE OBTAINED, REPLACE ALL CEILING TILES
- 9. INLET TO TRASH CHUTE EXHAUST FAN TR-A1 LOCATED NEAR STRUCTURAL SLAB ABOVE. TEST AND CONFIRM OPERATION OF EXISTING FIRE DAMPER IN FLOOR SLAB AND PROVIDE PRE-READ AND POST INSTALLATION READING OF AIRFLOW AT DUCT INLET. CONTRACTOR TO PROVIDE SCAFFOLDING OR OTHER TEMPORARY WORK PLATFORM THAT WILL NOT IMPEDE THE OPERATION OF TRASH COMPACTOR EQUIPMENT BELOW AND PROVIDE REQUIRED FALL PROTECTION TO THEIR WORKERS AND TEST AND BALANCE SUBCONTRACTOR.
- CONTRACTOR SHALL THOROUGHLY CLEAN THE COMPLETE DUCT RUN, ALL BRANCH DUCTS, AND AIR GRILLES CONNECTED TO THIS SYSTEM. REFER TO RISER DIAGRAM AND OTHER FLOOR PLANS FOR INLETS AND ACCESS POINTS. 10. INSTALL NEW INLINE RETURN FAN IN WAREHOUSE. PROVIDE NEW FLEX CONNECTORS AND SPRING ISOLATED SUPPORTS. ONCE INSTALLED, CONTRACTOR SHALL RETURN AFTER MANUFACTURER RECOMMENDED HOURS TO ADJUST BELT TENSION.









ISS	UE/REVISION:		
REV.	DATE	DESCRIPTION	
-	11/05/21	ISSUED FOR BID	
$\sqrt{1}$	11/15/21	ISSUED FOR BID ADDENDUM	

GUARANTEED RATE FIELD -HVAC REPLACEMENT PHASE XI

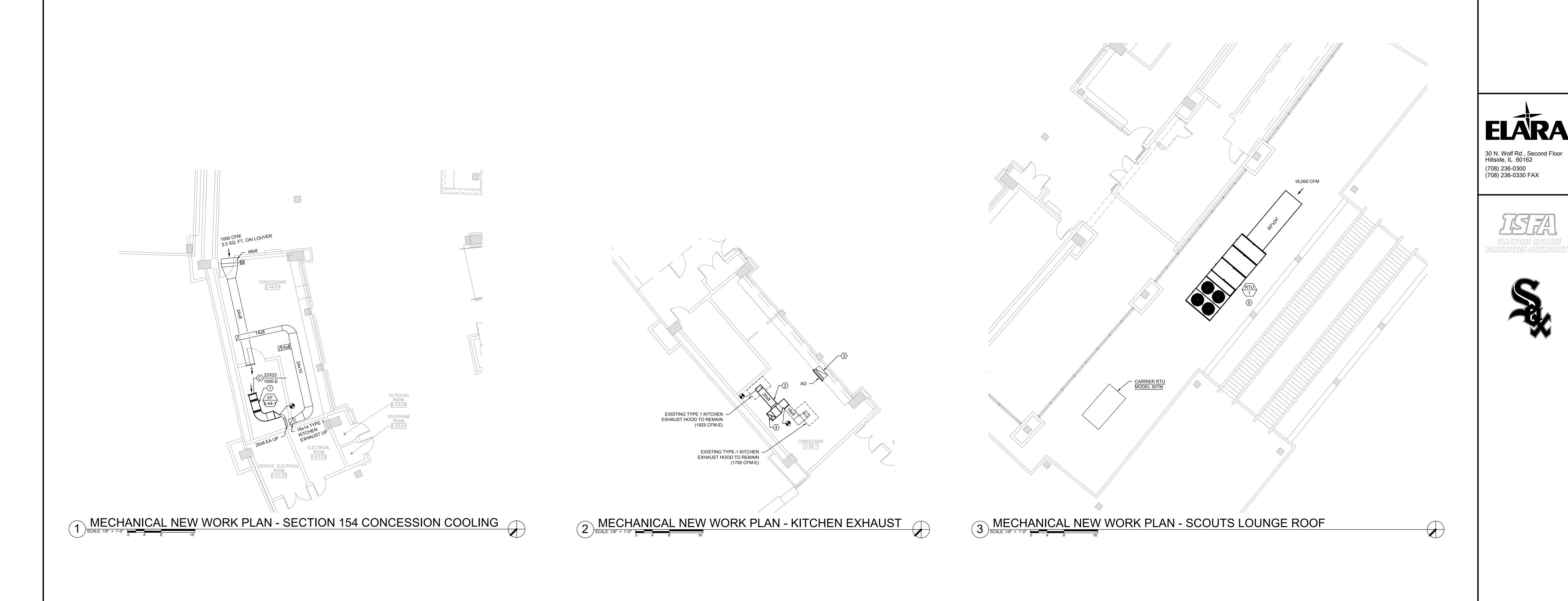
333 W 35TH STREET, CHICAGO, ILLINOIS 60616

> DRAWING TITLE: MECHANICAL NEW WORK PLAN - CONCOURSE ENLARGED PLANS

DESIGNED BY:	DA
CHECKED BY:	MS
PROJECT NO:	21276
SCALE:	1/8" = 1'-0"
SHEET NO.	

ISSUED FOR BID ADDENDUM

M1.02 PRELIMINARY - NOT FOR CONSTRUCTION



KEYED MECHANICAL NEW WORK SHEET NOTES

INSPECTION IF NECESSARY. PROVIDE DRAIN IN DUCT CAP ROUTED TO CLOSEST FLOOR SINK OR FLOOR DRAIN. PROVIDE WITH

4. INSTALL NEW 26x14 BLACK IRON KITCHEN EXHAUST DUCT UP THROUGH ROOF TO NEW KITCHEN EXHAUST FAN KEF-1. REFER TO SCHEMATIC RISER DIAGRAM ON M2.01. PROVIDE FIRE WRAP PER SPECIFICATIONS. ENSURE EXISTING DUCT SECTIONS THAT

5. INSTALL NEW VAV ROOF TOP UNIT ON EXISTING CURB WITH CURB ADAPTER. BASIS OF DESIGN UNIT WILL REQUIRE ADAPTER CDI

6. (INSTALL THREE (3) NEW WALL MOUNTED DX CASSETTE UNITS. PROVIDE CONDENSATE DRAIN TO NEAREST FLOOR DRAIN. MOUNT REMOTE CONTROL/THERMOSTAT ON WALL AS SHOWN:

7. ROUTE REFRIGERANT LINES FOR NEW DX CASSETTES HIGH BEFORE PENETRATING THROUGH ROOF TO NEW ROOF MOUNTED CONDENSING UNIT. SUPPORT AND INSULATE PER DETAILS AND SPECIFICATIONS.

. INSTALL NEW DUCTWORK AND EXHAUST GRILLES FOR SERVICE COUNTER SECTION OF CONCESSION STAND 104. COORDINATE EXACT LOCATION WITH ACT LAYOUT TO AVOID CONFLICT WITH LIGHTS, ETC. DUCTWORK TO BE ROUTED ABOVE ACCESSIBLE

8. INSTALL VINYL CURTAIN STRIP DOOR TO ISOLATION POINT OF SALE AREA FROM BACK ROOM TO CONTAIN COOLING TO THE

STORAGE AREA. BLOCK AND SEAL ANY OPENINGS BETWEEN THE TWO SPACES NOT COVERED BY THE VINYL STRIPS.

2. RECONFIGURE DUCTWORK SERVING HOOD TO FACILITATE RISER RELOCATION. DUCT SHALL BE SLOPED AND PROVIDED WITH

3. EXISTING KR-E1 RISER TO BE CAPPED IN SPACE AND ABANDONED IN PLACE. PROVIDE ACCESS DOOR TO ALLOW FUTURE

1. INSTALL NEW EXHAUST FAN, EXHAUST AIR INLET, UPSTREAM AND DOWNSTREAM DUCTWORK AND FITTINGS.

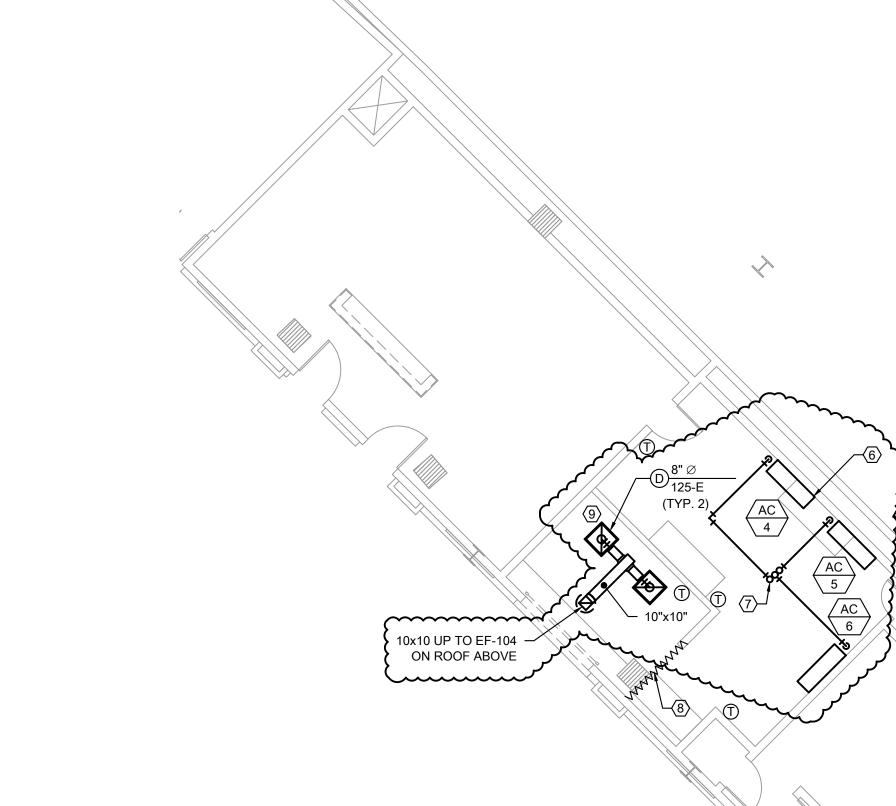
SIGHT GLASS AND ISOLATION VALVE FOR DIAGNOSING IF ABANDONED DUCT RISER IS TAKING ON WATER.

CLEANOUTS IN ACCORDANCE WITH CODE. COVER IN FIRE-WRAP PER SPECIFICATIONS.

REMAIN ARE CLEANED PRIOR TO WELDING NEW CONNECTIONS.

CEILING AND BELOW THE ROOF SLAB OF THE STAND.

EXISTING SIEMENS BAS WITH OWNER DESIGNATED BAS REPRESENTATIVE.



GUARANTEED RATE FIELD - HVAC REPLACEMENT PHASE XI

STATE OF THE PROPERTY OF TH

CHICAGO, ILLINOIS 60616

DRAWING TITLE:

MECHANICAL NEW WORK
PLAN - LEVEL 100 ENLARGED

PROJECT:

SCALE:

KEY PLAN

VIEW 3 —

ISSUE/REVISION:

EV. DATE DESCRIPTION

11/05/21 ISSUED FOR BID

11/15/21 ISSUED FOR BID ADDENDUM

DESIGNED BY: DA

CHECKED BY: MS

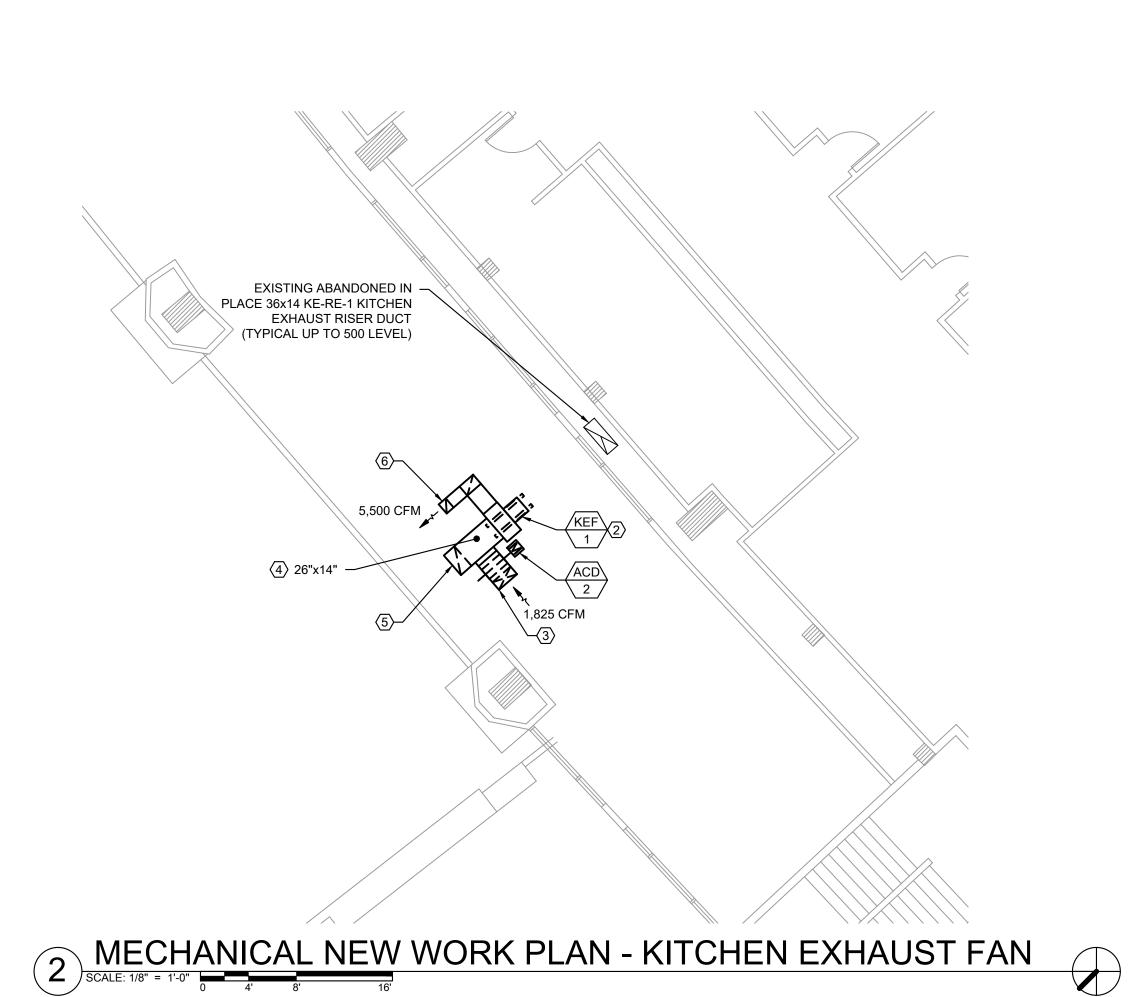
PROJECT NO: 21276

M1.04

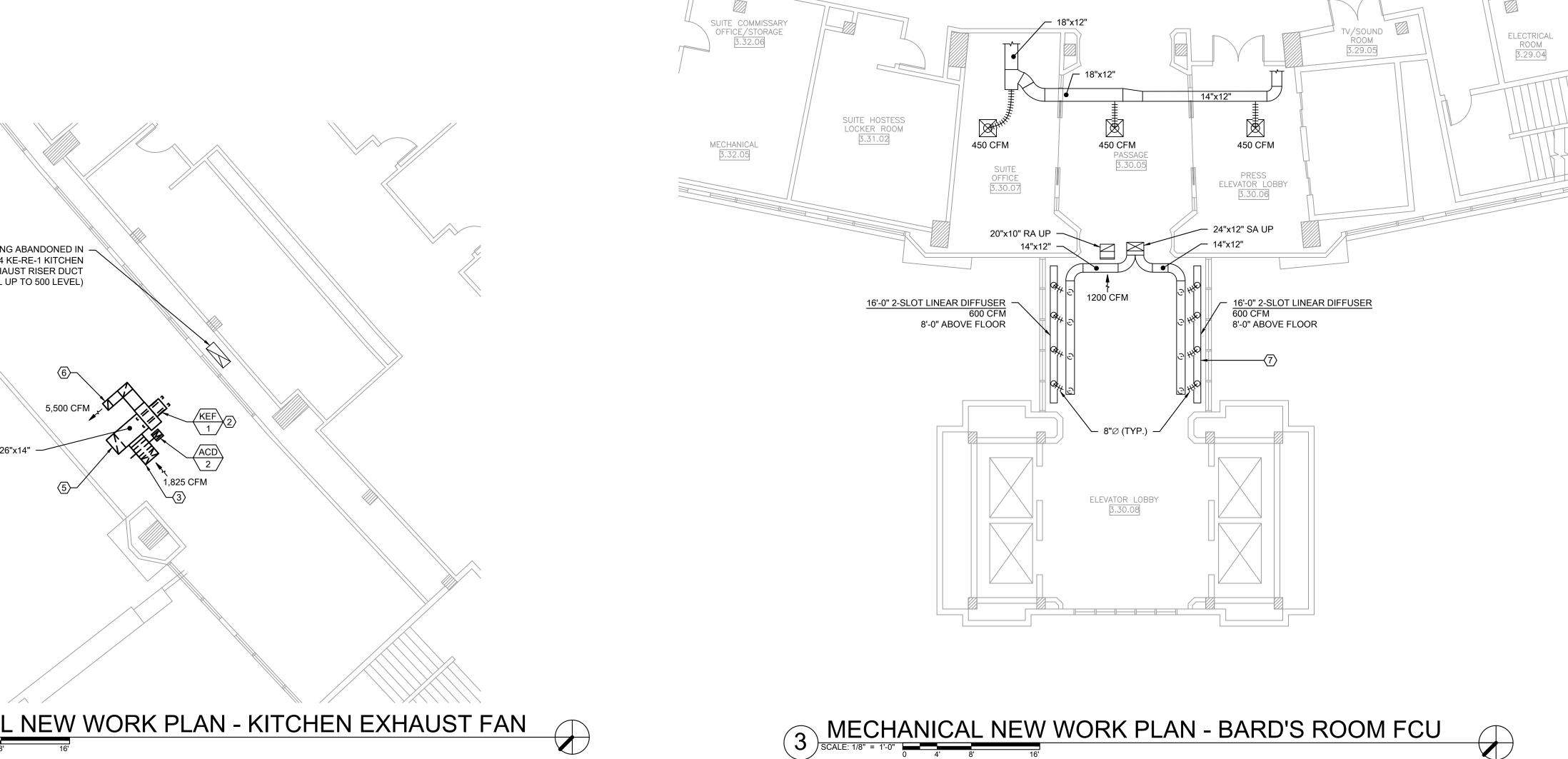
1/8" = 1'-0"

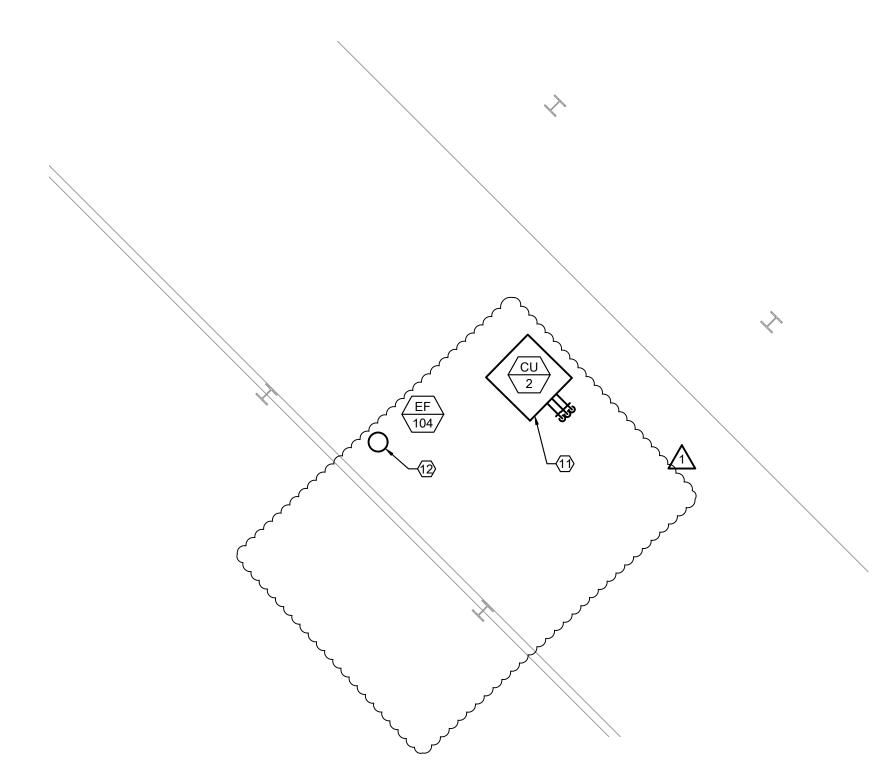
11/15/2021 ISSUED FOR BID ADDENDUM
PRELIMINARY - NOT FOR CONSTRUCTION





96"x19" DN TO RA INTAKE

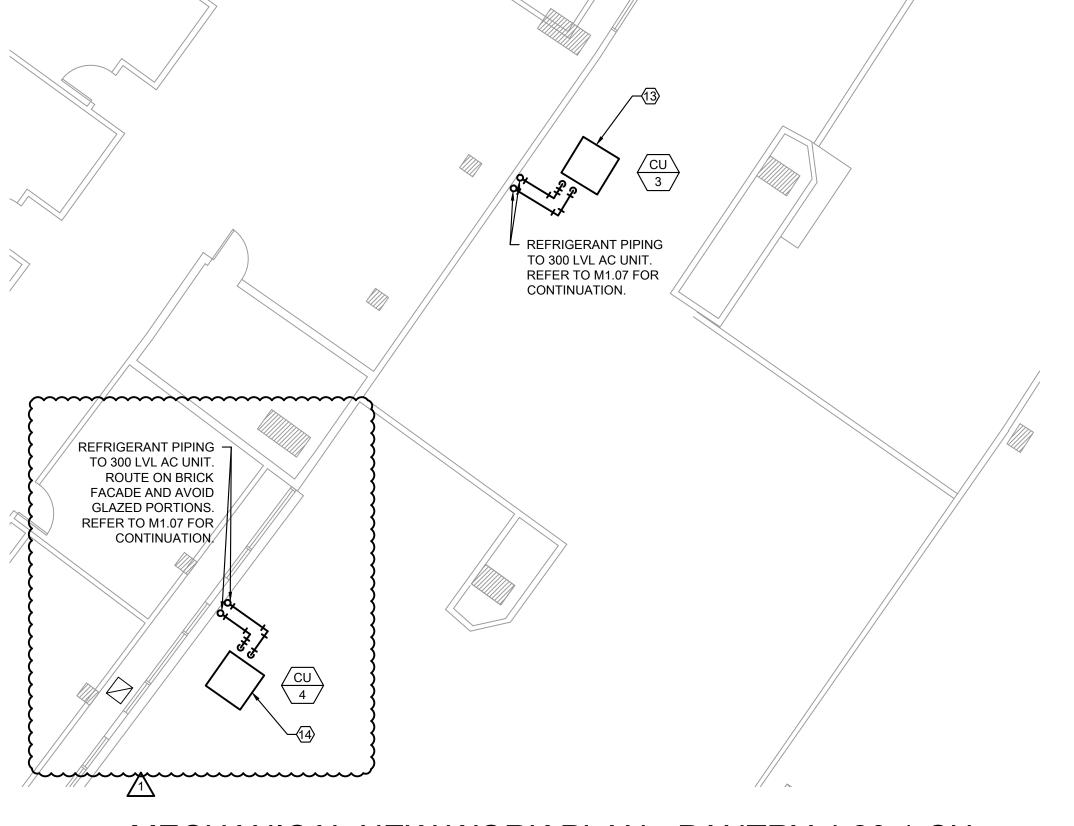




MECHANICAL NEW WORK PLAN - SECTION 105 ICE CREAM

SCALE: 1/8" = 1'-0"

A 16'



7 MECHANICAL NEW WORK PLAN - PANTRY 4.20.1 CU
SCALE: 1/8" = 1'-0" 4' 8' 16'

1825 CFM OF DILUTION AIR TO MIX WITH GREASE LADEN KITCHEN EXHAUST FROM BELOW WHEN FAN IS RUNNING. TERMINATE WITH ANGLED INLET TO PREVENT RAIN & SNOW INFILTRATION AND BIRD SCREEN. BOTTOM OF INTAKE OPENING SHALL BE A 4. CONNECT FULLY WELDED GREASE DUCT TO EXHAUST FAN WITH SECURELY BOLTED FLANGES & GASKET AS REQUIRED CODE. 5. NEW 26"x14" WELDED BLACK IRON KITCHEN EXHAUST DUCT DN FROM TYPE 1 HOODS BELOW. PROVIDE CURB RATED FOR HIGH 6. TERMINATE KEF-1 OUTLET UPWARD. OUTLET SHALL BE AT A MINIMUM OF 40" ABOVE ROOF LEVEL AS REQUIRED BY CODE. DIRECT PLUME AT A 45° ANGLE UP AND AWAY FROM ADJACENT BUILDING TO PREVENT ACCUMULATION OF SMOKE & GREASE ON 7. DISTRIBUTION AND AIR OUTLETS ASSOCIATED WITH BARDS ROOM FCU SHOWN FOR REFERENCE ONLY. DUCTS ARE HIGH, TIGHT 8. INSTALL NEW AIR HANDLER IN LOCATIONS OF PREVIOUSLY DEMOLISHED UNIT. PROVIDE NEW DUCTWORK WITH INSULATION TO CONNECT EXISTING OUTSIDE AIR AND SUPPLY AIR DUCTS TO NEW UNIT INLET AND OUTLET. TIE EXISTING RETURN TO NEW 9. DISASSEMBLE, CLEAN, AND PERFORM INSPECTION OF EXISTING RETURN FAN. REPLACE WORN COMPONENTS AND RELUBRICATE 10. CONNECT NEW AHU CHILLED WATER COIL TO EXISTING PIPING DOWNSTREAM OF EXISTING CONTROL VALVE. 11. INSTALL NEW CONDENSING UNIT ASSOCIATED WITH ICE CREAM COOLING BELOW. PROVIDE NEW ROOF CURB AND PIPE 12. INSTALL NEW EXHAUST FAN SERVING ICE CREAM SERVING AREA BELOW. PROVIDE NEW ROOF CURB.

KEYED MECHANICAL NEW WORK SHEET NOTES

13. INSTALL NEW CONDENSING UNIT AND REFRIGERANT PIPING ASSOCIATED WITH PANTRY 4.20.1 COOLING UNIT ON LEVEL ABOVE.

INSTALL NEW CONDENSING UNIT AND REFRIGERANT PIPING ASSOCIATED WITH STORAGE 4.22 COOLING UNIT ON LEVEL ABOVE.

SAFE ACCESS AND A WORK SURFACE FOR INSPECTION AND CLEANING.

TEMP EXHAUST. OPENING SHALL BE SEALED WEATHERTIGHT.

TO STRUCTURE AND INACCESSIBLE BEHIND DRYWALL CEILING.

MINIMUM OF 24" ABOVE THE ROOF LEVEL.

PER MANUFACTURERS RECOMMENDATIONS.

REFER TO M1.08 FOR CONTINUATION.

REFER TO M1.08 FOR CONTINUATION.

PENETRATION PORTAL.

ISSUED FOR BID ADDENDUM PRELIMINARY - NOT FOR CONSTRUCTION

30 N. Wolf Rd., Second Floor Hillside, IL 60162 (708) 236-0300 (708) 236-0330 FAX





KEY PLAN

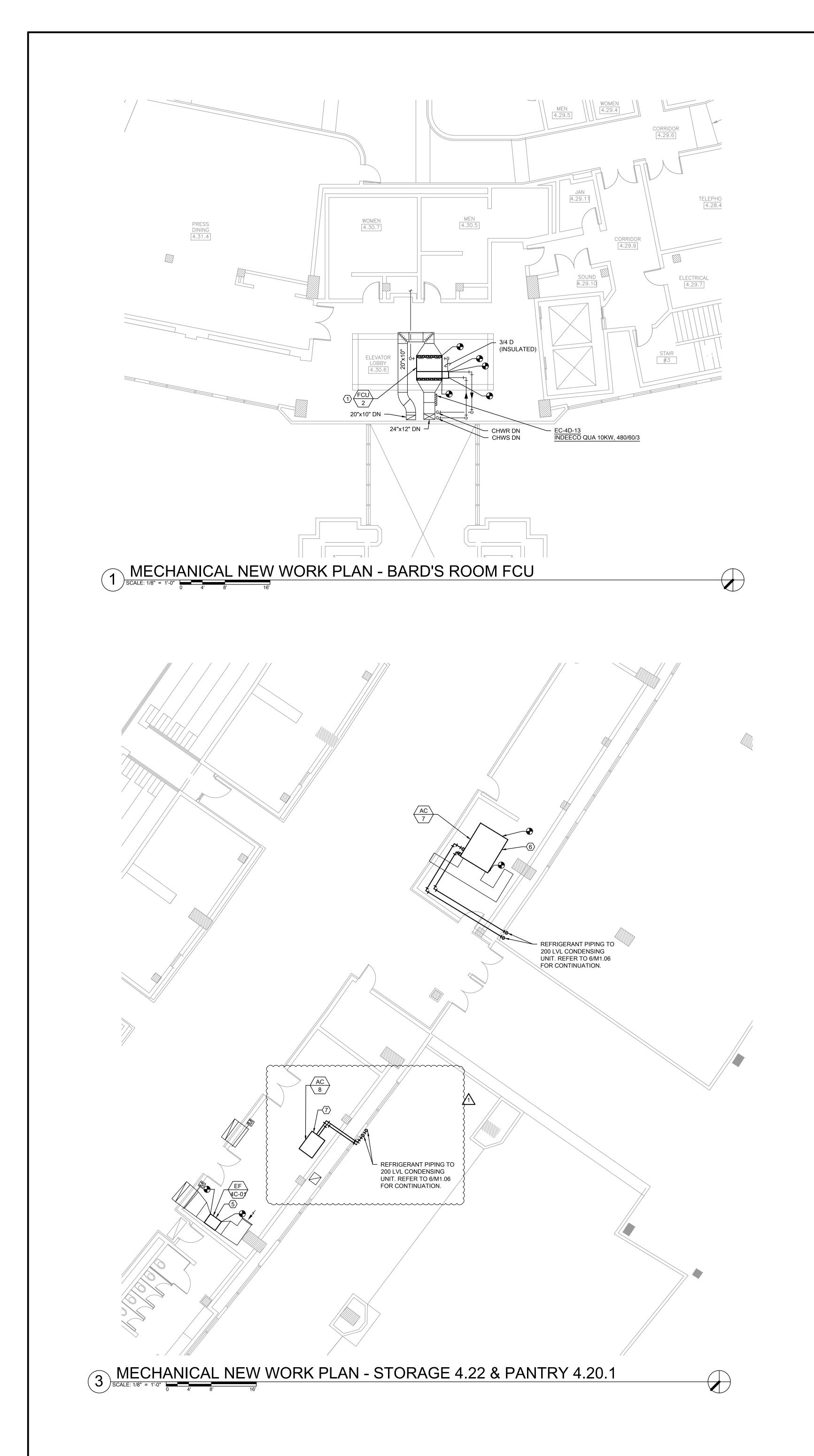
		VIEW 3
ISS	UE/REVIS	SION:
REV.	DATE	DESCRIPTION
-	11/05/21	ISSUED FOR BID
1	11/15/21	ISSUED FOR BID ADDENDUM
PR) IECT·	

GUARANTEED RATE FIELD -HVAC REPLACEMENT PHASE XI

333 W 35TH STREET, CHICAGO, ILLINOIS 60616

DRAWING TITLE: MECHANICAL NEW WORK PLANS - LEVEL 200 ENLARGED

DESIGNED BY: CHECKED BY: PROJECT NO: 21276 SCALE: 1/8" = 1'-0"





KEYED MECHANICAL NEW WORK SHEET NOTES

- INSTALL NEW FAN COIL UNIT ABOVE CEILING TO SERVE LOWER LEVEL ELEVATOR LOBBY. CONNECT TO EXISTING SUPPLY AND RETURN DUCTS AS WELL AS EXISTING CHILLED WATER PIPING AND CONDENSATE DRAIN LINE. 2. TRASH CHUTE EXHAUST DUCT SHOWN FOR REFERENCE. DUCT TO BE CLEANED PRIOR TO INSTALLATION OF NEW EXHAUST FAN
- 3. AIR OUTLETS AND INLETS FOR AHU-3A-2 SHOWN FOR REFERENCE. SYSTEM TO BE BALANCED UPON COMPLETION OF INSTALLATION.
- 4. DISHWASHER EXHAUST DUCT SHOWN FOR REFERENCE. DUCT BELOW TO BE REPAIRED AND DRAIN SECTION INSTALLED.

DOWN TO NEW CONDENSING UNIT ON ROOF BELOW. REFER TO M1.06 FOR CONDENSING UNIT.

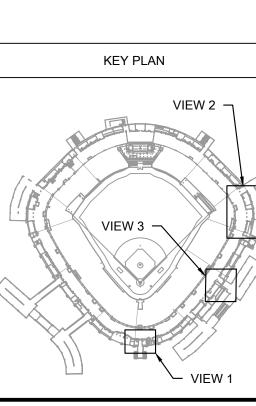
5. INSTALL NEW EXHAUST FAN IN PLACE OF DEMOLISHED ONE. CONNECT TO EXISTING DUCTWORK WITH NEW FLEX CONNECTIONS AND TIE TO EXISTING CONTROLS INCLUDING MOTORIZED DAMPERS.

- 6. INSTALL NEW DX DUCTED FAN COIL. CONNECT TO EXISTING SUPPLY AND RETURN DUCTS. ROUTE NEW INSULATED REFRIGERANT LINES OUT THROUGH EXISTING WALL PENETRATIONS AND DOWN TO NEW CONDENSING UNIT ON ROOF BELOW. REFER TO M1.06
- FOR CONDENSING UNIT. INSTALL NEW DX DUCTED FAN COIL WITH FILTER BOX. ROUTE NEW INSULATED REFRIGERANT LINES OUT EXTERIOR WALL AND 11









I		
REV.	DATE	DESCRIPTION
-	11/05/21	ISSUED FOR BID
1	11/15/21	ISSUED FOR BID ADDENDUM

GUARANTEED RATE FIELD -HVAC REPLACEMENT PHASE XI

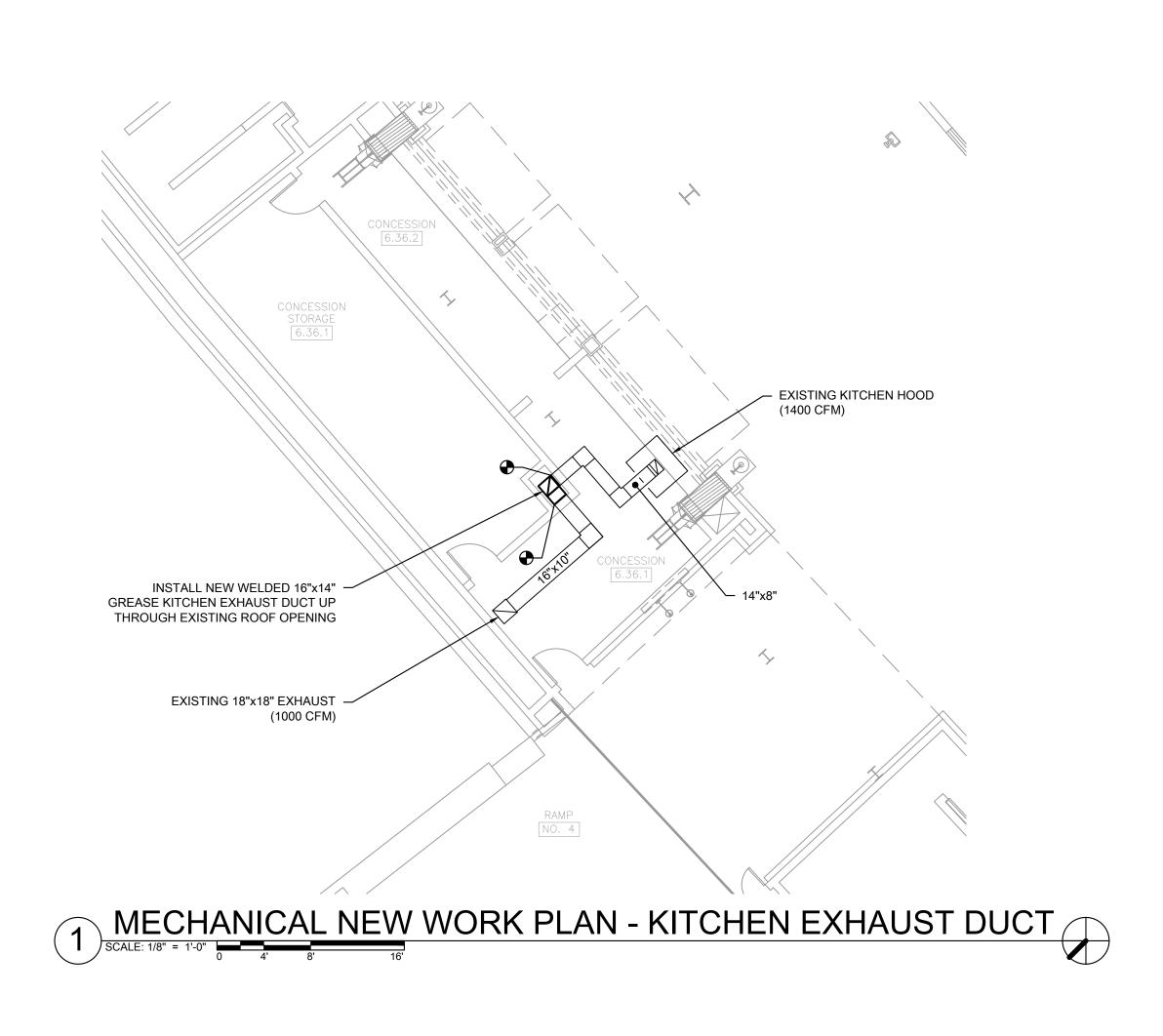
333 W 35TH STREET, CHICAGO, ILLINOIS 60616

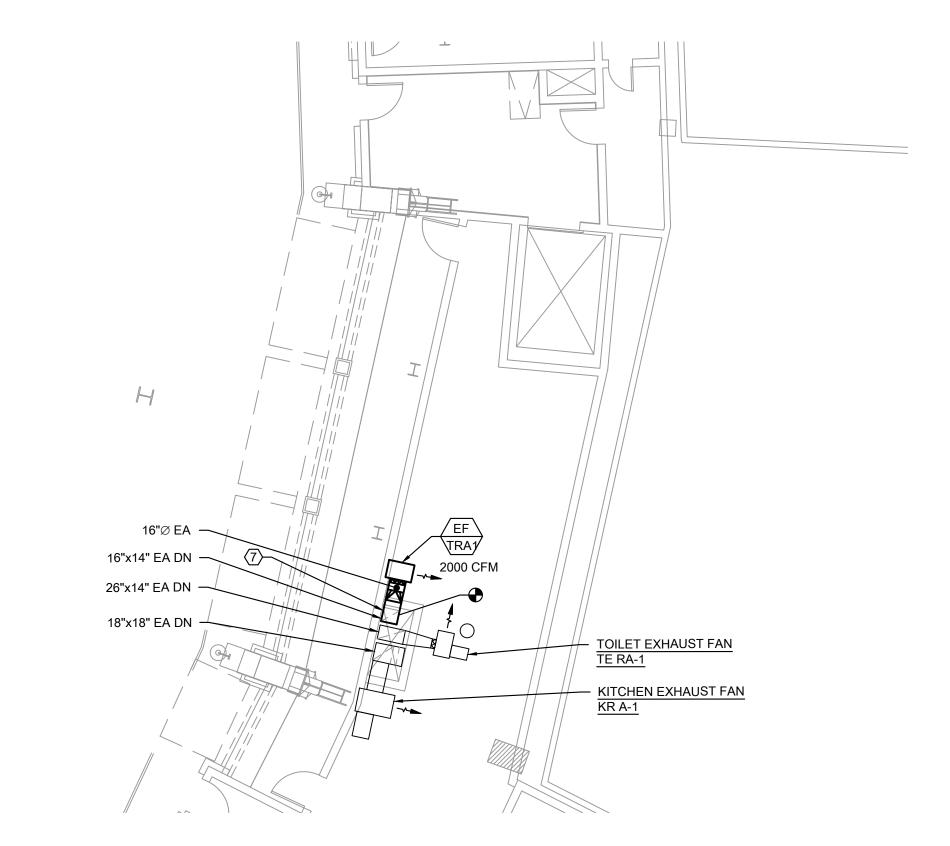
> DRAWING TITLE: MECHANICAL NEW WORK PLANS - LEVEL 300 ENLARGEDD PLANS

DESIGNED BY: CHECKED BY: PROJECT NO: 21276 SCALE: 1/8" = 1'-0" SHEET NO.

ISSUED FOR BID ADDENDUM

PRELIMINARY - NOT FOR CONSTRUCTION



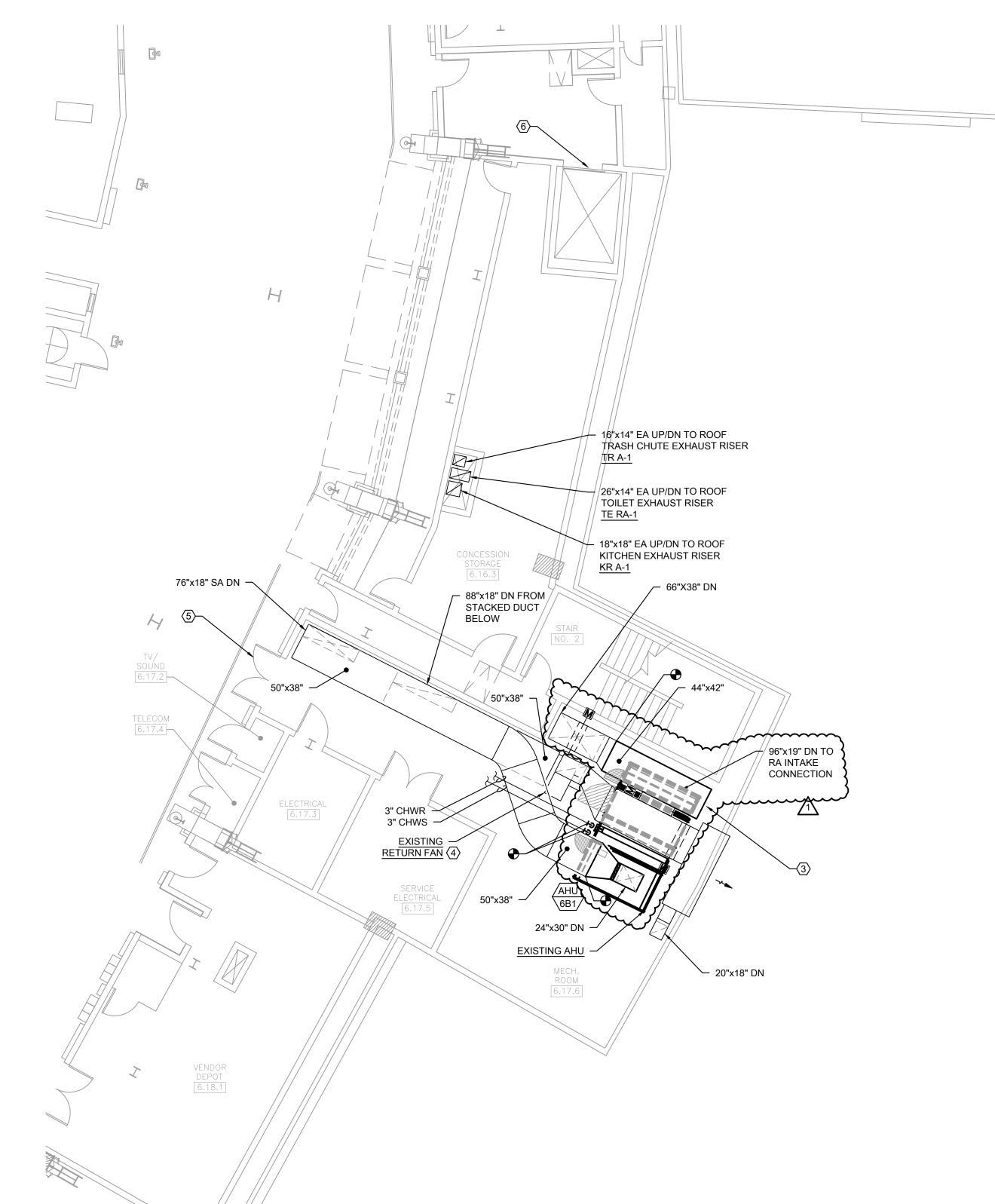


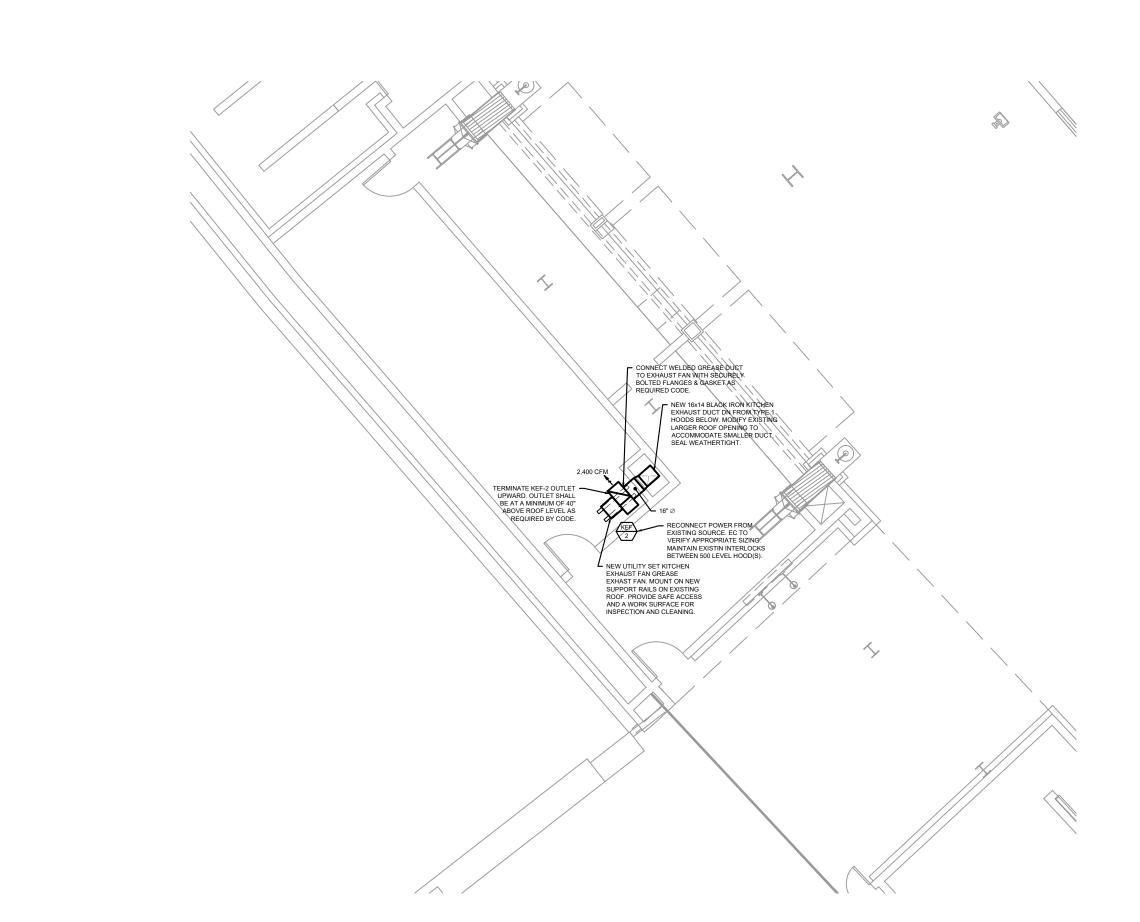
KEYED MECHANICAL NEW WORK SHEET NOTES

- 1. VFD FOR NEW 1-1/2 HP KITCHEN EXHAUST FAN KEF-2. COORDINATE FINAL LOCATION WITH SPACE EQUIPMENT LAYOUT.
- 2. CLEAN EXISTING TO REMAIN TYPE 1 HOOD DUCTWORK THOROUGHLY. PROVIDE NEW CLEANOUT AND ACCESS IF NOT
- 3. INSTALL NEW AIR HANDLER IN LOCATIONS OF PREVIOUSLY DEMOLISHED UNIT. PROVIDE NEW DUCTWORK WITH INSULATION TO CONNECT EXISTING OUTSIDE AIR AND SUPPLY AIR DUCTS TO NEW UNIT INLET AND OUTLET. TIE EXISTING RETURN TO NEW
- 4. DISASSEMBLE, CLEAN, AND PERFORM INSPECTION OF EXISTING RETURN FAN. REPLACE WORN COMPONENTS AND RELUBRICATE
- PER MANUFACTURERS RECOMMENDATIONS. 5. DOUBLE DOORS CONNECTING MECHANICAL ROOM TO 500 LEVEL CONCOURSE IS RECOMMENDED FOR MECHANICAL EQUIPMENT

INGRESS. UNIT SHALL REQUIRE SOME AMOUNT OF FIELD ASSEMBLY DUE TO LIMITED AREA OF ENTRY TO MECHANICAL SPACE.

- 6. SERVICE ELEVATOR SUITABLE FOR SMALL EQUIPMENT INGRESS. FEATURES ACCESS ON ALL FLOORS. COORDINATE USE AND ANY REQUIRED LOCKOUTS WITH ISFA AND CHICAGO WHITE SOX.
- 7. INSTALL NEW RADIUS ELBOW FITTING AND CONNECT TO EXISTING EXHAUST RISER SERVING TRASH CHUTE. SEAL AND LEAK TEST RISER TO CONFIRM INTEGRITY OF EXISTING DUCTWORK. CONNECT TO NEW ROOF MOUNTED UTILITY SET EXHAUST FAN.

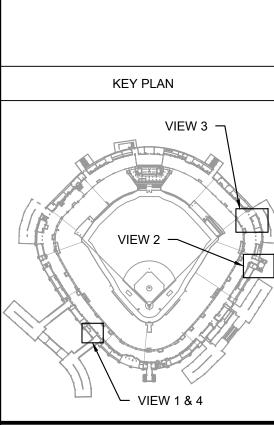












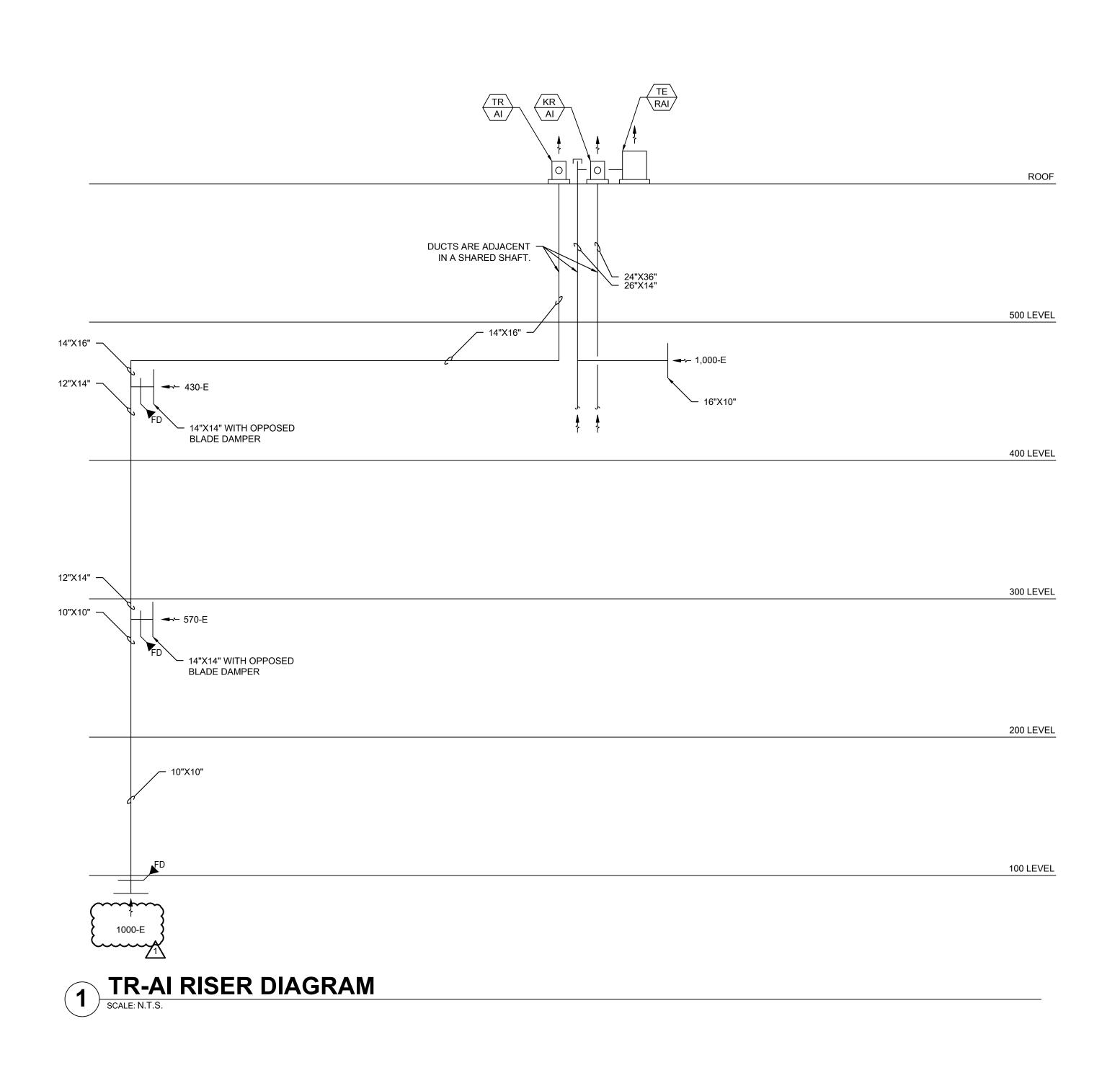
─ VIEW 1 & 4		
ISSUE/REVISION:		
REV.	DATE	DESCRIPTION
-	11/05/21	ISSUED FOR BID
$\sqrt{1}$	11/15/21	ISSUED FOR BID ADDENDUM

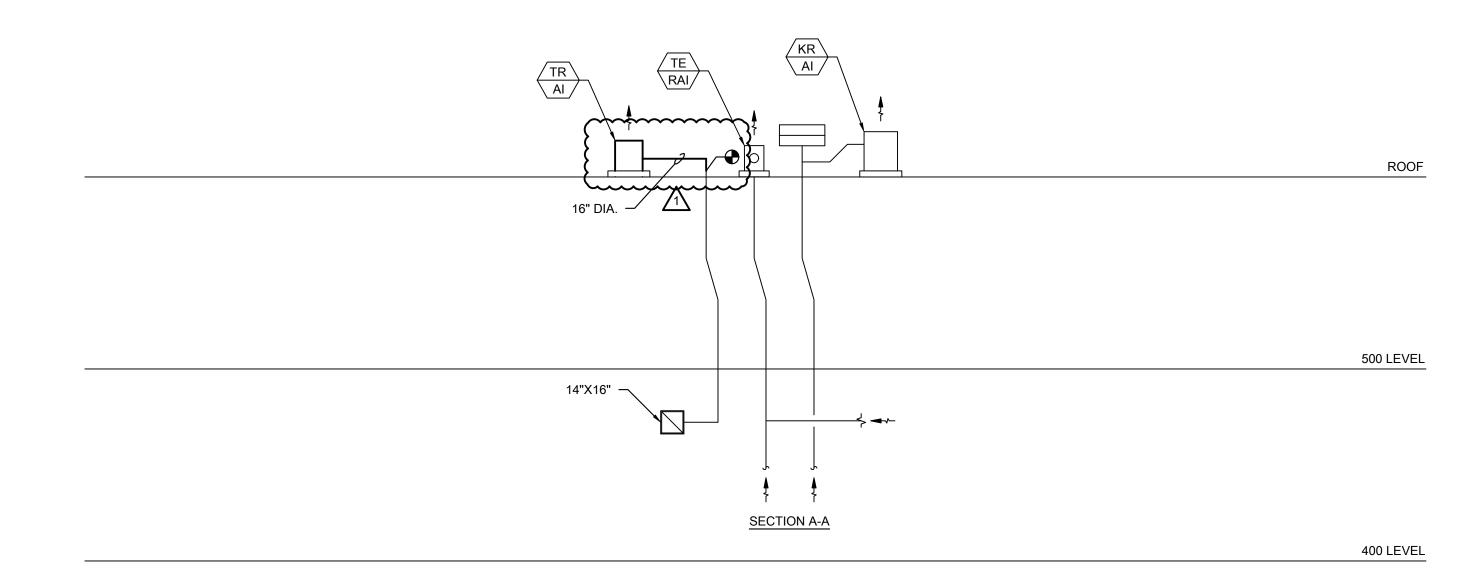
GUARANTEED RATE FIELD -HVAC REPLACEMENT PHASE XI

333 W 35TH STREET, CHICAGO, ILLINOIS 60616

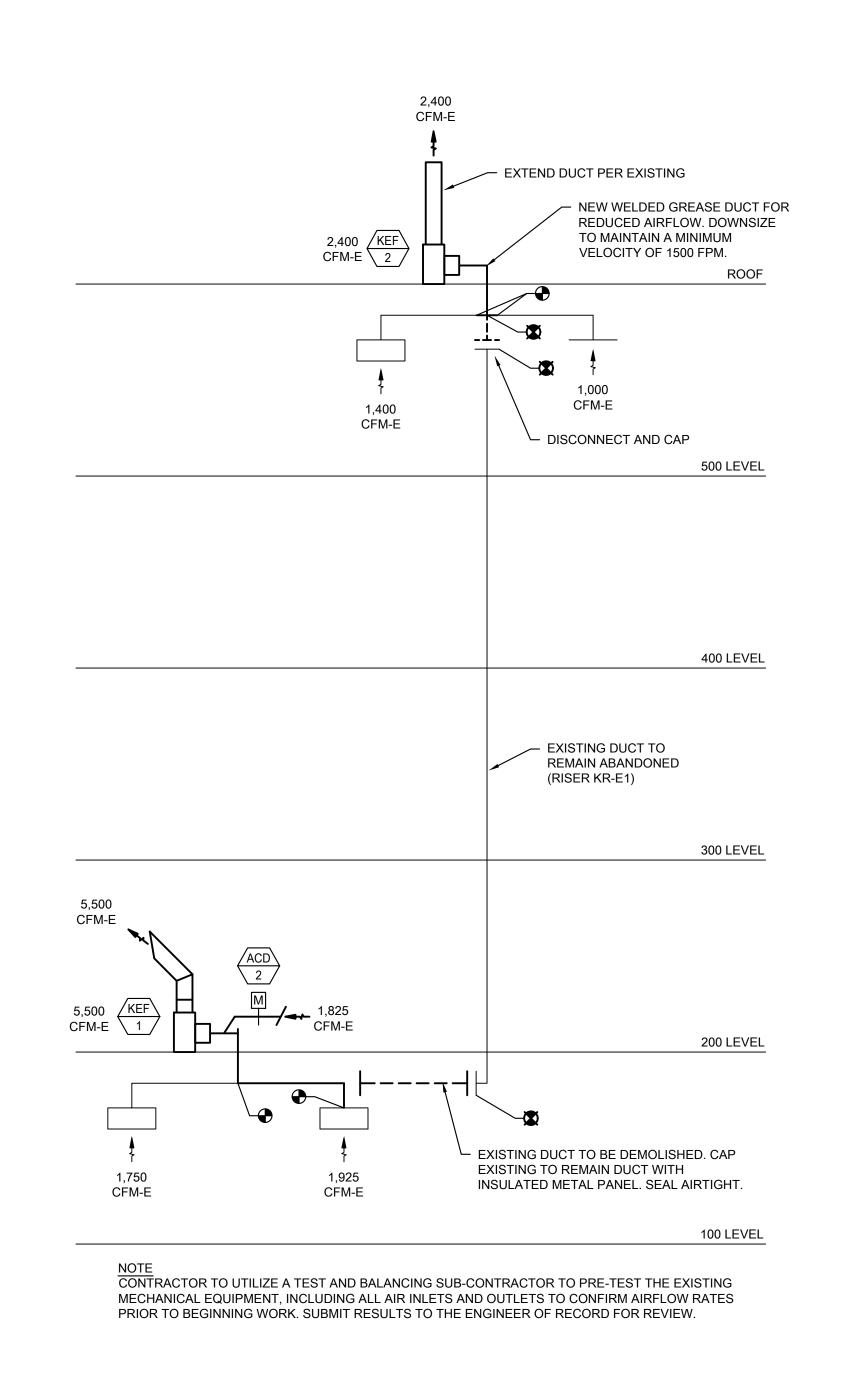
DRAWING TITLE: MECHANCIAL NEW WORK PLAN - LEVEL 500 ENLARGED

DESIGNED BY:	DA
CHECKED BY:	MS
PROJECT NO:	21276
SCALE:	1/8" = 1'-0"
SHEET NO.	





1 TR-AI RISER DIAGRAM
SCALE: N.T.S.



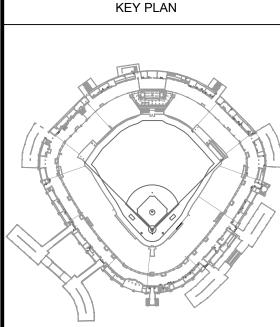
1 KITCHEN EXHAUST SCHEMATIC DIAGRAM
SCALE: N.T.S.







KEY PLAN



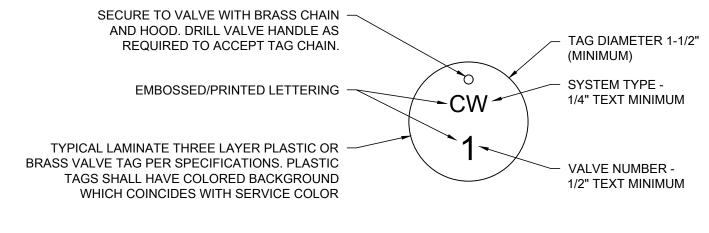
ISS	UE/REVIS	SION:
REV.	DATE	DESCRIPTION
-	11/05/21	ISSUED FOR BID
$\sqrt{1}$	11/15/21	ISSUED FOR BID ADDENDUM

GUARANTEED RATE FIELD -HVAC REPLACEMENT PHASE XI

333 W 35TH STREET, CHICAGO, ILLINOIS 60616

DRAWING TITLE: MECHANICAL SCHEMATICS

DESIGNED BY:	DA
CHECKED BY:	MS
PROJECT NO:	21276
SCALE:	NO SCALE
SHEET NO.	



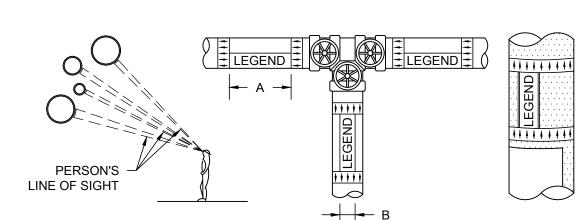
TAG LEGEND (PLUMBING EXAMPLE)
CW = COLD / CITY WATER HW = HOT WATER HWR = HOT WATER RE-CIRCULATING FP = FIRE PROTECTION

TAG LEGEND (HYDRONIC EXAMPLE)
HWS = HOT WATER SUPPLY HWR = HOT WATER RETURN CHWS = CHILLED WATER SUPPLY CHWR = CHILLED WATER RETURN

- 1. ABBREVIATIONS SHALL BE INDICATED FOR EACH DESIGN SYSTEM AS THEY APPEAR ON THE DESIGN DRAWINGS. 2. VALVE TAGS SHALL BE INDICATED IN "VALVE CHARTS" AND ON "PROJECT RECORD" DRAWINGS AND SHALL CORRELATE WITH TAG
- 3. ALL MAJOR SYSTEMS ON-OFF, CONTROL, AND BALANCING VALVES SHOULD HAVE AN ASTERIK***. 4. PROVIDE 8.5" x 11" VALVE TAG SHEETS IN A 3-RING BINDER FOR REPRODUCTION AND/OR FUTURE EDITING.
- 5. REFERENCE ALL "VALVE TAGS" TO "VALVE TAG CHARTS", "AS BUILT DRAWINGS", AND "O & M MANUAL DATA" (INDEX VALVES PER CHART). EXAMPLE VALVE TAG CHART BELOW:

	VALVE TAG CHART FOR: XXXXXXX	MOD: XXX	AREA: XXX	WING: XXX	FLO	OR: XXX		
VALVE TAG#	LOCATION (ALSO SEE AS-BUILT DRAWINGS)	(WHAT IT DC	FUNCTION DES & WHAT/WHER	E IT SERVICES)	TYPE	SIZE	MANUFACTURER	MODEL NUMBER
CW-1	RM. XXX - ABOVE CEILING	ON/OFF - FIXT	URES IN RM. XXX 8	XXX	BV	1"	BELL AND GOSSETT	XX-XXX-XX
CW-2	CORR. XXX - ABOVE DOOR @ RM. XXX	BALANCE - 2NI	D FLOOR, EAST SIE	E, NORTH WING	BFV	1-1/2"	ALLEN BRADLEY	XX-XXX-XX
CW-3	BOILER RM. XXX - NE CORNER	ON/OFF - MAIN	I - BLDGS X, Y, & Z		GV	8"	BELL AND GOSSETT	XX-XXX-XX
CW-4	RM. XXX - BEHIND N. ACCESS PANEL	ON/OFF - EXTE	RIOR FIELD HOUS	E - IRRIGATION	BV	3"	M & M	XX-XXX-XX
CW-5	RM. XXX - ABOVE CEILING	ON/OFF - MIXIN	NG VALVE - EYEWA	SH	BV	1"	GTM & S	XX-XXX-XX

1 VALVE TAG AND VALVE CHART DETAIL
SCALE: NO SCALE



1. STENCIL TYPE MARKERS WILL NOT BE PERMITTED. ONLY FACTORY MANUFACTURED MARKERS AS FOLLOWS WILL BE ACCEPTABLE: FOR INDOOR USE, UTILIZE ADHESIVE PIPE MARKERS - LARGEST SIZE POSSIBLE GIVEN THE PIPE OR INSULATION OUTER DIAMETER, WITH BOTH ENDS SECURED WITH ARROW TAPE OF MATCHING SIZE AND COLOR

 FOR OUTDOOR USE, UTILIZE "STRAP AROUND" TYPE SECURED WITH HEAVY DUTY ZIP TIES. 2. IDENTIFICATION MARKERS SHALL BE PLACED ON ALL EXPOSED COVERED AND UNCOVERED PIPES AT 20'-0" INTERVALS, AT ALL VALVES AND BRANCHES, AND

ON BOTH SIDES OF WALLS WHERE PIPES PASS THROUGH. ARROW TAPE OF

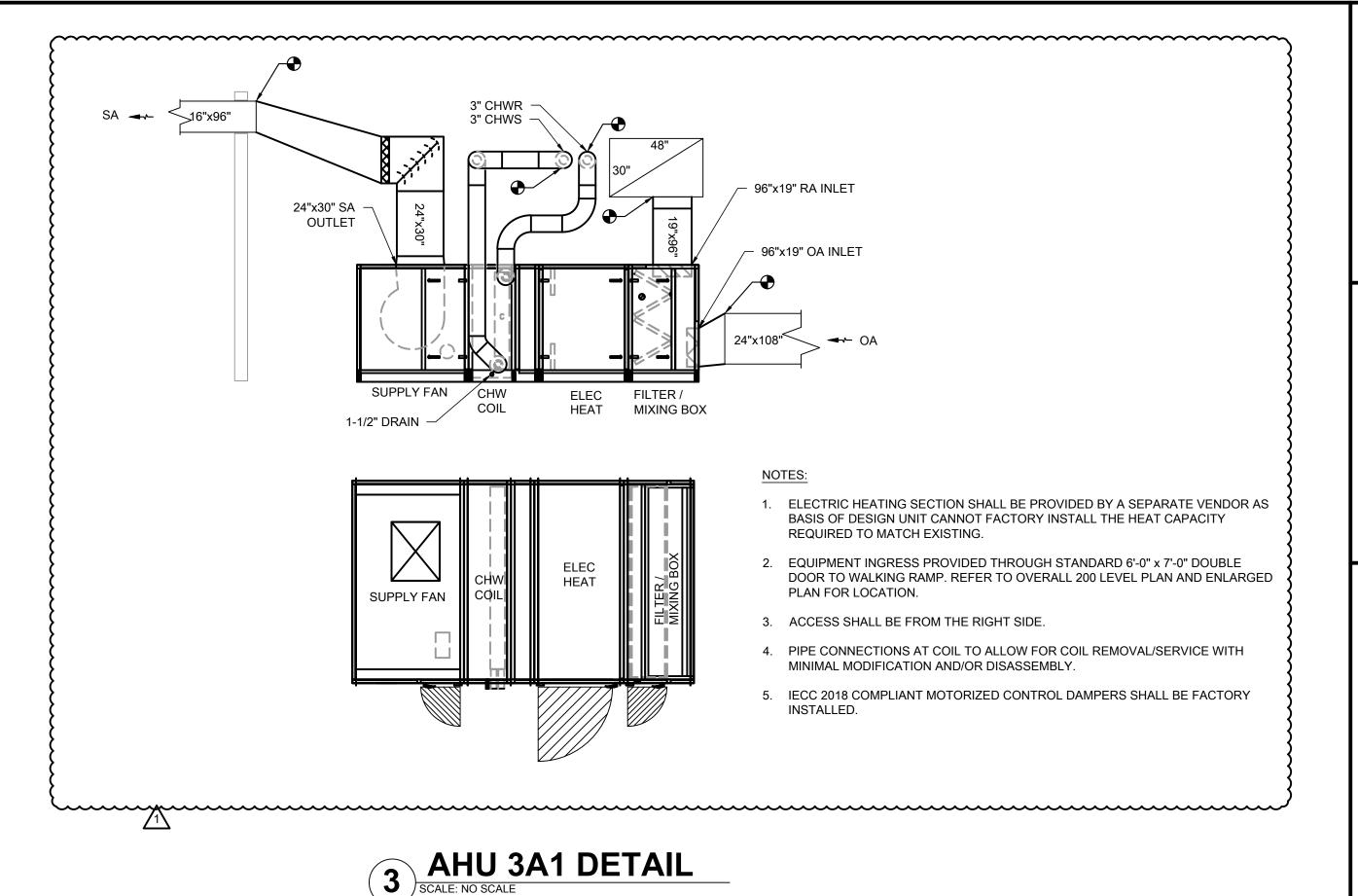
SAME COLOR AS IDENTIFICATION MARKERS SHALL ALSO BE PLACED ON PIPES POINTING AWAY FROM MARKER INDICATING DIRECTION OF FLOW. 3. IDENTIFICATION COLOR SCHEME TO BE PER THE TABLE BELOW UNLESS THERE IS EXISTING PIPING IN WHICH CASE COLOR SCHEME TO MATCH EXISTING.

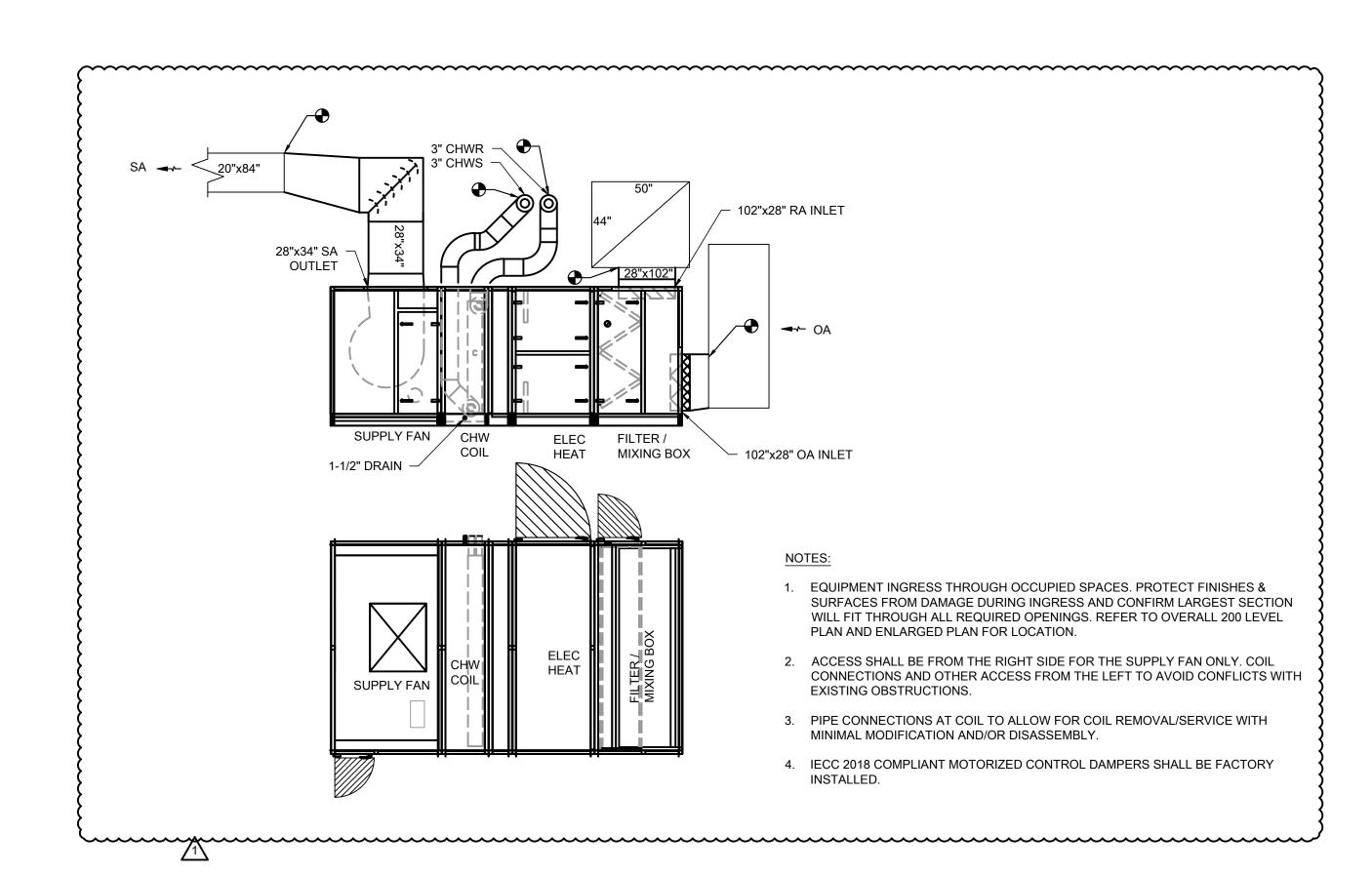
SIZ	ZE OF LEGEND LETTE	ERS
OUTSIDE	LENGTH OF	SIZE OF
DIAMETER OF PIPE	COLOR FIELD	LETTERS
OF COVERING	"A"	"B"
3/4" TO 1-1/4"	8"	1/2"
1-1/2" TO 2"	8"	3/4"
2'-1/2" TO 6"	12"	1-1/4"
8" TO 10"	24"	2-1/2"
OVER 10"	32"	3-1/2"

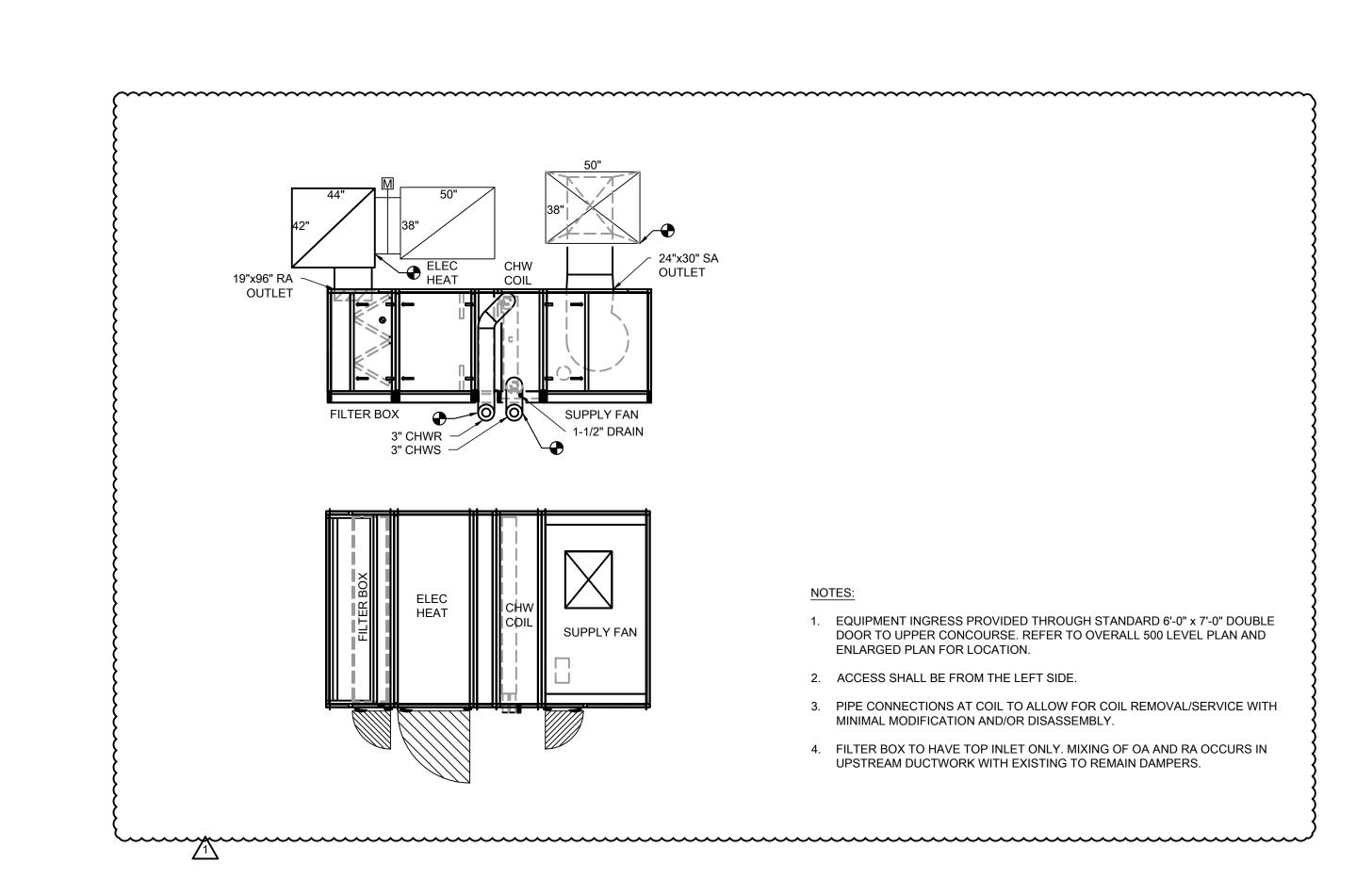
PLAN TAG	SERVICE	IDENTIFICATION MARKER
CHWR	CHILLED WATER RETURN	WHITE LETTERING ON GREEN BACKGROUND
CHWS	CHILLED WATER SUPPLY	WHITE LETTERING ON GREEN BACKGROUND
CW	DOMESTIC COLD WATER (CITY WATER)	WHITE LETTERING ON GREEN BACKGROUND
CWR	CONDENSER WATER RETURN	WHITE LETTERING ON GREEN BACKGROUND
CWS	CONDENSER WATER SUPPLY	WHITE LETTERING ON GREEN BACKGROUND
DTR	DUAL TEMPERATURE RETURN	BLACK LETTERING ON YELLOW BACKGROUND
DTS	DUAL TEMPERATURE SUPPLY	BLACK LETTERING ON YELLOW BACKGROUND
G	NATURAL GAS	BLACK LETTERING ON YELLOW BACKGROUND
GWR	GEOTHERMAL WATER RETURN	BLACK LETTERING ON YELLOW BACKGROUND
GWS	GEOTHERMAL WATER SUPPLY	BLACK LETTERING ON YELLOW BACKGROUND
MU	MAKE-UP WATER	WHITE LETTERING ON GREEN BACKGROUND
HWR	HOT WATER RETURN	BLACK LETTERING ON YELLOW BACKGROUND
HWS	HOT WATER SUPPLY	BLACK LETTERING ON YELLOW BACKGROUND

TYPICAL PIPE IDENTIFICATION MARKER DETAIL

SCALE: NO SCALE







5 AHU 6B1 DETAIL
SCALE: NO SCALE

ISSUED FOR BID ADDENDUM PRELIMINARY - NOT FOR CONSTRUCTION

30 N. Wolf Rd., Second Floor Hillside, IL 60162 (708) 236-0300 (708) 236-0330 FAX





KEY PLAN

ISSUE/REVISION: 11/05/21 ISSUED FOR BID 11/15/21 ISSUED FOR BID ADDENDUM

PROJECT: **GUARANTEED RATE FIELD -**HVAC REPLACEMENT PHASE XI

333 W 35TH STREET, CHICAGO, ILLINOIS 60616 DRAWING TITLE: MECHANICAL DETAILS

DESIGNED BY: DA CHECKED BY: PROJECT NO: 21276 SCALE: NO SCALE SHEET NO.

																							F	PAC	KAG	ED	ROO	FTO	P UN	NITS	(RT	U)																							
EQUIP. T	AG					GENER	AL									SUPP	LYFAN						E	ELECTF	RIC HEAT	-				DX COO	LING / I	HOT GAS	REHEAT	COILS					AIF	R COOLED CO	ONDENSER				POWE	ER EXHAL	UST		FILTI	≣R		ELECTF	RICAL		
							OPE	RATING			MINI	TOTAL								MOTOR	}	тота			ELECT	BIC								SENSI	RIE T	TOTAL _			COMPRES	SSOR(S)			FAN(S)			FAN(S)									
ABB.	NO. L	OCATIO	ON SERV	ICE M	FR	MODEL	l w	EIGHT (LBS)	DIMENSIC (LxW	NS (IN) xH)	OA (CFM)	AIR FLOW (CFM)	ESP (IN. WC	TSP (IN. WG	(i) T	YPE	QTY.	FRPM	TYPE	HP (EACH)	BHP) (EACH		EAT (°F)	(°F)	HEA (KW	T S	TAGES		REFRIG. TYPE	EAT DB/		AT DB/WB (°F)	APD (IN. W.C	CAPAC	CA		CKT QT	YTONS	6	TYPE	CHARG (LBS.)	TYP	E QTY	FLA	TYPE	QTY	FLA	TYPI	E ME	RV (IN. W	C) FLA	VOLTS	HZ PHASE	NOTES	
RTU	1	ROOF	scot	JTS V	NDK IV	40E3CG4K1CAS	2212	6,571	253" x 90	ייע פטיי	3200	16000	2	2.57	DOU	JBLE- LET	2 ON 1	228	BELT DRIVE	15	11.55	306.9) 55	72.8	90		2	DX	R410A	70 / 66	\$ 4 G	60.2 / 57.6		324.	Q	406.2	A 2	20	FIXED SI	PEED SCROL	L 26	DIREC	CT 4	2.1	DIRECT		4.1	2" PLEA	TED S	3 0.1	15	460	60 3	SEE BELO	\ <u></u>
NIO		KOOF	LOUN	IGE TO		+0E30G4K10A3	0202	ا 7,57	200 X 90	, , 03	3200	10000	2	2.57	FOR	WARD RVED	SHAFT	000	WITH VFD	15	11.55	300.8	, 55	12.0	90		2	DX	K410A	79760).4 O	00.2737.0	-	324.	.0	400.2	B 1	20		SE VARIABLE CROLL	24.5	DRIV	Œ ⁴	2.1	DRIVE	2	4.1	Z PLEA	VIED 6	0.1	15	400	00 3	SEE BELO	VV

1. MANUFACTURER PROVIDED 1 YEAR WARRANTY ON ENTIRE UNIT, AND 5 YEAR PARTS ONLY COMPRESSOR WARRANTY.

2. MANUFACTURER CERTIFIED START-UP.

3. MODULATING POWER EXHAUST. 4. CLOGGED FILTER SWITCH.

5. STAINLESS STEEL DRAIN PAN.

6. R-13 DOUBLE WALL CONSTRUCTION. 7. PROVIDE INSULATED CURB ADAPTER FOR CONVERSION FROM Y24 UNIT LAYOUT ON EXISTING CURB. 8. ELECTRIC HEAT

9. FACTORY MOUNTED AND WIRED NON-FUSED DISCONNECT SWITCH.

10. PROVIDE BACNET COMPATIBLE SPACE TEMPERATURE SENSOR / THERMOSTAT WITH SETPOINT ADJUSTMENT. 11. SINGLE POINT POWER CONNECTION.

12. CONDENSER COIL HAIL GUARDS.

13. PROVIDE (1) EXTRA SET OF FILTERS FOR OWNER'S STOCK.

15. FACTORY MOUNTED CONVENIENCE OUTLET; WIRED BY E.C.

14. OUTDOOR AIR INTAKE HOOD.

						EXH	HAUS	T FANS (I	EF)										
EQUIP	TAG		G	ENERAL							FAN					MOTOR			
ABB.	NO.	SERVICE	LOCATION	MFR	MODEL	TYPE	DRIVE	DAMPER SIZE (IN.)	CFM	SP (IN. WC)	FRPM	SONE	ВНР	RPM	HP	VOLTS	HZ	PHASE	NOTES
RF	1B-1	AHU-1B-1	LEVY WAREHOUSE 1.18.10	GREENHECK	BSQ-240	INLINE	BELT	N/A	6210	0.5	752	16	1.29	1800	1.5	460	60	3	1,5-8,10,12
EF	TR-A1	TRASH CHUTE	ROOF SECTION	GREENHECK	USF-13	UTILITY SET	DIRECT	14x16	2000	1.4	1,910	17.2	0.87	1910	1	460	60	3	1-4,7-9,11,12
EF	2-44-1	SECTION 154 CONCESSIONS	CONCESSIONS 2.44.01	GREENHECK	BDF-80	INLINE	BELT	N/A	1000	1.5	1,766	15.9	0.5	1800	0.75	120	60	1	1,5-8,10,12
EF	104	SECTION 104 CONCESSIONS	ROOF SECTION 104	GREENHECK	G-070-D	DOWNBLAST	DIRECT	8x8	225	0.3	1,550	4.4	0.02	1550	0.03	120	60	1	1,2,4,8-10,12
NOTES:																			

FACTORY MOUNTED AND WIRED DISCONNECT SWITCH.

PROVIDE 14" HIGH PREFABRICATED, INSULATED, ROOF CURB WITH COUNTERFLASHING CURB CAP.

. ALUMINIMUM BIRD SCREEN.

MOTORIZED BACKDRAFT DAMPER SHIPPED LOOSE TO BE INSTALLED BY MC AND WIRED BY EC. PROVIDE TRANSFORMER AS REQUIRED.

5. MOTOR COVER/BELT GUARD.

6. PROVIDE 1 SPARE SET OF BELTS FOR OWNER'S ATTIC STOCK.

8. NEMA PREMIUM EFFICIENCY MOTOR WITH SHAFT GROUNDING RING.

VIRBRATION ISOLATION KIT FURNISHED LOOSE BY MANUFACTURER TO BE INSTALLED BY MC.

9. ECM FAN WITH SINGLE 0-10V CONTROLLER FACTORY MOUNTED ON FAN. 10. FAN SHALL BE CONTROLLED BY SPACE TEMPERATURE SENSOR/THERMOSTAT FURNISHED AND WIRED BY BASC.

11. FAN SHALL BE CONTROLLED BY TIME CLOCK, FURNISHED AND INSTALLED BY EC. 12. ACCEPTABLE ALTERNATE MANUFACTURERS: COOK, TWIN CITY.

													Al	R H	ANDLING	UNI	TS (AF	IU)											
EQU	P. TAG				GENE	RAL								ţ	SUPPLY FAN					RETU	RN/EXHAUST F	AN		FII	NAL FILTE	:R	ELI	ECTRICAL	
ABB.	NO.	LOCATION	SERVICE	MFR	MODEL	OPERATING WEIGHT	LENGTH	WIDTH	HEIGHT	HYDRONIC	TOTAL AIR FLOW	ESP	TSP	TVDE	QTY. FAN RPM		МОТОЯ	२	TOTAL AIR FLOW ESP	TSP	E QTY. FRPM	4	MOTOR	TYPE	MERV	APD	VOLTS	HZ PHA	NOTES
Abb.	INO.	LOCATION	SERVICE	WIFK	WODEL	(LBS)	(IN)	(IN)	(IN)	COILS	(CFM)	(IN. WC)	(IN. WC)		QTT. FAN KEW		HP (EACH)	BHP (EACH)		(IN. WC)	. IQTT. FREW		HP (EACH) BHP (EACH)		IVILITY	(IN. WC)	VOLIS		SE
AHU	3A-01	MECH RM 3-13-9	STADIUM CLUB KITCHEN	CARRIER	39MN SIZE 30	5132	171	108	60	CC-1 EHC-1	14300	2.5	3.63	AF	1 2054	1800	20	15.1			NONE	•		4" ANGLE	13	0-2" WC	460	60 3	3 1-16
AHU	3A-02	MECH RM 3-17-8	LOWER STADIUM CLUB	CARRIER	39MN SIZE 36W	6057	180	120	71	CC-2 EHC-2	18300	2.5	3.75	FC	1 773	1800	20	18.2	EXISTING RF-3	A2: 12,460 CFM	AT 2" TSP, 7.5 F	НР МОТО	R - 6.7 BHP, 480V/3Ø	4" ANGLE	13	0-2" WC	460	60 3	3 2-16
AHU	6B-01	MECH RM 6-17-6	UPPER STADIUM CLUB	CARRIER	39MN SIZE 30	5132	171	115	60	CC-3 EHC-3	13845	2.5	3.63	AF	1 2060	1800	20	15.3	EXISTING RF-	6B1: 13,845 CFM	AT 2" TSP, 10 H	IP MOTOI	R - 5.5 BHP, 480V/3ø	4" ANGLE	13	0-2" WC	460	60 3	3 2-16
NOTES	<u>3:</u>																												

1. PROVIDE WITH BLANK SECTION IN LIEU OF FACTORY INSTALLED HEAT. BASIS OF DESIGN UNIT REQUIRES A SEPARATE HEATING COIL SECTION PROVIDED BY ANOTHER SUPPLIER. REFER TO DETAILS AND ELECTRIC HEATING COIL SCHEDULE.

2. 2" FOAM INJECTED DOUBLE WALL CONSTRUCTION. R-13 MINIMUM WITH THERMALLY BROKEN PANELS. 3. PANEL DEFLECTION SHALL NOT EXCEED L/240 AT 125% OF DESIGN STATIC PRESSURE, MAXIMUM 5 INCHES OF POSITIVE OR 6 INCHES OF NEGATIVE STATIC PRESSURE. DEFLECTION SHALL BE MEASURED AT THE PANEL MIDPOINT.

4. CASING LEAKAGE RATE SHALL NOT EXCEED 0.50 CFM PER SQUARE FOOT OF CASING SURFACE AREA AT ADESIGN STATIC PRESSURE UP TO A MAXIMUM OF 5 INCHES POSITIVE PRESSURE SECTIONS AND -6 INCHES IN NEGATIVE PRESSURE SECTIONS.

5. MULTI-SLOPED STAINLESS STEEL DRAIN PANS UNDER ANY COIL WITH EXPECTED SUPPLY WATER TEMPERATURE BELOW 70°F. COILS STACKED VERTICALLY SHALL BE PROVIDED WITH INTERMEDIATE DRAIN PANS.

6. UNITS SHALL BE MOUNTED ON EXISTING 4" HOUSEKEEPING PADS.

7. FACTORY MOUNTED AND WIRED DISCONNECT SWITCH.

8. BACNET INTERFACE.

9. REFER TO HYDRONIC COIL SCHEDULE FOR FURTHER INFORMATION. 10. INTEGRAL ENERGY RECOVERY DEVICE. REFER TO ENERGY RECOVERY DEVICE SCHEDULE FOR FURTHER INFORMATION.

11. FACTORY INSTALLED LOW-LEAKAGE BYPASS DAMPERS FOR SUPPLY AND RETURN AROUND ENTHALPY WHEEL.

12. MANUFACTURER CERTIFIED START-UP. 13. SINGLE POINT POWER CONNECTION.

14. PROVIDE (1) EXTRA SET OF FILTERS FOR OWNER'S STOCK.

15. ACCEPTABLE ALTERNATE MANUFACTURERS: AAON, CARRIER, DAIKIN, TRANE, YORK.

					KITCHEN EX	HAUS	T FANS (KEF)										
		G	ENERAL INFOR	RMATION					PER	FORMAN	CE				MOTOR			
EQUIP. TAG	SERVICE	LOCATION	MFR	MODEL	TYPE	DRIVE	OPER. WEIGHT (LBS)	CFM	SP (IN. WC)	FRPM	SONE	ВНР	RPM	HP	VOLTS	HZ	PHASE	NOTES
KEF-1	CONCESSION 2.36.1	200 LEVEL ROOF	LOREN COOK	195CA- SWSI	CENTRIFUGAL AIRFOIL BLOWER UPBLAST	DIRECT	547	5500	2.2	1881	30	2.59	1725	3.0	460	60	3	SEE BELOW
KEF-2	CONCESSION 6.36.1	UPPER ROOF	LOREN COOK	150CA- SWSI	CENTRIFUGAL AIRFOIL BLOWER UPBLAST	DIRECT	374	2400	2.4	2,271	22	1.21	1725	1.5	460	60	3	SEE BELOV

1. FAN SHALL BE CONSTRUCTED OF CARBON STEEL NOT LESS THAN 0.055" IN THICKNESS, OR STAINLESS STEEL NOT LESS THAN 0.044" IN THICKNESS.

2. PROVIDE WITH ACCESS OPENING IN OUTER FAN HOUSING FOR CLEANING AND INSPECTION OF THE FAN BLADES PER NFPA 96. 3. PROVIDE WITH FLANGE AT INLET FOR SECURELY BOLTED CONNECTION TO WELDED GREASE DUCT PER NFPA 96.

4. PROVIDE VISIBLE GREASE RECEPTACLE NOT TO EXCEED 1 GALLON FOR DIRECT CONNECTION TO EXHAUST FAN GREASE DRAIN. 5. FAN MOTOR MUST BE LOCATED OUTSIDE OF THE AIRSTREAM.

		G	RILLES, REGISTERS,	AND DIFFU	SERS		
EQUIP. TAG	MFR	MODEL	TYPE	MATERIAL	SIZE	MAX. NC	NOTES
Α	TITUS	OMNI	PLAQUE DIFFUSER	STEEL	24x24	25	1-6
В	TITUS	PAR	RETURN GRILLE	STEEL	24x24	25	1-6
С	TITUS	350	EXHAUST GRILLE	STEEL	SEE PLAN	25	1-4,6
D	TITUS	PAR	EXHAUST GRILLE	STEEL	24x24	25	1-6

1. CONTRACTOR SHALL VERIFY BORDER TYPE INCLUDING FRAME, FLANGE, AND SECURING METHOD IN EACH APPLICATION; REFER TO PLANS. 2. COLOR AND FINISH SHALL BE SELECTED BY ARCHITECT. UNITS INSTALLED IN EXPOSED DUCT LOCATIONS TO BE PAINT READY.

3. SURFACE MOUNTED FLANGED FRAME WITH SCREW FASTENING. 4. LAY-IN FRAME.

5. MANUFACTURER PROVIDED OPPOSED BLADE DAMPER, ACCESSIBLE THROUGH FACE OF DEVICE.

6. ACCEPTABLE ALTERNATE MANUFACTURER: PRICE

							HYD	RONIC	C FAN	1 COI	L UNIT	S (FC	U)								
EQUIP	. TAG					GENERAL								PERFORMANCE					ELE	CTRICAL	
ABB.	NO.	LOCATION	SERVICE	MFR	MODEL	TYPE	OPERATING WEIGHT (LBS)	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	AIRFLOW (CFM)	ESP (IN. WC)	TOTAL COOLING CAPACITY (MBH)	SENSIBLE COOLING CAPACITY (MBH)	EAT DB/WB (°F)		CHW FLOW (GPM)	FILTERS	VOLTS	HZ PHASE	NOTES
FCU	1	COMMAND CENTER	COMMAND CENTER	CARRIER	42DHA	HORIZONTAL DUCTED	108	37.5	37	21.5	1200	0.3	38	29	70	50	8	MERV 13	115	60 1	1-6
FCU	2	BARDS LOBBY	BARDS LOBBY	CARRIER	42DHA	HORIZONTAL DUCTED	108	37.5	37	21.5	1200	0.3	38	29	70	50	8	MERV 13	277	60 1	1-6

CAPACITIES ARE BASED ON HIGH FAN SPEED. MANUFACTURER PROVIDED 24/7 PROGRAMMABLE THERMOSTAT

3. BACNET CARD

4. DISCONNECT SWITCH. 5. PROVIDE (1) EXTRA SET OF FILTERS FOR OWNER'S STOCK. 6. ACCEPTABLE ALTERNATE MANUFACTURERS: DAIKIN, TRANE, YORK.

									HY	DRONI	C COILS	(HC)											
EQUIP.	TAG		GEN	ERAL													PERFOR	MANCE					
ABB.	NO. LOCATION	SERVICE	MFR	MODEL	NUMBER OF COILS	CFM	FLUID TYPE	ROWS	FPI	FIN TYPE	FIN THICKNESS (IN.)	EAT DB/WB (°F)	LAT DB/WB (°F)	EWT (°F)	LWT (°F)	TOTAL CAP. (MBH)	SENS. CAP. (MBH)	FACE VELOCITY (FPM)	APD (IN. WC)	GPM	FLUID VELOCITY (FPS)	WPD (FT)	NOTES
CC	1 AHU-3A-1	COOLING COIL	CARRIER	28MC	1	14300	30% PG	6	14	SINE WAVE	0.0042	80	67	44	54	472	356	455	0.73	100	3	7.1	ALL
CC	2 AHU-3A-2	COOLING COIL	CARRIER	28MC	1	18300	30% PG	6	14	SINE WAVE	0.0042	80	67	44	54	627	472	499	0.84	132.5	3.4	9.9	ALL
CC	3 AHU-6B-1	COOLING COIL	CARRIER	28MC	1	13845	30% PG	6	14	SINE WAVE	0.0042	80	67	44	54	473	357	456	0.73	100	3	7.1	ALL
NOTES:		MENT SCHEDULE REFERE	NCED UNDER	"LOCATI	ON" FOR FURT	HER INFORM	MATION.																

2. MULTI-SLOPED STAINLESS STEEL DRAIN PANS UNDER ANY COIL WITH EXPECTED SUPPLY WATER TEMPERATURE BELOW 70°F. COILS STACKED VERTICALLY SHALL BE PROVIDED WITH INTERMEDIATE DRAIN PANS.

	ELECTRIC HEATING COIL (EHC)																		
EQUIP	. TAG				GENE	RAL						PERFO	DRMANCE			El	LECTRICA	AL	
ABB.	NO.	LOCATION	MFR	UNIT SIZE	CFM	MIN AIRFLOW (CFM)	FACE AREA (SQ.FT.)	SUB CIRCUITS	# OF STAGES	KW	EAT (°F)	LAT (°F)	TOTAL CAP. (MBH)	FACE VELOCITY (FPM)	APD (IN. WC)	VOLTS	HZ	PHASE	NOTES
EHC	1	AHU-3A-1	BRASCH	-	14300	-	-	-	SCR	210	60	106.4	716.7	-	0.04	480	60	3	1-3
EHC	2	AHU-3A-2	CARRIER	36W	18300	6545	18.7	4	VERNIER	200	60	93.9	682.6	978.6	0.05	480	60	3	1-2
EHC	3	AHU-6B-1	CARRIER	30W	13845	5082	14.52	4	VERNIER	85	60	79	290.11	953.5	0.05	480	60	3	1-2

UNIT MOUNTED THERMOSTAT PROVIDED BY MANUFACTURER.

2. LOCAL DISCONNECT PROVIDED BY MANUFACTURER. 3. 46" LONG ELECTRIC COIL SECTION PROVIDED BY SEPARATE MANUFACTURER TO BE FIELD INSTALLED IN AIR HANDLER. CONTRACTOR TO COORDINATE SIZE OF AHU AND EHC.

	AIR COOLED CONDENSING UNITS (CU)																										
EQUIP. TAG			GENE	RAL							COMPRE	SSOR(S)			FA	N(S)				PERFO	RMANCE			ELEC	TRICAL		
ABB. NO	SERVICE	LOCATION	MFR	MODEL	OPERATING WEIGHT (LBS)	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	скт	QTY	TONS	TYPE	CHARGE (LBS.)	TYPE	QTY	CFM (EACH)	FLA (EACH)	TOTAL CAPACITY (MBH)	EER SEER	REFRIG. TYPE	SUCTION LINE SIZE (IN)	LIQUID LINE SIZE (IN)		FLA VOLTS	S HZ PHA	SE NOT	ES
CU 1	AC-1	SERVICE LEVEL CORRIDOR	CARRIER	38MARBQ36AA3	150.3	15.75	35.5	52.25	Α	1	3	ROTARY	8.6+	PROPELLER	2	4100	1.2	36	8.5 17.5	R410A	5/8	3/8	N/A	- 208	60 1	1-1	9
CU 2	AC-4, AC-5 & AC-6	SECTION 105 ICE CREAM ROOF	CARRIER	38VMA072HDS5-1	659	31.1	35.5	64.375	A	1	6	SCROLL	37.5+	PROPELLER	2	7650	-	72	12.8 23.05	R410A	7/8	3/8	N/A	- 460	60 3	1-1	Э
CU 3	AC-7	200 LEVEL ROOF	CARRIER	38AUZE08A0M6	391	59.4	45.9	42.4	Α	1	7.5	SCROLL	17+	PROPELLER	2	6000	0.8	90	11.2 16.17	R410A	1-1/8	5/8	N/A	- 208/23	60 1	1-1	9
CU 4	AC-8	200 LEVEL ROOF	CARRIER	38MBRQ48A	218	16	38	53	Α	1	4	ROTARY	9.3	PROPELLER	2	2250	1.17	48	9 16.5	R410A	5/8	3/8	N/A	- 460	60 3	1-1	9
 MA ECI 	NUFACTURER CERT	IDED 1 YEAR WARRANTY ON ENT IFIED START-UP S WITH HEAD PRESSURE CONTRO		ND 5 YEAR PARTS	ONLY COMPR	ESSOR WA	ARRANTY	<i>'</i> .																			

							DX I	FAN COI	LUNIT	S (A	C)											
EQUIP.	TAG					GENERAL								PE	RFORMANCE				ELE	ECTRI	CAL	
ABB.	NO.	LOCATION	SERVICE	MFR	MODEL	TYPE	REFRIGERANT TYPE	OPERATING WEIGHT (LBS)	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	AIRFLOW (CFM)	ESP (IN. WC)	TOTAL COOLING CAPACITY (MBH)	SENSIBLE COOLING CAPACITY (MBH)	EAT DB/WB (°F)	LAT DB/WB (°F)	FILTERS	VOLTS	S HZ	PHASE	NOTE
AC	1	IT ROOM	DATA CENTER COOLING	CARRIER	40VMW030	DUCTLESS CASSETTE	R-410A	38	10	47	13.5	770	0	32	20.8	75	43.4	-	208	60	1	1-6,9
AC	2	HYDROTHERAPY	DEHUMIDIFICATION	DAIKIN	FXAQ24MVJU	DUCTLESS CASSETTE	R-410A	31	9	41.375	11.375	635	0	24	18	-	-	-	208	60	1	1-6,10
AC	3	HYDROTHERAPY	DEHUMIDIFICATION	DAIKIN	FXHQ36MVJU	DUCTLESS CASSETTE	R-410A	90	26.75	62.625	7.69	830	0	36	25.1	-	-	-	208	60	1	1-6,10
AC	4	ICE CREAM VENDOR	SPACE COOLING	CARRIER	40VMW030	DUCTLESS CASSETTE	R-410A	38	10	47	13.5	770	0	30	18.9	72	55	-	208	60	1	1-6,9
AC	5	ICE CREAM VENDOR	SPACE COOLING	CARRIER	40VMW030	DUCTLESS CASSETTE	R-410A	38	10	47	13.5	770	0	30	18.9	72	55	-	208	60	1	1-6,9
AC	6	ICE CREAM VENDOR	SPACE COOLING	CARRIER	40VMW030	DUCTLESS CASSETTE	R-410A	38	10	47	13.5	770	0	30	18.9	72	55	-	208	60	1	1-6,9
AC	7	FOOD SERVICE 4.20.1	SPACE COOLING	CARRIER	40RUA	DUCTED FAN COIL	R-410A	404	56.1	49	28.2	3475	1	96.9	78.1	80	59.2	MERV 8	460	60	3	1-9
AC	8	STORAGE 4.22	SPACE COOLING	CARRIER	40MBDQ48	LOW PROFILE DUCTED FAN COIL	R-410A	120	34	48	12	1230	0.2	48	30.2	75	52.7	MERV 13	208	60	1	1-6,8,

7. FACTORY MOUNTED 120V CONVENIENCE OUTLET FOR FIELD WIRING.

3. FLARED CONNECTIONS ARE NOT ALLOWED FOR CHICAGO INSTALLATIONS. ALL JOINTS SHALL BE BRAZED.

4. BACNET CARD

5. SINGLE POINT POWER. 6. NON-FUSED DISCONNECT.

8. UL LISTED.

5. DISCONNECT SWITCH.

6. CONDENSTATE PUMP. PROVIDE FILTERED RETURN SECTION MOUNTED TO UNIT INLET.

8. PROVIDE (1) EXTRA SET OF FILTERS FOR OWNER'S STOCK.

9. ADDITIONAL ACCEPTABLE MANUFACTURERS: AAON, YORK, DAIKIN, LENNOX, LIEBERT, LG, MITSUBISHI, TRANE.

9. ACCEPTABLE ALTERNATE MANUFACTURERS: LIEBERT, LG, MITSUBISHI, SAMSUNG. 10. NO SUBSTITUTION WILL BE ACCEPTABLE. UNITS TO BE INSTALLED IN EXISTING VRF SYSTEM BY BASIS OF DESIGN MANUFACTURER. SUBSTITUTION WOULD REQUIRE FULL SYSTEM REPLACEMENT.

EQUIP. TAG GENERAL PERFORMANCE										ELE	CTRIC	AL										
ABB.	NO.	LOCATION	SERVICE	MFR	MODEL	TYPE	REFRIGERANT TYPE	OPERATING WEIGHT (LBS)	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	AIRFLOW (CFM)	ESP (IN. WC)	TOTAL COOLING CAPACITY (MBH)	SENSIBLE COOLING CAPACITY (MBH)	EAT DB/WB (°F)	LAT DB/WB (°F)	FILTERS	VOLTS	HZ F	PHASE	NOTES
AC	1	IT ROOM	DATA CENTER COOLING	CARRIER	40VMW030	DUCTLESS CASSETTE	R-410A	38	10	47	13.5	770	0	32	20.8	75	43.4	-	208	60	1	1-6,9
AC	2	HYDROTHERAPY	DEHUMIDIFICATION	DAIKIN	FXAQ24MVJU	DUCTLESS CASSETTE	R-410A	31	9	41.375	11.375	635	0	24	18	-	-	-	208	60	1	1-6,10
AC	3	HYDROTHERAPY	DEHUMIDIFICATION	DAIKIN	FXHQ36MVJU	DUCTLESS CASSETTE	R-410A	90	26.75	62.625	7.69	830	0	36	25.1	-	- '	-	208	60	1	1-6,10
AC	4	ICE CREAM VENDOR	SPACE COOLING	CARRIER	40VMW030	DUCTLESS CASSETTE	R-410A	38	10	47	13.5	770	0	30	18.9	72	55	-	208	60	1	1-6,9
AC	5	ICE CREAM VENDOR	SPACE COOLING	CARRIER	40VMW030	DUCTLESS CASSETTE	R-410A	38	10	47	13.5	770	0	30	18.9	72	55	-	208	60	1	1-6,9
AC	6	ICE CREAM VENDOR	SPACE COOLING	CARRIER	40VMW030	DUCTLESS CASSETTE	R-410A	38	10	47	13.5	770	0	30	18.9	72	55	-	208	60	1	1-6,9
AC	7	FOOD SERVICE 4.20.1	SPACE COOLING	CARRIER	40RUA	DUCTED FAN COIL	R-410A	404	56.1	49	28.2	3475	1	96.9	78.1	80	59.2	MERV 8	460	60	3	1-9
AC	8	STORAGE 4.22	SPACE COOLING	CARRIER	40MBDQ48	LOW PROFILE DUCTED FAN COIL	R-410A	120	34	48	12	1230	0.2	48	30.2	75	52.7	MERV 13	208	60	1	1-6,8,9
NOTES:																						
1.	. CAPACITIES ARE BASED ON HIGH FAN SPEED.																					
2.	MAN	IUFACTURER PROVIDE	24/7 PROGRAMMABLE TH	ERMOSTA	Т																	

DRAWING TITLE: MECHANICAL SCHEDULES

333 W 35TH STREET,

CHICAGO, ILLINOIS 60616

GUARANTEED RATE FIELD -HVAC REPLACEMENT PHASE XI

ISSUE/REVISION:

EV. DATE DESCRIPTION

PROJECT:

11/05/21 ISSUED FOR BID

11/15/21 ISSUED FOR BID ADDENDUM

KEY PLAN

30 N. Wolf Rd., Second Floor

Hillside, IL 60162

(708) 236-0330 FAX

(708) 236-0300

DESIGNED BY: CHECKED BY: PROJECT NO: 21276 SCALE: NO SCALE SHEET NO.

ISSUED FOR BID ADDENDUM PRELIMINARY - NOT FOR CONSTRUCTION



- 10. THE BASC SHALL SELECT ALL PRESSURE AND TEMPERATURE SENSORS WITH AN APPROPRIATE SPAN AND RANGE FOR THE APPLICATION.
- 11. ALL TEMPERATURE AND PRESSURE SENSORS SHALL BE INSTALLED IN LOCATIONS SUCH THAT THEY DO NOT MAKE FALSE READINGS. BASC SHALL REVIEW THE PLANS AND IDENTIFY ANY SUCH POTENTIAL CAUSES FOR FALSE READINGS AND NOTIFY THE ENGINEER IN WRITING THAT THESE SHOULD BE RELOCATED PRIOR TO ROUGH-IN AND CONTROLS INSTALLATION. THE BASC SHALL RELOCATE ANY SENSORS INSTALLED IN IMPROPER LOCATIONS AND GIVING FALSE READINGS AND HIS OWN EXPENSE. CONDITIONS TO BE AWARE OF INCLUDE, BUT ARE NOT LIMITED TO, LOCATIONS OF THERMOSTATS BEHIND DOORS, OUTDOOR AIR SENSORS NEAR EXHAUST OPENINGS, STATIC PRESSURE SENSORS IN TURBULENT LOCATIONS, THERMOSTATS INSTALLED ADJACENT TO HEAT SOURCES SUCH AS COFFEE POTS, COMPUTERS, VENDING MACHINES, AND OTHER APPLIANCES, ETC.
- 12. THE BASC SHALL FURNISH AND INSTALL MANUAL RESET SAFETY DEVICES FOR ANY AND ALL CONDITIONS THAT COULD DAMAGE THE EQUIPMENT AND / OR REPRESENT A THREAT TO HUMAN SAFETY. ALL WATER COILS SHALL BE PROTECTED BY AN AVERAGING ELEMENT FREEZE-STAT WITH A NON-ADJUSTABLE 40°F SET POINT, MANUAL RESET, AND HARDWIRED INTERLOCK TO SHUT DOWN THE ASSOCIATED FAN ANY TIME THE TEMPERATURE ACROSS ANY 12" LENGTH OF THE AVERAGING ELEMENT FALLS BELOW 40°F. FREEZE-STATS SHALL BE INSTALLED DOWNSTREAM OF ALL WATER COILS.
- 13. ALL UNUSED HOLES IN EXISTING AND NEW CONTROL PANELS ARE TO BE CAPPED.
- 14. RE-USE OF EXISTING CONTROL CONDUIT, RACEWAYS, AND WIRING ACCEPTABLE IF COMPATIBLE WITH NEW SYSTEM AND IF THE CONTRACTOR INCLUDES IN THE PROJECT
- 15. THE BASC IS RESPONSIBLE FOR ALL LOW VOLTAGE CONTROL WIRING, POWER WIRING, AND CONDUIT ASSOCIATED WITH ALL CONTROL VALVES, ACTUATORS, CONTROLLERS, ETC., BEING INSTALLED AS A PART OF THIS PROJECT.
- 16. THE BASC MAY RE-USE ANY EXISTING RELAYS, CURRENT SENSING RELAYS, AND CURRENT TRANSDUCERS PROVIDED THEY ARE COMPATIBLE WITH THE NEW CONTROLLERS. ALL HARD WIRED CONTROL POINTS ARE TO BE MAPPED TO THE SYSTEM GRAPHICS FOR EASY VIEWING BY BUILDING STAFF. ANY CONDUIT, WIRING, SENSORS, OR SWITCHES THAT ARE RE-USED BY THE BASC ARE TO BE TESTED PRIOR TO USE AND INCLUDED IN THE PROJECT WARRANTY.
- 17. WIRING IN OCCUPIED AREAS OF THE BUILDING SHALL BE CONCEALED IN WALL AND ABOVE CEILINGS. EXPOSED WIRING AND CONDUIT IS NOT ACCEPTABLE IN OCCUPIED AREAS.
- 18. CONTRACTOR SHALL OBTAIN POWER FOR THE NEW DDC CONTROL SYSTEM FROM THE NEAREST SOURCE. 19. THE BASC SHALL INCLUDE ADEQUATE TIME IN HIS BID FOR COMPLETE COMMISSIONING OF
- CONTRACTOR AND OTHER TRADES AS REQUIRED TO MAKE ALL EQUIPMENT COMPLETE AND FULLY OPERATIONAL.

THE MECHANICAL SYSTEMS, ON SITE IN COORDINATION WITH THE MECHANICAL

20. REFER TO SCHEMATICS, SCHEDULES, AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

B. SCOPE OF WORK

- 1. ALL WORK ASSOCIATED WITH THIS PROJECT SHALL BE INCORPORATED INTO THE EXISTING SIEMENS BUILDING AUTOMATION SYSTEM CURRENTLY IN OPERATION WITHIN GUARANTEED RATE FIELD. THE SCOPE OF WORK SHALL BE AS FOLLOWS FOR EACH COMPONENT ASSOCIATED WITH THIS PROJECT. ALL CONTROL ITEMS INDICATED BELOW SHALL BE PROVIDED IN GRAPHIC FORM ON THE BUILDING BAS SYSTEM.
- 2. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
- 3. THE FOLLOWING SHALL BE A TYPICAL POINTS LIST FOR A FAN COIL UNIT:
- AO-1: MODULATING CHILLED WATER VALVE CONTROL FAN COIL DISCHARGE AIR TEMPERATURE OCCUPIED WALL SWITCH DO-1: FAN COMMAND ON/OFF

DO-2: ELECTRIC HEAT COIL COMMAND ON/OFF

- 3. THE FOLLOWING SHALL BE A TYPICAL POINTS LIST FOR AN AIR HANDLING UNIT:
- AO-1: MODULATING CHILLED WATER VALVE CONTROL AI-2: RETURN AIR TEMPERATURE

COMM: THERMOSTAT

- AI-1: DISCHARGE AIR TEMPERATURE DO-1: FAN COMMAND ON/OFF COMM: THERMOSTAT
- 4. FCU-1 IN ISFA CONFERENCE ROOM SHALL HAVE OUTDOOR AIR DUCTWORK AND ASSOCIATED MOTORIZED DAMPER INSTALLED. OA DAMPER SHALL ONLY OPEN TO CFM INDICATED AFTER PROOF OF FCU OPERATION.
- 5. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL SMOKE AND/OR HEAT DETECTORS IN AIR SUPPLY SYSTEM OVER 2000 CFM. AN ADDRESSABLE FIRE ALARM RELAY SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. BAS CONTRACTOR SHALL PICK UP SIGNAL FROM RELAY AND PROVIDE A PROGRAM TO STOP SUPPLY FAN INTERLOCKED WITH THE SYSTEM SENSING FIRE OR SMOKE. DDC PROGRAM SHALL ALSO SHOW FIRE IN UNIT ALARM AT TIME OF SHUT DOWN.

XIV. MECHANICAL / ELECTRICAL SCOPE OF WORK (FAN COIL UNITS)

- A. GENERAL NOTES FOR STORAGE AND REPLACEMENT FOR ALL FAN COIL UNITS, AIR HANDLING UNITS, FANS, AND RELATED EQUIPMENT
- 1. ALL CEILING OR ABOVE CEILING MOUNTED COMPONENTS REMOVED DURING DEMOLITION, INCLUDING BUT NOT LIMITED TO CEILING TILES, SUPPORT STRUCTURE, LIGHT FIXTURES, DUCT WORK, DIFFUSERS, GRILLES, FIRE ALARM DEVICES, AND SPEAKERS SHALL BE STORED FOR RE-INSTALLATION.
- 2. ALL FIRE PROTECTION DEVICES IN MOUNTED IN CEILING OR ABOVE CEILING, INCLUDING BUT NOT LIMITED TO, SPRINKLER HEADS, PIPING, SUPPORTS, ETC., SHALL BE REMOVED, STORED, AND RE-INSTALLED.
- 3. ALL DUCT WORK CONNECTIONS TO FANS AND FAN COILS THAT IS DISCONNECTED OR REMOVED TO PERMIT THE INSTALLATION OF NEW EQUIPMENT SHALL BE STORED OR
- REPLACED AT THE TIME OF INSTALLATION OF THE NEW UNITS. 4. ALL DUCTWORK REMOVED TO PERMIT DEMOLITION AND STORED FOR RE-INSTALLATION
- SHALL BE CLEANED PRIOR TO INSTALLATION OR REPLACEMENT.
- 5. EQUIPMENT OR COMPONENTS REMOVED DURING THE DEMOLITION PHASE AND FOUND TO BE DAMAGED OR UNSUITABLE FOR RE-INSTALLATION SHALL BE REPLACED WITH EQUIVALENT ITEMS TO MATCH THOSE REMOVED.
- 6. ALL EQUIPMENT OR COMPONENTS REMOVED AND STORED SHALL BE LABELED, INDICATING LOCATION, SERVICE, ROOM NUMBER, AND SYSTEM.
- 7. ALL MATERIALS SHALL BE STORED ON SITE AND PROTECTED FROM DAMAGE OR LOSS. SEE SPECIFICATIONS.

B. CHILLED WATER FAN COIL - GENERAL DEMOLITION

- 1. REMOVE CEILING TILE AND SUPPORT SYSTEM LOCATED UNDER UNIT AND DUCTWORK. 2. REMOVE LIGHTING, WIRE, AND CONDUIT LOCATED UNDER UNIT AND DUCTWORK. LIGHTING
- TO BE RE-USED.

3. REMOVE FIRE PROTECTION PIPING, SPRINKLER HEADS, AND SUPPORTS LOCATED UNDER

- UNIT AND DUCTWORK. 4. REMOVE ALL SPEAKERS, GRILLES, DIFFUSERS, OR RELATED COMPONENTS UNDER UNIT
- AND DUCTWORK.
- 5. RELOCATE MOVABLE EQUIPMENT AND MATERIALS UNDER UNIT AND DUCTWORK. C. CHILLED WATER FAN COIL - DEMOLITION
- 1. REMOVE CHILLED WATER PIPING, INSULATION, VALVES, GAUGES, AND THERMOMETERS. REMOVE UNIT PIPING BACK TO MAIN OR BRANCH Y.
- 2. REMOVE CONDENSATE DRAIN PIPING AND INSULATION.
- 3. DISCONNECT ELECTRIC HEATING COIL CONDUIT AND WIRING TO PERMIT REMOVAL OF FAN
- 4. DISCONNECT AND REMOVE DUCTWORK AND FLEXIBLE CONNECTIONS.
- 5. REMOVE DUCT INSULATION REQUIRED FOR INSTALLATION OF NEW UNIT AND DUCT CONNECTIONS.
- CONDUIT, AND COMPONENTS TO BE RE-USED.

6. DISCONNECT AND REMOVE ELECTRICAL POWER WIRING FROM FCU. EXISTING WIRING,

- 7. DISCONNECT ALL TEMPERATURE CONTROL, WIRING, SENSORS, AND RELATED COMPONENTS.
- 8. DISCONNECT EXISTING DISCONNECT SWITCH SERVING FAN COIL UNIT. SWITCH TO BE
- 9. REMOVE FAN COIL UNIT, HANGERS, SUPPORTS, AND RELATED COMPONENTS NOT BEING
- D. CHILLED WATER FAN COIL GENERAL CONSTRUCTION NOTES
- 2. PROVIDE THE RE-INSTALLATION OF LIGHTING, WIRE, AND CONDUIT LOCATED UNDER THE UNIT AND DUCTWORK.

1. PROVIDE FIRE PROTECTION PIPING, SPRINKLER HEADS, AND SUPPORTS LOCATED UNDER

3. PROVIDE CEILING TILE AND SUPPORT SYSTEM LOCATED UNDER UNIT AND DUCTWORK.

UNIT AND DUCTWORK.

- E. CHILLED WATER FAN COIL CONSTRUCTION 1. PROVIDE FAN COIL UNIT, HANGERS, SUPPORTS, AND RELATED COMPONENTS.
- 2. PROVIDE ALL TEMPERATURE CONTROL, WIRING, SENSORS, AND RELATED COMPONENTS.
- 3. PROVIDE ELECTRICAL POWER, WIRING, CONDUIT, AND COMPONENTS.
- 4. PROVIDE RE-CONNECTION OF ELECTRIC HEATING COIL FOR FAN COIL.

5. PROVIDE DUCTWORK CONNECTIONS FOR SUPPLY DUCTWORK AND FLEXIBLE

- CONNECTIONS. 6. PROVIDE DUCT INSULATION FOR ALL NEW DUCTWORK AND DUCT CONNECTIONS TO
- EXISTING INSULATED DUCTWORK. 7. PROVIDE CHILLED WATER PIPING, VALVES, GAUGES, THERMOMETERS, AND INSULATION FROM MAIN OR BRANCH PIPING.
- 8. PROVIDE CONDENSATE DRAIN PIPING, INSULATION, HANGERS, AND SUPPORTS.
- 9. PROVIDE LABELING OF UNIT, VFD PANELS, PIPING, AND VALVE TAGS. 10. PROVIDE TESTING AND BALANCING OF UNIT.
- 11. PROVIDE SECONDARY DRAIN PAIN WHERE INDICATED.
- 12. PROVIDE RETURN AIR FILTER GRILLE.
- F. CHILLED WATER BRANCH PIPING ISOLATION VALVES AND PIPING DRAIN DOWN.
- 1. PROVIDE DRAIN DOWN OF CHILLED WATER SYSTEMS TO PERMIT THE INSTALLATION OF ISOLATION VALVES.

- 2. REMOVE PIPING INSULATION TO PERMIT THE INSTALLATION OF ISOLATION VALVES.
- 3. REMOVE CEILING TILES, LIGHTING, CONDUIT, FIRE PROTECTION PIPING, AND HEADS TO PERMIT THE INSTALLATION OF ISOLATION VALVES.
- 4. PROVIDE ISOLATION VALVES FOR SUPPLY AND RETURN PIPING AT MAIN RISER OR BRANCH TO PERMIT REPLACEMENT OF FAN COIL UNIT.
- 5. PROVIDE HOLDING TANK OR TRUCK FOR CHILLED WATER DRAIN DOWN AND RETENTION DURING FAN COIL REMOVAL AND REPLACEMENT. (TANK OR TRUCK CAPACITY TO BE
- DETERMINED BASED ON DRAIN DOWN REQUIRED). 6. PROVIDE TESTING OF CHILLED WATER FOR GLYCOL CONTENT. REFILLING OF SYSTEM AND
- 7. PROVIDE THE RE-INSTALLATION OF CEILING, LIGHTING, FIRE PROTECTION, CONDUIT, AND

MAKE UP OF GLYCOL AS REQUIRED TO ACHIEVE 30% CONCENTRATION.

A. GENERAL

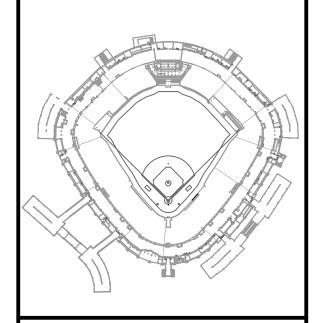
- 1. THE HVAC CLEANING CONTRACTOR SHALL BE A CERTIFIED MEMBER OF THE NATIONAL AIR DUCT CLEANERS ASSOCIATION (NADCA) AND SHALL PERFORM SERVICES IN ACCORDANCE WITH NADCA STANDARDS.
- B. HVAC SYSTEM CLEANING REQUIREMENTS
- SOURCE REMOVAL CLEANING METHOD IS TO BE USED EXCLUSIVELY.
- 2. CREATE SERVICE OPENINGS AS NEEDED FOR CLEANING INACCESSIBLE AREAS. 3. SEAL ALL OPENINGS, GRILLES, DIFFUSERS, ETC. IN THE SYSTEM TO BE CLEANED.
- 4. ATTACH HIGH-PRESSURE VACUUM UNIT TO DUCTWORK NEAR FAN. DO NOT EXCEED THE NEGATIVE PRESSURE RATING OF THE DUCTWORK.
- 5. FROM FARTHEST OPENING, WORK DIRT FROM DUCT BACK TO EXTRACTION POINT USING COMPRESSED AIR BRUSHES AND SCRAPERS. 6. DO NOT DAMAGE LINING OR DEVICES DURING CLEANING. REPLACE ANY DAMAGED MATERIAL.
- C. VERIFICATION OF CLEANLINESS
- 1. THE DUCT CLEANING CONTRACTOR SHALL PROVIDE REPORT VERIFYING CLEANLINESS TO THE ENGINEER.







KEY PLAN



ISS	ISSUE/REVISION:										
REV.	DATE	DESCRIPTION									
-	11/05/21	ISSUED FOR BID									
1	11/15/21	ISSUED FOR BID ADDENDUM									
DD() IECT:										

HVAC REPLACEMENT PHASE XI 333 W 35TH STREET, CHICAGO, ILLINOIS 60616

GUARANTEED RATE FIELD -

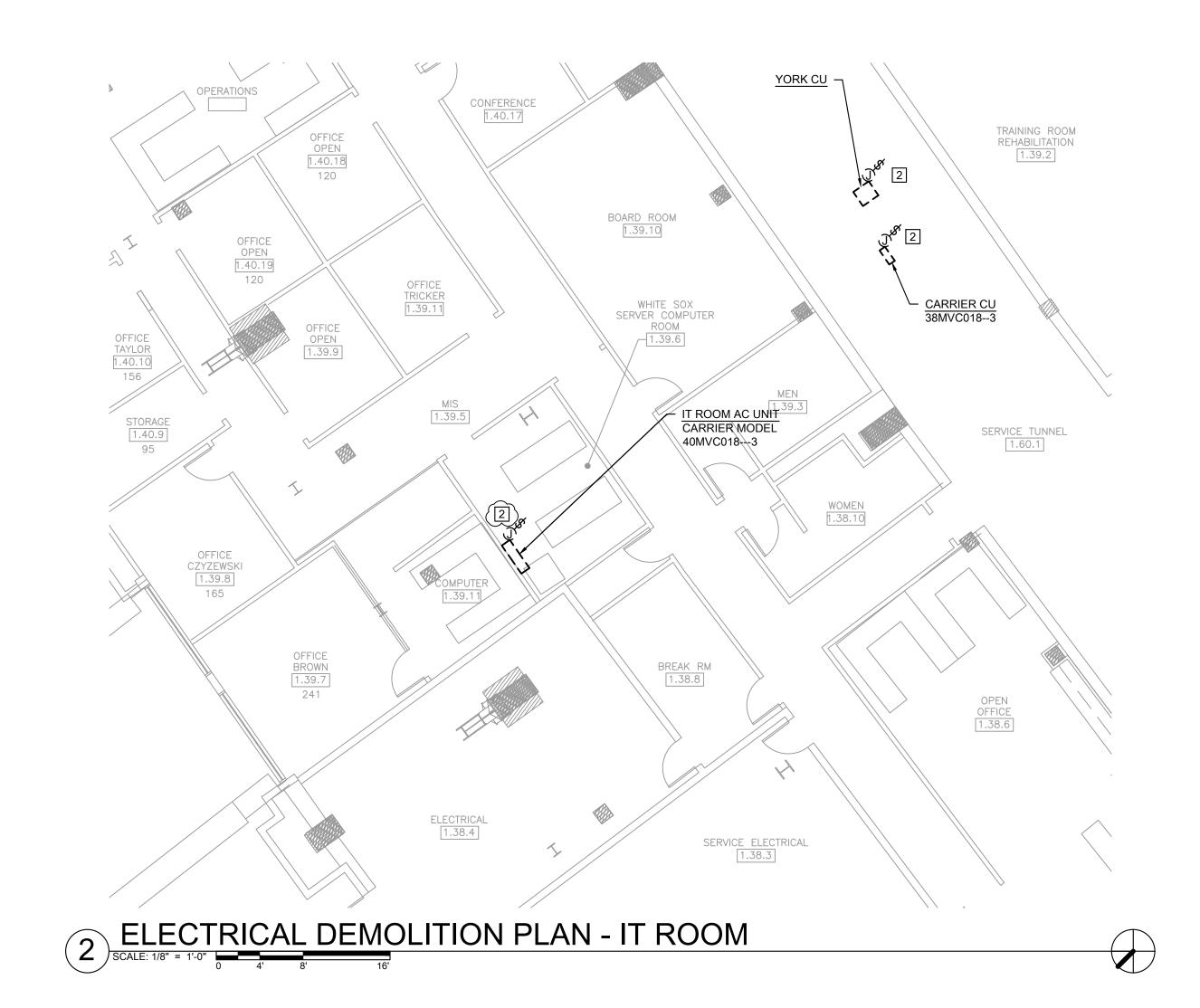
DRAWING TITLE: MECHANICAL SPECIFICATIONS

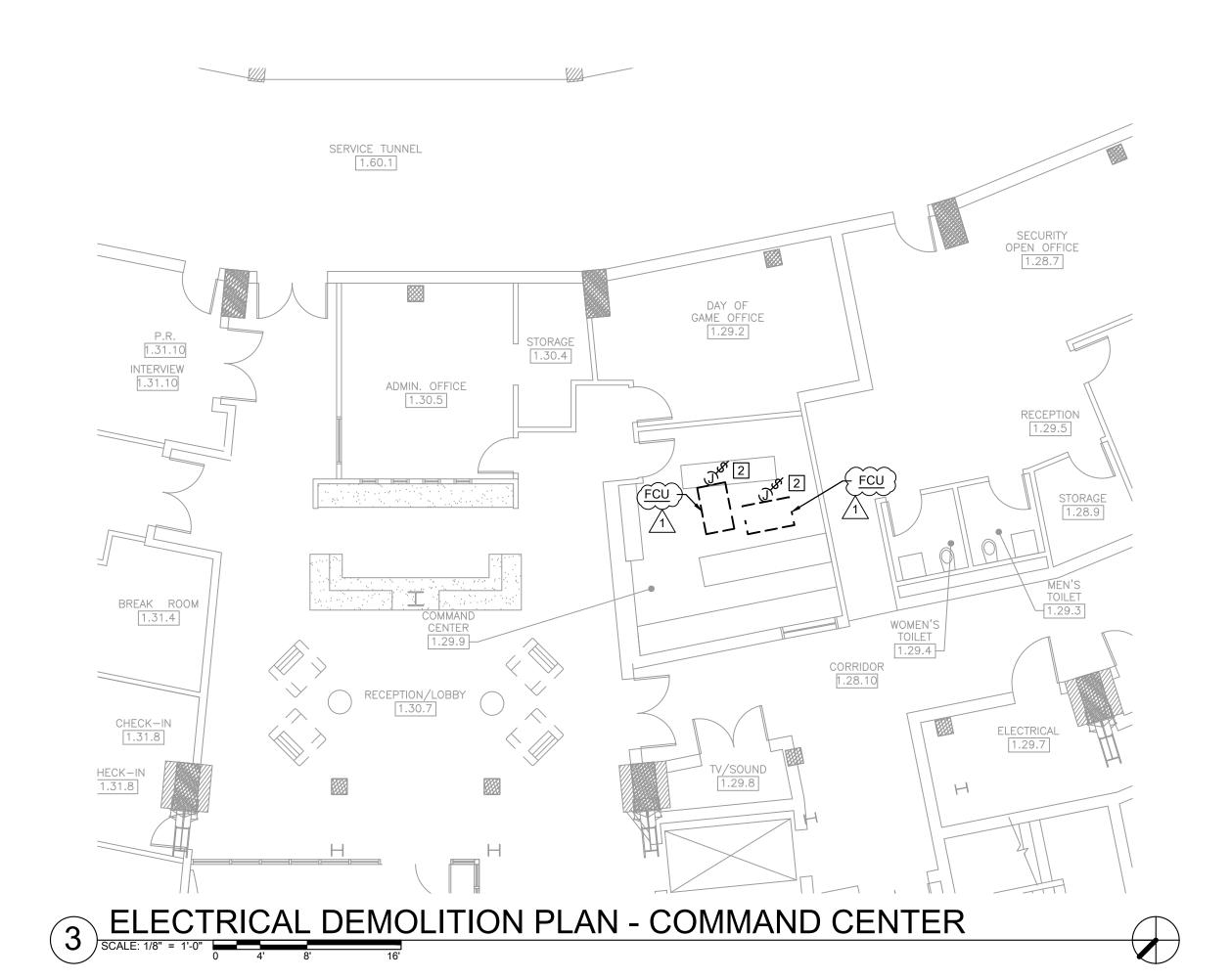
SHEET NO.

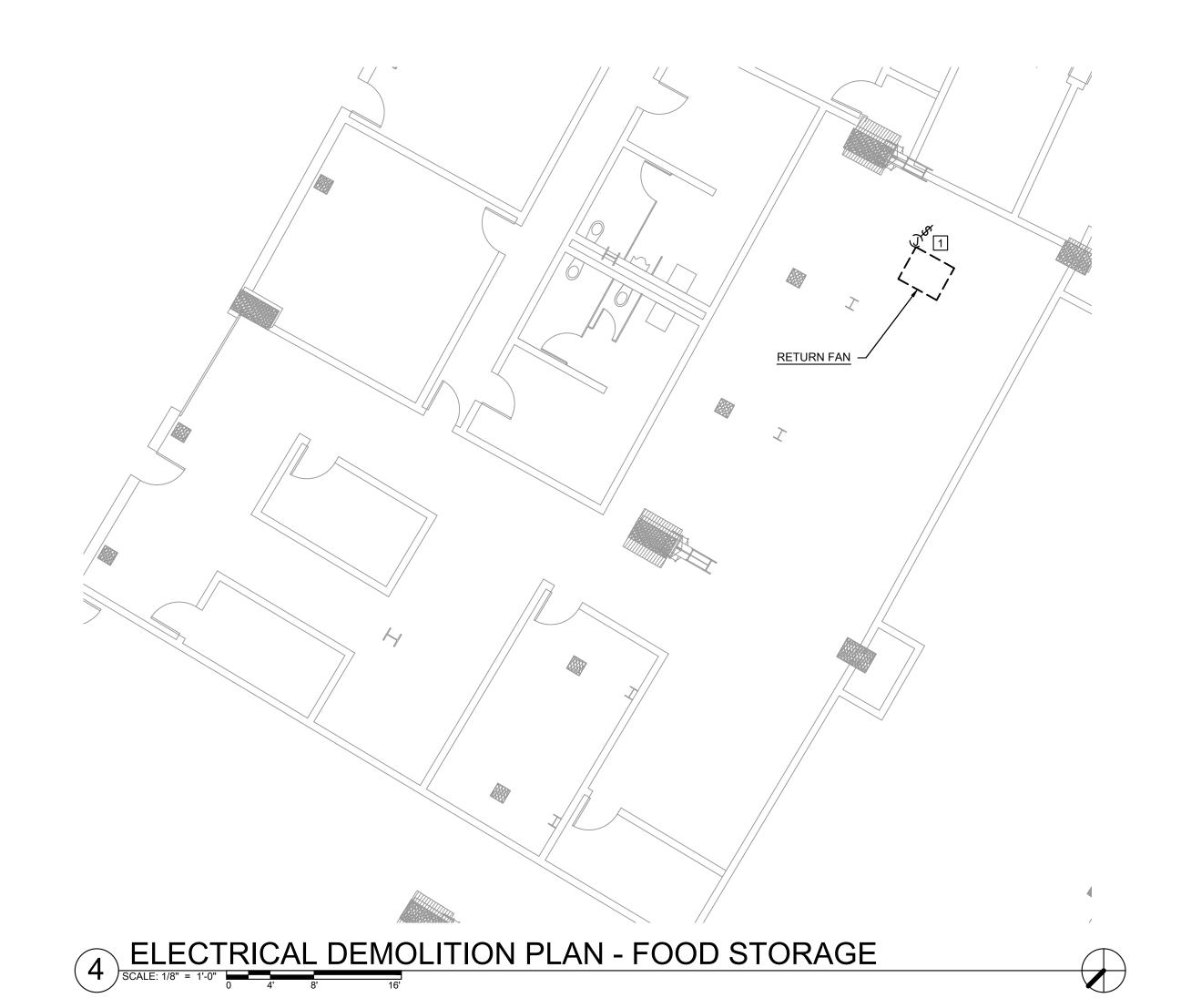
DESIGNED BY: CHECKED BY: PROJECT NO: 21276 NO SCALE SCALE:

ISSUED FOR BID ADDENDUM PRELIMINARY - NOT FOR CONSTRUCTION







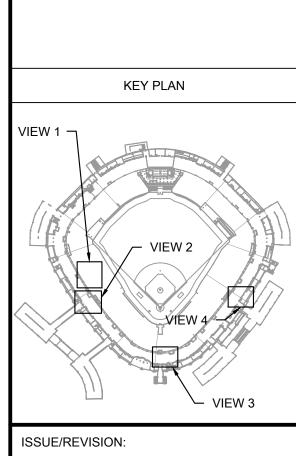


KEYED ELECTRICAL DEMOLITION SHEET NOTES DISCONNECT AND REMOVE POWER FOR MECHANICAL EQUIPMENT SHOWN. EC SHALL MAINTAIN EXISTING BRANCH CIRCUIT AND EXISTING CONDUIT AND WIRES FOR INSTALLATION OF NEW MECHANICAL EQUIPMENT IN THE NEW WORK. 2. DISCONNECT AND REMOVE EXISTING POWER FOR MECHANICAL EQUIPMENT SHOWN. DISCONNECT AND REMOVE ASSOCIATED CONDUIT AND WIRES COMPLETELY FROM THE SOURCE.









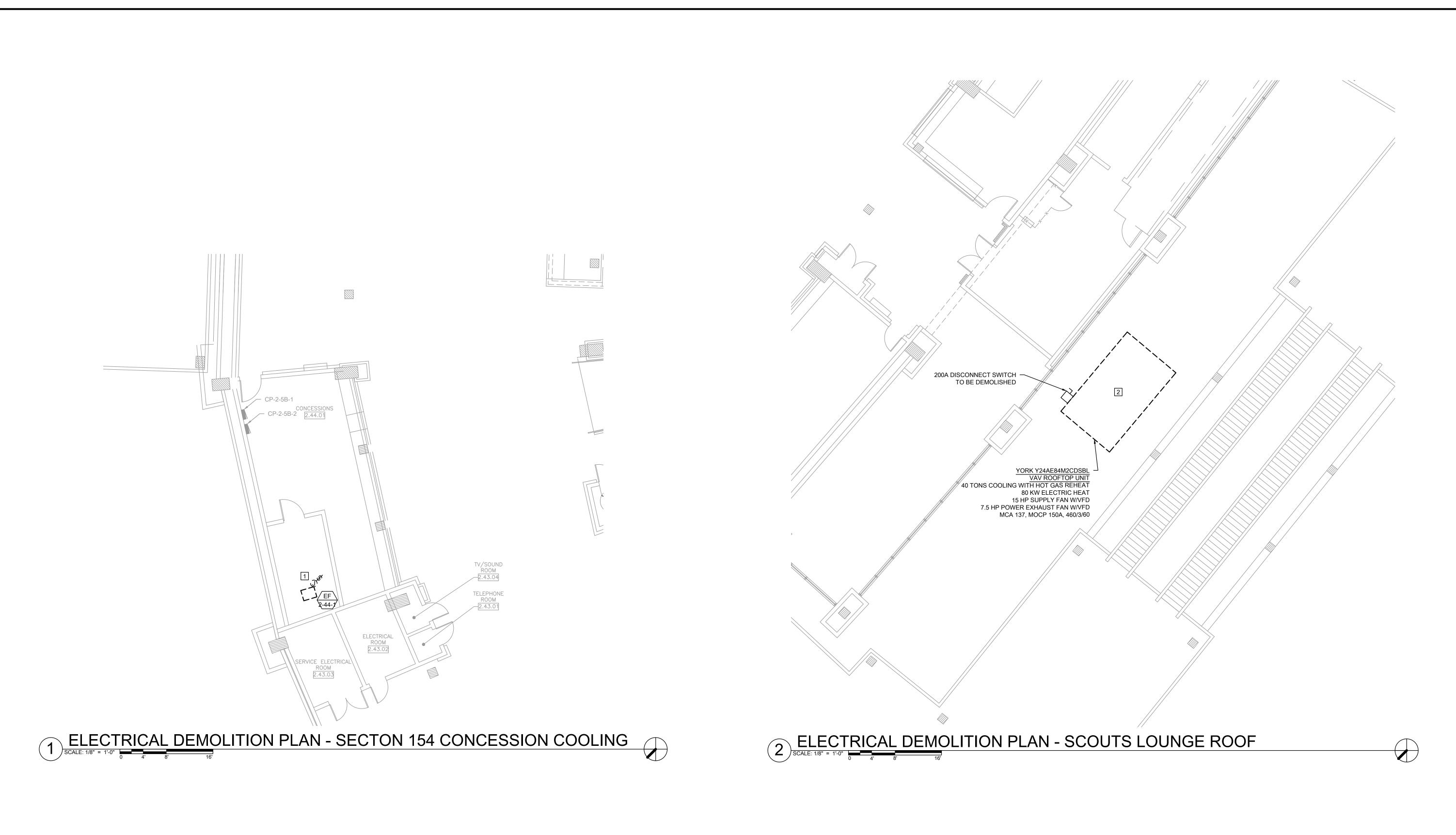
ISS	UE/REVIS	SION:
REV.	DATE	DESCRIPTION
-	11/05/21	ISSUED FOR BID
1	11/15/21	ISSUED FOR BID ADDENDUM

PROJECT: GUARANTEED RATE FIELD -HVAC REPLACEMENT PHASE XI

333 W 35TH STREET, CHICAGO, ILLINOIS 60616

DRAWING TITLE: ELECTRICAL DEMOLITION PLANS - CONCOURSE ENLARGED PLANS

DESIGNED BY:	TG
CHECKED BY:	ВТ
PROJECT NO:	21276
SCALE:	1/8" = 1'-0"
SHEET NO.	



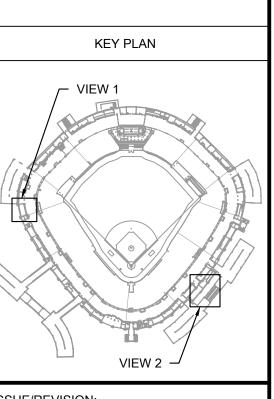
1. DISCONNECT AND REMOVE POWER FOR MECHANICAL EQUIPMENT SHOWN. EC SHALL MAINTAIN EXISTING BRANCH CIRCUIT AND EXISTING CONDUIT AND WIRES FOR INSTALLATION OF NEW MECHANICAL EQUIPMENT IN THE NEW WORK.

2. DISCONNECT AND REMOVE EXISTING POWER FOR MECHANICAL EQUIPMENT SHOWN. DISCONNECT AND REMOVE CONDUIT AND WIRES BACK TO THE EXISTING DISCONNECT SWITCH MOUNTED ON THE EXISTING ROOFTOP UNIT. DISCONNECT AND REMOVE EXISTING DISCONNECT SWITCH. EC SHALL MAINTAIN EXISTING FEEDER AND CONDUIT TO THE SLAB FOR NEW ROOFTOP UNIT. REFER TO THE NEW WORK FOR MORE INFORMATION.









ISS	UE/REVIS	SION:
REV.	DATE	DESCRIPTION
1	11/05/21	ISSUED FOR BID
1	11/15/21	ISSUED FOR BID ADDENDUM

PROJECT:
GUARANTEED RATE FIELD HVAC REPLACEMENT PHASE XI

333 W 35TH STREET, CHICAGO, ILLINOIS 60616

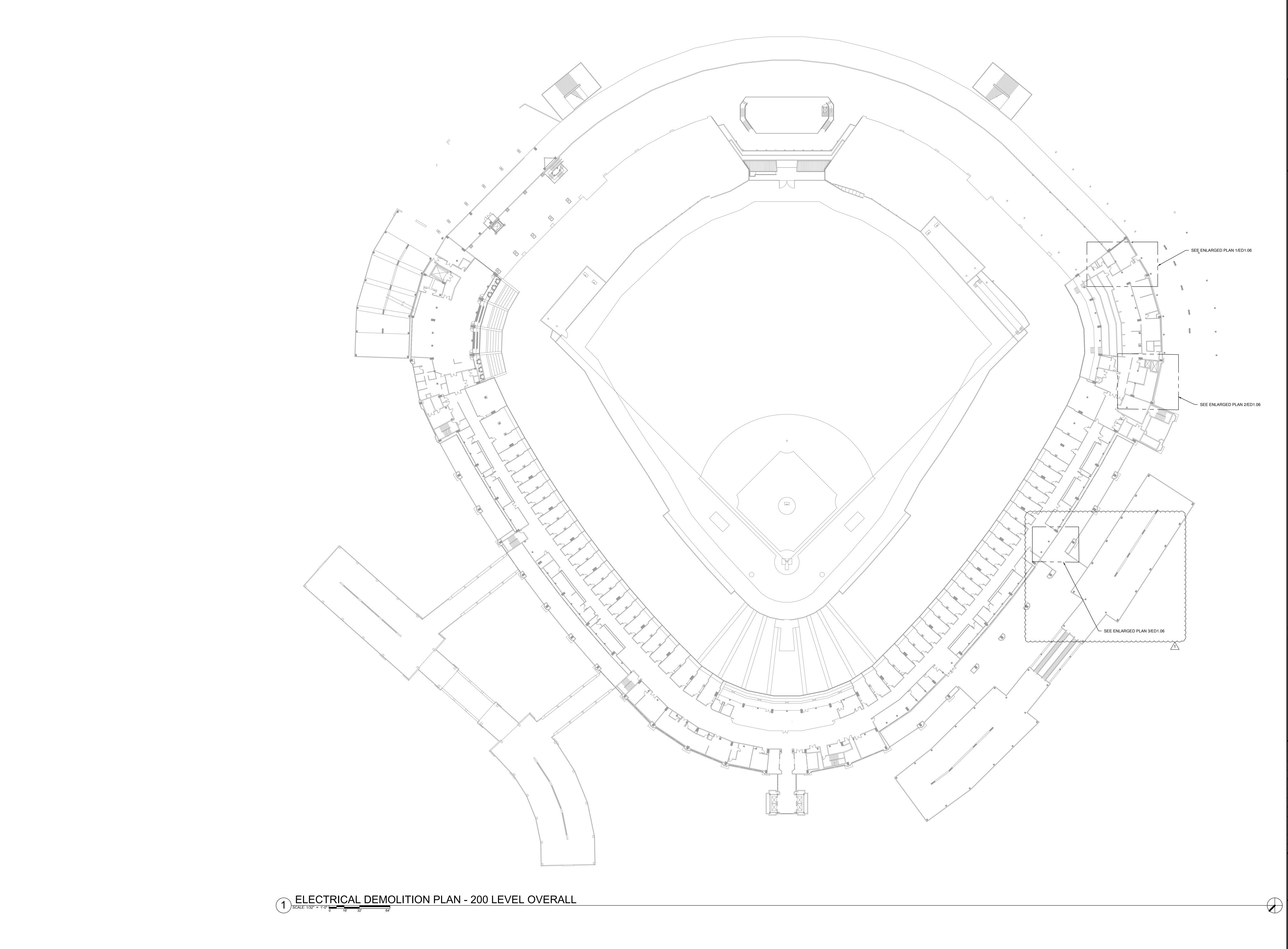
DRAWING TITLE:

ELECTRICAL DEMOLITION
PLANS - 100 LEVEL ENLARGED
PLANS

DESIGNED BY:	TG
CHECKED BY:	ВТ
PROJECT NO:	21276
SCALE:	1/8" = 1'-0"
SHEET NO.	

11/15/2021 ISSUED FOR BID ADDENDUM
PRELIMINARY - NOT FOR CONSTRUCTION

ED1.04

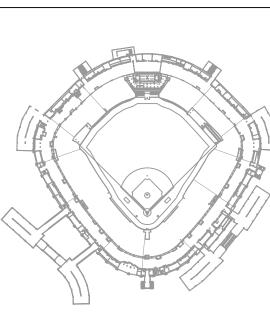


30 N. Wolf Rd., Second Floor Hillside, IL 60162 (708) 236-0300 (708) 236-0330 FAX





KEY PLAN



ISS	UE/REVIS	SION:
REV.	DATE	DESCRIPTION
-	11/05/21	ISSUED FOR BID
1	11/15/21	ISSUED FOR BID ADDENDUM

PROJECT:
GUARANTEED RATE FIELD HVAC REPLACEMENT PHASE XI

333 W 35TH STREET, CHICAGO, ILLINOIS 60616

DRAWING TITLE:

ELECTRICAL DEMOLITION
PLAN - 200 LEVEL OVERALL

DESIGNED BY: TG

CHECKED BY: BT

PROJECT NO: 21276

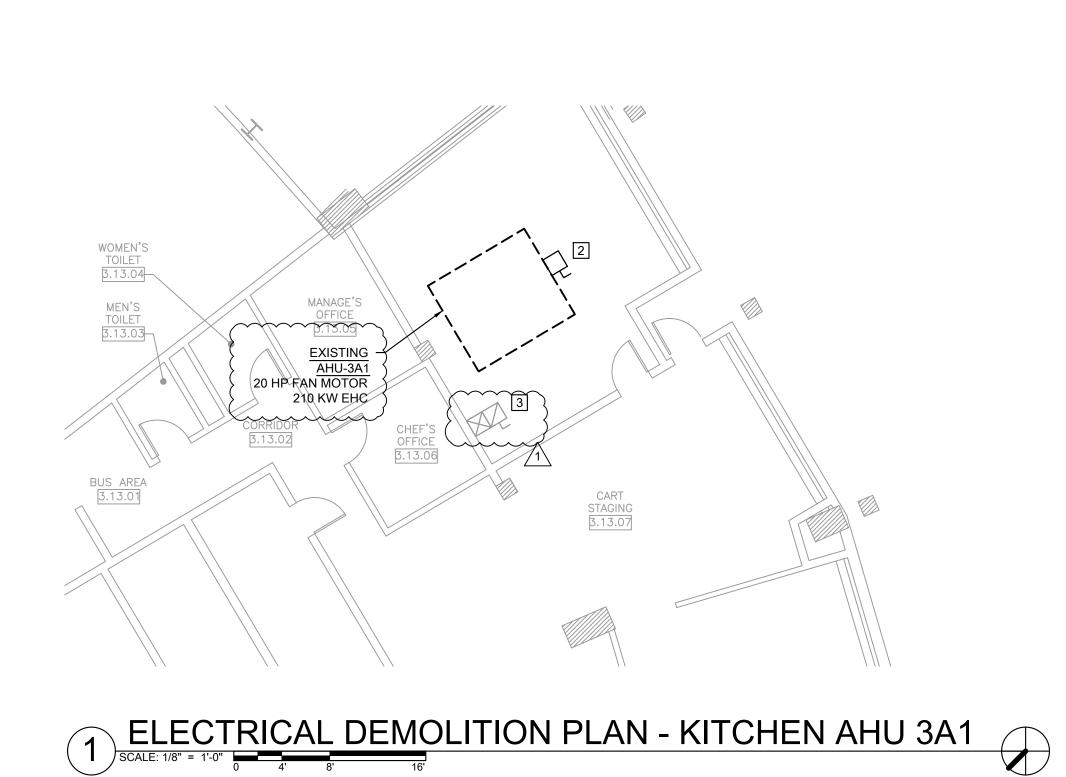
SCALE: 1/32" = 1'-0"

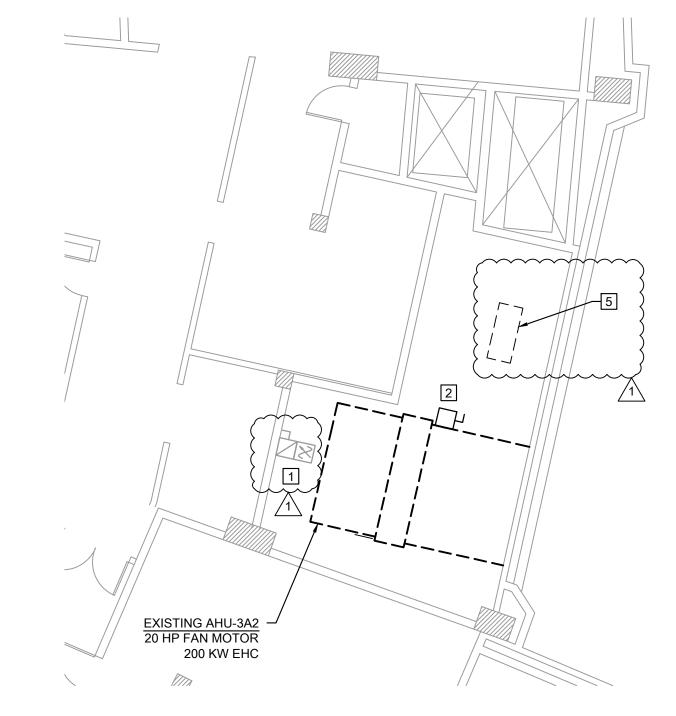
SHEET NO.

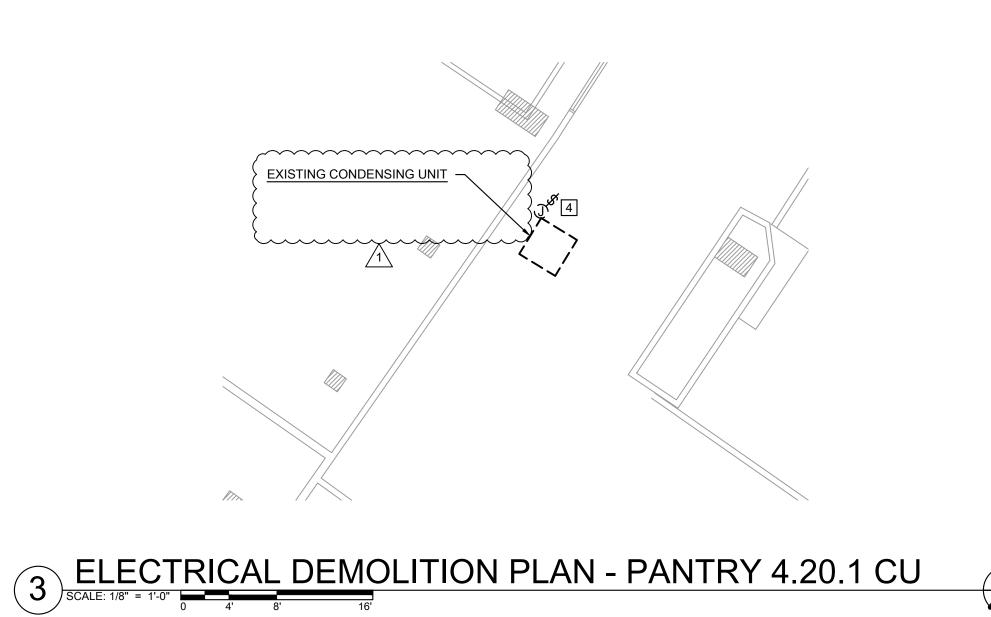
ED1.05

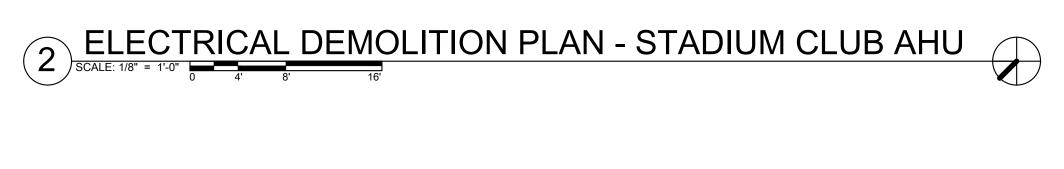
ISSUED FOR BID ADDENDUM

PRELIMINARY - NOT FOR CONSTRUCTION









KEYED ELECTRICAL DEMOLITION SHEET NOTES 1. DISCONNECT AND REMOVE EXISTING POWER FOR MECHANICAL EQUIPMENT SHOWN. DISCONNECT AND REMOVE CONDUIT AND WIRES BACK TO THE EXISTING VARIABLE FREQUENCY DRIVE. EC SHALL MAINTAIN EXISTING FEEDER AND CONDUIT FOR NEW POWER CONNECTION TO FAN MOTOR. REFER TO THE NEW WORK FOR MORE INFORMATION. 2. DISCONNECT AND REMOVE EXISTING POWER FOR MECHANICAL EQUIPMENT SHOWN. DISCONNECT AND REMOVE CONDUIT AND WIRES BACK TO THE EXISTING DISCONNECT SWITCH FOR ELECTRIC HEATING COIL. EC SHALL MAINTAIN EXISTING FEEDER AND CONDUIT FOR NEW POWER CONNECTION TO NEW ELECTRIC HEATING COIL DISCONNECT SWITCH. REFER TO THE NEW WORK FOR MORE INFORMATION. 3. DISCONNECT AND REMOVE EXISTING POWER FOR MECHANICAL EQUIPMENT SHOWN. DISCONNECT AND REMOVE CONDUIT AND WIRES BACK TO THE EXISTING STARTER. EC SHALL MAINTAIN EXISTING FEEDER AND CONDUIT FOR NEW POWER CONNECTION TO FAN MOTOR. REFER TO THE NEW WORK FOR MORE INFORMATION. 4. DISCONNECT AND REMOVE POWER FOR MECHANICAL EQUIPMENT SHOWN. EC SHALL MAINTAIN EXISTING BRANCH CIRCUIT AND EXISTING CONDUIT AND WIRES FOR INSTALLATION OF NEW MECHANICAL EQUIPMENT IN THE NEW WORK. 5. DISCONNECT AND PRESERVE EXISTING RETURN FAN BRANCH CIRCUIT. EXISTING RETURN FAN IS BEING REFURBISHED AND WILL BE RE-INSTALLED DURING NEW WORK.







VIEW 2

ISS	UE/REVIS	SION:
REV.	DATE	DESCRIPTION
	11/05/21	ISSUED FOR BID
1	11/15/21	ISSUED FOR BID ADDENDUM

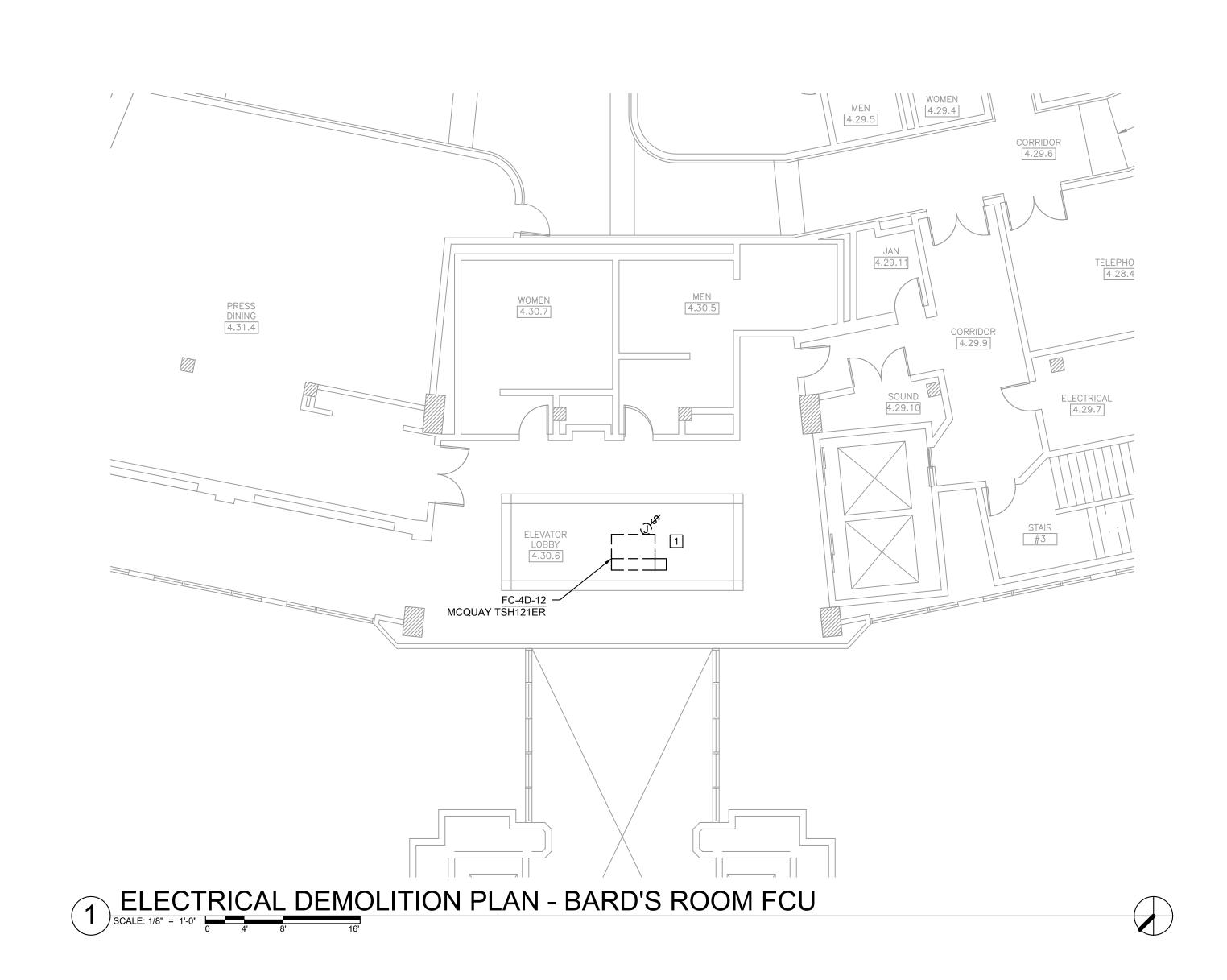
PROJECT:
GUARANTEED RATE FIELD HVAC REPLACEMENT PHASE XI

333 W 35TH STREET, CHICAGO, ILLINOIS 60616

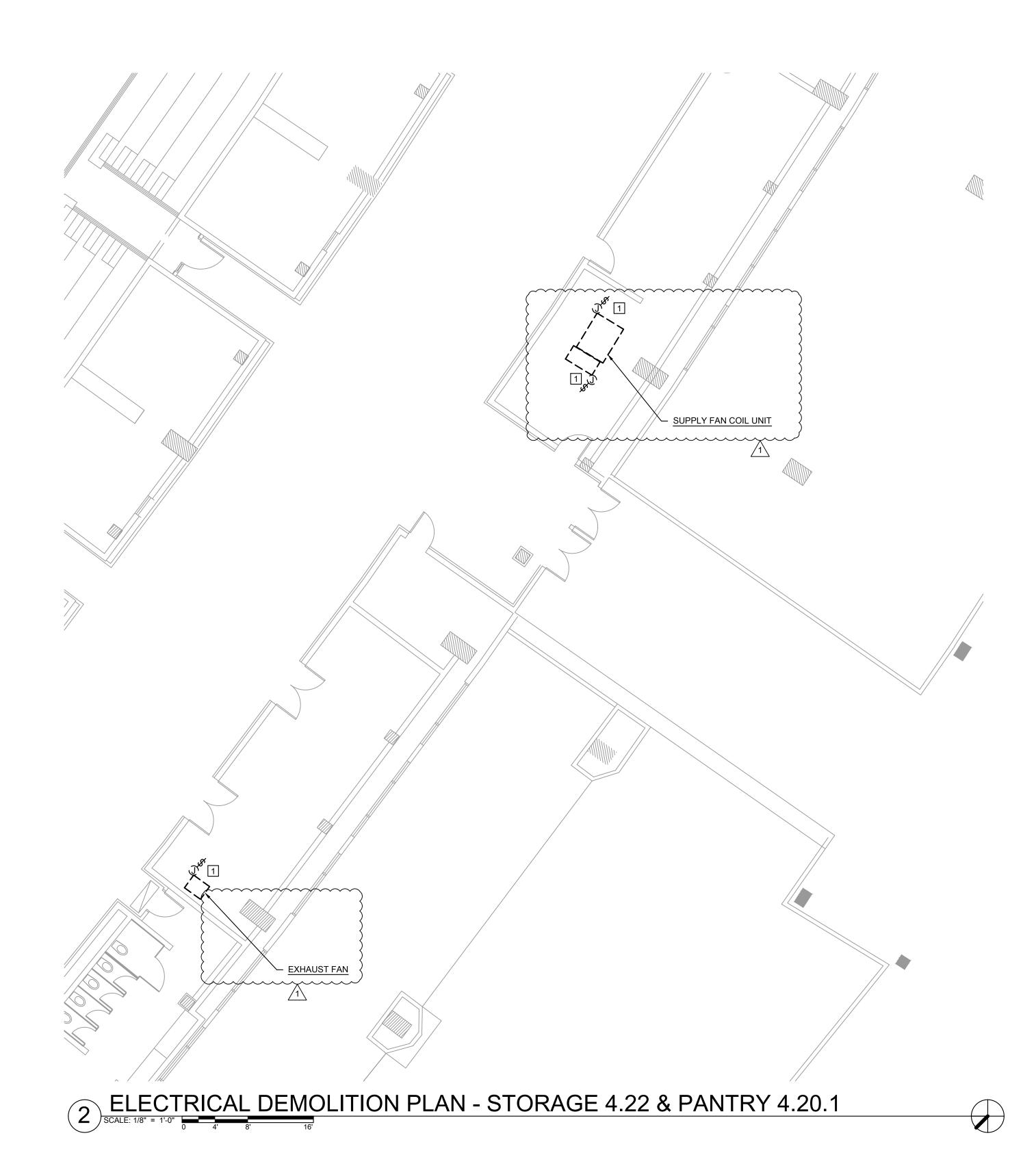
DRAWING TITLE:

ELECTRICAL DEMOLITION
PLANS - 200 LEVEL ENLARGED
PLANS

DESIGNED BY:	TG
CHECKED BY:	ВТ
PROJECT NO:	21276
SCALE:	1/8" = 1'-0"
SHEET NO.	



1. DISCONNECT AND REMOVE POWER FOR MECHANICAL EQUIPMENT SHOWN. EC SHALL MAINTAIN EXISTING BRANCH CIRCUIT AND EXISTING CONDUIT AND WIRES FOR INSTALLATION OF NEW MECHANICAL EQUIPMENT IN THE NEW WORK.

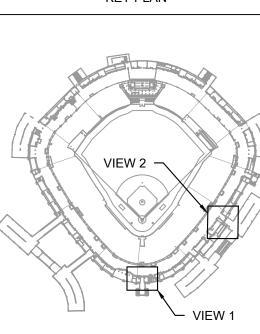








KEY PLAN



ISS	ISSUE/REVISION:		
REV.	DATE	DESCRIPTION	
-	11/05/21	ISSUED FOR BID	
$\overline{\Lambda}$	11/15/21	ISSUED FOR BID ADDENDUM	
PRO	OJECT [.]		

PROJECT:
GUARANTEED RATE FIELD HVAC REPLACEMENT PHASE XI

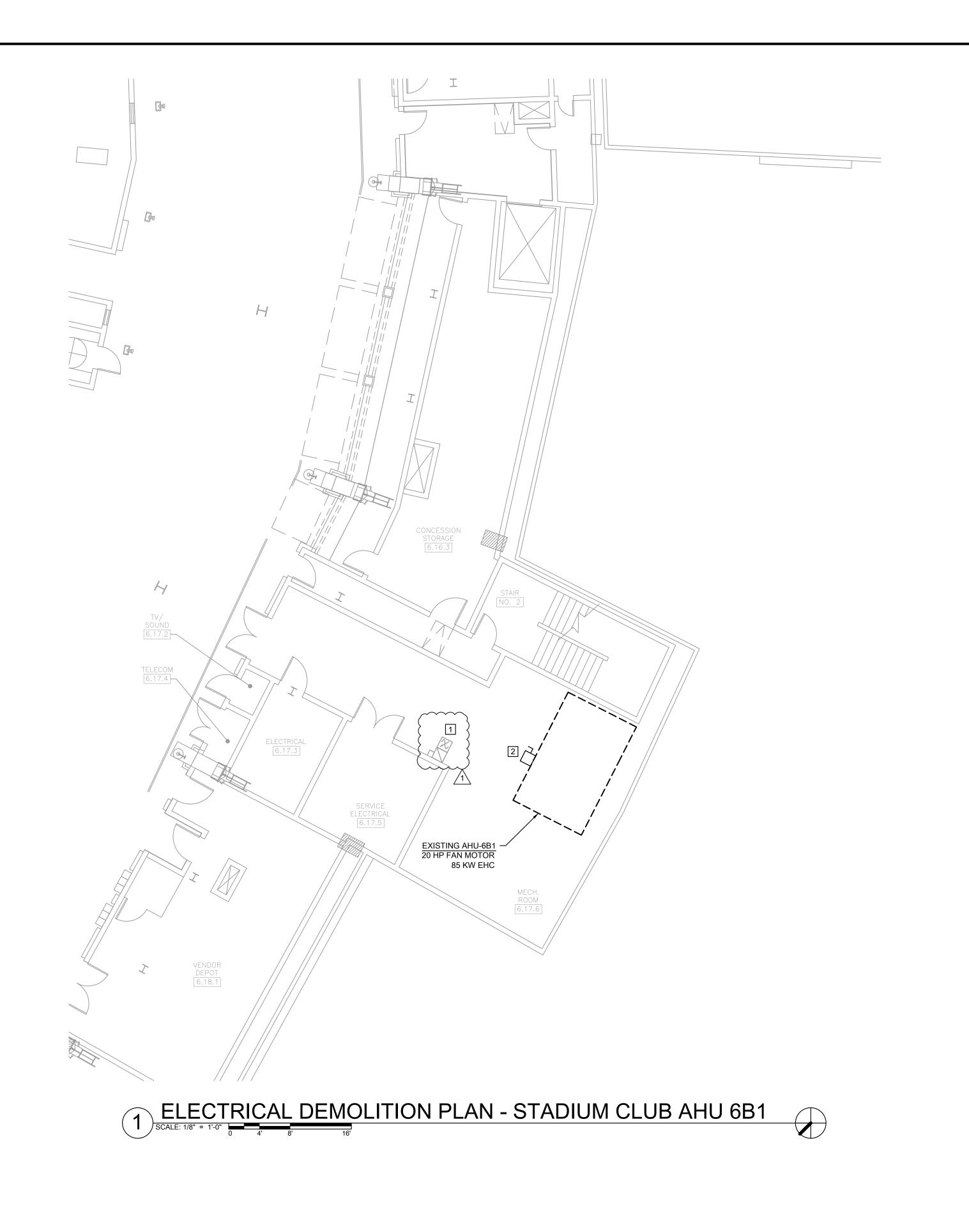
333 W 35TH STREET, CHICAGO, ILLINOIS 60616

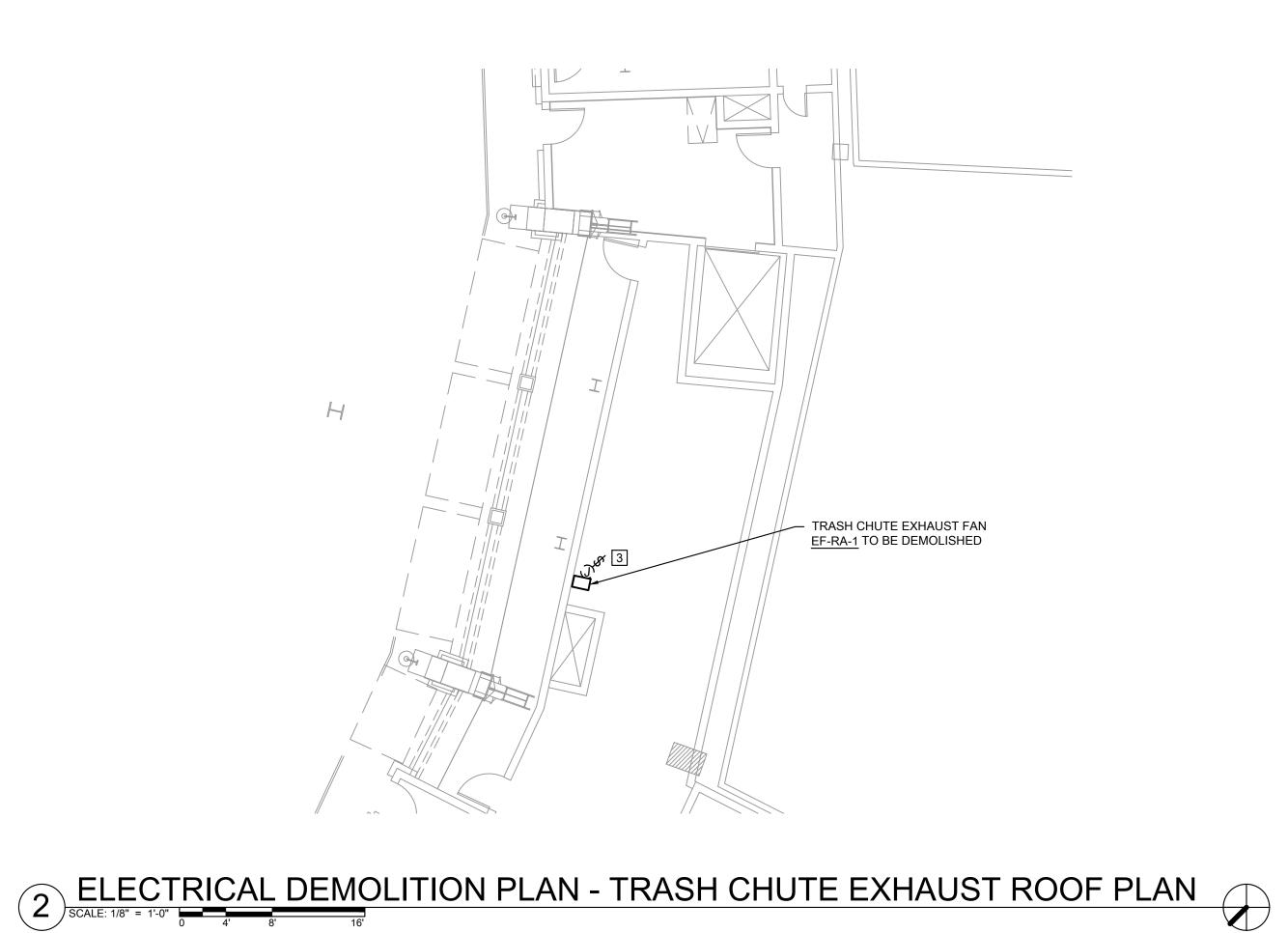
DRAWING TITLE:

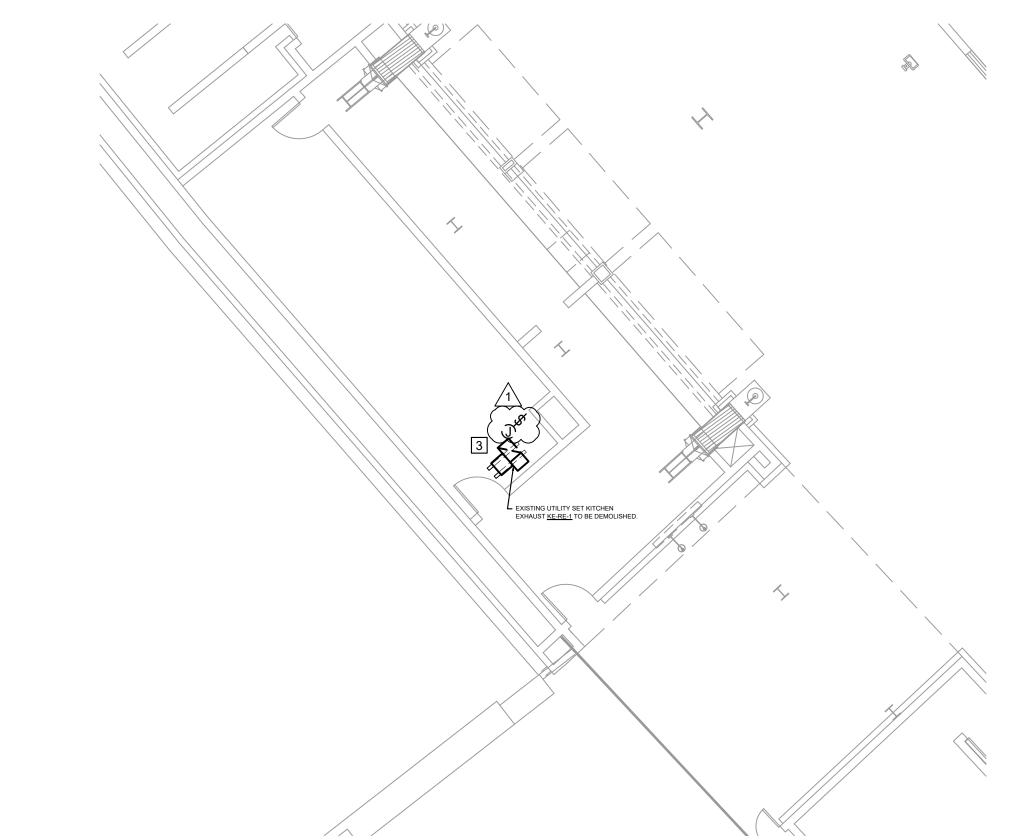
ELECTRICAL DEMOLITION
PLANS - 300 LEVEL ENLARGED
PLANS

DESIGNED BY:	TG
CHECKED BY:	ВТ
PROJECT NO:	21276
SCALE:	1/8" = 1'-0"
SHEET NO.	

ED1.08













VIEW 2
VIEW 1

	VIEW 3		
ISS	UE/REVIS	SION:	
REV.	DATE	DESCRIPTION	
-	11/05/21	ISSUED FOR BID	
1	11/15/21	ISSUED FOR BID ADDENDUM	

PROJECT:
GUARANTEED RATE FIELD HVAC REPLACEMENT PHASE XI

333 W 35TH STREET, CHICAGO, ILLINOIS 60616

DRAWING TITLE:

ELECTRICAL DEMOLITION
PLANS - 500 LEVEL ENLARGED

DESIGNED BY: TG

CHECKED BY: BT

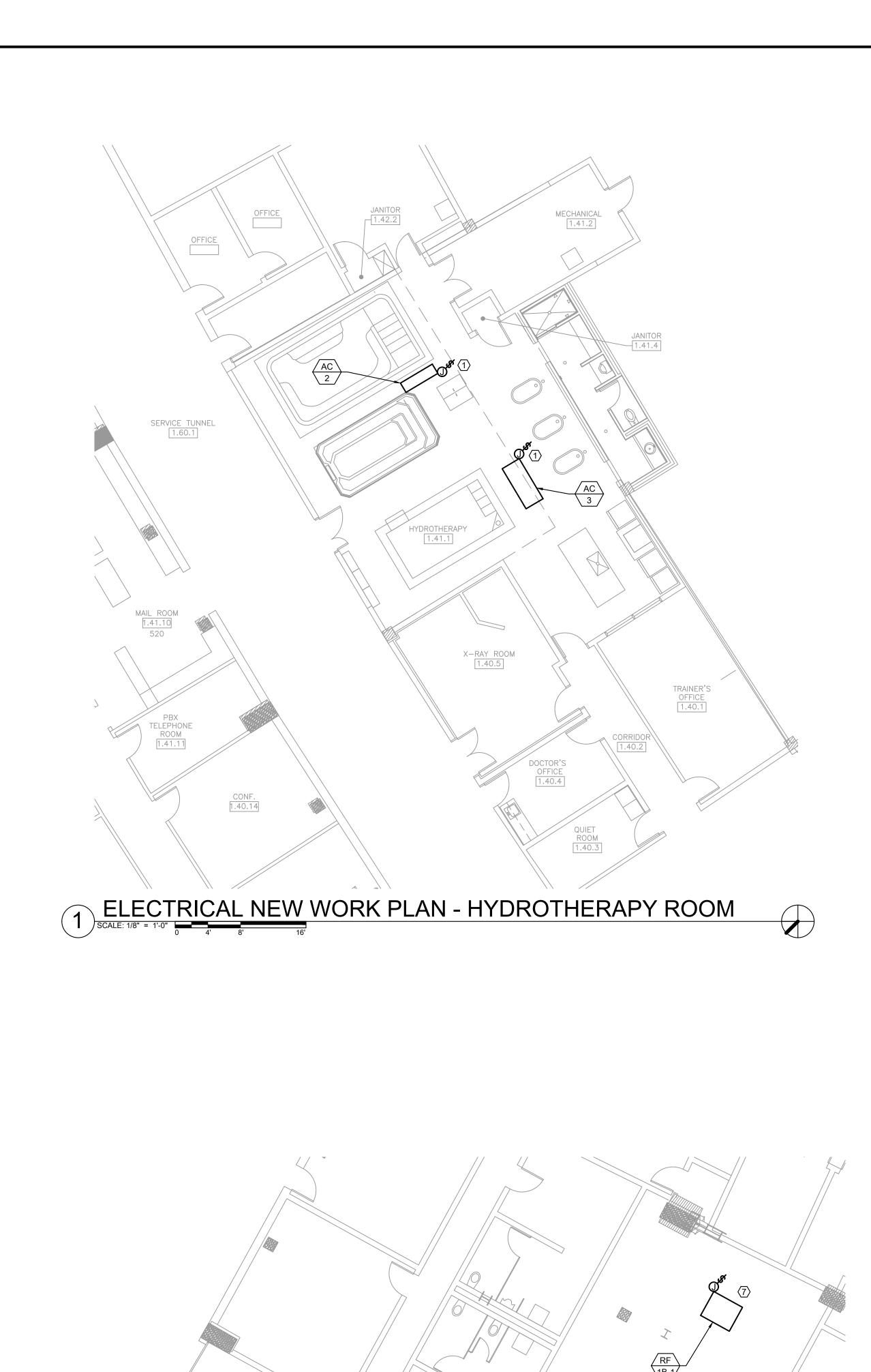
PROJECT NO: 21276

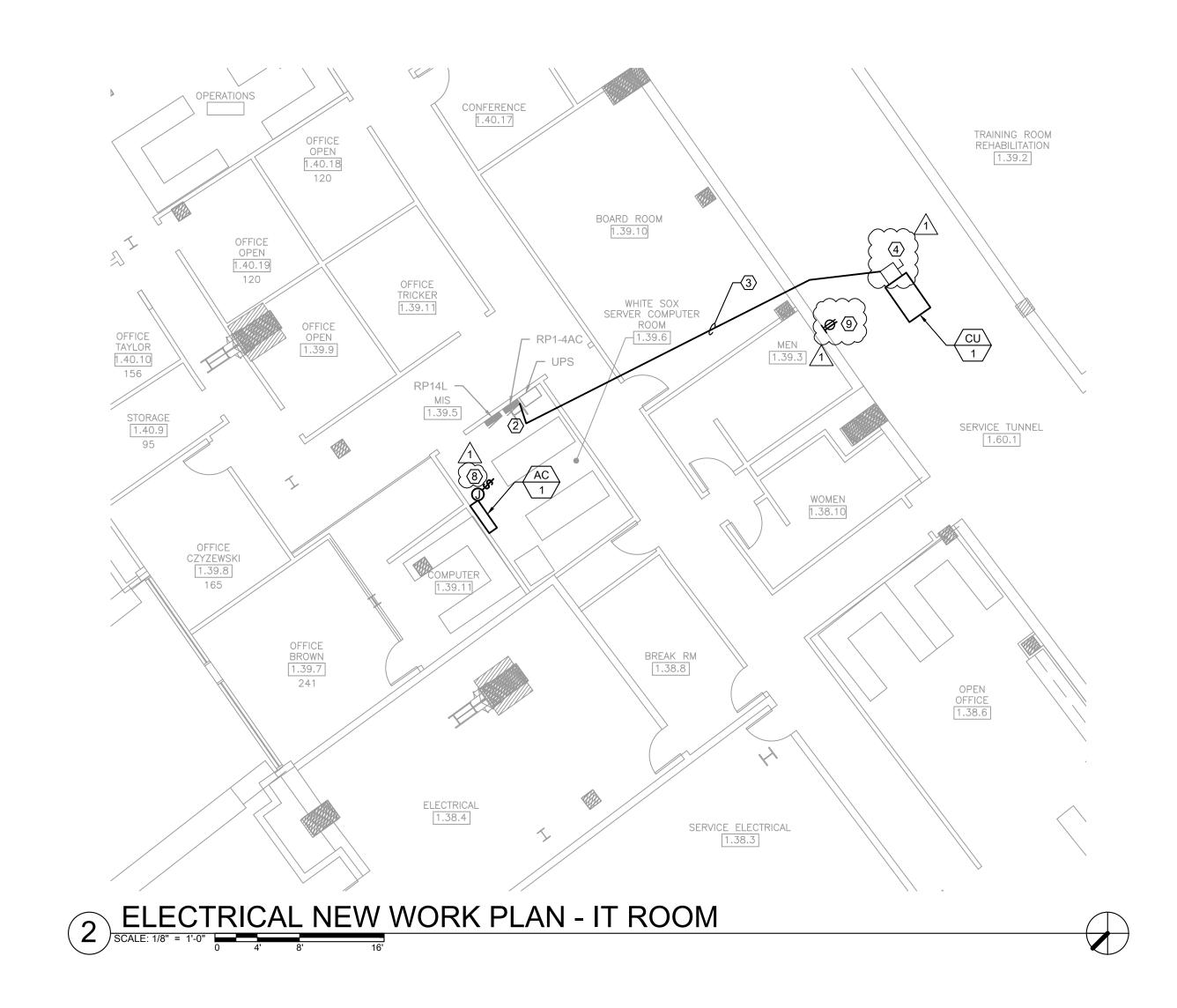
SCALE: 1/8" = 1'-0"

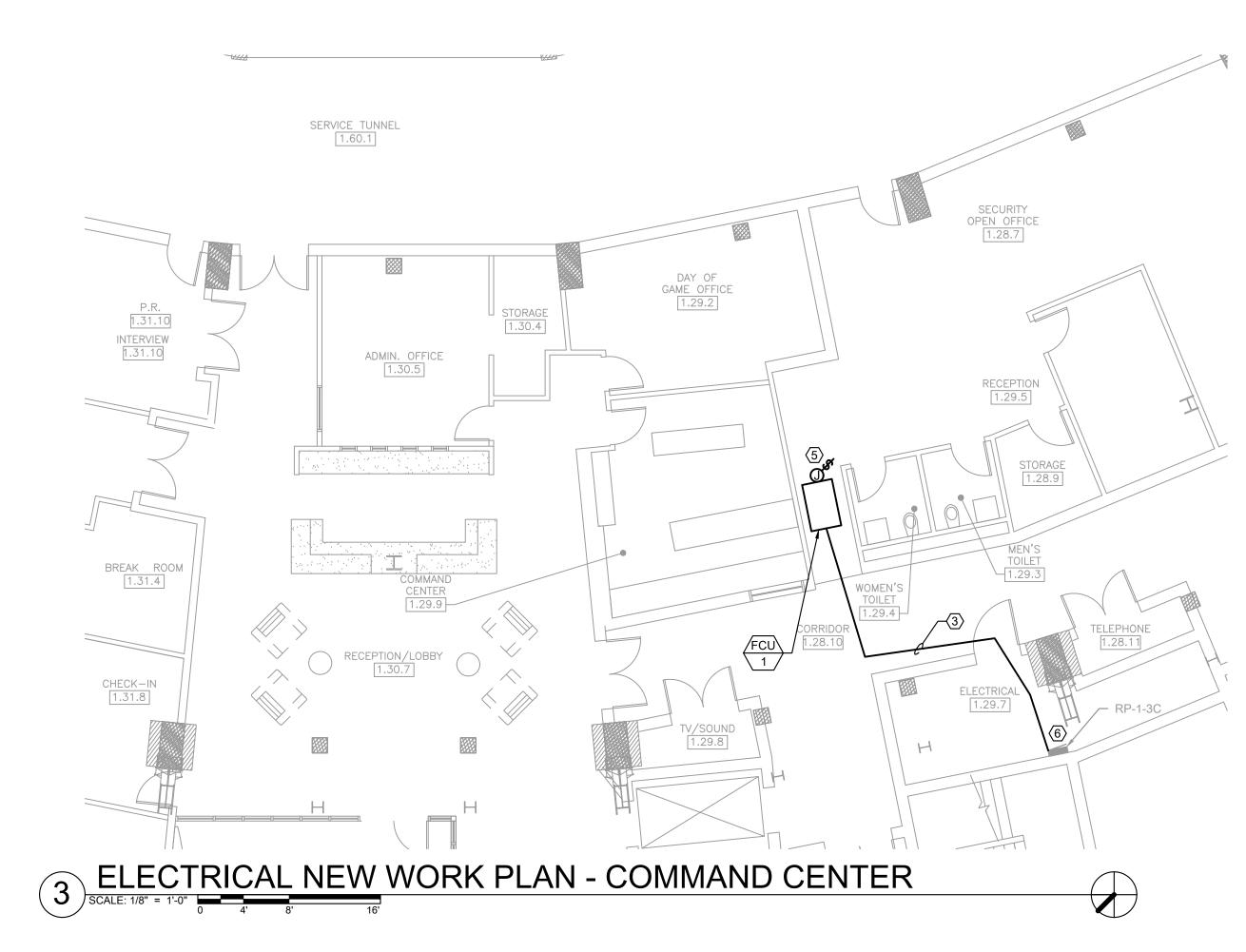
SHEET NO.

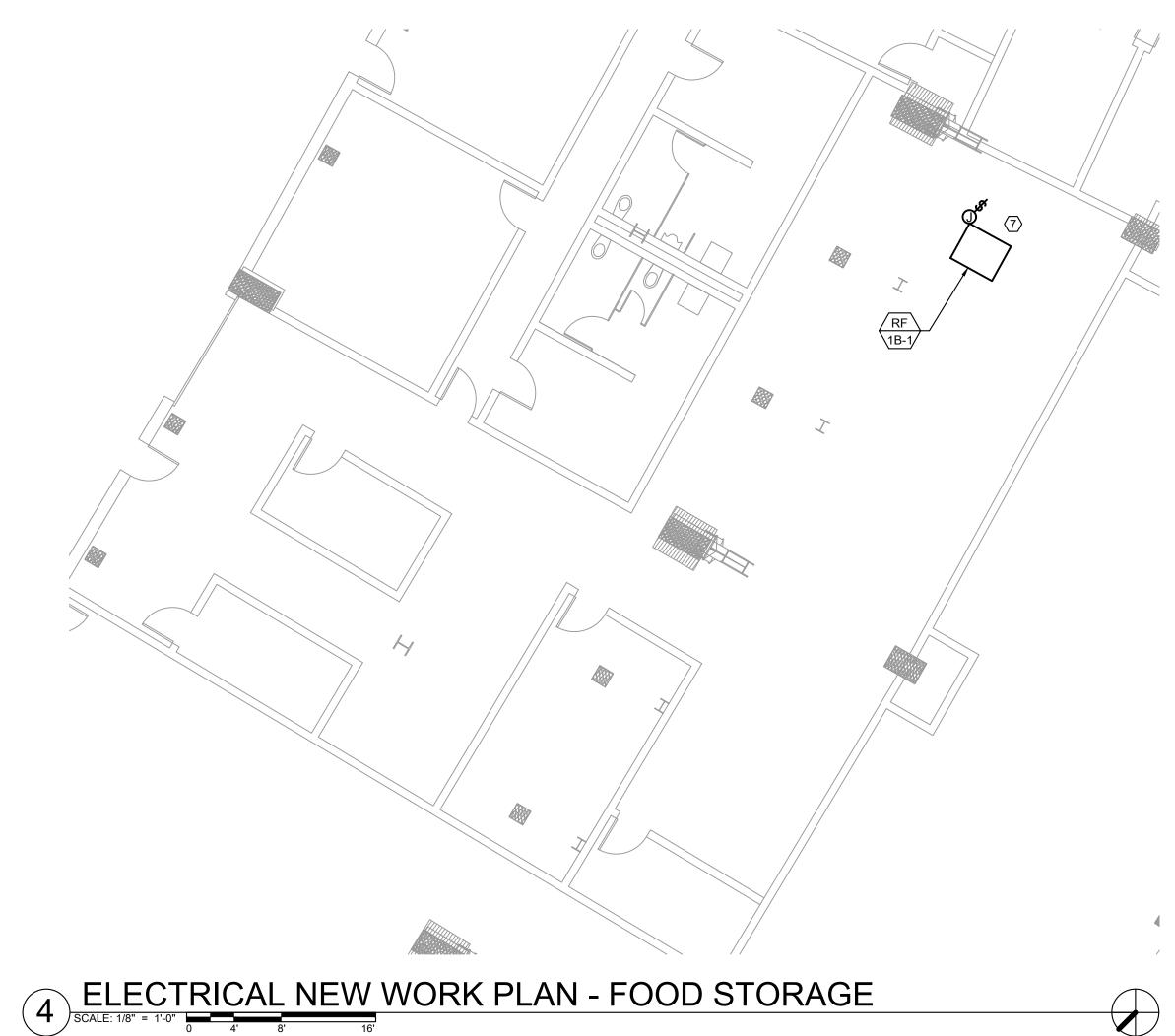
11/15/2021 ISSUED FOR BID ADDENDUM
PRELIMINARY - NOT FOR CONSTRUCTION

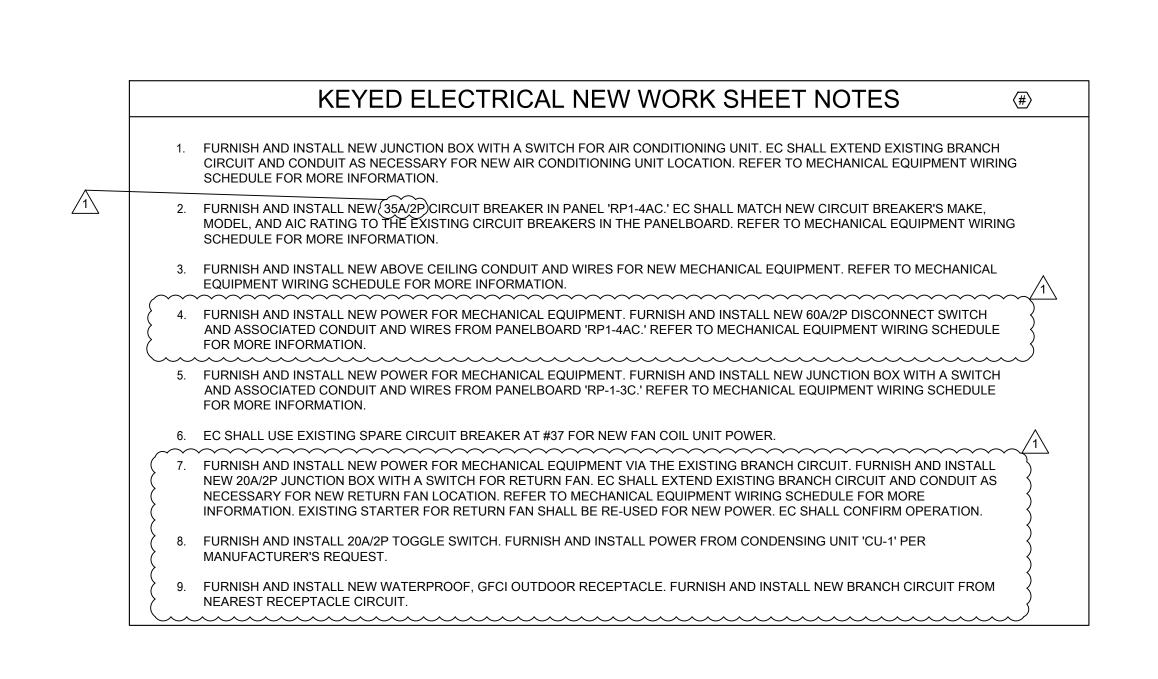
ED1.10







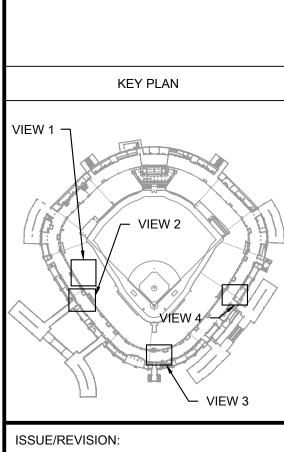












ISSI	UE/REVIS	SION:
REV.	DATE	DESCRIPTION
-	11/05/21	ISSUED FOR BID
Λ	11/15/21	ISSUED FOR BID ADDENDUM

PROJECT:

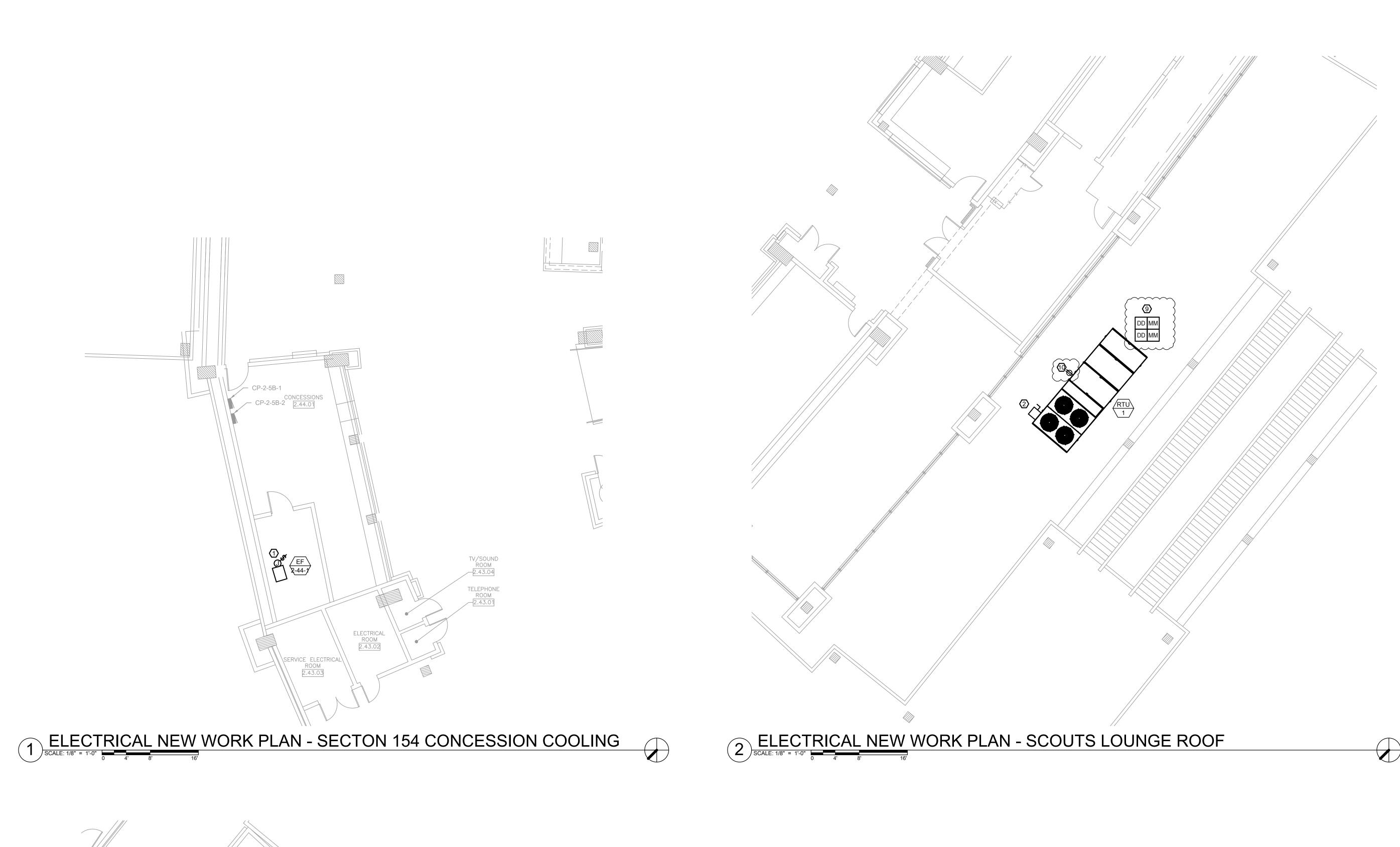
GUARANTEED RATE FIELD
HVAC REPLACEMENT PHASE XI

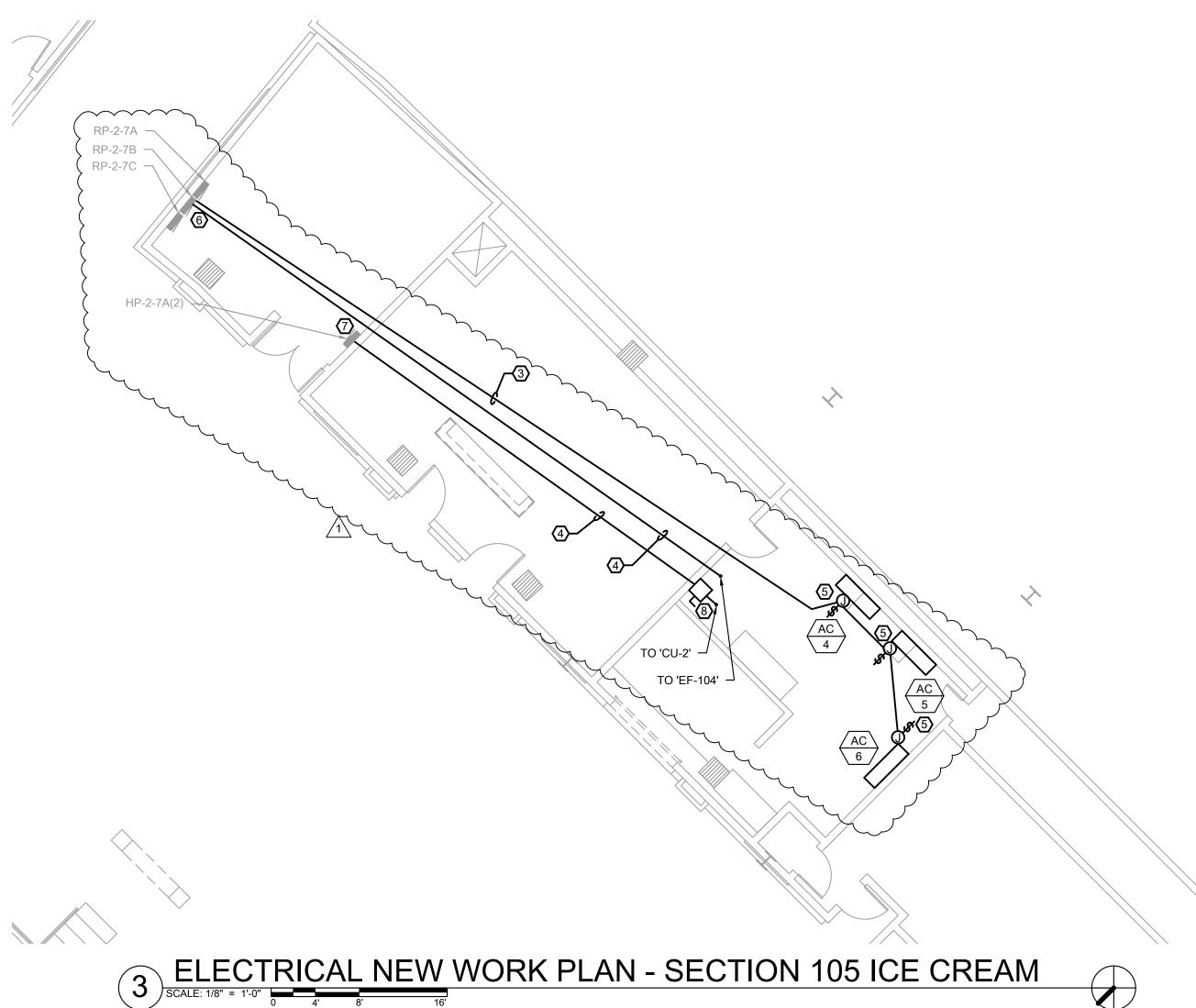
333 W 35TH STREET, CHICAGO, ILLINOIS 60616

DRAWING TITLE:

ELECTRICAL NEW WORK
PLANS - CONCOURSE LEVEL
ENLARGED PLANS

DESIGNED BY:	TG
CHECKED BY:	ВТ
PROJECT NO:	21276
SCALE:	1/8" = 1'-0"
SHEET NO.	



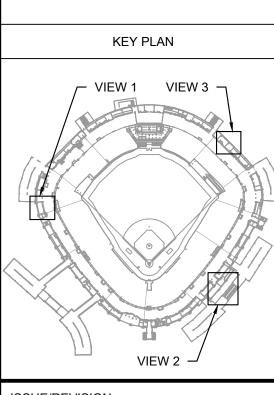


KEYED ELECTRICAL NEW WORK SHEET NOTES 1. FURNISH AND INSTALL NEW POWER FOR MECHANICAL EQUIPMENT VIA THE EXISTING BRANCH CIRCUIT. FURNISH AND INSTALL NEW JUNCTION BOX WITH A SWITCH FOR EXHAUST FAN. EC SHALL EXTEND EXISTING EXISTING BRANCH CIRCUIT AND CONDUIT AS NECESSARY FOR NEW EXHAUST FAN LOCATION. REFER TO MECHANICAL EQUIPMENT WIRING SCHEDULE FOR MORE INFORMATION. . FURNISH AND INSTALL NEW POWER AND ASSOCIATED CONDUIT AND WIRES FOR NEW ROOFTOP UNIT. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION. EC SHALL EXTEND EXISTING CONDUIT AND FEEDER FOR NEW ROOFTOP UNIT. REFER TO MECHANICAL EQUIPMENT WIRING SCHEDULE FOR MORE INFORMATION. EC SHALL CONFIRM THAT EXISTING OCPD SERVING THE EXISTING ROOFTOP UNIT IS RATED AT 150A. IF IT IS NOT EXACTLY 150A, THEN EC SHALL NOTIFY ELECTRICAL ENGINEER IMMEDIATELY. 3. FURNISH AND INSTALL NEW OVERHEAD CONDUIT AND WIRES FOR NEW MECHANICAL EQUIPMENT FROM EXISTING PANELBOARD SHOWN. REFER TO MECHANICAL EQUIPMENT WIRING SCHEDULE FOR MORE INFORMATION. 4. FURNISH AND INSTALL NEW OVERHEAD CONDUIT AND WIRES FROM EXISTING PANELBOARD SHOWN FOR NEW MECHANICAL EQUIPMENT ON ROOF ABOVE. REFER TO SHEET E1.06 FOR LOCATION OF MECHANICAL EQUIPMENT. REFER TO MECHANICAL EQUIPMENT WIRING SCHEDULE FOR MORE INFORMATION. EC SHALL CORE THROUGH THE EXISTING CEILING FOR NEW CONDUITS. EC SHALL SCAN CEILING PRIOR TO CORING. EC SHALL FILL CEILING CORE AFTER INSTALLATION OF NEW CONDUITS 5. FURNISH AND INSTALL NEW POWER AND ASSOCIATED CONDUIT AND WIRES FOR NEW AIR CONDITIONING UNITS. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION. REFER TO MECHANICAL EQUIPMENT WIRING SCHEDULE FOR MORE 6. FURNISH AND INSTALL NEW 15A/2P CIRCUIT BREAKER IN SPARE #40,42 FOR NEW AIR CONDITIONING UNITS SHOWN ON PLAN. EC SHALL DISCONNECT AND REMOVE THE (2) EXISTING 20A/1P SPARE CIRCUIT BREAKERS IN ORDER TO INSTALL NEW 15A/2P CIRCUIT BREAKER FOR AIR CONDITIONING UNITS. FURNISH AND INSTALL 15A/1P CIRCUIT BREAKER IN EXISTING SPACE #36 FOR NEW EXHAUST FAN SHOWN ON SHEET E1.06. FURNISH AND INSTALL NEW 30A/3P CIRCUIT BREAKER FOR NEW CONDENSING UNIT ON ROOF. EC SHALL DISCONNECT AND REMOVE THE (3) EXISTING 20A/1P SPARE CIRCUIT BREAKERS FOR THE INSTALLATION OF THE NEW 30A/3P CIRCUIT BREAKER FOR THE NEW CONDENSING UNIT SHOWN ON SHEET E1.06. 8. EC SHALL FURNISH AND INSTALL NEW 30A DISCONNECT SWITCH FOR NEW CONDENSING UNIT ON ROOF. EC SHALL COORDINATE DISCONNECT SWITCH LOCATION WITH MECHANICAL CONTRACTOR AND OWNER. 9. FURNISH AND INSTALL DUCT SMOKE DETECTOR WITH SAMPLING TUBES ON SUPPLY AND RETURN SIDE OF THE DUCT. EC SHALL COORDINATE WITH MC FOR BEST LOCATION OF DUCT SMOKE DETECTORS. FURNISH AND INSTALL FIRE ALARM MONITOR MODULE FOR EACH DUCT SMOKE DETECTOR AND REMOTE TEST SWITCH. FURNISH AND INSTALL FIRE ALARM CABLE IN CONDUIT TO EXISTING FIRE ALARM CONTROL PANEL LOCATED NEAR THE COMMAND CENTER ON GROUND LEVEL. 10. FURNISH AND INSTALL NEW WATERPROOF, GFCI OUTDOOR RECEPTACLE. FURNISH AND INSTALL NEW BRANCH CIRCUIT FROM









ISSUE/REVISION:		
REV.	DATE	DESCRIPTION
1	11/05/21	ISSUED FOR BID
$\sqrt{1}$	11/15/21	ISSUED FOR BID ADDENDUM

PROJECT:
GUARANTEED RATE FIELD HVAC REPLACEMENT PHASE XI

333 W 35TH STREET, CHICAGO, ILLINOIS 60616

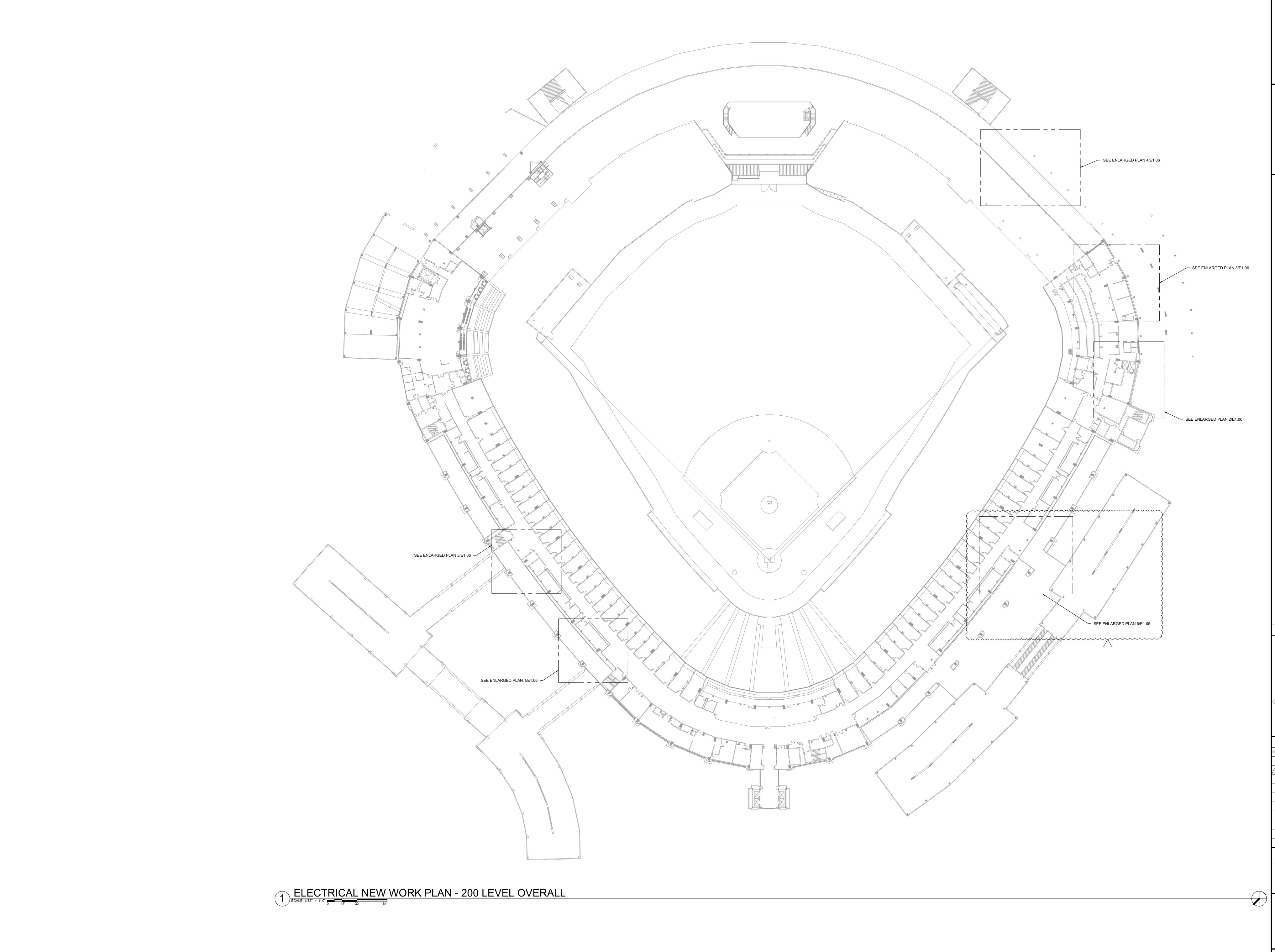
DRAWING TITLE:

ELECTRICAL NEW WORK
PLANS - 100 LEVEL ENLARGED
PLANS

DESIGNED BY:	TG
CHECKED BY:	ВТ
PROJECT NO:	21276
SCALE:	1/8" = 1'-0"
SHEET NO.	

PRELIMINARY - NOT FOR CONSTRUCTION

E1.04

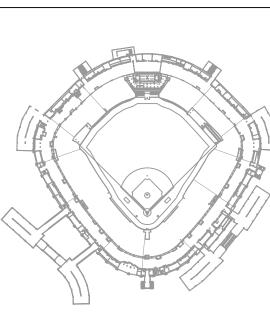


30 N. Wolf Rd., Second Floor Hillside, IL 60162 (708) 236-0300 (708) 236-0330 FAX





KEY PLAN



ISS	ISSUE/REVISION:		
REV.	DATE	DESCRIPTION	
-	11/05/21	ISSUED FOR BID	
$\sqrt{1}$	11/15/21	ISSUED FOR BID ADDENDUM	

PROJECT:
GUARANTEED RATE FIELD HVAC REPLACEMENT PHASE XI

333 W 35TH STREET, CHICAGO, ILLINOIS 60616

DRAWING TITLE:
ELECTRICAL NEW WORK PLAN
- 200 LEVEL OVERALL

DESIGNED BY: TG

CHECKED BY: BT

PROJECT NO: 21276

SCALE: 1/32" = 1'-0"

SHEET NO.

ISSUED FOR BID ADDENDUM

PRELIMINARY - NOT FOR CONSTRUCTION

E1.05



7. FURNISH AND INSTALL NEW 30A RATED COMBINATION DISCONNECT SWITCH/STARTER FOR NEW KITCHEN EXHAUST FAN. REFER TO MECHANICAL EQUIPMENT WIRING SCHEDULE FOR MORE INFORMATION. EC SHALL PROVIDE INTERLOCK WITH EXISTING KITCHEN HOOD BELOW NEW EXHAUST FAN LOCATION FOR ON/OFF

8. FURNISH AND INSTALL NEW POWER FOR MECHANICAL EQUIPMENT WITH INTEGRAL DISCONNECT SWITCH VIA THE EXISTING BRANCH CIRCUIT. EC SHALL EXTEND

9. FURNISH AND INSTALL NEW POWER FOR MECHANICAL EQUIPMENT. FURNISH AND INSTALL NEW JUNCTION BOX WITH A SWITCH AND ASSOCIATED CONDUIT AND

11. FURNISH AND INSTALL NEW 50A/2P CIRCUIT BREAKER FOR NEW CONDENSING UNIT. REFER TO MECHANICAL EQUIPMENT WIRING SCHEDULE FOR MORE

WIRES FROM PANELBOARD. REFER TO HVAC EQUIPMENT WIRING SCHEDULE FOR MORE INFORMATION.

THE MAKE, MODEL, AND AIC RATING OF THE EXISTING CIRCUIT BREAKERS IN THE PANELBOARD.

10. FURNISH AND INSTALL NEW CONDUIT AND WIRES FOR NEW CONDENSING UNIT PER THE MECHANICAL EQUIPMENT WIRING SCHEDULE.

FIRE ALARM CABLE IN CONDUIT TO EXISTING FIRE ALARM CONTROL PANEL LOCATED NEAR THE COMMAND CENTER ON GROUND LEVEL.

EXISTING BRANCH CIRCUIT AND CONDUIT AS NECESSARY FOR NEW CONDENSING UNIT LOCATION. REFER TO MECHANICAL EQUIPMENT WIRING SCHEDULE FOR

INFORMATION. EC SHALL DISCONNECT AND REMOVE (2) EXISTING SPARE CIRCUIT BREAKERS FOR THE INSTALLATION OF NEW CIRCUIT BREAKER. EC SHALL MATCH

12. FURNISH AND INSTALL DUCT SMOKE DETECTOR WITH SAMPLING TUBES ON SUPPLY AND RETURN SIDE OF THE DUCT. EC SHALL COORDINATE WITH MC FOR BEST LOCATION OF DUCT SMOKE DETECTORS. FURNISH AND INSTALL FIRE ALARM MONITOR MODULE FOR EACH DUCT SMOKE DETECTOR AND REMOTE TEST SWITCH.

FURNISH AND INSTALL FIRE ALARM CABLE IN CONDUIT TO EXISTING FIRE ALARM CONTROL PANEL LOCATED NEAR THE COMMAND CENTER ON GROUND LEVEL.

13. FURNISH AND INSTALL DUCT SMOKE DETECTOR WITH SAMPLING TUBES ON RETURN SIDE OF THE DUCT. EC SHALL COORDINATE WITH MC FOR BEST LOCATION OF DUCT SMOKE DETECTOR. FURNISH AND INSTALL FIRE ALARM MONITOR MODULE FOR DUCT SMOKE DETECTOR AND REMOTE TEST SWITCH. FURNISH AND INSTALL

14. FURNISH AND INSTALL NEW WATERPROOF, GFCI OUTDOOR RECEPTACLE. FURNISH AND INSTALL NEW BRANCH CIRCUIT FROM NEAREST RECEPTACLE CIRCUIT.

15. FURNISH AND INSTALL NEW FUSES FOR EACH NEW AHU ELECTRIC HEATING COIL. FURNISH AND INSTALL (3) NEW 350A FUSES FOR AHU-3A1 ELECTRIC HEATING COIL. FURNISH AND INSTALL (3) NEW 350A FUSES FOR AHU-3A2 ELECTRIC HEATING COIL. FURNISH AND INSTALL (3) NEW 150A FUSES FOR AHU-6B1 ELECTRIC

OPERATION INTERLOCKED WITH KITCHEN HOOD.

(708) 236-0300 (708) 236-0330 FAX





KEY PLAN

ISS	UE/REVIS	SION:
REV.	DATE	DESCRIPTION
-	11/05/21	ISSUED FOR BID
Λ	11/15/21	ISSUED FOR BID ADDENDUM

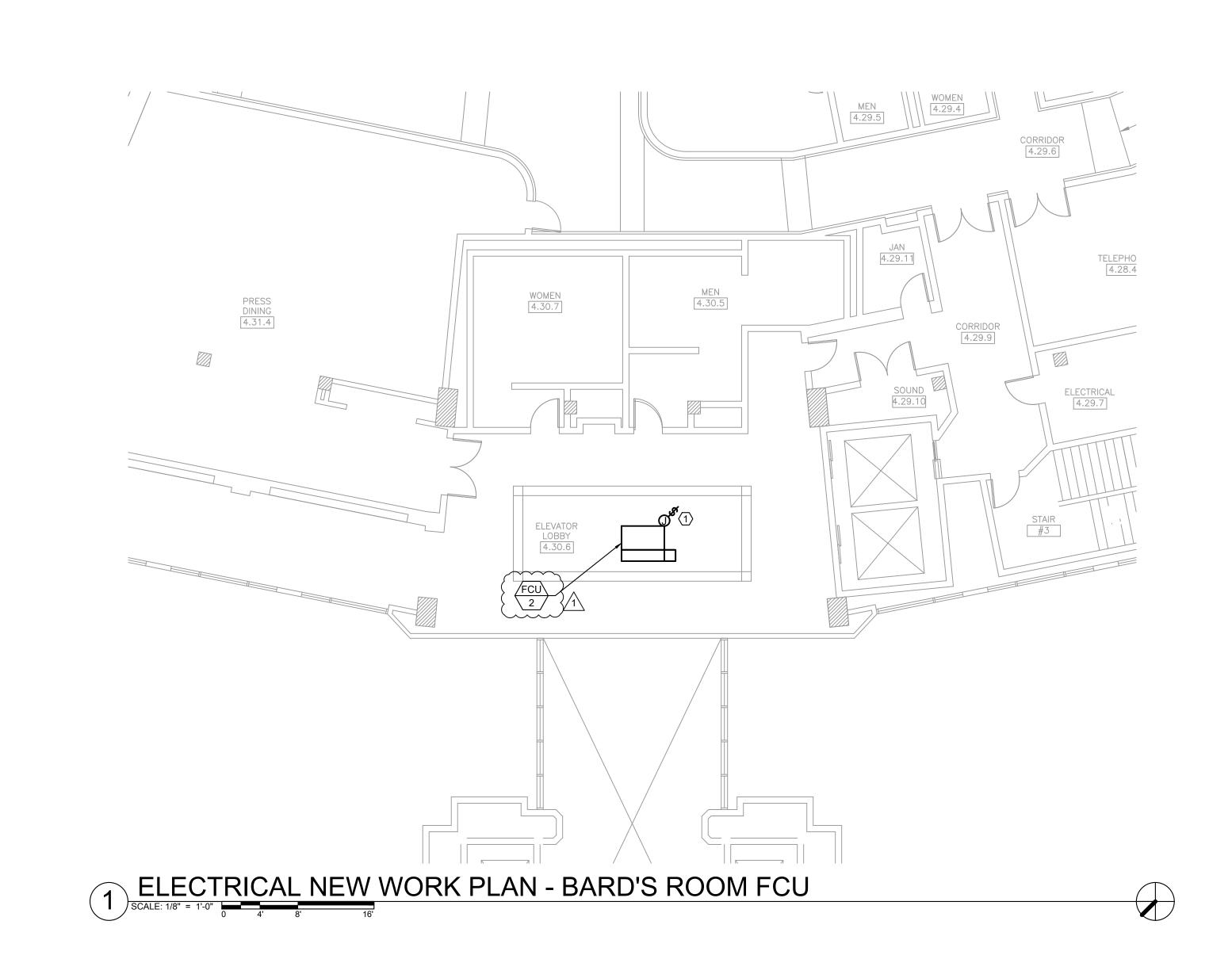
GUARANTEED RATE FIELD -HVAC REPLACEMENT PHASE XI

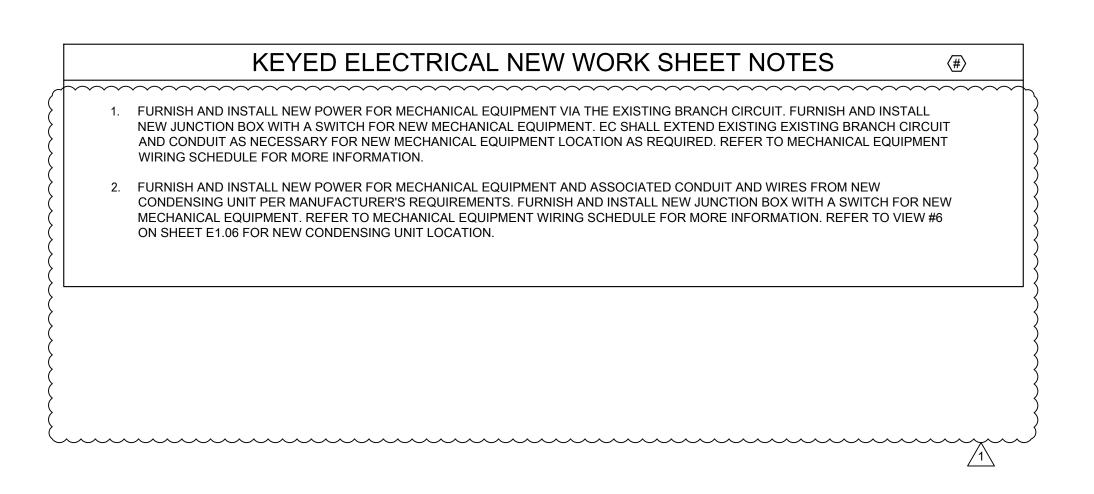
333 W 35TH STREET, CHICAGO, ILLINOIS 60616

> DRAWING TITLE: ELECTRICAL NEW WORK PLANS - 200 LEVEL ENLARGED

DESIGNED BY: CHECKED BY: PROJECT NO: 21276 1/8" = 1'-0" SCALE:

ISSUED FOR BID ADDENDUM PRELIMINARY - NOT FOR CONSTRUCTION





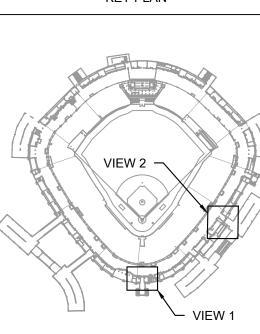








KEY PLAN



ISS	SSUE/REVISION:		
REV.	DATE	DESCRIPTION	
-	11/05/21	ISSUED FOR BID	
1	11/15/21	ISSUED FOR BID ADDENDUM	

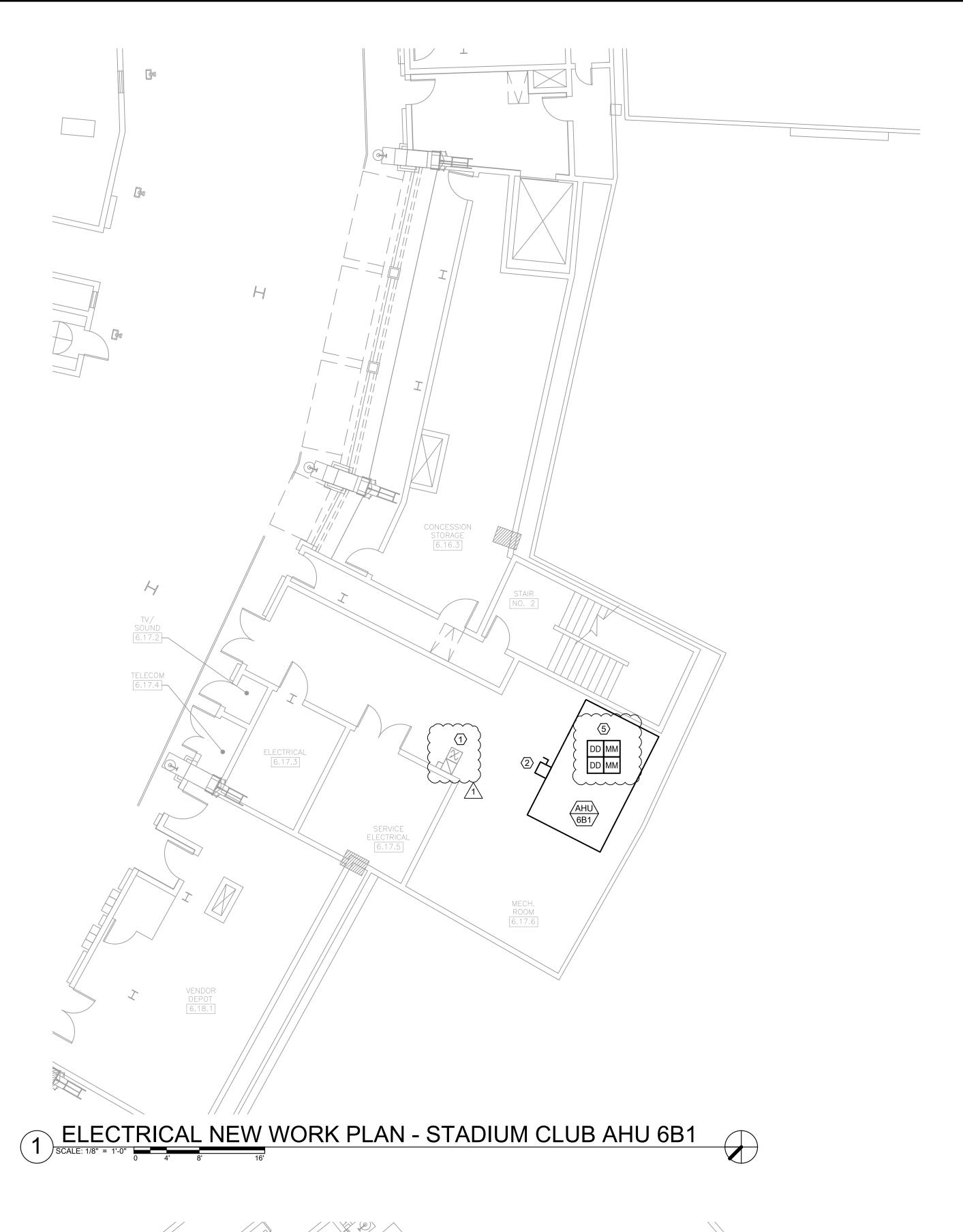
PROJECT:
GUARANTEED RATE FIELD HVAC REPLACEMENT PHASE XI

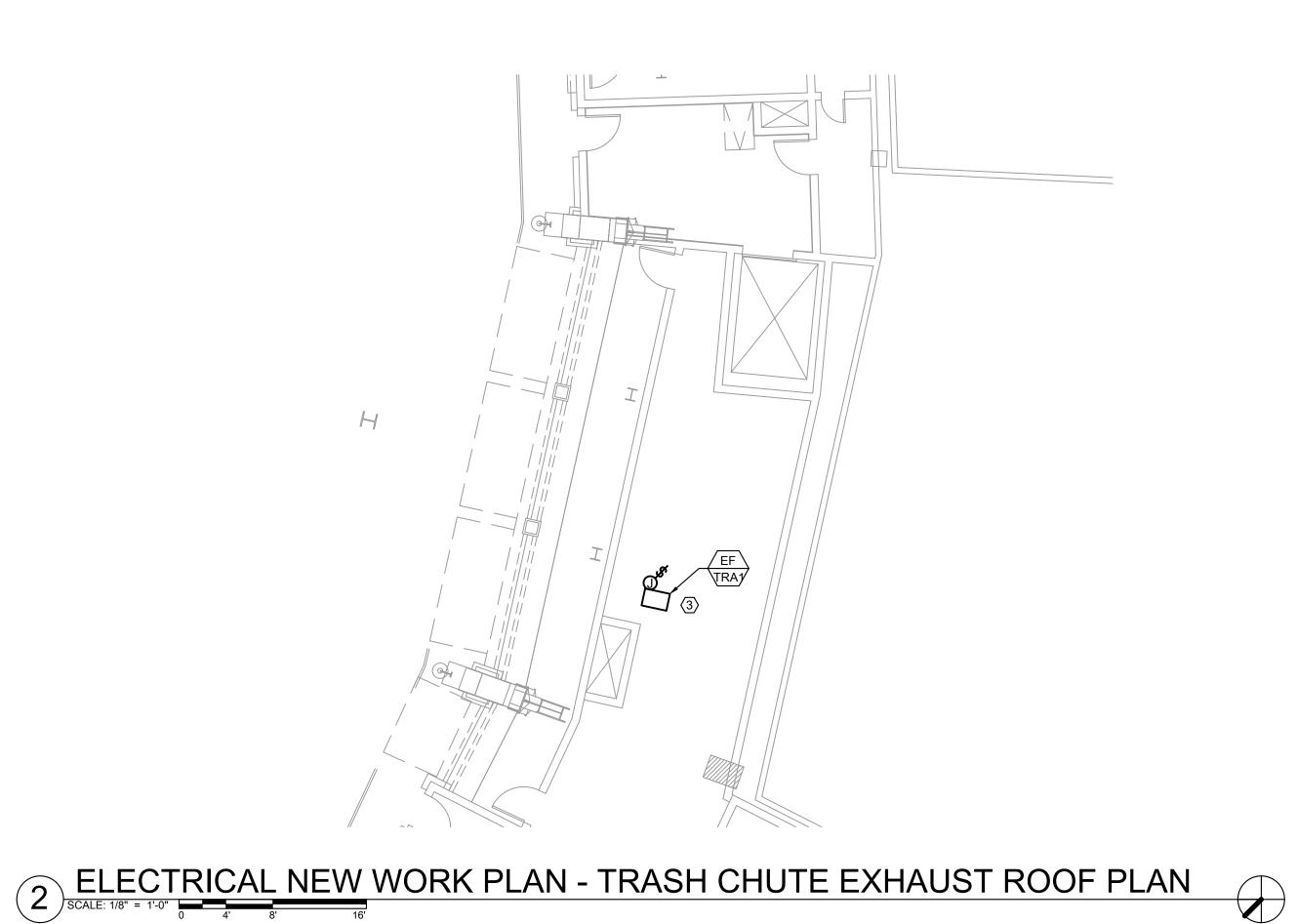
333 W 35TH STREET, CHICAGO, ILLINOIS 60616

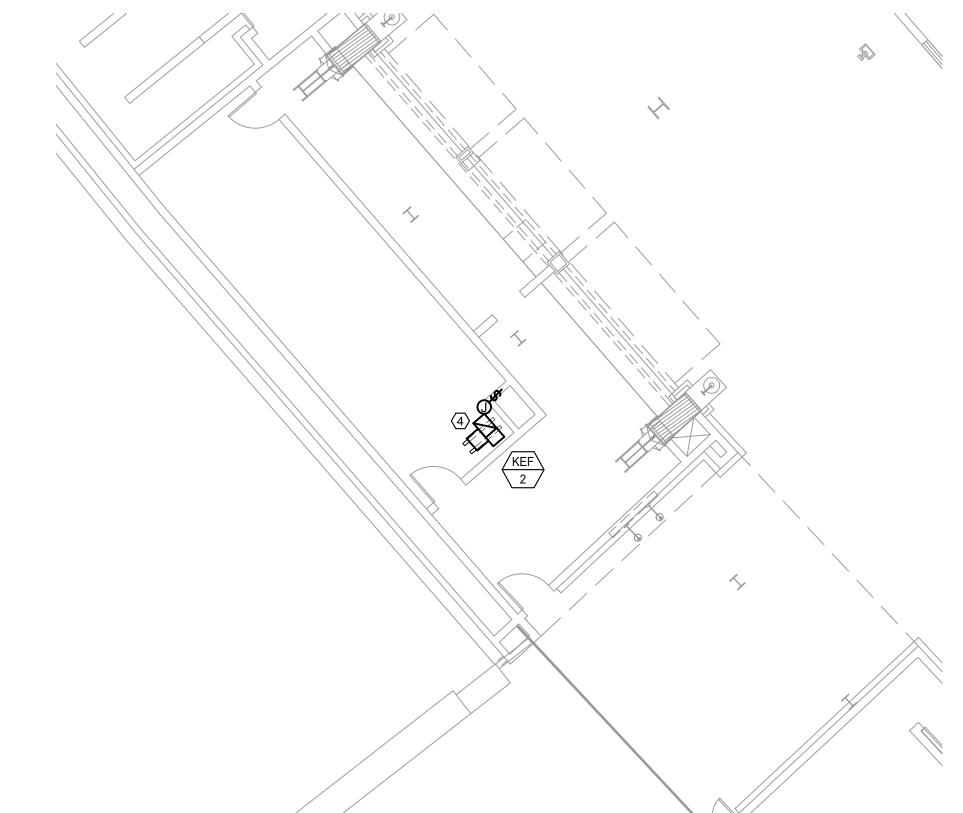
DRAWING TITLE:

ELECTRICAL NEW WORK
PLANS - 300 LEVEL ENLARGED
PLANS

DESIGNED BY:	TG
CHECKED BY:	ВТ
PROJECT NO:	21276
SCALE:	1/8" = 1'-0"
SHEET NO.	







KEYED ELECTRICAL NEW WORK SHEET NOTES 1. EXISTING VFD SHALL REMAIN. FURNISH AND INSTALL NEW POWER AND ASSOCIATED FEEDER AND CONDUIT FOR MECHANICAL EQUIPMENT. EC SHALL RE-USE EXISTING FEEDER AND CONDUIT TO EXISTING VFD. FURNISH AND INSTALL NEW CONDUIT AND WIRES FROM VFD TO EQUIPMENT. REFER TO HVAC EQUIPMENT WIRING SCHEDULE FOR MORE INFORMATION. EXISTING FEEDER AND CONDUIT TO NEW ELECTRIC HEATING COIL DISCONNECT SWITCH. FURNISH AND INSTALL NEW DISCONNECT SWITCH FOR ELECTRIC HEATING COIL. EC SHALL EXTEND EXISTING CONDUIT AND FEEDER AS REQUIRED. REFER 3. FURNISH AND INSTALL NEW POWER FOR MECHANICAL EQUIPMENT VIA THE EXISTING CONDUIT AND WIRES. EC SHALL RE-USE EXHAUST FAN LOCATION. REFER TO MECHANICAL EQUIPMENT WIRING SCHEDULE FOR MORE INFORMATION. EC SHALL REPLACE EXISTING STARTER OVERLOAD TO MATCH NEW MOTOR NAMEPLATE DATA. 4. FURNISH AND INSTALL NEW POWER FOR MECHANICAL EQUIPMENT VIA THE EXISTING CONDUIT AND WIRES. EC SHALL RE-USE EXISTING VARIABLE FREQUENCY DRIVE IN ELECTRICAL ROOM 6.38.03 FOR NEW EXHAUST FAN. EC SHALL EXTEND EXISTING CONDUIT AND WIRES AS NECESSARY FOR NEW EXHAUST FAN LOCATION. REFER TO MECHANICAL EQUIPMENT WIRING SCHEDULE FOR MORE INFORMATION. EC SHALL PROVIDE INTERLOCK WITH EXISTING KITCHEN HOOD BELOW NEW EXHAUST FAN LOCATION FOR ON/OFF OPERATION INTERLOCKED WITH KITCHEN HOOD. 5. FURNISH AND INSTALL DUCT SMOKE DETECTOR WITH SAMPLING TUBES ON RETURN SIDE OF THE DUCT. EC SHALL COORDINATE WITH MC FOR BEST LOCATION OF DUCT SMOKE DETECTOR. FURNISH AND INSTALL FIRE ALARM MONITOR MODULE FOR DUCT SMOKE DETECTOR AND REMOTE TEST SWITCH. FURNISH AND INSTALL FIRE ALARM CABLE IN CONDUIT TO EXISTING FIRE ALARM CONTROL PANEL LOCATED NEAR THE COMMAND CENTER ON GROUND LEVEL.

3 ELECTRICAL NEW WORK PLAN - KITCHEN EXHAUST DUCT ROOF PLAN
SCALE: 1/8" = 1'-0" 0 4' 8' 16'

30 N. Wolf Rd., Second Floor Hillside, IL 60162 (708) 236-0300 (708) 236-0330 FAX





VIEW 2

VIEW 1

VIEW 3		
ISSUE/REVISION:		
REV.	DATE	DESCRIPTION
-	11/05/21	ISSUED FOR BID
1	11/15/21	ISSUED FOR BID ADDENDUM

PROJECT:
GUARANTEED RATE FIELD HVAC REPLACEMENT PHASE XI

333 W 35TH STREET, CHICAGO, ILLINOIS 60616

DRAWING TITLE:

ELECTRICAL NEW WORK
PLANS - 500 LEVEL ENLARGED
PLANS

DESIGNED BY: TG

CHECKED BY: BT

PROJECT NO: 21276

SCALE: 1/8" = 1'-0"

SHEET NO.

11/15/2021 ISSUED FOR BID ADDENDUM
PRELIMINARY - NOT FOR CONSTRUCTION

E1.10

HVAC EQUIPMENT WIRING SCHEDULE																																			
			VOLT BUAGE		LOAD		OCPD		FEED FROM		FEEDER/BRANCH WIRING					EQUIPMENT CONTROLLER						LOCAL DISCONNECT SWITCH							EQUIPMENT CONNECTION						
TAG	DESCRIPTION	LOCATION	VOLT PHASE	HP	KW	FLA	MCA S	SIZE POL		CKT.	SETS N	O. SIZE	GND.	CONDUI	T P.B	F.B	I.B SIZE	TYPE	DISC. SW	OCPD	POLE	ENCL.	SEE NOTE F	P.B F.E	B I.B S	SIZE 1	YPE F	POLE	ENCL.	SEE NOTE P.B	F.B I.I	B RECP.	CPC HV	NC FWC	SEE NOTE
AC-1	AIR CONDITIONING UNIT	GROUND LEVEL - IT ROOM	208 1	- 1	-	1	-	15 2	FROM CU-1	-	1 :	2 12	12	3/4"	-	-		-	-	-	-	-	- E	E.C -	-	20	TS	I .	NEMA 1	3 E.C				ES -	-
AC-2	AIR CONDITIONING UNIT	GROUND LEVEL - HYDROTHERAPY ROOM	208 1	-	-	0.6	-	15 2	EXISTING PANEL	-	1 2	2 12	12	3/4"	-	-		-	-	-	-	-	- E	E.C -	-	20	TS	2	NEMA 1	3 E.C				ES -	-
AC-3	AIR CONDITIONING UNIT	GROUND LEVEL - HYDROTHERAPY ROOM	208 1	-	-	1.4	-	15 2	EXISTING PANEL	-	1 1 2	2 12	12	3/4"	-	-		-	-	-	-	-	- E	E.C -	-	20	TS	2	NEMA 1	3 E.C			- YF	ES -	-
CU-1	CONDENSING UNIT	GROUND LEVEL - SERVICE TUNNEL	208 1	-	-	28	-	35 2	RP1-4AC	13,15	1 1 2	2 8	10	3/4"	-	-		-	-	-	-	-	- E	E.C -	-	60 NOI	1-FUSE	2 N	NEMA 3R	3 E.C			- YF	<u> </u>	-
FCU-1	FAN COIL UNIT	GROUND LEVEL - COMMAND CENTER	120 1	1	-	10.7	-	20 1	RP-1-3C	37	1 1 2	2 12	12	3/4"	-	-		-	-	-	-	-	- E	E.C -	-	20	TS	- 1	NEMA 1	3 E.C				ES -	-
RF-1B-1	RETURN FAN	GROUND LEVEL - FOOD STORAGE	480 3	1 1/2	-	-	-	15 3	EXISTING PANEL	-	1 ;	3 12	12	3/4"	-	-		-	-	-	-	-	- E	E.C -	-	20	TS	· ·	NEMA 1	3 E.C	- -		- YE	ES -	4
FF-2-44-1	EXHAUST FAN	100 LEVEL - CONCESSIONS STAND	120 1	3/4	-	13.8	-	20 1	CP-2-5B-2	23	1 2	2 12	12	3/4"	_	-		-	-	-	-	-	- E	E.C -	-	20	TS	1	NEMA 1	3 E.C				ES -	-
→ RTU-1	ROOFTOP UNIT	100 LEVEL - SCOUTS LOUNGE ROOM	480 3	-	-	138.6	-	150 3	EXISTING PANEL	-	1 ;	3 1 0	6	1.1/2"	M.C	-		-	-	-	-	-	-		-	-	-	-	<u>-</u>	6 E.C				ES -	4
AC-4	AIR CONDITIONING UNIT	100 LEVEL - ICE CREAM STAND	208 1	-	-	0.85	-	15 2	RP-2-7B	40,42	1 1 :	2 12	12	3/4"	-	-		-	-	-	-	-	- E	E.C -	-	20	TS	2	NEMA 1	3 E.C	- -		- YF	ES -	-
AC-5	AIR CONDITIONING UNIT	100 LEVEL - ICE CREAM STAND	208 1	-	-	0.85	-	15 2	RP-2-7B	40,42	1 :	2 12	12	3/4"	-	-		-	-	-	-	-	- E	E.C -	-	20	TS	2	NEMA 1	3 E.C	- -			ES -	-
AC-6	AIR CONDITIONING UNIT	100 LEVEL - ICE CREAM STAND	208 1	-	-	0.85	-	15 2	RP-2-7B	40,42	1 2	2 12	12	3/4"	-	-		-	-	-	-	-	- E	E.C -	-	20	TS	2	NEMA 1	3 E.C	- -			ES -	4
CU-2	CONDENSING UNIT	200 LEVEL - ICE CREAM STAND ROOF	480 3	-	-	22	-	30 3	HP-2-7C	38,40,42	1 ;	3 10	10	3/4"	-	-		-	-	-	-	-	- E	E.C -	-	30 NOI	1-FUSE	3 N	NEMA 3R	₹ 3 E.C	- -		- YF	ES -	4
EF-104	EXHAUST FAN	200 LEVEL - ICE CREAM STAND ROOF	120 1	1/30	-	0.5	-	15 1	RP-2-7B	36	1 2	2 12	12	3/4"	-	-		-	-	-	-	-	- E	E.C -	-	20	TS	1 N	NEMA 3R	₹ 3 E.C			- YF	ĒS -	-
AHU-3A1	AIR HANDLING UNIT MOTOR	200 LEVEL - STADIUM CLUB	480 3	20	-	27	-	35 3	EXISTING PANEL	-	1 ;	3 8	10	3/4"	-	-		-	-	-	-	-	-		-	-	-	-	-	- E.C				ES -	4
AHU-3A1	ELECTRIC HEATING COIL	200 LEVEL - STADIUM CLUB	480 3	-	210	253	-	350 3	SWBD-1-3B	-	1 ;	3 500	3	2.1/2"	-	-		-	-	-	-	-	- E	E.C -	- 4	400 NOI	I-FUSE	3	NEMA 1	3 E.C			- YE	ES -	-
AHU-3A2	AIR HANDLING UNIT MOTOR	200 LEVEL - TRASH CHUTE ROOM	480 3	20	-	27	-	35 3	EXISTING PANEL	-	1 ;	3 8	10	3/4"	-	-		-	-	-	-	-	-		-	-	-	-	_	- E.C				ES -	4
AHU-3A2	ELECTRIC HEATING COIL	200 LEVEL - TRASH CHUTE ROOM	480 3	-	200	241	-	350 3	SWBD-1-3B	-	1 ;	3 500	3	2.1/2"	-	-		-	-	-	-	-	- E	E.C -	- 4	400 NOI	I-FUSE	3	NEMA 1	3 E.C				ES -	-
≻ KEF-1	KITCHEN EXHAUST FAN	200 LEVEL - KITCHEN	480 3	3	-	4.8	-	15 3	HP-3-4B	37,39,41	1 ;	3 12	12	3/4"	E.C	-	- #1	FVNR	30	10	3 N	NEMA 1	-		-	-	-	-	_	6 E.C	- -			ES -	4
CU-3	CONDENSING UNIT	200 LEVEL - ROOF OF PANTRY 4.20.1	480 3	-	-	14.9	-	25 3	EXISTING PANEL	-	1 ;	3 10	10	3/4"	-	-		-	-	-	-	-	- E	E.C -	-	30	TS	3 N	NEMA 3R	₹ 3 E.C	- -			ES -	4
CU-4	CONDENSING UNIT	200 LEVE - ROOF OF STORAGE ROOM	208 1	-	-	36	-	50 2	RP-3-2C	-	1 2	2 8	10	3/4"	-	-		-	-	-	-	-	- E	E.C -	-	60 NOI	I-FUSE	2 N	NEMA 3R	₹ 3 E.C			- YF	ES -	-
FCU-2	FAN COIL UNIT	300 LEVEL - ELEVATOR LOBBY	277 1	-	-	-	-	20 1	EXISTING PANEL		1 2	2 12	12	3/4"	-	-		-	-	-	-	-	- E	E.C -	-	20	TS		NEMA 1	3 E.C				ES -	-
EF-4C-01	EXHAUST FAN	300 LEVEL - STORAGE ROOM	120 1	-	-	-		20 1	EXISTING PANEL		1 :	2 12	12	3/4"	-	-		-	-	-	-	-		E.C -	-	20	TS	1	NEMA 1	3 E.C	- -		- YE	ES -	-
AC-7	AIR CONDITIONING UNIT	300 LEVEL - FOOD PANTRY	480 3	- 1	-	7	-	15 3	EXISTING PANEL	-	1 :	3 12	12	3/4"	-	-	- -	-	-	-	-	-	- E	E.C -	-	20	TS		NEMA 1	3 E.C	- -		- Yr	ES -	4
AC-8	AIR CONDITIONING UNIT	300 LEVEL - STORAGE ROOM	208 1	-	-	7	-	15 2	RP-3-2C	-	1 2	2 12	12	3/4"	-	-	- -	-	-	-	-	-	- E	E.C -	-	20	TS	2	NEMA 1	3 E.C				ES -	-
AHU-6B1	AIR HANDLING UNIT MOTOR	500 LEVEL - MECH ROOM 6.17.6	480 3	20	-	27	-	35 3	EXISTING PANEL	-	1 :	3 8	10	3/4"	-	-	- -	-	-	-	-	-	-	- -	-	-	-	-	-	- E.C	I		- YF	ES -	-
AHU-6B1	ELECTRIC HEATING COIL	500 LEVEL - MECH ROOM 6.17.6	480 3	-	85	102	-	150 3	SWBD-1-3B	-	1 :	3 1 0	6	1.1/2"	-	-		-	-	-	-	-	- E	E.C -	- 2	200 NOI	I-FUSE	3	NEMA 1	3 E.C	l l		- Yr	ES -	-
EF-TRA1	EXHAUST FAN	500 LEVEL - TRASH CHUTE EXHAUST	480 3	1	-	2.1	-	15 3	EXISTING PANEL	-	1 :	3 12	12	3/4"	-	-		-	-	-	-	-	- E	E.C -	-	20	TS	3 N	NEMA 3R	R 3 E.C	- -		- YF	FS -	4
KEF-2	KITCHEN EXHAUST FAN	500 LEVEL - KITCHEN EXHAUST ROOF	480 3	5	-	7.6	-	15 3	EXISTING PANEL		1 :	3 12	12	3/4"	-	-		-	-	-	-	-	-		-	-	-	-	-	6 E.C			- YE	<i>Ē</i> S -	4
	•	•	•					.	•	•	•	•	•	•				•	•				<u> </u>	<u> </u>		<u> </u>	<u> </u>	· · ·		· · · · · · · · · · · · · · · · · · ·		<u> </u>			-

E.C. SHALL REVIEW THE ARCHITECTURAL, MECHANICAL, PLUMBING, AND FIRE PROTECTION CONTRACT

E.C. SHALL VEFIRY IN THE FIELD THE OCPD REQUIREMENTS WITH THE OEM PRIOR TO INSTALLING CONDUIT.

E.C. SHALL PROVIDE CONNECTIONS TO MOTOR/LISTED EQUIPMENT. PROVIDE A Cu EQUIPMENT GROUND(EGC)

FROM THE DISCONNECT SWITCH TO THE MOTOR/LISTED EQUIPMENT CONNECTION POINT/JUNCTION BOX

DOCUMENTS, AND SHOP DRAWINGS FOR FINAL EQUIPMENT LOCATION, ELEVATION, AND POWER

4 E.C. SHALL VERIFY IN THE FIELD THE CONTACTOR/STARTER/VFD/PRMS/OEM CONTROLLER/DISCONNECT

E.C. SHALL LOCATE THE DISCONNECT SWITCH WITHIN 5FT AND WITHIN SIGHT OF THE EQUIPMENT.

2 E.C. SHALL REVIEW THE LOAD REQUIREMENTS WITH THE OEM PRIOR TO INSTALLING CONDUIT.

E.C. SHALL VERIFY IN THE FIELD THE THERMAL OVERLOAD RATINGS WITH THE OEM.

E.C. SHALL VERIFY IN THE FIELD WITH THE OEM PRIOR TO INSTALLING CONDUIT.

REQUIREMENTS PRIOR TO INSTALLING CONDUITS.

OCPD RATINGS ARE DERIVED FROM THE OEM'S SPECIFICATIONS.

RATINGS WITH THE OEM PRIOR TO INSTALLING CONDUIT.

PROVIDE OVERLOADS PER OEM RECOMMENDATIONS.

(708) 236-0300

(708) 236-0330 FAX

PB: PROVIDED BY (FURNISH AND INSTALL)

NOTE #1

E.C. SHALL PROVIDE MOUNTING/RACKING FOR STARTER TYPES (FVNR, FVR, PRMS, 2SP1W, & 2SP2W)

FB: FURNISHED BY

INSTALLED BY

E.C. SHALL PROVIDE THERMAL OVERLOADS FOR STARTERS PER OEM/FIELD VERIFICATION

E.C. SHALL PROVIDE TWO SETS OF FORM "C" AUX CONTACTS FOR ALL STARTER TYPES

ENCL.: NEMA ENCLOSURE

E.C. SHALL PROVIDE 120Vac CONTROL COIL FOR STARTERS TYPES (FVNR, FVR, 2SP1W, & 2SP2W)

E.C. SHALL PROVIDE 12000C CONTROL COIL FOR STARTLERS TIPES (FORM, 25FTW, & 25FTW, &

EPC: CORD AND PLUG CONNECTION

VNR: FULL VOLTAGE NON-REVERSING MAGNETIC STARTER

FOR VARIABLE FREQUENCY CONTROLLER

S: TOGGLE SWITCH

E.C. SHALL CALIBRATE SOLID STATE OVERLOADS PER OEM/FIELD VERIFICATION RESULTS

E.C. SHALL PROVIDE FOUR SETS OF FORM "C" AUX CONTACTS WITHIN THE VFD ENCLOSURE

E.C. SHALL PROVIDE OEM START-UP AND COMMISSIONING OF VFD PRIOR TO FINAL PUNCHLIST

NOTE #3

E.C. SHALL PROVIDE MOUNTING/RACKING FOR DISCONNECT SWITCHES

FUSE FUSE DISCONNECT SWITCH

NON-FUSE NON-FUSED DISCONNECT SWITCH

MAXIMUM HEIGHT AFF OF DISCONNECT SWITCH HANDLE SHALL NOT EXCEED 6'-3"

NOTE #4 E.C. SHALL PROVIDE MOONTING/RACKING FOR DISCONNECT SWITCHES

ALL DISCONNECT SWITCHES

ALL DISCONNECT SWITCH SHALL BE WITHIN SIGHT OF THE MOTOR/EQUIPMENT

AND SHALL NOT EXCEED A MAXIMUM DISTANCE OF 5 FEET FROM THE MOTOR/EQUIPMENT

MAXIMUM HEIGHT AFF OF DISCONNECT SWITCH HANDLE SHALL NOT EXCEED 6'-3"

NOTE #4 E.C. SHALL PROVIDE MOONTING/RACKING FOR DISCONNECT SWITCHES

ALL DISCONNECT SWITCHES

AND SHALL NOT EXCEED A MAXIMUM DISTANCE OF 5 FEET FROM THE MOTOR/EQUIPMENT

MAXIMUM HEIGHT AFF OF DISCONNECT SWITCH HANDLE SHALL NOT EXCEED 6'-3"

NOTE #4 E.C. SHALL PROVIDE MOONTING/RACKING FOR DISCONNECT SWITCHES

REPRESENTATIVE PROIR TO ENERGIZING MOTOR(S)/EQUIPMENT E.C. SHALL PROVIDE GROUNDING AND BONDING PER THE OEM SPECIFICATIONS

KEY PLAN

ISS	UE/REVIS	SION:										
REV.	DATE	DESCRIPTION										
-	11/05/21	ISSUED FOR BID										
$\sqrt{1}$	11/15/21	ISSUED FOR BID ADDENDUM										

PROJECT:
GUARANTEED RATE FIELD HVAC REPLACEMENT PHASE XI

333 W 35TH STREET, CHICAGO, ILLINOIS 60616

DRAWING TITLE:
ELECTRICAL SCHEDULES

DESIGNED BY:	TG
CHECKED BY:	ВТ
PROJECT NO:	21276
SCALE:	NO SCALE
SHEET NO.	

I. GENERAL CONDITIONS AND REQUIREMENTS

- A. ALL ELECTRICAL WORK INCLUDING BUT NOT LIMITED TO INSTALLATION, GROUNDING, EQUIPMENT, AND DEVICES SHALL CONFORM TO THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION AND APPLICABLE NATIONAL, STATE, CITY, AND MUNICIPAL BUILDING CODES.
- ALL ELECTRICAL WORK SHALL CONFORM TO NATIONAL AND LOCAL STANDARDS AND GUIDELINES INCLUDING BUT NOT LIMITED TO THE LATEST VERSIONS OF THE FOLLOWING:
- 1. ANSI AMERICAN NATIONAL STANDARDS INSTITUTE
- 2. ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IES)
- 3. NATIONAL ELECTRICAL SAFETY CODE (NESC)
- 4. NFPA NATIONAL FIRE PROTECTION ASSOCIATION: STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE (NFPA 70E)
- 5. UNDERWRITERS LABORATORY (OR OTHER RECOGNIZED INSPECTING AGENCY)
- ALL MATERIALS SHALL BE LISTED BY AN APPROVED LABORATORY AND SHALL BE NEW AND THE BEST OF THEIR RESPECTIVE KINDS AND SHALL BE INSTALLED AND APPLIED AS INTENDED AND REQUIRED BY THE MANUFACTURER.
- D. ELECTRICAL WORK SHALL INCLUDE, BUT NOT BE LIMITED TO:
- ALL MATERIALS
- 2. EQUIPMENT, TOOLS, AND LABOR REQUIRED FOR A COMPLETE AND CODE COMPLIANT
- ANY OSHA REQUIREMENTS THAT MAY APPLY TO THE WORK UNDER THIS CONTRACT INCLUDING BUT NOT LIMITED TO SAFETY MEETINGS. STRICT LOCK/OUT/TAG/OUT PROCEDURES, AND PROPER PROTECTIVE EQUIPMENT.
- 4. LABOR AND SPECIALTY MODELING SOFTWARE REQUIRED FOR INTERDISCIPLINARY
- COORDINATION AND FAMILIARIZATION WITH SITE CONDITIONS.
- 5. TRAINING AND GATHERING OF DOCUMENTATION FOR CLOSEOUT PROCEDURES. THE DRAWINGS AND SPECIFICATIONS SHALL BE UNDERSTOOD TO COVER COMPLETE SYSTEMS ACCORDING TO THEIR INTENT AND MEANING AS DESCRIBED HEREIN. THIS SPECIFICATION IS
- INCLUSIVE FOR EACH ITEM, REQUIRING ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO PROPERLY INSTALL, ALTER, ADJUST AND PUT IN OPERATION THE COMPLETE ELECTRICAL THIS CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING ALL ELECTRICAL COMPONENTS AND SYSTEMS AS REQUIRED FOR A FULLY FUNCTIONAL SYSTEM AND AS

DESCRIBED HEREIN. ALL EQUIPMENT AND DEVICES SPECIFIED AND ADDITIONALLY REQUIRED

WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. IT WILL BE THE RESPONSIBILITY

- OF THE ELECTRICAL CONTRACTOR TO PURCHASE ALL EQUIPMENT AND FURNISH LABOR AND EQUIPMENT FOR A COMPLETE CODE COMPLIANT OPERATING ELECTRICAL SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER LAYOUT AND CONSTRUCTION OF THE
- SPECIFIC VOLTAGE AND CURRENT REQUIREMENTS ON THE ELECTRICAL DRAWINGS SHALL NOT RELIEVE THIS CONTRACTOR OF THE RESPONSIBILITY TO VERIFY THE VOLTAGE PRIOR TO PURCHASING OR ROUGH-IN WORK. THIS CONTRACTOR SHALL REVIEW ALL DEVICES AND EQUIPMENT FURNISHED BY HIS/HER CONTRACT AND THOSE FURNISHED BY OTHER CONTRACTORS ARE IN AGREEMENT WITH THE DATA SHOWN ON THE DRAWINGS. THE E.C. SHALL

PROVIDE FEEDERS, CABLE AND DEVICES THAT ARE IN ACCORDANCE WITH CODE.

WORK INCLUDED IN THIS CONTRACT, INSTALLED ACCORDING TO THE APPLICABLE BUILDING

- ITEMS, ACCESSORIES, AND DEVICES REASONABLY INFERABLE AS NECESSARY FOR THE COMPLETE AND PROPER OPERATION OF ANY SYSTEM SHALL BE PROVIDED BY THE CONTRACTOR FOR SUCH SYSTEM(S), WHETHER THEY ARE SPECIFICALLY CALLED FOR BY THE DRAWINGS AND/OR SPECIFICATIONS OR NOT.
- THE DRAWINGS MAY NOT SHOW COMPLETE OR ACCURATE DETAILS OF THE EXISTING FACILITY IN EVERY RESPECT. EXACT LOCATIONS AND RELATIONS ARE TO BE DETERMINED IN THE FIELD AND SHALL BE TO THE SATISFACTION OF THE OWNER. THIS CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL FIELD MEASUREMENTS AND EXACT EQUIPMENT LOCATIONS.
- DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF CONDUIT AND RACEWAYS ARE SHOWN FOR CONCEPT. BUT DO NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING, NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND BUILDING CONSTRUCTION. ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.
- IT IS INTENDED THAT EQUIPMENT SHALL BE LOCATED SYMMETRICALLY WITH THE ARCHITECTURAL ELEMENTS OF THE BUILDING, NOTWITHSTANDING THE FACT THAT LOCATIONS INDICATED BY THESE DRAWINGS MAY BE DISTORTED FOR CLEARNESS OF PRESENTATION. ENGINEER HAS RIGHT TO MOVE ANY EQUIPMENT OR DEVICE BY 10 FEET WITHOUT ANY ADDITIONAL COST TO OWNER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO ROUGH-IN.
- M. CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL X-RAY IMAGING, CORING, CUTTING, PATCHING, REPAIRING AND REFINISHING OF BUILDING CONSTRUCTION REQUIRED TO ACCOMMODATE THE INSTALLATION OF THEIR WORK. ALL PATCHING, REPAIRING AND REFINISHING WORK SHALL BE PERFORMED BY THOSE REGULARLY INVOLVED IN THAT TRADE AND SHALL MATCH THE NEW CONSTRUCTION AS CLOSELY AS POSSIBLE. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE ANY EXISTING BUILDING CONSTRUCTION OR ITEMS THAT ARE TO REMAIN. ANY EXISTING FINISHES THAT ARE DAMAGED DURING THE INSTALLATION OF NEW WORK SHALL BE REPAIRED, REPLACED AND PAID FOR BY THE INSTALLING CONTRACTOR, TO THE SATISFACTION OF THE ENGINEER AND OWNER.
- THIS CONTRACTOR IS RESPONSIBLE FOR SCHEDULING DELIVERY, RECEIVING, UNLOADING. UNCRATING, STORING, SETTING IN PLACE, AND PROTECTING FROM DAMAGE, VANDALISM, THEFT OR WEATHER ALL NEW EQUIPMENT FURNISHED BY THIS CONTRACTOR FOR THE ENTIRETY OF CONSTRUCTION. THIS REQUIREMENT ALSO APPLIES TO ITEMS FURNISHED BY THE OWNER TO THE ELECTRICAL CONTRACTOR. THIS CONTRACTOR SHALL COORDINATE THE DELIVERY TO MEET THE PROJECT COMPLETION DATES AS ESTABLISHED BY THE OWNER.
- REFER TO ARCHITECTURAL DRAWINGS FOR EXISTING BUILDING CONSTRUCTION THAT IS TO REMAIN AND, THEREFORE, SUBJECT TO PATCHING, REPAIRING, AND REFINISHING.
- ANY ITEMS AND EQUIPMENT SCHEDULED TO BE REMOVED THAT THE OWNER WANTS TO RETAIN SHALL BE REMOVED CAREFULLY (SO AS NOT TO DAMAGE THEM) AND TURNED OVER TO THE OWNER. ALL OTHER ITEMS TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE SITE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN CLEANUP DURING CONSTRUCTION. IF CONTRACTOR FAILS TO PROVIDE SUCH CLEANUP, THE ENGINEER WILL DIRECT ANOTHER CONTRACTOR TO PERFORM THE CLEAN-UP AND THE NEGLIGENT CONTRACTOR SHALL PAY THE ASSOCIATED BACK-CHARGES AS DEEMED APPROPRIATE BY THE ENGINEER.
- ACCESS TO WORK AREAS, INCLUDING WORK SCHEDULED THEREIN. MUST HAVE PRIOR APPROVAL OF THE OWNER. ALL WORK AREAS WILL BE KEPT CLEAN BY THIS CONTRACTOR WITH THOROUGH CLEAN UP AT END OF EACH DAY'S WORK. ALL EXISTING ELECTRIC SERVICE EQUIPMENT IS TO REMAIN OPERATIONAL DURING THE CONSTRUCTION PERIOD. ANY TEMPORARY WIRING OR REROUTING OF CIRCUITRY TO ACHIEVE THIS IS BY THE ELECTRICAL CONTRACTOR.
- CONTRACTOR SHALL FURNISH MATERIALS AND USE INSTALLATION METHODS SUITABLE FOR THE ENVIRONMENTAL CONDITIONS OF THE AREA IN WHICH EQUIPMENT, FIXTURES AND DEVICES ARE
- CONTRACTOR SHALL PROVIDE SLEEVES IN BEAMS, FLOORS, COLUMNS AND WALLS, AS REQUIRED BY JOB SITE CONDITIONS, AND/OR AS SPECIFIED, WHEN INSTALLING THEIR WORK. ALL BEAMS AND COLUMNS WHICH ARE REQUIRED TO BE SLEEVED SHALL BE CUT AND REINFORCED AS REQUIRED BY FIELD CONDITIONS AND LOCATIONS AND SIZES SHALL BE CHECKED AND APPROVED BY ENGINEER BEFORE CONTRACTOR CUTS ANY BUILDING STRUCTURAL MEMBER.
- CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND STRUCTURAL CONTRACT DRAWINGS (BEFORE SUBMITTING THEIR BIDS) TO FAMILIARIZE THEMSELVES WITH THE EXTENT OF THE GENERAL CONTRACTORS WORK, CEILING HEIGHTS AND CLEARANCE FOR INSTALLING THEIR
- CONTRACTOR SHALL STORE ALL MATERIALS AND EQUIPMENT SHIPPED TO THE SITE IN A PROTECTED AREA. IE MATERIAL IS STORED OUTSIDE OF THE BUILDING, IT MUST BE STORED OFF THE GROUND A MINIMUM OF SIX INCHES (6") ON 6' x 6' PLANKS AND/OR WOOD PALLETS. ALL PIPING AND DUCTWORK WILL HAVE THE ENDS CLOSED TO KEEP OUT DIRT AND OTHER DEBRIS. NO EQUIPMENT SHALL BE STORED ON THE SITE UNLESS IT IS SITTING ON WOOD PLANKS AND COMPLETELY PROTECTED WITH WEATHERPROOF COVERS. ALL MATERIALS AND EQUIPMENT MUST BE COMPLETELY COVERED WITH WATERPROOF TARPS OR VISQUIN.
- W. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL NON-ACCESSIBLE SYSTEM DEVICES, PULL BOXES AND EQUIPMENT, ETC. TO ACCESSIBLE CEILING AREAS. E.C. SHALL INCLUDE ALL COMPLETE COSTS FOR RELOCATION AND VERIFY SUCH CONDITIONS WITH ARCHITECTURAL CEILING PLANS PRIOR TO FINAL BID.
- ELECTRICAL CONTRACTOR SHALL FOLLOW NEMA NO. PB-1.1 1979 PUBLICATION, PART V PROCEDURES PRIOR TO ENERGIZATION OF ANY SWITCHGEAR. THE ELECTRICAL CONTRACTOR SHALL USE ONLY TRAINED AND AUTHORIZED PROFESSIONAL ELECTRICAL CRAFT PERSONS. THE E.C. SHALL FURNISH ANY PERSONNEL SAFETY EQUIPMENT, LADDERS, MAN-LIFTS, AND POWERED HAND TOOLS THAT MAY BE REQUIRED. ALL POWERED TOOLS SHALL BE IN GOOD CONDITION WITH ALL GROUND CONDUCTOR IN PROPER OPERATION.
- VERIFY CODE CLEARANCES FOR ALL NEW ELECTRICAL WORK BEFORE PROCEEDING WITH CONSTRUCTION. PROVIDE ADEQUATE WORKING CLEARANCES, DEDICATED EQUIPMENT SPACE. AND LEAK PROTECTION SYSTEMS AS REQUIRED BY APPLICABLE ELECTRICAL CODES. COORDINATE USAGE OF AVAILABLE SPACE WITH ALL TRADES. IN THE EVENT OF CONFLICTS, NOTIFY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- II. CONFLICT IN DOCUMENTS
- A. GENERALLY, THE DRAWINGS ESTABLISH THE LOCATION, QUANTITY AND RELATIONSHIP OF THE PARTS OF THE WORK, AND THE SPECIFICATIONS DEFINE THE TYPE AND QUALITY OF MATERIALS AND WORKMANSHIP. WORK SHOWN IN THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, OR REQUIRED BY THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS. SHALL BE PROVIDED AS IF FULLY PROVIDED FOR IN BOTH. IN THE CASE OF CONFLICTS BETWEEN THE DRAWINGS AND SPECIFICATIONS, OR WITHIN EITHER DOCUMENT, THE ENGINEER SHALL DETERMINE THE INTENT. IN SUCH CASES, IN GENERAL, THE MORE STRINGENT REQUIREMENT CONCERNING GREATER QUANTITY, QUALITY AND/OR RESULTING IN A HIGHER COST SHALL GOVERN WITHOUT FURTHER COST TO THE OWNER.
- III. SHUT-DOWN OF SYSTEM
- A. COORDINATE AND SEQUENCE DEMOLITION SO AS NOT TO CAUSE SHUTDOWN OF OPERATION OF SURROUNDING AREAS. B. SHUT-DOWN PERIODS:
- ARRANGE TIMING OF SHUT-DOWN PERIODS OF SYSTEM, SERVICE WITH OWNER. DO NOT SHUT DOWN ANY SERVICE, WITHOUT PRIOR WRITTEN APPROVAL. PROVIDE NOTICE MINIMUM 15 WORKING DAYS IN ADVANCE.
 - 2. KEEP SHUT-DOWN PERIOD TO MINIMUM OR USE INTERMITTENT PERIOD AS DIRECTED BY THE
 - 3. MAINTAIN LIFE-SAFETY SYSTEM IN FULL OPERATION IN OCCUPIED FACILITIES, OR PROVIDE NOTICE MINIMUM 15 WORKING DAYS IN ADVANCE.
 - 4. THE SYSTEM SHUT-DOWN SHALL BE DONE DURING OFF-BUSINESS HOURS.

IV. VISIT TO SITE

- . THIS CONTRACTOR SHALL CAREFULLY EXAMINE THE ENTIRE SET OF CONTRACT DOCUMENTS, VISIT THE SITE, AND FULLY FAMILIARIZE HIMSELF/HERSELF AS TO ALL CONDITIONS AND MATTERS THAT CAN AFFECT THE WORK OR THE COST THEREOF. THIS CONTRACTOR IS RESPONSIBLE FOR NOTIFYING ENGINEER IN WRITING, AND PRIOR TO BID, OF DISCREPANCIES OR OMISSIONS FROM THE DRAWINGS, SPECIFICATIONS OR OTHER DOCUMENTS. OBTAIN CLARIFICATION PRIOR TO SUBMITTING ANY BID. LACK OF NOTIFICATION SHALL BE INTERPRETED TO INDICATE NO DISCREPANCIES OR CONFLICTS EXIST AND ADDITIONAL COMPENSATION WILL NOT BE GRANTED AFTER AWARD OF CONTRACT FOR ANY WORK REQUIRED TO COMPLY WITH THESE
- REQUIREMENTS OR INTENT. SUBMISSION OF PROPOSALS SHALL BE CONSIDERED EVIDENCE THAT THE CONTRACTOR HAS VISITED AND EXAMINED THE SITE.

TO VISIT, EXAMINE AND VERIFY. D. THE ENGINEER WILL MAKE PERIODIC VISITS TO THE JOBSITE TO OBSERVE THE PROGRESS OF THE

C. NO EXTRA PAYMENT WILL BE ALLOWED THE CONTRACTOR FOR EXTRA WORK CAUSED BY FAILURE

WORK AND TO OBSERVE ITS ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE ENGINEER IS NOT A GUARANTOR OF THE CONTRACTOR'S WORK, RESPONSIBLE FOR JOBSITE SAFETY, RESPONSIBLE FOR SUPERINTENDING, OR IN CHARGE OF THE ERECTION AND/OR CONSTRUCTION OF THE WORK. THE ENGINEER IS NOT RESPONSIBLE FOR SAFETY OR ADEQUACY OF ANY SHIPMENT, BUILDING, SCAFFOLDING, FORMS OR OTHER WORK AIDS USED.

V. LAWS, ORDINANCES, AND REGULATIONS

- A. ALL SYSTEMS SHALL CONFORM IN FULL AND/OR PART SHALL CONFORM TO ALL PERTINENT LAWS, ORDINANCES AND REGULATIONS OF ALL BODIES HAVING JURISDICTION AT ALL GOVERNING LEVELS. NOTWITHSTANDING ANYTHING IN THESE DRAWINGS OR SPECIFICATIONS TO THE CONTRARY. IN CASE OF CONFLICT BETWEEN GOVERNING LEVELS, THE MORE STRINGENT LAWS
- B. THE CONTRACTOR SHALL PAY ALL FEES AND OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED BY ANY AUTHORITY HAVING JURISDICTION IN CONNECTION WITH HIS
- C. WHERE APPLICABLE, ALL NEW MATERIAL SHALL BEAR THE UNDERWRITER'S (UL) SEAL OF APPROVAL, AS WELL AS THOSE SEALS OF ALL MUNICIPALITIES HAVING JURISDICTION. CERTIFICATES TO THIS AFFECT TO BE FURNISHED TO ARCHITECT UPON REQUEST.
- D. THE ELECTRICAL CONTRACTOR SHALL SECURE AND PAY FOR ALL LICENSES REQUIRED BY THE GOVERNING BODIES TO OPERATE AS AN ELECTRICAL CONTRACTOR FOR THIS PROJECT.

- A. ALL WORK TO BE PERFORMED SHALL BE DONE BY QUALIFIED MECHANICS. ALL MECHANICS IN THE EMPLOY OF THIS CONTRACTOR ON THIS PROJECT SHALL BE SKILLED IN THE PHASES OF THE WORK TO WHICH THEY ARE USED.
- B. ALL WORK MUST BE DONE IN WORKMANLIKE MANNER TO THE COMPLETE SATISFACTION OF THE ENGINEER. ALL MATERIAL SHALL BE NEW, OF THE QUALITY SPECIFIED, FREE FROM DEFECTS AND IN FIRST-CLASS CONDITION. ALL VERTICAL CONDUITS SHALL BE PLUMB.
- C. THE COMPLETE SYSTEM SHALL MEET THE REQUIREMENTS OF THE LOCAL ELECTRICAL CODE AND AS MAY BE MODIFIED BY LOCAL AMENDMENTS.
- D. THIS CONTRACTOR SHALL ESTABLISH SAFE WORKING PROCEDURES FOR THE PROTECTION OF THE WORKING CREW AND NON-WORKING OCCUPANTS IN ALL PHASES OF WORK, COMPLYING WITH THE APPLICABLE PROVISIONS OF ALL CITY, STATE AND FEDERAL SAFETY LAWS (OSHA). THIS SHALL INCLUDE "LOCK-OUT/TAG-OUT" AND REQUIRED GROUNDING. WORK UNDER THIS CONTRACT SHALL NOT BE DONE ON ENERGIZED CIRCUITS.

VII. MATERIALS AND EQUIPMENT

- A. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL CONFORM TO THE GRADE, QUALITY AND STANDARD SPECIFIED HEREIN. ALL EQUIPMENT OFFERED UNDER THESE SPECIFICATIONS SHALL BE LIMITED TO PRODUCTS REGULARLY PRODUCED AND RECOMMENDED FOR SERVICE, IN ACCORDANCE WITH ENGINEERING DATA, RATINGS OR OTHER COMPREHENSIVE LITERATURE MADE AVAILABLE TO THE PUBLIC AND IN EFFECT AT THE TIME OF OPENING OF BIDS.
- B. EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR TYPE AND CAPACITY OF EACH PIECE OF EQUIPMENT USED, UNLESS INDICATED OTHERWISE. THE ENGINEER MAKES NO REPRESENTATION AS TO WHETHER OR NOT ANY HAZARDOUS OR CONTAMINATED MATERIALS (INCLUDING BUT NOT LIMITED TO ASBESTOS, PCB'S, CONTAMINATED SOILS, ETC.) ARE PRESENT WITHIN THE EXISTING BUILDING OR ON THE SITE. WORK SHOWN ON THE DRAWINGS AND/OR INDICATED IN THE SPECIFICATIONS SHALL NOT BE CONSTRUED TO CALL FOR CONTACT WITH ANY OF THESE MATERIALS. IF THESE MATERIALS ARE ENCOUNTERED OR SUSPECTED THE CONTRACTOR SHALL NOT DISTURB THEM AND SHALL CONTACT THE ENGINEER IMMEDIATELY.
- C. ALL INSTRUMENTS, APPARATUS AND EQUIPMENT SHALL BE TESTED AND PROVED TO BE ELECTRICALLY AND MECHANICALLY WITHOUT DEFECTS. THE ELECTRICAL SYSTEM SHALL BE TESTED FOR GROUNDS OR SHORTS. IF THE TROUBLE IS WITHIN THE CIRCUIT WIRING, ALL SHORTED OR GROUNDED WIRES SHALL BE REPLACED AND THEN RE-TESTED. ALL METERS. CABLES, EQUIPMENT OR APPARATUS NECESSARY FOR MAKING ALL TESTS SHALL BE FURNISHED AND PROVIDED BY THIS CONTRACTOR. ANY TESTING OR EQUIPMENT MUST CONFORM TO OSHA REQUIREMENTS.

VIII. COORDINATION WITH OTHER TRADES

- A. THE SEQUENCE FOR THE INSTALLATION OF ALL WORK SHALL BE COORDINATED BETWEEN ALL CONTRACTORS ON THE PROJECT AND IN STRICT ACCORDANCE WITH ENGINEER AND OWNERS STIPULATION AS CALLED FOR IN THE SPECIFICATION AND/OR AS DIRECTED.
- B. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE LABOR AND SOFT MATERIALS REQUIRED FOR COORDINATING CONSTRUCTION INSTALLATION ELECTRONICALLY WITH OTHER TRADES USING CURRENT SOFTWARE AND MODELING SYSTEMS. THE CONTRACTOR SHALL CONFIRM MODELING REQUIREMENTS PRIOR TO BID.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THAT WORK OF THE OTHER TRADES. CONTRACTOR IS COMPLETELY RESPONSIBLE IF FAILURE ON HIS PART TO COORDINATE EFFORTS RESULTS IN EXTRA WORK HAVING TO BE DONE TO COMPLETE A TASK. AS SUCH, HIS FAILURE SHALL NOT BE THE BASIS FOR ANY EXTRA CHARGE AGAINST THE OWNER.
- D. CONTRACTOR SHALL CHECK DRAWINGS OF OTHER TRADES TO VERIFY THAT SPACES IN WHICH THEIR WORK WILL BE INSTALLED IS CLEAR OF OBSTRUCTIONS. WORK SHALL BE INSTALLED TO MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITION AT ALL POINTS IN THE BUILDING. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, CONTRACTOR SHALL NOTIFY ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION OF THEIR WORK. CONTRACTOR SHALL FURNISH OTHER TRADES ADVANCE INFORMATION AND/OR SHOP DRAWINGS ON LOCATIONS AND SIZES OF CONDUITS, RACEWAYS, EQUIPMENT, FRAMES, BOXES, SLEEVES AND OPENINGS, ETC. NEEDED FOR THEIR WORK TO PERMIT OTHER TRADES AFFECTED TO INSTALL THEIR WORK PROPERLY AND WITHOUT DELAY.
- E. WHERE THERE IS EVIDENCE THAT WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, ALL TRADES SHALL MEET ON JOB SITE TO WORK OUT SPACE CONDITIONS, AND MAKE SATISFACTORY ADJUSTMENTS TO INSTALLATION OF THE NEW WORK. CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL ELECTRICAL DEVICES AND EQUIPMENT PRIOR TO ROUGH-IN WITH FIELD CONDITIONS, SHOP DRAWINGS AND WORK OF OTHER TRADES. EACH CONTRACTOR SHALL BE RESPONSIBLE, AT THEIR OWN EXPENSE, FOR THE REMOVAL AND REINSTALLATION OF ANY PART OF THEIR WORK IF SAME WAS INSTALLED WITHOUT CONSULTING WITH OTHER TRADES BEFORE INSTALLING THEIR WORK.
- F. REFER TO THE ARCHITECTURAL, MECHANICAL AND PLUMBING SHEETS AND SPECIFICATIONS FOR EQUIPMENT LOCATIONS, LOADS, AND ADDITIONAL REQUIREMENTS.
- G. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION OF HVAC EQUIPMENT TO BE WIRED PRIOR TO ROUGH-IN.
- H. THE EC SHALL REVIEW AND BE FAMILIAR WITH THE MECHANICAL DRAWINGS AND SCHEDULES FOR FINAL EQUIPMENT SELECTION. THE EC SHALL VERIFY HORSEPOWER, VOLTAGE, PHASES, AMPACITY, AND SPECIAL MOUNTING BEFORE SUBMITTING HIS BID. ANY SPECIAL CONDITIONS OR CONFLICTS MUST BE INDICATED IN WRITING TO THE ENGINEER PRIOR TO OR AT THE TIME OF BID. BEFORE STARTING ANY DEMOLITION ON HVAC EQUIPMENT WHICH HAS AN ELECTRICAL CONNECTION.THE MECHANICAL CONTRACTOR SHALL MEET WITH THE ELECTRICAL CONTRACTOR
- TO IDENTIFY ALL SUCH EQUIPMENT. THE ELECTRICAL CONTRACTOR WILL DISCONNECT THE POWER TO EACH UNIT, REMOVE CONDUIT, WIRING, DISCONNECT SWITCHES, AND STARTERS UNDER HIS CONTRACT. MECHANICAL CONTRACTOR WILL REMOVE ALL EQUIPMENT, ELECTRICAL TEMPERATURE CONTROL AND WIRING UNDER HIS CONTRACT. MECHANICAL CONTRACTOR SHALL NOT START DEMOLITION UNTIL ALL ELECTRICAL POWER HAS BEEN SAFELY DISCONNECTED FROM EQUIPMENT TO BE DEMOLISHED.

IX. SUBMITTALS

- A. THE CONTRACTOR SHALL PROVIDE COMPLETE SHOP DRAWINGS INDICATING EQUIPMENT. DEVICE. AND RACEWAY LOCATIONS, INVERTS FOR OUTDOOR DEVICES, AND COMPLETE INSTALLATION DRAWINGS. THE DRAWINGS SHALL BE MAINTAINED AT THE JOB SITE AND SHALL BE UPDATED AND MAINTAINED IN AS NEAR AS POSSIBLE TO THE "AS INSTALLED" STATUS OF THE PROJECT AND SHALL BE KNOWN AS "CONTRACT RECORD DOCUMENTS". THE DRAWINGS SHALL BE REVISED IN AN AUTOCAD FORMAT AND SUBMITTED TO THE ENGINEER FOR REVIEW. THE FINAL ELECTRICAL PAYOUT SHALL NOT BE MADE TO THE EC UNTIL THE CONTRACT RECORD DOCUMENTS HAVE BEEN RECEIVED AND REVIEWED BY THE ENGINEER. THE ENGINEER WILL PROVIDE WRITTEN CONFIRMATION TO THE OWNER AND GENERAL CONTRACTOR FOR FINAL PAYOUT BASED ON THE REVIEW OF THE CONTRACT RECORD DOCUMENTS.
- B. PROVIDE PRODUCT DATA FOR ALL EQUIPMENT AND DEVICES SUCH AS PANELBOARDS. DISCONNECT SWITCHES, CONDUIT & JUNCTION BOXES, WIRING, GROUNDING MATERIALS, WIRING DEVICES, EMERGENCY GENERATOR, PIPING MATERIALS, VALVES, ETC.
- C. PROVIDE DIMENSIONAL DRAWINGS, MANUFACTURERS' TECHNICAL DATA, PERFORMANCE, ELECTRICAL CHARACTERISTICS, RATINGS, AND FINISHES. INCLUDE WIRING DIAGRAMS FOR POWER, SIGNAL, AND CONTROL WIRING.
- PROVIDE OPERATION AND MAINTENANCE DATA FOR ALL EQUIPMENT AND DEVICES INCLUDING MANUFACTURER'S WRITTEN INSTRUCTIONS FOR TESTING AND ADJUSTING EQUIPMENT AND
- E. PROVIDE SHOP DRAWINGS FOR CONDUITS LARGER THAN 1" AND ALL EXPOSED RACEWAYS.

X. IDENTIFICATION

- A. IN ADDITION TO THE REQUIREMENTS OF THE ELECTRICAL CODE AND OSHA, INSTALL AN IDENTIFICATION SIGN WHICH CLEARLY INDICATES INFORMATION REQUIRED FOR USE AND MAINTENANCE OF ITEMS SUCH AS PANELBOARDS, MOTOR CONTROLLERS (VFD, STARTERS, ETC.), SAFETY SWITCHES, CONTROL DEVICES AND OTHER SIGNIFICANT EQUIPMENT. NAMEPLATES SHALL BE LAMINATED BLACK PHENOLIC RESIN WITH A WHITE CORE WITH ENGRAVED LETTERING, A MINIMUM OF 6 MM (1/4_INCH) HIGH.
- B. PROVIDE PANELBOARD AND CIRCUIT NUMBER TAG ON EACH RECEPTACLE.

XI. FIRESTOPPING

- A. APPLY UL LISTED FIRE STOPPING TO PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES FOR ELECTRICAL INSTALLATIONS TO RESTORE ORIGINAL FIRE-RESISTANCE RATING OF ASSEMBLY.
- B. PROVIDE FIRE PUTTY TO MEET FIRE RATED ENCLOSURE UL LISTING REQUIREMENTS ON ALL ELECTRICAL BOXES INSTALLED ON THE FIRE RATED WALLS AND CEILINGS.

XII. CLOSEOUT PROCEDURES

- A. TESTING 1. PERFORM TESTS RECOMMENDED BY MANUFACTURER INCLUDING VISUAL, MECHANICAL, AND ELECTRICAL INSPECTIONS.
- 2. PERFORM INSULATION-RESISTANCE TESTS IN ACCORDANCE WITH IEEE 43.
- 3. FUNCTIONALLY TEST EQUIPMENT TO ENSURE IT IS INSTALLED PER DESIGN.
- 4. PROVIDE OPERATIONAL TEST AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, CONFIRM PROPER OPERATION.
- 5. PROVIDE WRITTEN REPORT OF THE RESULTS OF TESTS AND INSPECTIONS. PERFORM EMERGENCY SYSTEM (GENERATOR, TRANSFER SWITCH, EMERGENCY LIGHTING, BATTERIES, ETC.) TESTS RECOMMENDED BY MANUFACTURER INCLUDING VISUAL AND MECHANICAL AND ELECTRICAL INSPECTIONS. FUNCTIONALLY TEST EQUIPMENT TO ENSURE IT IS INSTALLED PER DESIGN INCLUDING EMERGENCY LIGHTING BLACKOUT TEST. PROVIDE

OPERATION. PROVIDE WRITTEN REPORT OF THE RESULTS OF TESTS AND INSPECTIONS.

OPERATIONAL TEST AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, CONFIRM PROPER

- B. GUARANTEE
- 1. THIS CONTRACTOR SHALL UNCONDITIONALLY GUARANTEE IN WRITING ALL MATERIAL, EQUIPMENT AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE BY OWNER. THE CONTRACTOR SHALL PROVIDE FREE SERVICE FOR ALL EQUIPMENT INVOLVED IN HIS CONTRACT DURING THIS GUARANTEE PERIOD.

- THE GUARANTEE SHALL INCLUDE RESTORATION TO ITS ORIGINAL CONDITION OF ALL ADJACENT WORK THAT MUST BE DISTURBED IN FULFILLING THIS GUARANTEE.
- 3. ALL SUCH REPAIRS AND/OR REPLACEMENTS SHALL BE MADE WITHOUT DELAY AND AT THE CONVENIENCE OF THE DEVELOPER AND TENANT.
- C. WARRANTY 1. INSTALLER AND MANUFACTURERS AGREE TO REPAIR OR REPLACE MATERIALS OR
- WORKMANSHIP THAT FAIL WITHIN SPECIFIED WARRANTY PERIOD. WARRANTY PERIOD SHALL BE FIVE YEARS FROM DATE OF SUBSTANTIAL COMPLETION. D. INSPECTION
- 1. ALL ELECTRICAL WORK IS TO BE INSPECTED AND APPROVED BY THE AUTHORIZED REPRESENTATIVE BEFORE THE SYSTEM IS ENERGIZED. DUPLICATE CERTIFICATES OF THIS APPROVAL SHALL BE DELIVERED TO THE ENGINEER.
- 2. ALL FEES FOR THIS INSPECTION AND APPROVAL SHALL BE BORNE BY THE CONTRACTOR AND ARE TO BE INCLUDED IN HIS/HER BID. NO EXTRA COMPENSATION SHALL BE ALLOWED FOR
- E. CLOSEOUT DOCUMENT AND EQUIPMENT TURNOVER 1. PROVIDE FINAL AS-BUILT DRAWINGS IN ELECTRONIC PDF FORMAT TO OWNER AND ENGINEER SHOWING FINAL INSTALLED CONDITIONS AND BEFORE FINAL PAYMENT WILL BE ISSUED.
- 2. THE AS-BUILT DRAWINGS SHALL DIAGRAMMATICALLY INDICATE THE INSTALLED CONDITION. CIRCUIT NUMBERS, AND LOCATION OF THE DEVICES FOR ALL WORK. THESE DRAWINGS SHALL BE CONSIDERED CONTRACT RECORD DOCUMENTS AND SHALL ACCURATELY REFLECT THE ACTUAL INSTALLATION OF THE ELECTRICAL COMPONENTS AND CONDUITS.
- 3. PROVIDE ALL EQUIPMENT INSTALLATION, MAINTENANCE, AND INSTRUCTION MANUALS.
- 4. TURN OVER ALL KEYS, SPARE MATERIALS, STOCK ITEMS, AND OTHER EQUIPMENT PURCHASED AS PART OF THE CONTRACT AND BELONGING TO THE OWNER.

XIII. HANGERS AND SUPPORT SYSTEMS

- A. CONTRACTOR SHALL INSTALL ALL AUXILIARY SUPPORTING STEEL AS REQUIRED FOR THE SUPPORTING OF THEIR CONDUIT, FIXTURES, DEVICES, EQUIPMENT, ETC, ALL SUPPORTING STEEL FOR ITEMS ABOVE A SUSPENDED CEILING SHALL BE FROM BUILDING STRUCTURAL MEMBERS
- B. THIS CONTRACTOR SHALL VERIFY ALL EQUIPMENT AND DEVICE MOUNTING ARRANGEMENTS, HEIGHTS, AND LOCATIONS PRIOR TO ROUGH-IN. ANY MENTION OF A SPECIFIC MOUNTING ARRANGEMENT, HEIGHT, OR LOCATION SHALL NOT RELIEVE THIS CONTRACTOR OF THE RESPONSIBILITY TO COORDINATE LOCATIONS AND SPECIFIC REQUIREMENTS WITH THE EQUIPMENT FURNISHED BY OTHER TRADES IN THE SAME AREA. NO ADDITION TO THE CONTRACT SUM WILL BE PERMITTED FOR WRONG OR CONFLICTING LOCATIONS. THE OWNER RESERVES THE RIGHT TO RELOCATE ANY DEVICE 10' - 0" PRIOR TO ROUGH-IN WITHOUT ANY ADDITIONAL CHARGE BY THIS CONTRACTOR. THIS CONTRACTOR SHALL FULLY COORDINATE ELECTRICAL WORK WITH THE INSTALLATION OF WORK BY ALL OTHER TRADES AND MAKE NECESSARY FIELD ADJUSTMENTS AS REQUIRED TO ACCOMMODATE THE ELECTRICAL INSTALLATION. ALL OF THE ABOVE SHALL BE

INCLUDED IN THE SCOPE OF WORK AT NO ADDITIONAL COST TO THE OWNER.

- . ALL CONDUITS SHALL BE RIGIDLY SUPPORTED BY MEANS OF APPROVED CONDUIT HANGERS OR CLAMPS FIRMLY ANCHORED IN PLACE AND SPACED AT INTERVALS NOT TO EXCEED 7'-0". ALL EXPOSED CONDUIT SHALL BE RACKED AND PARALLEL OR PERPENDICULAR TO WALLS AND STRUCTURAL MEMBERS, WITH 90° BENDS WHERE REQUIRED. PULL AND JUNCTION BOXES SHALL BE HELD TO A MINIMUM. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL RODS, ANGLES, RAILS, STRUTS, BRACE PLATES, PLATFORMS, ETC.. REQUIRED FOR SUSPENSION OR SUPPORT OF CONDUIT AND EQUIPMENT AND ALL STRAPS, CLAMPS, THREADED RODS. TURNBUCKLES, ANCHORS, FASTENERS, AND MISCELLANEOUS SPECIALTIES FOR THE ATTACHMENT OF HANGERS AND SUPPORTS TO THE STRUCTURE. ALL CONDUIT FASTENERS STRAPS, SUPPORTS AND ETC., MUST BE "BOLT-ON" GALVANIZED STEEL ON EXPOSED
- D. IN SUSPENDED CEILINGS, SUPPORT CONDUIT AND JUNCTION BOXES DIRECT FROM THE STRUCTURAL SLAB, DECK, OR FRAMING PROVIDED FOR THAT PURPOSE. THE CONDUITS SHALL NOT BE CLIPPED TO THE CEILING SUPPORT WIRES OR SPLICE UNLESS THE CEILING SYSTEM HAS BEEN SPECIFICALLY DESIGNED FOR THAT PURPOSE AND APPROVAL GRANTED BY ENGINEER.

CONSTRUCTION. SINGLE CONDUIT SUPPORTS SHALL BE MINNERALIC OR EQUAL.

XIV. RACEWAY, JUNCTION BOX, AND PULL BOX SYSTEMS

- A. THIS CONTRACTOR SHALL INSTALL SIZE OF CONDUIT CALLED FOR ON DRAWINGS AND SHALL NOT REDUCE SIZE OF CONDUITS TO SUIT WIRE FILL CAPACITY. MINIMUM SIZE OF CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED. THIS CONTRACTOR SHALL LEAVE A WIRE PULLING LINE IN ALL CONDUITS WHICH ARE NOT FILLED TO CAPACITY. THE E.C. SHALL VERIFY ALL CONDUIT SIZE PRIOR TO INSTALLATION. NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICT.
- . THE RACEWAY SYSTEM SHALL BE METALLIC, ELECTRICAL METALLIC TUBING "EMT" IN TRADE SIZED CONCEALED WHEREVER POSSIBLE. ALL FITTINGS SHALL BE COMPRESSION TYPE ONLY EXCEPT WHERE PVC IS ALLOWED BY CONTRACT DOCUMENTS.
- CONDUIT USED OUTDOORS AND NOT BELOW GRADE OR EXPOSED TO WEATHER SHALL BE TYPE INTERMEDIATE METALLIC CONDUIT "IMC" OR RIGID GALVANIZED METAL CONDUIT "RMC" WITH THREADED COUPLINGS. PROVIDE MEYERS HUBS AT NON/CAST TYPE JUNCTION/PULL BOXES AND SWITCH/RECEPTACLE OUTLETS.

CONDUIT USED OUTDOORS, BELOW GRADE, EMBEDDED IN CONCRETE, OR EXPOSED TO

THE BUILDING AND IN THE CASE OF CEILING AND FLOOR RUNS, CONDUITS SHALL BE GROUPED

- WEATHER SHALL BE TYPE RIGID GALVANIZED METAL CONDUIT "RMC" WITH THREADED COUPLINGS. PROVIDE MEYERS HUBS AT NON/CAST TYPE JUNCTION/PULL BOXES AND SWITCH/RECEPTACLE OUTLETS. ALL CONDUITS SHALL BE RUN PARALLEL AND/OR PERPENDICULAR TO CONSTRUCTION LINES OF
- AND SUPPORTED WITH TRAPEZE/TYPE RACKS OR STANDOFFS WITH INDIVIDUAL CONDUITS SEPARATELY ACCESSIBLE FOR REPLACEMENT AND MAINTENANCE. . ALL WIRING INCLUDING ALL LOW VOLTAGE CABLING BEHIND THE WALL AND ABOVE THE

NON-ACCESSIBLE CEILING SHALL BE INSTALLED IN CONDUIT.

6. JUNCTION BOXES, PULL BOXES AND TERMINAL BOXES SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS AND AT OTHER LOCATIONS AS REQUIRED TO FACILITATE THE PULLING OF

PULL BOXES SHALL BE CODE SIZED AND SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED

SHEET STEEL. EACH BOX SHALL BE PROVIDED WITH A SCREW-ON REMOVABLE COVER. PROVIDE

- FLANGED COVERS ON FLUSH BOXES. BOXES SHALL BE SMOOTH, SQUARE AND SET PARALLEL WITH WALLS AND CEILING. ALL BOXES SHALL BE PROVIDED IN LOCATIONS WHERE REASONABLE ACCESS CAN BE OBTAINED
- IN THE FUTURE WITHOUT REQUIRING REMOVAL OF BUILDING ELEMENTS OR FINISHES. IT SHALL BE THE SOLE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO RELOCATE BOXES TO ACCESSIBLE AREAS WHERE INACCESSIBILITY IS DETERMINED BY THE INSPECTOR OR ENGINEER.
- . ANY SURFACE RACEWAY USED ON A FINISHED SURFACE MUST BE METALLIC RACEWAY, WIREMOLD OR EQUAL. IF RACEWAY USED FOR POWER AND DATA, THEN MUST BE DUAL CHANNEL WITH PARTITION. SUBMIT FOR APPROVAL BY ENGINEER PRIOR TO INSTALLATION. FINAL CONNECTIONS TO MOVABLE DEVICES, OR DEVICES THAT MAY TRANSMIT VIBRATION SHALL

REMOVE ALL UNUSED AND ABANDONED CONDUIT AND RACEWAY COMPLETELY.

- BE MADE THROUGH FLEXIBLE METALLIC CONDUIT OR LIQUID-TIGHT FLEXIBLE CONDUIT. (MOTORS, TRANSFORMERS, DUCT MOUNTED DEVICES, ETC.) M. ENDS OF ALL METALLIC CONDUITS SHALL BE EQUIPPED WITH INSULATED GROUNDING BUSHINGS FOR DEDICATED CONDUITS SERVING GROUNDING CONDUCTORS. ALL METALLIC CONDUIT SERVING FEEDERS AND BRANCH CIRCUITS SHALL BE EQUIPPED WITH INSULATED ANTI-SHORT FITTINGS AT ENDS. ENDS OF ALL CONDUITS SHALL BE TEMPORARILY CAPPED PRIOR TO INSTALLATION AND DURING CONSTRUCTION TO EXCLUDE FOREIGN MATERIAL. UPON THE
- WATERTIGHT . EACH LIGHT, RECEPTACLE OR OTHER MISCELLANEOUS DEVICE SHALL BE PROVIDED WITH A GALVANIZED OR SHERARDIZED PRESSED STEEL OUTLET BOX OF THE KNOCKOUT TYPE, OR NOT LESS THAN NO. 14 U.S. GAUGE STEEL. CONDUITS SHALL BE FASTENED WITH LOCK NUTS AND BUSHINGS. ALL UNUSED BOX KNOCKOUTS MUST BE LEFT SEALED. THERE MUST BE SUFFICIENT ROOM FOR WIRES AND BUSHINGS, AND DEEP BOXES SHALL BE INSTALLED WHERE REQUIRED.

COMPLETION OF CONSTRUCTION THE OPEN END OF CONDUITS OR SLEEVES SHALL BE SEALED

- BOXES SHALL BE SECURELY AND ADEQUATELY SUPPORTED. WHERE FLOOR FITTINGS REQUIRE PENETRATION OF THE FLOOR SLAB, THERE SHALL BE A STANDARD DEVICE LISTED BY UL FOR THE PURPOSE AND HAVE A UL FIRE RATING EQUAL TO THE FLOOR RATING. ALL CORE SIZES AND LOCATIONS SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL AND SUBMISSION TO STRUCTURAL ENGINEER PRIOR TO CORING. THE ELECTRICAL CONTRACTOR MUST PROVIDE FLOOR X-RAY SERVICES TO DETECT AND AVOID EXISTING
- P. ALL CONDUIT RUNS SHALL BE INSTALLED ABOVE AND OVER TOP OF ALL NEW DUCTWORK, PIPING, CONDUITS, PULL BOXES, ETC, WITH PROVISION FOR ALL NECESSARY ACCESSIBLE PULL BOXES.
- CONDUIT MAY NOT EXCEED CODE ALLOWED NUMBER OF BENDS. Q. CONDUIT RUNS OR PULL BOXES SHALL NOT BLOCK OR PREVENT FULL ACCESS OR OPERATION OF HVAC EQUIPMENT, ACCESS DOORS, PIPING VALVES, JUNCTION BOXES, MAIN RETURN AIR DUCTS,
- PULL BOXES, CLEAN OUTS, ETC. R. FLEXIBLE METAL CONDUIT SHALL NOT BE LONGER THAN 6'0" LONG.

XV. WIRE AND WIRING METHOD

TO SOURCE.

APPROVED EQUAL.

EMBEDDED SYSTEMS PRIOR TO CORING

- A. ALL CONDUCTORS SHALL BE COPPER IN SIZES AS SHOWN OR REQUIRED BY LOADS SERVED. ALL CABLE SHALL BE 600/VOLT INSULATION RATED AT 75 DEGREES C, WITH TERMINATIONS AND LOADS SERVED RATED AT 75 DEGREES C. INDOOR DRY LOCATIONS SHALL BE TYPE "THHN" AND WET LOCATIONS (EXPOSED, BELOW THE SLAB, AND BELOW GRADE) SHALL BE TYPE "XHHW".
- 3. A SEPARATE NEUTRAL CONDUCTOR AND GREEN GROUND WIRE SHALL BE INSTALLED FOR EACH FEEDER AND BRANCH CIRCUIT.

EACH BRANCH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL WIRE. A SHARED NEUTRAL IS NOT

- ALLOWED. . MINIMUM SIZE CONDUCTOR SHALL BE #12 EXCEPT FOR CONTROL, FIRE ALARM AND SIGNAL CABLES. CONDUCTORS AND ASSOCIATED RACEWAYS SHALL BE INCREASED FOR VOLTAGE DROP COMPENSATION AS CALCULATED ACCORDING TO ELECTRICAL CODE REQUIREMENTS.
- LUG KITS SHALL BE INCLUDED IN THE BASE BID. CABLE SIZE REDUCING PINS SHALL NOT BE AN ACCEPTABLE ALTERNATIVE TO LUG KITS. REMOVE ALL UNUSED AND ABANDONED WIRING, INCLUDING LOW VOLTAGE, COMPLETELY BACK

. THE E.C. SHALL FURNISH AND INSTALL LUG KITS TO MATCH THE CABLE SIZES AS SHOWN ON THE

DRAWINGS. TYPICAL FOR ALL ELECTRICAL AND MECHANICAL EQUIPMENT. ANY AND ALL REQUIRED

 G. ALL COMMUNICATION CABLING INSTALLED IN PLENUM AIR SPACES SHALL BE IN CONDUIT, WITHOUT ANY EXCEPTIONS.

3. FOR #10 AND #12 WIRE SPLICES SHALL BE MADE WITH SCOTCH-LOK CONNECTORS.

- H. ALL PLENUM AIR SPACES AREA SHALL BE IN CONDUIT WITH PLENUM RATED BOX. E.C SHALL PROVIDE ALL FEEDER & BRANCH CIRCUITS SIZED BASED ON VOLTAGE DROP REQUIRED
- PER LOCAL CODE. J. CONDUCTOR SPLICING SPLICING WIRES SHALL BE DONE ONLY IN ACCESSIBLE OUTLET JUNCTION OR PULL BOXES.
- 2. SPLICES SHALL BE MADE STRICTLY IN ACCORDANCE WITH THE INSTRUCTIONS OF THE CABLE MANUFACTURER USING THE METHODS AND MATERIALS RECOMMENDED BY HIM.
- 4. WIRE #6 AND LARGER SHALL BE CONNECTED WITH BURNDY OR EQUAL SOLDERLESS MECHANICAL LUG AND PAINTED WITH INSULATING VARNISH. 5. ALL CONNECTIONS SHALL BE PROPERLY TAPED WITH SCOTCH ELECTRICAL TAPE #22, #33 OR
- 6. ALL GROUND SPLICES AND GROUND CONNECTIONS TO DEVICES WITHIN METALLIC BOXES SHALL BE BONDED TO BOX USING APPROPRIATELY SIZED PIGTAIL CONNECTIONS OR OTHER UL APPROVED BONDING METHOD.

XVI. GROUNDING AND BONDING

. EQUIPMENT GROUNDING CONDUCTORS SHALL BE UL 83 INSULATED STRANDED COPPER. UNLESS OTHERWISE INDICATED ON THE DRAWINGS. INSULATION COLOR SHALL BE CONTINUOUS GREEN FOR ALL EQUIPMENT GROUNDING CONDUCTORS. BONDING CONDUCTORS SHALL BE ASTM B8 BARE STRANDED COPPER, EXCEPT THAT SIZES NO. 10 AWG AND SMALLER SHALL BE ASTM B1 SOLID BARE COPPER WIRE. CONDUCTOR SIZES SHALL NOT BE LESS THAN WHAT IS SHOWN ON THE DRAWINGS AND NOT LESS THAN REQUIRED BY THE NEC. WHICHEVER IS GREATER. A GROUND CONDUCTOR SHALL BE INSTALLED IN EVERY RACEWAY AND BONDED TO ALL BOXES AND ENCLOSURES EXCEPT FOR THE SERVICE LATERALS. THE GROUND CONDUCTOR SHALL BE

XVII. MOTOR AND CONTROL WIRING

INTEGRAL THERMAL OVERLOADS.

BONDED IN EVERY ENCLOSURE.

- MOTORS FOR EQUIPMENT WILL BE PROVIDED AND SET IN PLACE BY RESPECTIVE TRADES INSTALLING THE EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL INSTALL STARTERS AND CONTROLLERS. REMOTE CONTROL STATIONS. INCLUDING APPARATUS FOR PROPER OPERATION AND THEIR RESPECTIVE MOTORS OR EQUIPMENT. ALL STARTERS FOR ALL MOTORS SHALL HAVE PROPER HEATING ELEMENTS INSTALLED BY THE ELECTRICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL:
- 1. PROVIDE, INSTALL AND TERMINATE ALL POWER WIRING FOR ALL MOTORS.

2. INSTALL THOSE DEVICES FURNISHED BY THE MECHANICAL CONTRACTOR.

- 3. PROVIDE AND INSTALL ALL CONTROL WIRING IN ACCORDANCE WITH INSTRUCTIONS/DIRECTIONS RECEIVED FROM THE MECHANICAL CONTRACTOR OR TEMPERATURE CONTROL DESIGNATE.
- 4. COORDINATING MOTOR THERMAL OVERLOAD REQUIREMENTS AND PROVIDING EXTERNAL THERMAL OVERLOAD PROTECTION WHERE MOTORS ARE NOT NOTED TO BE PROVIDED WITH
- 5. AFTER FINAL CONNECTIONS ARE COMPLETED, THE ELECTRICAL CONTRACTOR SHALL TEST MOTOR FOR PROPER ROTATION. BEFORE APPLYING CURRENT TO THE MOTOR. THE ELECTRICAL CONTRACTOR SHALL HAVE CONTRACTOR WHO SUPPLIED MOTOR CHECK THE MOTOR ALIGNMENT, OIL, ETC. THE ELECTRICAL CONTRACTOR SHALL MAKE ANY NECESSARY ADJUSTMENTS, REPLACEMENTS OR MODIFICATIONS TO THE STARTERS AND CONTROL EQUIPMENT FOR PROPER STARTING AND OVERLOAD PROTECTION.
- 6. ELECTRICAL CONTRACTOR SHALL MEASURE ALL OPERATING VOLTAGE AND AMPERAGE ON EACH MOTOR. VERIFY THAT THE CORRECT OVERCURRENT TRIP INFORMATION IS PROGRAMMED INTO THE VFD DRIVE UNITS. VERIFY PROPER ROTATION WITH THE MECHANICAL CONTRACTOR.

XVIII. DISCONNECT SWITCHES

ALL FUSED (FD) AND NON-FUSED (NF) DISCONNECTS SHALL BE SQUARE D COMPANY OR APPROVED EQUAL, 3-POLE HEAVY DUTY TYPE ONLY. ALL UNITS INSTALLED OUTDOORS SHALL BE RATED WEATHERPROOF NEMA 3R. MANUFACTURERS: SCHNEIDER SQUARE D, EATON, GENERAL ELECTRIC, SIEMENS, OR APPROVED EQUAL.

XIX. STARTER

- ALL STAND ALONE MOTOR STARTERS SHALL BE NEMA RATED STARTER (MINIMUM NEMA SIZE 1). THEY SHALL BE INSTALL IN SUITABLE NEMA RATED ENCLOSURES SUITABLE FOR THE ENVIRONMENT WHERE INSTALLED. THEY SHALL BE FVNR, HAVE APPROPRIATE CONTROL TRANSFORMER, (2) NO/NC AUXILIARY CONTACT, HOA SELECTOR SWITCH, STOP AND RUN LIGHTS. COMBINATION UNITS SHALL HAVE INTEGRAL DISCONNECT SWITCH AND FUSE (RK1) AS NOTED. PROVIDE WITH SOLID-STATE OVERLOAD RELAY WITH FOLLOWING FUNCTIONS: SQUARE-D CLASS
- 8538, ALLEN-BRADLEY, SIEMENS, OR APPROVED EQUAL.
- MICROPROCESSOR BASED CONTROL.
- PHASE LOSS AND CURRENT UNBALANCE PROTECTION, USER SELECTABLE 3. SWITCH OR DIAL SELECTABLE FOR MOTOR RUNNING OVERLOAD PROTECTION.
- 4. SENSORS IN EACH PHASE. 5. STANDARD SELECTABLE TRIP CLASS 10/20.
- MOTOR TEMPERATURE AND POWER-UP PROTECTION WITH THERMAL MEMORY.

A. LIST OF APPROVED MANUFACTURERS SHALL BE THE FOLLOWING OR AS OTHERWISE NOTED ON DESIGN DRAWINGS:

XXII. WIRING DEVICES

a. LEVITON b. HUBBELL

c. LEGRAND

POWER DEVICES:

B. TOGGLE SWITCHES SHALL BE SINGLE UNIT TOGGLE, BUTT CONTACT, QUIET AC TYPE. HEAVY DUTY GENERAL-PURPOSE USE WITH AN INTEGRAL SELF GROUNDING MOUNTING STRAP, LISTED BY UNDERWRITERS LABORATORIES, INC., AND MEET THE REQUIREMENTS OF NEMA WD 1, HEAVY DUTY AND UL 20 RATED FOR 20 AMPERES AT 120-277 VOLTS AC.

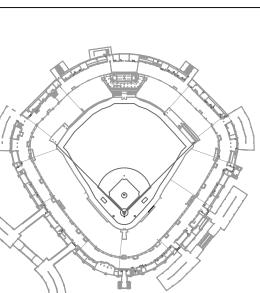
Hillside, IL 60162 (708) 236-0300

(708) 236-0330 FAX





KEY PLAN



. DATE DESCRIPTION 11/05/21 ISSUED FOR BID 11/15/21 ISSUED FOR BID ADDENDUM PROJECT:

SSUE/REVISION:

DRAWING TITLE: **ELECTRICAL SPECIFICATIONS**

GUARANTEED RATE FIELD -

333 W 35TH STREET.

CHICAGO, ILLINOIS 60616

HVAC REPLACEMENT PHASE XI

PROJECT NO: 21276 SCALE: NO SCALE SHEET NO.

DESIGNED BY:

CHECKED BY:

ISSUED FOR BID ADDENDUM

PRELIMINARY - NOT FOR CONSTRUCTION