Date: December 03, 2019 **SECTION 00 90 01**

BIDDING AND CONTRACT REQUIREMENTS
ADDENDUM NUMBER 1

Legat Architects, Inc.
2015 Spring Road, Suite 175
Oak Brook IL 60523
P. (630) 990-3535
www.legat.com

Distributed via: Email

To: Prospective Bidders
Re: **ADDENDUM NUMBER 1 TO THE BIDDING DOCUMENTS FOR:**

Oak Brook Park District
Central Park West Mechanical Renovations
Architect's Project Number: 220005.00

This addendum forms a part of the bidding and contract documents and modifies the original bidding documents dated November 22, 2019. Acknowledge receipt of this addendum in the space provided on Bid Form.
FAILURE TO DO SO MAY SUBJECT BIDDER TO DISQUALIFICATION.

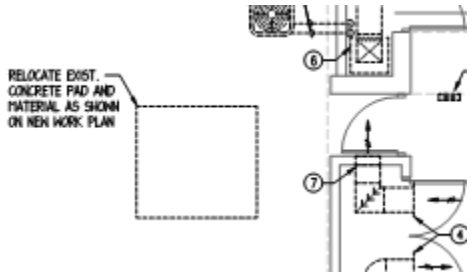
I. PART 1 - ADDENDUM TO THE PROJECT MANUAL

A. Document Table of Contents.
1. Page TOC-1:
a. ADD the following item(s) after "00 90 01 Addendum Number 1":
"00 90 01 Addendum Number 1 ....."

II. PART 2 - ADDENDUM TO THE DRAWINGS – CENTRAL PARK WEST MECHANICAL RENOVATIONS

A. See attached drawings to be included as part of the drawing bid documents.
1. ADD drawing E-201, titled, "Electrical Floor Plans."
2. ADD drawing E-301, titled, "Electrical Notes, Schedules, and Symbol Legend."

B. Drawing M-101, titled, "Main Floor HVAC Demo Plans".
1. At drawing 1/M-101, titled, "First Floor HVAC Demolition Plan".
a. REVISE note to read as follows:
1) "Existing concrete foundations to be removed – Salvage existing wood framed screen and relocate at the owners discression", in lieu of "Relocate existing concrete pad and material as shown on new work plan." – See snapshot of existing note location below.



C. Drawing M-201, titled, "First Floor HVAC Plans".
1. At the Equipment Schedule
a. DELETE equipment tag labeled "RTU-1" and all associated notes with it.
2. On sheet, near the Equipment Schedule.

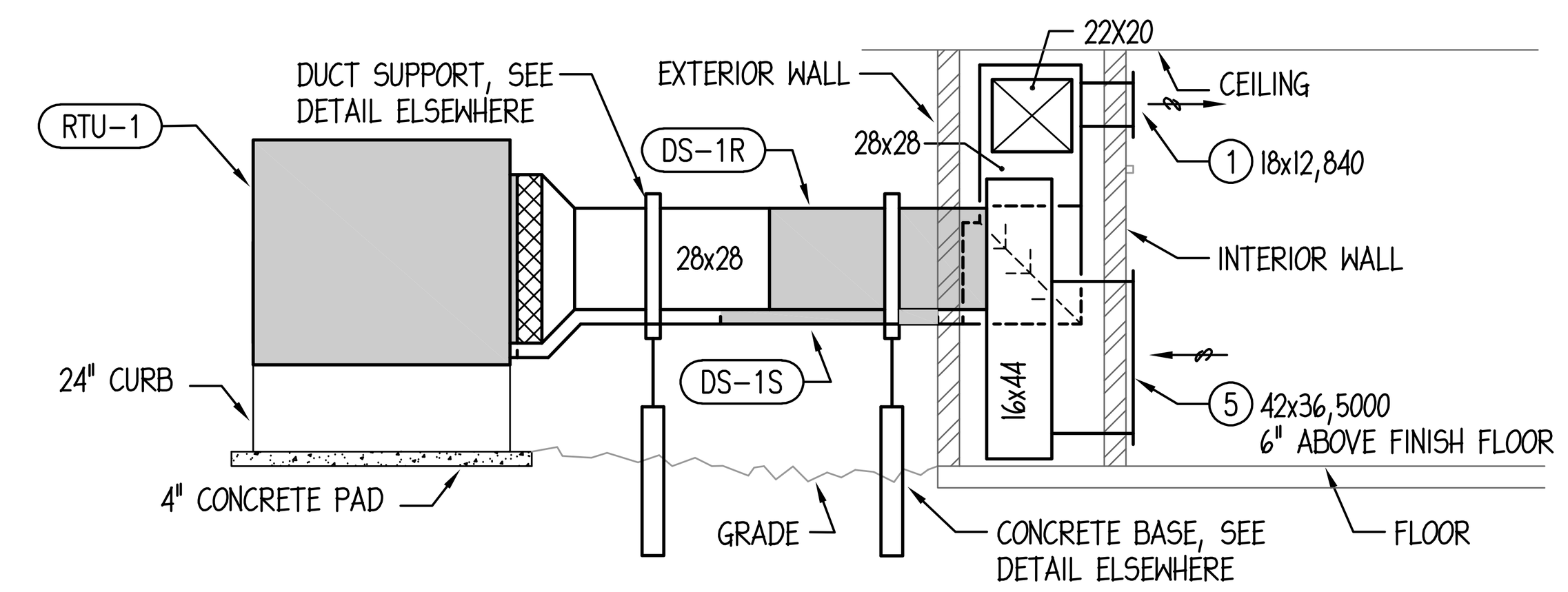
a. ADD schedule labeled, “Pre-Purchased Equipment Schedule:”
    1) ADD equipment tag labeled, “RTU-1” and all associated notes with it.
3. At the Drawings Notes
    a. ADD the following notes:
        1) “12. Unit Pre-Purchased by owner and installed by contractor.”

END OF SECTION

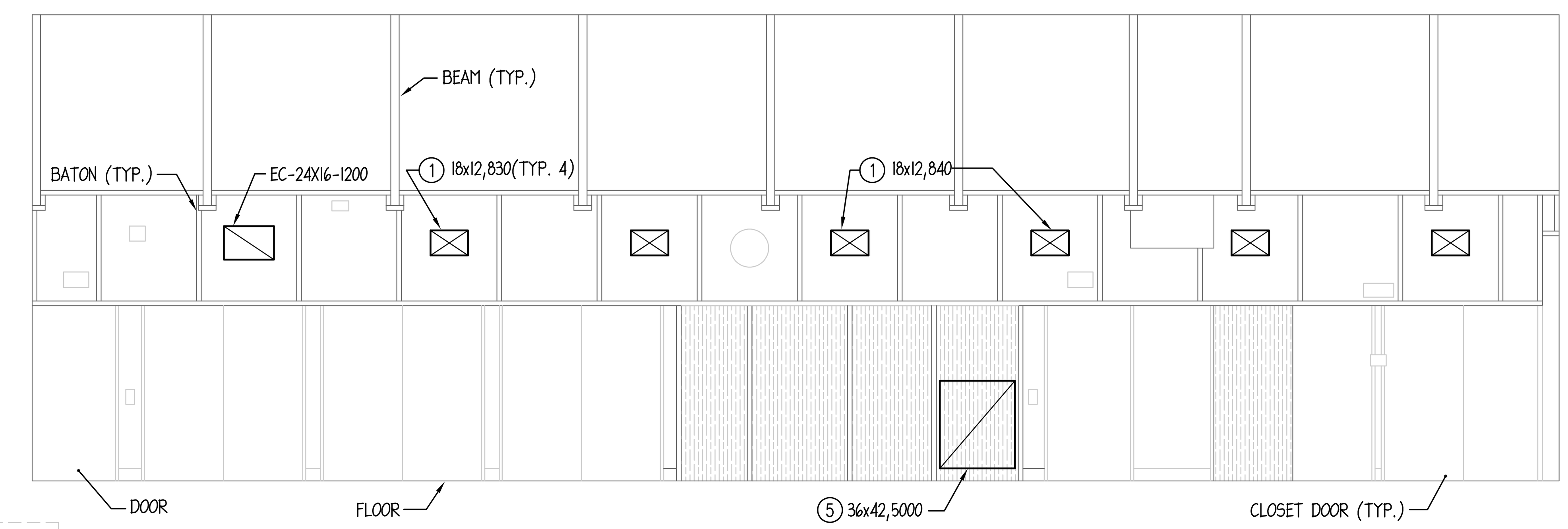
This addendum consists of two (2) pages.

This addendum has three (3) attached pages identified below:

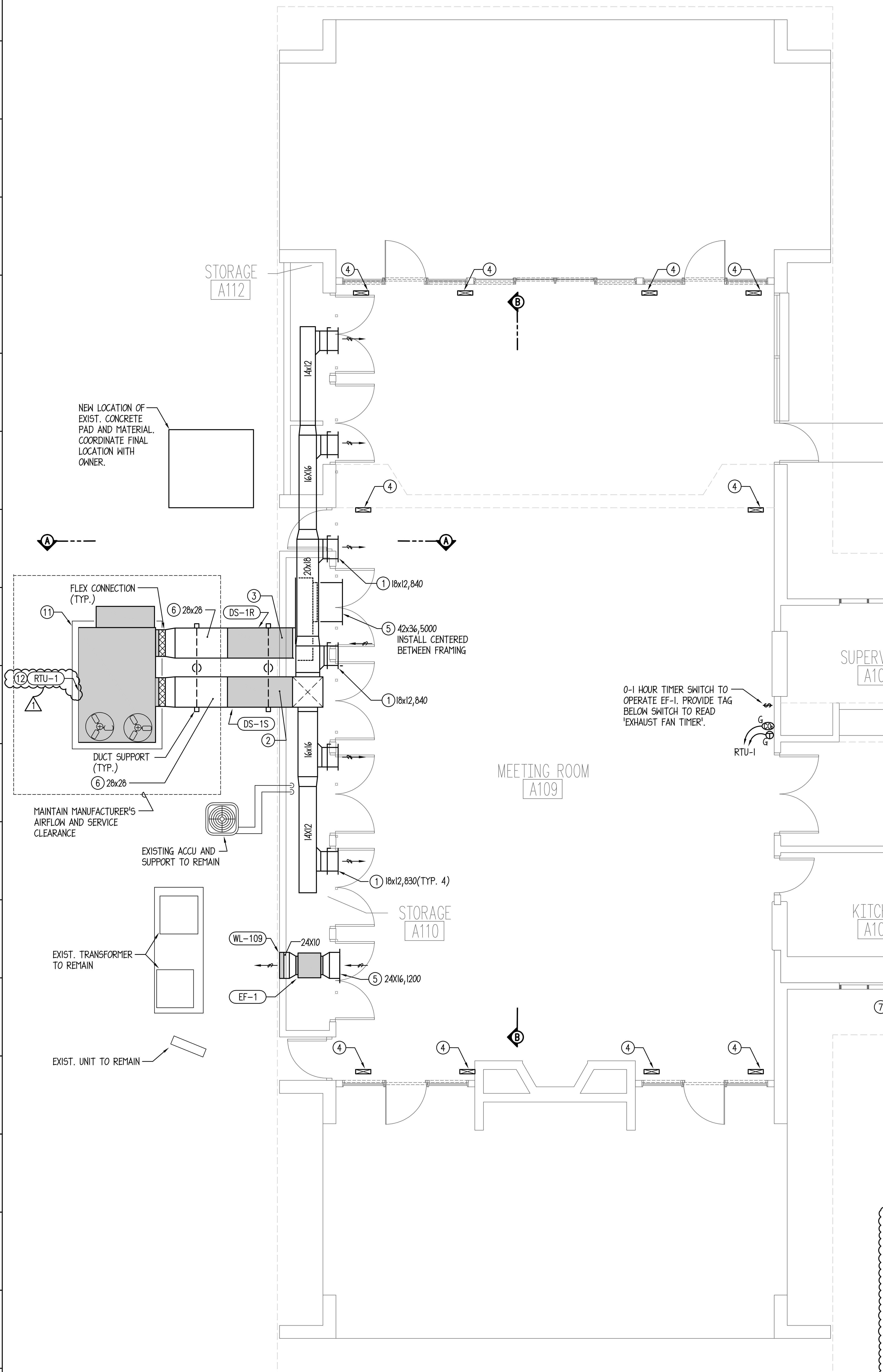
- Drawings (3 sheets):
    - M-201 “First Floor HVAC Plans”.
    - E-201 “Electrical Floor Plans”.
    - E-301 “Electrical Notes, Schedules. And Symbol Legend”.



A HVAC SECTION A
NO SCALE



B HVAC SECTION B
NO SCALE



1 FIRST FLOOR HVAC PLAN
1/4" = 1'-0"

DRAWING NOTES:

1. TITUS (OR APPROVED EQUAL) MODEL '300R' SUPPLY REGISTER WITH NECK SIZE INDICATED TO DISCHARGE AIRFLOW INDICATED.
2. 28x28 SUPPLY DUCT THRU WALL AND UP WITHIN CLOSET.
3. 28x28 RETURN DUCT THRU WALL.
4. TITUS (OR APPROVED EQUAL) MODEL '30R' WITH DARK BRONZE ANODIZED FINISH IN SAME LOCATION AS FORMER. PROVIDE BLANKED-OFF BACK WITH VISIBLE PORTION PAINTED BLACK.
5. TITUS (OR APPROVED EQUAL) MODEL '350R' RETURN/EXHAUST REGISTER WITH NECK SIZE INDICATED TO DISCHARGE AIRFLOW INDICATED.
6. SUPPORT EXTERIOR DUCTWORK SIZE INDICATED PER DETAIL ON SHEET M-201 AND EXTERNALLY INSULATED WITH MINIMUM R-12 RIGID BOARD (APPROXIMATELY 4" THICK) DUCT INSULATION AND VENTURE CLAD 1577 CW WHITE 5-PLY LAMINATED FOIL/FILM JACKET INSTALLED STRICTLY PER MANUFATURER'S INSTRUCTION. ALL SEAMS SHALL BE LAPPED AND SEALED WEATHERTIGHT.
7. EXISTING HVAC EQUIPMENT TO REMAIN.
8. EXISTING DUCTWORKS, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
9. EXISTING PIPING AND VALVING TO REMAIN.
10. EXISTING THERMOSTAT TO REMAIN.
11. 4" THICK REINFORCED CONCRETE PAD WITH 4" CRUSHED GRAVEL BASE 6" LARGER THAN UNIT IN ALL DIRECTIONS.
12. UNIT PRE-PURCHASED BY OWNER AND INSTALLED BY CONTRACTOR.

PRE-PURCHASED EQUIPMENT SCHEDULE:

RTU-1 12.5 TON TRANE VOYAGER 'THD180G' PACKAGED ROOFTOP UNIT ON GRADE TO DISCHARGE 5,000 CFM AT 1.0 ESP,2378 LB., 54 kW ELECTRIC HEATING CAPACITY, AND DEHUMIDIFICATION SEQUENCE, 88.96°F HEATING LAT, 60.71°F DB/56.04°F WB COOLING LAT, 240V/Δ HIGH ϕ, 155 MCA, 175 MOCP. PROVIDE MANUFACTURER'S 24" CURB, ECONOMIZER WITH BAROMETRIC RELIEF, AND SOUND ATTENUATION ACCESSORIES.

EQUIPMENT SCHEDULE:

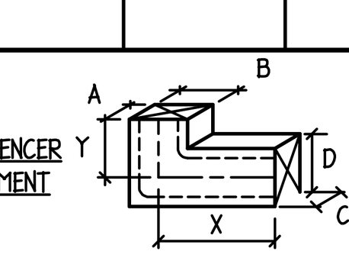
EF-1 GREENHECK (OR APPROVED EQUAL) MODEL 'SQ-100' INLINE EXHAUST FAN TO EXHAUST 1,200 CFM AT 0.375 ESP. 1/4 HP, 0.2 BHP, 120V/1 PH, 10.4 SONES, AND DISCONNECT SWITCH. PROVIDE NEOPRENE VIBRATION ISOLATORS, BACKDRAFT DAMPER, AND SPEED CONTROLLER FOR BALANCING.

WL-109 RUSKIN (OR APPROVED EQUAL) MODEL 'ELF375DX' EXTRUDED ALUMINUM DRAINABLE WALL LOUVER WITH 24x18 NECK TO EXHAUST 1,200 CFM AT 0.15 ESP, 900 FPM. PROVIDE BIRDSCREEN AND COLOR/FINISH AS SELECTED BY ARCHITECT.

DUCT SILENCER SCHEDULE

EQUIPMENT TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	CFM	AIR INLET SIZE AxB (IN)	AIR INLET SIZE CxD (IN)	VELOCITY (FPM)	MINIMUM ATTENUATION 63/125/250/500/1k/2k/4k	MAX. AIR P.D. (IN. H_2O)	LENGTH X dim. (IN.)	LENGTH Y dim. (IN.)	NOTES
DS-1S	EXTERIOR	RTU-1	PRICE	RM60/8C	5,000	28x28	28x28	918	7/12/18/28/24/18/13/11	0.14	30	30	1,2,3
DS-1R	EXTERIOR	RTU-1	PRICE	RM60/8C	5,000	28x28	28x28	918	8/13/20/30/25/18/13/11	0.11	30	30	1,2,3

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: APPROVED EQUAL
2. ELBOW SILENCER LENGTH IS CENTER LINE LENGTH.
3. OUTER CASING SHALL BE 22 GAUGE, PERFORATED INNER CASING SHALL BE 26 GAUGE, WITH STANDARD FIBERGLASS FILL.



DUCT SILENCER ARRANGEMENT

LEGAT ARCHITECTS
DESIGN | PERFORMANCE | SUSTAINABILITY

Oak Brook Park District

CENTRAL PARK WEST MECHANICAL RENOVATIONS

1500 Forest Gate Road
Oak Brook, IL 60523

ARCHITECT
Legat Architects
2015 Spring Road, Suite 175
Oak Brook, IL 60523
P: 630.990.3535
www.legat.com

M.E.P. ENGINEER
20/10 Engineering
1216 Tower Road
Schaumburg, IL 60173
P: 847.882.2010
www.2010engineering.com

SIGNATURE
DATE

REVISIONS

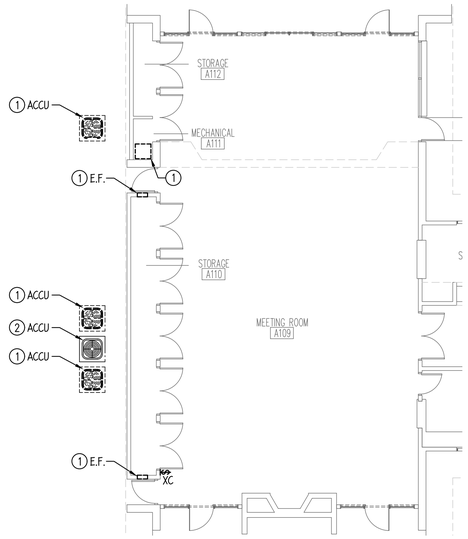
NO.	DESCRIPTION	DATE
1	ADDENDUM #1	12.03.19

PROJECT NUMBER 220005.00
DATE OF ISSUE 11.22.19
DRAWN BY
CHECKED BY

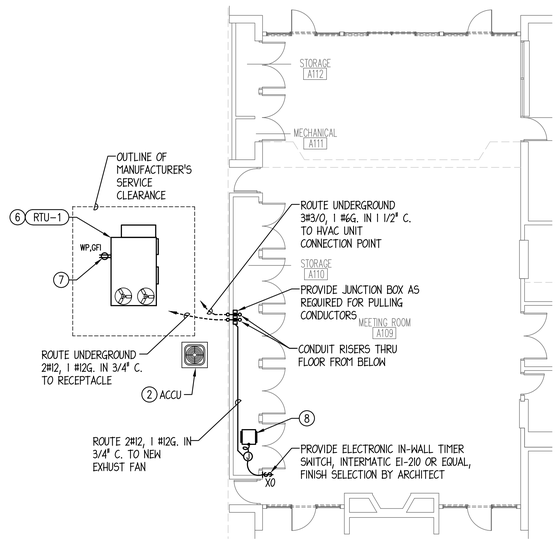
FIRST FLOOR HVAC PLANS

M-201
ISSUED FOR BIDDING

NAME: H24A2_HV-101.dwg BY:AXE DATE: OCT 28, 2019 TIME: 7:14 PM



2 PARTIAL FIRST FLOOR ELECTRICAL PLAN
1/8" = 1'-0"



3 PARTIAL FIRST FLOOR ELECTRICAL PLAN
1/8" = 1'-0"

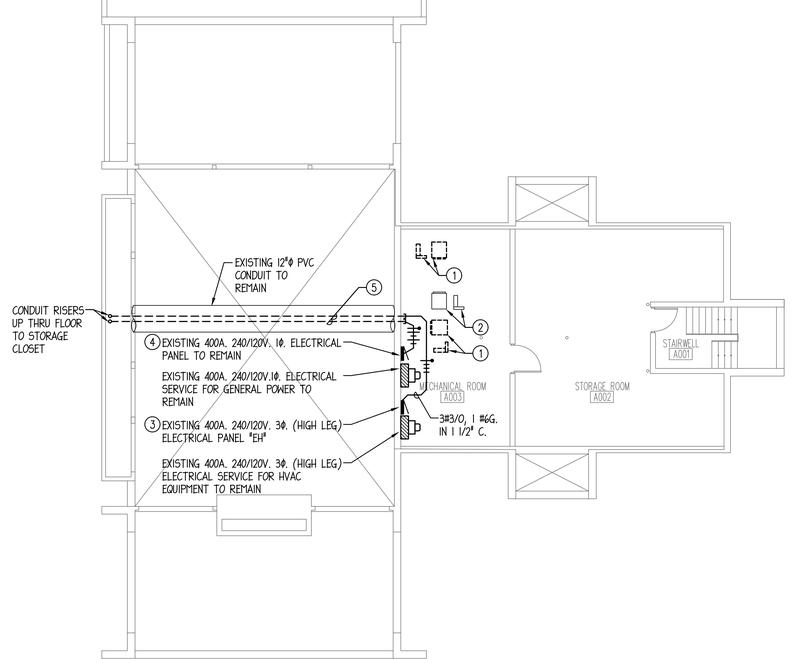
RENOVATED PANELBOARD "EH"

DIST. PANEL SCHEDULE: "EH"	
VOLT: 240/120V (HIGH-LEG), 3ϕ, 4W	MAINS: 400A MLO
LOCATION: BASEMENT	C.B. RATING: #K65 k.A.I.C.
MOUNTING: SURFACE	TYPE: BOLT-ON
EX. FEEDER: ASSUMED 4 #600 & 1 #2G. IN 4" C. VERIFY IN FIELD.	
REMARKS: EXISTING MANUFACTURER OF PANEL IS SEIMENS	

⊠ - PROVIDE RETRO-FIT PANEL WITH 175A./3P. SUB-FED CIRCUIT BREAKER TO SERVE NEW ON-GRADE HVAC ROOFTOP UNIT
△ - PROVIDE RETRO-FIT PANEL WITH 20A./1P. CIRCUIT BREAKER TO SERVE NEW EXHAUST FAN
B - DENOTES BUSSED SPACE
S - DENOTES EXISTING "SPARE" CIRCUIT BREAKER
- CONTRACTOR TO VERIFY EXISTING FAULT CURRENT SUPPLIED TO BUILDING FROM UTILITY COMPANY AND PROVIDE BRACING TO WITHSTAND FAULT

CIR. NO.	C/B		C/B	CIR. NO.
1	B		60	2
3	B		/2	4
5	60		60	6
7	/2		/2	8
9	B		30	10
11	B		/2	12
13	B		30	14
15	B		/2	16
17	20		20	18
19	/2		/2	20
21	B		30	22
23	B		/2	24
△ 25	20/1		B	26
27	B		B	28
29	20		20	30
31	/2		/2	32
33	20		30	34
35	/2		/2	36
37	70		40	38
39	/2		/2	40
41	B		B	42

SUB FEED C/B
⊠ 175/2



1 BAEMENT ELECTRICAL DEMOLITION PLAN
1/8" = 1'-0"

DRAWING NOTES:

1. ELECTRICALLY DISCONNECT EXISTING UNIT FOR REMOVAL BY OTHERS. REMOVE ANY ASSOCIATED FIRE ALARM DEVICES, DISCONNECT SWITCHES, STARTERS, AND ALL CONDUITS AND CONDUCTORS BETWEEN UNIT AND PANEL. LEAVE CIRCUIT BREAKER AT "OFF" POSITION AND INDICATE CIRCUIT AS "SPARE" IN PANELBOARD DIRECTORY.
2. EXISTING MECHANICAL EQUIPMENT TO REMAIN. PROTECT CONDUIT AND WIRING SERVING UNIT TO MAINTAIN PROPER OPERATION OF EQUIPMENT.
3. REMOVE EXISTING CIRCUIT BREAKERS PREVIOUSLY SERVING MECHANICAL EQUIPMENT BEING DEMOLISHED. EXISTING PANEL INTERIOR SHALL BE REMOVED AND REBUILT WITH NEW PANEL INTERIOR. ELECTRICAL PANELBOARD SHALL BE EXAMINED AND FIELD MEASURED PRIOR TO FABRICATION. CONTRACTOR SHALL CONFIRM EXISTING CIRCUIT BREAKER SIZES THAT ARE TO REMAIN PRIOR TO ORDERING PANEL INTERIOR REPLACEMENT AND NEW CIRCUIT BREAKERS. REFER TO PANEL SCHEDULE FOR ADDITIONAL INFORMATION.
4. PROVIDE TWO (2) NEW 20A./1P. CIRCUIT BREAKER (TO MATCH EXISTING TYPE - SIEMENS) TO SERVE NEW EXTERIOR RECEPTACLE MOUNTED ON HVAC UNIT. FIELD VERIFY EXISTING CONDITIONS.
5. ELECTRICAL CONTRACTOR TO ROUTE NEW ELECTRICAL TO HVAC UNITS AND RECEPTACLE THROUGH 12" DIAMETER PVC PIPE THAT WAS PREVIOUSLY USED FOR REFRIGERATION PIPING THAT IS BEING ABANDONED IN PLACE. VERIFY EXISTING CONDITIONS AND EXACT ROUTING OF CONDUITS IN FIELD.
6. DISCONNECT SWITCH FURNISHED WITH UNIT, WIRED BY ELECTRICAL CONTRACTOR. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION.
7. GFI RECEPTACLE BUILT-IN WITH THE UNIT SHALL BE PROVIDED WITH SEPARATE POWER FEED. PROVIDE (1) 20A-1P BRANCH CIRCUIT AS SHOWN ON THE PLAN. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION.
8. ELECTRICALLY DISCONNECT EXISTING UNIT FOR REMOVAL. REMOVE ANY ASSOCIATED DISCONNECT SWITCHES AND STARTERS. EXISTING CONDUITS AND CONDUCTORS SHALL REMAIN TO FEED NEW MECHANICAL EQUIPMENT. CONTRACTOR SHALL RELOCATE EXISTING JUNCTION BOXES, EXTEND CONDUIT AND WIRING AS REQUIRED TO ACCOMMODATE THE RENOVATIONS. FIELD VERIFY EXISTING CONDITIONS.

RETROFIT PANELBOARDS NOTES:

A. FOR ALL PANELBOARD DENOTED TO RECIEVE NEW PANEL INTERIOR:
- A.1. EXISTING ELECTRICAL PANELBOARD INTERIOR TO BE REPLACED.
- A.2. CONTRACTOR SHALL TAG EXISTING CIRCUITS PRIOR TO DISCONNECTING FROM EXISTING PANELBOARD.
- A.3. ALL PANELBOARDS SHALL BE EXAMINED AND FIELD MEASURED PRIOR TO FABRICATION. THE PANELBOARD INVESTIGATION SHALL BE PERFORMED AT THE START OF THE PROJECT
- A.4. ALL EXISTING CLOTH WIRING SHALL BE PROTECTED WITH A HEAT SHRINK SLEEVE (6" MINIMUM LENGTH FOR BRANCH CIRCUITS, 12" MINIMUM LENGTH FOR FEEDERS).
- A.5. RECONNECT EXISTING FEEDER AND BRANCH CIRCUITS AFTER PANEL INTERIOR REPLACEMENT HAS BEEN INSTALLED.

B. PROVIDE NEW TYPED DIRECTORIES PANELBOARD DIRECTORIES FOR ALL PANELBOARDS.

C. PROVIDE NEW ENGRAVED THREE-LAYER LAMINATED PLASTIC, BLACK LETTERS ON WHITE BACKGROUND NEXT TO EACH NEW CIRCUIT BREAKER REPLACING FUSIBLE SWITCH IN DISTRIBUTION SWITCHBOARD.

NOTE

SCHEDULE ELECTRIC SERVICE OUTAGE WITH UTILITY COMPANY AND NOTIFY OWNER, ARCHITECT AND ENGINEERS (10) DAYS IN ADVANCE. BUILDING SHALL BE UNOCCUPIED DURING OUTAGE UNLESS TEMPORARY POWER IS PROVIDED TO MAINTAIN LIFE SAFETY SYSTEMS THROUGH THE DURATION OF THE OUTAGE. RESET AND RESTART ALL SYSTEMS INCLUDING, BUT NOT LIMITED TO, FIRE ALARM, SECURITY AND TELECOMMUNICATIONS AFTER RESTORING BUILDING POWER.

NOTE

LUGS AND TERMINATIONS ON ELECTRICAL EQUIPMENT SHALL BE SIZED TO ACCOMMODATE THE THE NUMBER OF PARALLEL SETS AND SIZE OF CONDUCTORS TO MAKE FULL SIZE TERMINATIONS WITHOUT INVALIDATING THE TESTING LABEL AND LISTING BY A NATIONALLY RECOGNIZED TESTING AGENCY (UNDERWRITERS LABORATORY OR EQUIVALENT). INSTALLATION OR MODIFICATION OF LUGS AND TERMINATIONS AT ELECTRICAL EQUIPMENT WILL NOT BE ACCEPTABLE UNLESS IN COMPLIANCE WITH THE ORIGINAL EQUIPMENT MANUFACTURE AND TESTING AGENCY.

NOTE

INCIDENTAL WORK MAY ALSO BE NECESSARY DUE TO CHANGES AFFECTING, SITE WORK, ELECTRICAL, OR OTHER SYSTEMS. SUCH INCIDENTAL WORK IS ALSO PART OF THIS CONTRACT. INSPECT THOSE AREAS, COORDINATE WITH OTHER TRADES, AND ASCERTAIN WORK NEEDED, AND DO THAT WORK IN ACCORD WITH THE CONTRACT REQUIREMENTS, AT NO ADDITIONAL COST. THE REMOVAL & REINSTALLATION OF EXISTING WORK TO ACCOMMODATE CHANGES TO EXISTING, OR INSTALLATION OF, ELECTRICAL, OTHER SYSTEMS IS ALSO PART OF THIS CONTRACT.

NOTE

BUS BAR TAPS AT ELECTRICAL EQUIPMENT WILL NOT BE ACCEPTABLE UNLESS TAPS ARE MADE AT UTILIZING LUGS AND HOLES IN BUS BARS SUPPLIED OR APPROVED BY THE ORIGINAL EQUIPMENT MANUFACTURE, NOR SHALL TAPS INVALIDATE THE TESTING LABEL AND LISTING BY A NATIONALLY RECOGNIZED TESTING AGENCY (UNDERWRITERS LABORATORY OR EQUIVALENT).

NOTE

EXISTING CONDITIONS WERE OBTAINED FROM EXISTING AS-BUILT DRAWINGS AND CURSORY FIELD OBSERVATION. THIS CONTRACTOR SHALL IDENTIFY ANY DISCREPANCIES IN THE FIELD AND REPORT THEM TO THE ENGINEER.

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Oak Brook, IL 60523
P: 630.990.3535
www.legat.com

M.E.P. ENGINEER
20/10 Engineering
1216 Tower Road
Schaumburg, IL 60173
P: 847.882.2010
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CENTRAL PARK WEST MECHANICAL RENOVATIONS

SIGNATURE
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1	ADDENDUM #1	12.03.19

PROJECT NUMBER 220005.00
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DRAWN BY
CHECKED BY

ELECTRICAL FLOOR PLANS

△1 E-201
ISSUED FOR BIDDING

ELECTRICAL SPECIFICATIONS

I. SCOPE

THE WORK COVERED BY THIS SPECIFICATION INCLUDES THE COMPLETE ELECTRICAL SYSTEM.

THE WORK TO BE PERFORMED UNDER THE ELECTRICAL SPECIFICATIONS AND DRAWINGS CONSISTS OF FURNISHING ALL LABOR AND MATERIAL FOR THE COMPLETE INSTALLATION OF ELECTRICAL SYSTEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

A. CONDUIT AND WIRING
B. PANELBOARDS
C. ELECTRICAL EQUIPMENT AND WIRING
D. LUMINAIRES
E. TELEPHONE AND DATA RACEWAY SYSTEM
F. NURSE CALL SYSTEM
G. FIRE ALARM

II. GENERAL

THIS SPECIFICATION IS INCLUSIVE FOR EACH ITEM REQUIRING ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO PROPERLY INSTALL, ALTER, ADJUST, AND PUT INTO OPERATION THE COMPLETE ELECTRICAL SYSTEM.

THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER LAYOUT AND CONSTRUCTION OF THE WORK INCLUDED IN THIS CONTRACT.

THE DRAWINGS AND SPECIFICATIONS SHALL BE UNDERSTOOD TO COVER, ACCORDING TO THEIR INTENT AND MEANING, COMPLETE SYSTEMS AS DESCRIBED HEREIN.

MINOR 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 OR NOT THEY ARE SPECIFICALLY CALLED FOR BY THE DRAWINGS AND/OR SPECIFICATIONS.

THE COMPLETE INSTALLATION SHALL MEET ALL APPLICABLE CODE REQUIREMENTS.

III. VISIT TO SITE

ATTENTION IS DIRECTED TO THE NECESSITY OF THE CONTRACTOR TO VISIT THE SITE AND EXAMINE ALL CONDITIONS AFFECTING THE PROPER EXECUTION OF THIS CONTRACT. SUBMISSION OF PROPOSALS SHALL BE CONSIDERED EVIDENCE THAT THE CONTRACTOR HAS VISITED AND EXAMINED THE SITE.

NO EXTRA PAYMENT WILL BE ALLOWED TO THE CONTRACTOR FOR EXTRA WORK CAUSED BY FAILURE TO VISIT, EXAMINE, AND CLARIFY.

IV. LAWS, ORDINANCES, AND REGULATIONS

ALL SYSTEMS SHALL CONFORM IN FULL AND/OR PART 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 THE CASE OF CONFLICT BETWEEN GOVERNING LEVELS, THE MORE STRINGENT LAWS SHALL APPLY.

THE CONTRACTOR SHALL PAY ALL FEES AND OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED BY ANY AUTHORITY HAVING JURISDICTION IN CONNECTION WITH THE CONTRACTOR'S WORK.

WHERE APPLICABLE, ALL NEW MATERIAL SHALL BEAR THE UNDERWRITER'S SEAL OF APPROVAL, AS WELL AS THOSE SEALS OF ALL MUNICIPALITIES HAVING JURISDICTION. CERTIFICATES TO THIS EFFECT SHALL BE FURNISHED TO THE ARCHITECT UPON REQUEST.

THE CONTRACTOR SHALL SECURE AND PAY FOR ALL LICENSES REQUIRED BY THE GOVERNING BODIES TO OPERATE AS AN ELECTRICAL CONTRACTOR FOR THIS PROJECT.

V. WORKMANSHIP

ALL WORK TO BE PERFORMED SHALL BE DONE BY QUALIFIED MECHANICS IN THE EMPLOY OF THE CONTRACTOR ON THIS PROJECT; MECHANICS SHALL BE SKILLED IN THE PHASES OF THE WORK TO WHICH THEY ARE USED.

THE COMPLETE SYSTEM SHALL MEET THE REQUIREMENTS OF THE CURRENT EDITION OF THE NATIONAL ELECTRICAL CODE AND AS MAY BE MODIFIED BY THE LOCAL ELECTRICAL CODE.

VI. MATERIALS AND EQUIPMENT

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 BIDS.

EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR TYPE AND CAPACITY OF EACH PIECE OF EQUIPMENT USED.

VII. COORDINATION WITH OTHER TRADES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THEIR WORK WITH THE WORK OF OTHER TRADES. THE CONTRACTOR IS COMPLETELY RESPONSIBLE IF FAILURE ON THEIR PART TO COORDINATE EFFORTS RESULTS IN EXTRA WORK HAVING TO BE DONE TO COMPLETE A TASK. AS SUCH, THEIR FAILURE SHALL NOT BE THE BASIS FOR ANY EXTRA CHARGES AGAINST THE OWNER.

VIII. GROUNDING

PROVIDE ALL ELECTRICAL SYSTEM AND EQUIPMENT GROUNDS AS REQUIRED BY THE NATIONAL ELECTRICAL CODE AND AS MAY BE MODIFIED BY THE LOCAL ELECTRICAL CODE, THE NATIONAL SAFETY CODE, AND ALL AGENCIES/AUTHORITIES NOTED ABOVE.

IX. WIRING - MANNER OF INSTALLATION

ALL WIRES SHALL BE INSTALLED IN METALLIC CONDUIT. PROVIDE THIN WALL CONDUIT (EMT) IN ALL LOCATIONS EXCEPT WHERE PROHIBITED BY CODE, EXPOSED TO WEATHER, EXPOSED TO MECHANICAL INJURY, OR WHERE BURIED IN OR BELOW SLABS ON GRADE; IN THOSE LOCATIONS PROVIDE RIGID STEEL CONDUIT.

THE ENTIRE CONDUIT SYSTEM SHALL BE INSTALLED BOTH ELECTRICALLY AND MECHANICALLY CONTINUOUS. CONDUIT FITTINGS SHALL BE SUITABLE FOR THEIR PURPOSE AND SHALL BE COMPRESSION TYPE ONLY. INDENTER TYPE FITTINGS ARE STRICTLY PROHIBITED.

X. WIRE AND CABLE

WIRE AND CABLE FOR BRANCH CIRCUITS AND SECONDARY FEEDERS WITHIN THE BUILDING SHALL BE COPPER, THERMOPLASTIC INSULATED, TYPE THWN OR THHN, AND 600V RATED. TYPE THW MAY BE USED IN LIEU OF TYPE THWN OR THHN IN SIZES OF #12 AWG AND #10 AWG IN DRY LOCATIONS AT THE CONTRACTOR'S OPTION. WIRE BENEATH OR IN THE GROUND FLOOR AND OTHER WET LOCATIONS SHALL BE TYPE THWN.

NO WIRE SMALLER THAN #12 AWG SHALL BE USED ON THIS PROJECT UNLESS INDICATED.
LOW VOLTAGE CONTROL AND SIGNAL CIRCUITS MAY BE A MINIMUM OF #18 AWG.

PROVIDE COLOR CODED WIRING AS FOLLOWS:

	120/208V	120/240V DELTA	277/480V
PHASE A	BLACK	BLACK	BROWN
PHASE B	RED	ORANGE	ORANGE
PHASE C	BLUE	BLUE	YELLOW
NEUTRAL	WHITE	WHITE	GRAY
GROUND	GREEN	GREEN	GREEN WITH YELLOW STRIPE

BRANCH CIRCUIT WIRING FOR 20 AMP RECEPTACLES AND LIGHTING CIRCUITS SHALL BE ADJUSTED FOR VOLTAGE DROP:

A. 120/208V:
   0-75' - #12AWG MINIMUM
   75'-150' - #10AWG MINIMUM
   150'-225' - #8AWG MINIMUM

WIRE SIZES #12 AWG AND #10 AWG SHALL BE SOLID. WIRE SIZE #8 AWG AND LARGER SHALL BE STRANDED.

CONDUCTORS OF DIFFERENT VOLTAGES ("LOW VOLTAGE" vs. 120/208 VOLT) SHALL NOT OCCUPY THE SAME WIRING ENCLOSURE, CABLE, OR RACEWAY.

ALL WIRING SHALL BE ENCLOSED WITHIN A COMPLETE AND CONTINUOUS METAL RACEWAY.

XI. SPLICING

SPLICING WIRES SHALL BE DONE ONLY IN ACCESSIBLE OUTLET, JUNCTION, OR PULL BOXES. SPLICES SHALL BE MADE STRICTLY IN ACCORDANCE WITH THE INSTRUCTIONS OF THE CABLE MANUFACTURER USING THE METHODS AND MATERIALS RECOMMENDED BY THE MANUFACTURER.

FOR #10 AWG AND #12 AWG WIRE, SPLICES SHALL BE MADE WITH SCOTCHLOK CONNECTORS.

WIRE #8 AWG AND LARGER:
   BURNDY OR EQUAL SOLDERLESS MECHANICAL LUG AND PAINTED WITH INSULATING VARNISH.
   POLARIS OR EQUAL SOLDERLESS MECHANICAL LUG WITH FACTORY APPLIED CHEMICAL AND ABRASION RESISTANT, UV RATED INSULATION.

ALL CONNECTIONS SHALL BE PROPERLY TAPED WITH SCOTCH ELECTRICAL TAPE #22, #33, OR APPROVED EQUAL.

XII. JUNCTION AND PULL BOXES

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 CABLES. THEY 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. MINIMUM SIZE OF JUNCTION BOXES SHALL BE 4" X 4" X 2" SQUARE.

XIII. CONDUIT AND ELECTRIC METALLIC TUBING

CONDUIT AND ELECTRIC METALLIC TUBING SHALL BE IN ACCORDANCE WITH APPLICABLE ARTICLES OF THE NATIONAL ELECTRICAL CODE AND AS MAY BE MODIFIED BY THE LOCAL ELECTRICAL CODE.

INTERMEDIATE METAL CONDUIT (IMC) - ARTICLE 342
RIGID METAL CONDUIT (RMC) - ARTICLE 344
FLEXIBLE METAL CONDUIT (FMC) - ARTICLE 248
LIQUID TIGHT FLEXIBLE METAL CONDUIT (LFMC) - ARTICLE 350
RIGID POLYVINYL CHLORIDE CONDUIT (PVC) ARTICLE 352
ELECTRICAL METALLIC TUBING (EMT) - ARTICLE 358

IMC, RMC, AND EMT SHALL BE GALVANIZED STEEL.

THE CONDUIT SHALL BE INSTALLED PERPENDICULAR AND PARALLEL TO BUILDING LINES.

ALL CONDUIT INSTALLED OVERHEAD SHALL BE RIGIDLY SUPPORTED FROM THE STRUCTURE ABOVE AND NOT FROM ANY PART OF THE ROOFING SYSTEM OR CEILING SYSTEM. CEILING SYSTEM TO INCLUDE T-BAR GRID, SUPPORT WIRES, ETC.

ALL CONDUIT INSTALLATION SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:

A. SINGLE PHASE 120 VOLT BRANCH CIRCUITS, COMMUNICATIONS WIRING, AND OTHER SIGNALING CIRCUITS FOR INTERIOR LOCATIONS: USE EMT.
B. THREE PHASE 208 VOLT FEEDERS AND SINGLE PHASE BRANCH CIRCUITS FOR INTERIOR LOCATIONS: UP TO 2" USE EMT, OVER 2" USE IMC.
C. EXTERIOR CONDUITS ABOVE GRADE SHALL BE IMC OR RMC.
D. EXTERIOR CONDUITS BELOW GRADE SHALL RMC OR PVC.
E. PROVIDE METALLIC TRACER WIRE OR TAPE FOR ALL BELOW GRADE NON-METALLIC CONDUITS.

XIV. OUTLET BOXES

GENERALLY, OUTLET BOXES OF PROPER TYPE AND NOT LESS THAN 4 INCHES SQUARE OR OCTAGONAL AS REQUIRED BY BUILDING CONDITIONS SHALL BE PLACED AT ALL LIGHT, RECEPTACLE, AND SWITCH OUTLETS. OUTLET BOXES SHALL BE FIRMLY SECURED IN PLACE AND SHALL BE SET TRUE, SQUARE, AND FLUSH WITH THE FINISHED SURFACES. THE CONTRACTOR SHALL MOVE ANY OUTLET BOX UP TO 5 FEET IN ANY DIRECTION WITHOUT COST IF RELOCATED PRIOR TO INSTALLATION. MINIMUM DEPTH SHALL BE 2 INCHES.

XV. WIRING DEVICES

ACCEPTABLE MANUFACTURERS:
   PASS & SEYMOUR, LEVITON, COOPER, OR HUBBELL

SWITCHES SHALL BE OF THE HEAVY DUTY GRADE, 120/277 VOLT, FLUSH TOGGLE TYPE RATED AT 20 AMPERES AND UL APPROVED. ALL SWITCHES SHALL HAVE POLES AS REQUIRED AND SHALL BE SIMILAR TO PASS & SEYMOUR #PS20ACI. DEVICE COLORS TO BE SELECTED BY ARCHITECT. RECEPTACLES SHALL BE POLARIZED, GROUNDED, DUPLEX, BACK AND SIDE WIRED, RATED 20 AMPERES, AND UL APPROVED. ALL GENERAL PURPOSE RECEPTACLES SHALL BE SPECIFICATION GRADE SIMILAR TO PASS & SEYMOUR #PS5362. ALL TAMPER RESISTANT RECEPTACLES SHALL BE SIMILAR TO PASS & SEYMOUR #TR5362. ALL GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLES SHALL BE SIMILAR TO PASS & SEYMOUR #2097TRW. ALL OUTDOOR RECEPTACLES SHALL BE WEATHER RESISTANT AND GROUND FAULT CIRCUIT INTERRUPTER TYPE SIMILAR TO PASS & SEYMOUR #2095TRWRW.

CONTRACTOR TO SUBMIT SHOP DRAWINGS ON THIS ITEM.

XVI. PLATES

SWITCH AND RECEPTACLE PLATES IN FINISHED AREAS SHALL BE IMPACT RESISTANT NYLON WITH COLOR AS SELECTED BY ARCHITECT. ALL PLATES IN UNFINISHED AREAS AREA SHALL BE FORMED STEEL (GARVIN COVERS).

XVII. DISCONNECTS

ACCEPTABLE MANUFACTURERS:
   EATON, SQUARE D, OR SIEMENS

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL FUSIBLE OR NON-FUSIBLE DISCONNECT SWITCHES AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN.

PROVIDE HEAVY DUTY, KNIFE SWITCH TYPE DISCONNECT SWITCHES FOR ALL ELECTRICALLY OPERATED EQUIPMENT NEMA RATED FOR SIZE AND LOCATION. DISCONNECT SWITCHES SHALL BE PLENUM RATED OR WEATHERPROOF WHERE REQUIRED. HANDLE SHALL BE LOCKABLE IN THE 'OFF' POSITION. PROVIDE A PLASTIC LAMINATE INSCRIPTION PLATE WITH RIVETS FOR IDENTIFICATION. (PULLOUT SWITCHES ARE NOT APPROVED.)

FOR FUSIBLE DISCONNECT SWITCHES, PROVIDE FUSE CLIPS DESIGNED TO ACCOMMODATE NEMA FUI, CLASS R FUSES.

CONTRACTOR TO SUBMIT SHOP DRAWINGS ON THIS ITEM.

XVIII. FIRE STOPPING

THE CONTRACTOR SHALL FIRE STOP ALL PENETRATIONS THROUGH FIRE RATED WALLS, PARTITIONS, ROOFS, AND/OR FLOORS SO THAT THE INTEGRITY OF THE FIRE RATING IS NOT COMPROMISED BY THE CONTRACTOR'S INSTALLATION OF ANY BOX, CABLE TRAY, RACEWAY, AND/OR CONDUIT. FIRE STOPPING METHODS AND MATERIALS SHALL CONFORM TO LOCAL CODE AUTHORITY REQUIREMENTS. AT A MINIMUM, THE CONTRACTOR SHALL GROUT AROUND ALL BOXES, CABLE TRAYS, RACEWAYS, CONDUITS, ETC., IN PENETRATION RATED PARTITION/FLOOR CONSTRUCTION WITH NON-SHRINK GROUT SO THAT ALL OPEN SPACES ARE FILLED IN SOLIDLY.

THE CONTRACTOR SHALL PROVIDE SUITABLY RATED LUMINAIRES OR UTILIZE APPROVED MATERIALS AND METHODS TO MAINTAIN THE INTEGRITY OF THE FIRE RATED CEILING. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR THE LOCATION OF ALL FIRE RATED CEILINGS, PARTITIONS, AND WALLS.

XIX. PANELBOARDS

ACCEPTABLE MANUFACTURERS:
   POWER DISTRIBUTION EQUIPMENT CO., JOHN GANDY, 847-455-2500.
   ILLINOIS SWITCHBOARD, ED ZASTAWNY, 630-543-0910.
   SIEMENS

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL PANELBOARDS AND CABINETS AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN.

PANELBOARDS SHALL BE DEAD FRONT, WITH CAPACITY AND VOLTAGE CHARACTERISTICS AS SHOWN ON THE SCHEDULES. MAIN AND NEUTRAL BUS BARS SHALL BE COPPER AND BASED ON A CURRENT DENSITY OF NOT MORE THAN 1000 AMPERES PER SQUARE INCH CROSS SECTION AND SHALL BE FULL CAPACITY FOR THE ENTIRE LENGTH OF THE PANEL. BUSSING SHALL BE SEQUENCED SO AS TO PERMIT THE INSTALLATION OF FUSIBLE SWITCHES OR 1, 2, AND 3 POLE BREAKERS AT ANY LOCATION. LUGS SHALL BE SUITABLE FOR COPPER CABLE. GROUND BARS SHALL BE COPPER.

CIRCUIT BREAKERS SHALL BE QUICK-MAKE/QUICK-BREAK, SWITCHING DUTY RATED FOR 20A BREAKERS, TRIP INDICATING AND AMBIENT COMPENSATED, WITH COMMON TRIP ON MULTI-POLE BREAKERS. CIRCUIT BREAKERS SHALL BE BOLT-ON CONNECTED TO THE PANELBOARD, MINIMUM INTERRUPTING CAPACITY SHALL BE 10,000 AIC FOR 120/208 VOLT CIRCUIT BREAKERS.
(PLUG-IN BREAKERS ARE NOT APPROVED.)

BREAKERS USED FOR EXIT SIGNS, EMERGENCY LIGHTING, AND NIGHT LIGHTING CIRCUITS SHALL BE LOCKED IN THE "ON" POSITION.

PANELBOARD BOXES SHALL BE CODE GAUGE, GALVANIZED SHEET STEEL, WITH 4 INCH MINIMUM SIDE GUTTERS AND 5 INCH MINIMUM END GUTTERS. PANELBOARD BOXES SHALL NOT EXCEED 78 INCHES ABOVE FINISHED FLOOR.

EACH BRANCH CIRCUIT SHALL BE DISTINCTLY NUMBERED. PANELBOARD WIRING SHALL BE TAGGED AT EACH BREAKER WITH PROPER CIRCUIT NUMBERING. WRAP AROUND TAPES (BRADY TAGS) WILL BE ACCEPTABLE.

PANELBOARDS SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND AS MAY BE MODIFIED BY THE LOCAL ELECTRICAL CODE, UNDERWRITERS LABORATORIES, AND NEMA, AND SHALL DISPLAY A SERVICE ENTRANCE LABEL WHERE APPLICABLE. EACH PANELBOARD SHALL BE LEFT WITH A TYPEWRITTEN DIRECTORY IDENTIFYING EACH LOAD AFFIXED TO THE INSIDE COVER OF THE PANELBOARD.

PROVIDE A PERMANENT IDENTIFICATION NAMEPLATE ON ALL PANELBOARDS AND DISTRIBUTION PANELS. AT FUSIBLE DISTRIBUTION PANELS PROVIDE A NAMEPLATE AT EACH PIECE OF EQUIPMENT.

CONTRACTOR TO SUBMIT SHOP DRAWINGS ON THIS ITEM.

XX. BALANCING

THE SYSTEM OF FEEDERS AND BRANCH CIRCUITS FOR POWER AND LIGHTING SHALL BE CONNECTED IN SUCH A MANNER THAT THE CONNECTED LOADS ARE BALANCED ELECTRICALLY ON THE THREE PHASES AS CLOSELY AS POSSIBLE (WITHIN 10 PERCENT). SHOULD THE POWER COMPANY FIND AN UNFAVORABLE OPERATING CONDITION REACTING ON THE SERVICE, THE CONTRACTOR SHALL MAKE SUCH CHANGES REQUIRED TO BALANCE THE LOAD WITHOUT ADDITIONAL COST TO THE OWNER.

XXI. TESTING AND ADJUSTMENTS

ALL WORK SHALL BE TESTED BY THE CONTRACTOR. ALL MATERIAL, LABOR, AND EQUIPMENT SHALL BE FURNISHED BY THE CONTRACTOR TO ACCOMPLISH SUCH TESTS AS REQUIRED BY THE ARCHITECT/ENGINEER.

UPON COMPLETION OF THIS WORK, THE PROJECT SHALL BE FREE FROM SHORT CIRCUITS AND GROUNDS AND A THOROUGH TEST SHALL BE MADE. ALL OVERLOAD DEVICES, INCLUDING THOSE FURNISHED UNDER OTHER CONTRACTS SHALL BE ADJUSTED TO SUIT LOAD CONDITIONS BY THE CONTRACTOR. ALL SYSTEMS SHALL BE TESTED AND THEIR OPERATION DEMONSTRATED.

LIGHTING EQUIPMENT SHALL BE ADJUSTED TO THE SATISFACTION OF THE OWNER.

XXII. GUARANTEE

THE 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 THEIR 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.

ALL SUCH REPAIRS AND/OR REPLACEMENTS SHALL BE MADE WITHOUT DELAY AND AT THE CONVENIENCE OF THE OWNER.

XXIII. SUBSTITUTIONS

APPROVALS OF SUBSTITUTIONS FOR "APPROVED EQUAL" MUST BE MADE IN WRITING AND SUBSTITUTIONS MUST BE APPROVED BEFORE INSTALLATION. INSTALLATION WITHOUT PRIOR APPROVAL MAY RESULT IN THE CONTRACTOR REMOVING SUBSTITUTION AND REPLACING IT WITH SPECIFIED ITEM AT THEIR EXPENSE.

APPROVAL MAY BE GIVEN BY ARCHITECT OR ENGINEER.

GENERAL NOTES - ELECTRICAL

1. CONTRACTOR SHALL FURNISH MATERIALS AND USE INSTALLATION METHODS SUITABLE FOR THE ENVIRONMENTAL CONDITIONS OF THE AREA IN WHICH EQUIPMENT, FIXTURES, AND DEVICES ARE INSTALLED.
2. ALL CONNECTIONS TO EQUIPMENT WHICH ARE SUBJECT TO VIBRATION OR MOVEMENT SHALL BE MADE WITH FLEXIBLE CONDUIT.
3. THE LOCATIONS SHOWN FOR ALL LUMINAIRES AND CEILING MOUNTED ELECTRICAL EQUIPMENT ARE DIAGRAMMATIC. EXACT LOCATION SHALL BE DETERMINED FROM THE REFLECTED CEILING PLANS AND/OR ON THE JOB SITE BY THE ARCHITECT/ENGINEER REPRESENTATIVES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN CODE REQUIRED SPACINGS FOR ITEMS SUCH AS FIRE ALARM DEVICES.
4. CONTRACTOR SHALL BE REQUIRED TO MAINTAIN THE FIRE RATED INTEGRITY OF FLOORS CEILINGS AND/OR WALL PARTITIONS. ALL PENETRATIONS THROUGH FIRE RATED BUILDING ELEMENTS SHALL BE EFFECTIVELY SEALED USING APPROVED MATERIALS AND METHODS. ALL LIGHTING FIXTURES MOUNTED IN FIRE RATED CEILINGS SHALL BE INSTALLED TO MAINTAIN THE INTEGRITY OF THE FIRE RATED CEILING USING APPROVED MATERIALS AND METHODS. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT CONSTRUCTION TYPES AND RATINGS.

POWER SYMBOL LIST

Φ (WP,WR) (GFI)	20A. 2P, 3 WIRE, GROUNDING TYPE, 125V. SPECIFICATION-GRADE, DUPLEX RECEPTACLE NEMA 5-20R INSTALLED 16" A.F.F. U.N.O.
(EM,TR) Φ (IG,SPD) (AFCI)	- "EM" DENOTES RECEPTACLE WIRED TO CRITICAL BRANCH OF THE EMERGENCY SYSTEM. RECEPTACLE SHALL BE RED IN COLOR. - "GFI" DENOTES RECEPTACLE EQUIPPED WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER. - "WP" DENOTES WEATHER RESISTANT RECEPTACLE WITH WHILE-IN-USE WEATHERPROOF COVER. - "WR" DENOTES WEATHER RESISTANT RECEPTACLE. - "TR" DENOTES TAMPER RESISTANT TYPE RECEPTACLE. - "IG" DENOTES ISOLATED GROUND TYPE RECEPTACLE. - "SPD" DENOTES RECEPTACLE WITH INTEGRAL SURGE PROTECTIVE DEVICE. - "AFCI" DENOTES ARC FAULT CIRCUIT INTERRUPTER.
NF	NON-FUSED SAFETY DISCONNECT SWITCH, AMPERE RATING AND NUMBER OF POLES AS NOTED.
F	FUSED DISCONNECT SWITCH, AMPERE RATING, NUMBER OF POLES AND FUSE SIZE AS NOTED.
⊠	COMBINATION MOTOR STARTER WITH FUSED DISCONNECT, AMPERE RATING, NUMBER OF POLES, FUSE SIZE AND NEMA STARTER SIZE AS INDICATED.
	SWITCH FRAME SIZE.
	NUMBER OF FUSIBLE POLES.
	FUSE SIZE.
	NEMA ENCLOSURE RATING. (NEMA 1 STANDARD, 3R OUTDOORS AND WET LOCATIONS U.N.O.)
30/3/30/3R NEMA 00	FUSIBLE SWITCH RATING TAG.
	NEMA STARTER SIZE.
○	MOTOR.
$T	MANUAL MOTOR STARTER, THERMAL OVERLOAD TOGGLE SWITCH.
Ⓙ	CEILING JUNCTION BOX.
Ⓙ	WALL MOUNTED JUNCTION BOX.
Ⓙ	JUNCTION BOX WITH FLEXIBLE CONDUIT FOR FINAL CONNECTION TO EQUIPMENT.
◢	CIRCUIT BREAKER PANELBOARD.
T	DRY TYPE TRANSFORMER, WALL MOUNTED OR CEILING HUNG.
T	DRY TYPE TRANSFORMER WITH 4" CONCRETE HOUSEKEEPING PAD.
▨	DISTRIBUTION PANEL.
⌒	CONDUIT ROUTED CONCEALED IN WALLS AND CEILING. HASH MARKS DENOTE QUANTITY OF #12 MINIMUM AWG CONDUCTORS OR AS NOTED.
⌒	CONDUIT ROUTED EXPOSED. INSTALL PARALLEL TO WALLS AND CEILINGS. HASH MARKS DENOTE QUANTITY OF #12 MINIMUM AWG CONDUCTORS OR AS NOTED.
⌒	CONDUIT ROUTED BELOW GRADE. HASH MARK DENOTES QUANTITY OF #12 MINIMUM AWG CONDUCTORS OR AS NOTED.
⌒	DENOTES CONDUIT HOMERUN, 3/4" MINIMUM, PANEL DESTINATION AND CIRCUIT NUMBER(S) AS INDICATED.
	SHORT TICK MARK DENOTES LINE (HOT) OR SWITCH LEG CONDUCTOR, #12 MINIMUM AWG.
	LONG TICK MARK DENOTES NEUTRAL CONDUCTOR, #10 AWG MINIMUM.
	DENOTES INSULATED GROUND WIRE, #12 AWG MINIMUM.
⊐	CONDUIT END CAP.
⊏⊐	CONDUIT WALL SLEEVES FOR ROUTING OF LOW VOLTAGE CABLING WITH INSULATED BUSHING. EACH PENETRATION IS TO PROVIDE A MINIMUM OF (1) 1 1/4" CONDUIT (DATA), (1) 1" CONDUIT (FIRE ALARM/INTERCOM) U.N.O.

DEMOLITION SYMBOLS

SYMBOL	DESCRIPTION
R	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE REMOVED.
X	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO REMAIN.
XC	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE REMOVED AND JUNCTION BOX CAPPED OR REUSED AS REQUIRED.
XO	NEW ELECTRICAL EQUIPMENT INSTALLED OVER EXISTING OUTLET.
XRR	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE REMOVED, RELOCATED AND JUNCTION BOX REMOVED OR CAPPED AS REQUIRED.
XR	EXISTING ELECTRICAL EQUIPMENT OR OUTLET RELOCATED (NEW LOCATION).
XRT	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE TEMPORARILY REMOVED AND REINSTALLED IN SAME LOCATION.
XA	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE ABANDONED.
XM	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE MODIFIED.
XW	EXISTING ELECTRICAL EQUIPMENT TO BE REWIRED.

NOTE: NOT ALL SYMBOLS MAY BE USED.

DEMOLITION PLAN GENERAL NOTES

1. ALL INDICATED ELECTRICAL EQUIPMENT, FIXTURES, DEVICES, AND RELATED CONDUIT AND WIRING TO BE REMOVED UNLESS NOTED OTHERWISE.
2. ALL DEMOLITION OF THE ELECTRICAL SYSTEM AS NOTED ON THE DEMOLITION DRAWINGS SHALL BE COORDINATED WITH THE RENOVATION REQUIREMENTS TO DETERMINE THIS CONTRACTOR'S WORK.
3. IT IS THE INTENT OF THE ELECTRICAL DEMOLITION DRAWING(S) TO INDICATE AREAS IN WHICH ELECTRICAL EQUIPMENT, CONDUIT, LUMINAIRES, DEVICES, ETC. NEED TO BE REMOVED, RELOCATED, OR MODIFIED BY THIS CONTRACTOR TO ALLOW FOR THE RENOVATION PHASE OF CONSTRUCTION. THE ELECTRICAL DEMOLITION PLAN IS FOR REFERENCE PURPOSES ONLY AND IT IS NOT INTENDED TO BE THE SOLE SOURCE OF EXISTING CONDITIONS.
4. CONTRACTOR SHALL VISIT THE BUILDING, BEFORE SUBMITTING THEIR BID, TO VERIFY THE EXISTING CONDITIONS WHICH WILL AFFECT THEIR WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE ELECTRICAL DEMOLITION REQUIRED TO ACCOMMODATE THE RENOVATION. REMOVE AS REQUIRED ALL LUMINAIRES, CONNECTIONS TO MECHANICAL EQUIPMENT, DEVICES, ETC.. PULL OUT ALL UNUSED CONDUCTORS AND CABLES, AND REMOVE ALL ABANDONED CONDUIT. ELECTRICALLY DISCONNECT AIR HANDLING UNITS, PUMPS, BOILERS, AND OTHER SUCH EQUIPMENT FOR REMOVAL BY OTHERS. BACKFEED AS REQUIRED ALL DOWNSTREAM DEVICES WHICH REMAIN. (THE CONTRACTOR SHALL COORDINATE WITH THE OWNER WHICH ITEMS INDICATED TO BE REMOVED & DISCONNECTED SHALL BE SALVAGED AND PRESENTED TO THE OWNER PRIOR TO ANY DISPOSAL OF THESE ITEMS.)
6. ALL REMOVED EQUIPMENT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE. WHERE WORK CALLED FOR ON THE DRAWINGS OR IN THE SPECIFICATIONS INVOLVES THE REMOVAL OF FLUORESCENT LAMPS CONTAINING MERCURY OR CLOTH INSULATED CONDUCTORS, THEY SHALL BE PROPERLY HANDLED AND REMOVED FROM SITE BY APPROVED METHODS PER EPA REGULATIONS.
7. ALL EXISTING RECEPTACLES/DATA OUTLETS/DEVICES/EQUIPMENT THAT ARE NOT PART OF DEMOLITION SHALL REMAIN AS IS UNLESS NOTED OTHERWISE. CONTRACTOR SHALL CHECK AND VERIFY FOR CONTINUING OPERATION OF THESE DEVICES PRIOR TO SUBSTANTIAL COMPLETION. IF ANY EXISTING CIRCUITS TO REMAIN ARE INTERRUPTED BY DEMOLITION OR NEW CONSTRUCTION, CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT/REMOVAL/REROUTING/MODIFICATION OF CONDUITS AND WIRES INCLUDING EXTENSION, AS REQUIRED TO MAINTAIN FUNCTIONALITY OF DOWNSTREAM RECEPTACLES/DATA OUTLETS/DEVICES/EQUIPMENT.
8. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT PHASING AND MAINTAIN EXISTING SYSTEMS ACTIVE IN AREAS WHICH REMAIN OCCUPIED.
9. EXISTING CEILING MOUNTED SPEAKERS, PROGRAM BELLS, FIRE ALARM DEVICES, AND SIMILAR ELECTRICAL EQUIPMENT AND DEVICES TO REMAIN SHALL BE EXTENDED AND REINSTALLED AS REQUIRED IN NEW CEILINGS. FIELD VERIFY EXACT QUANTITIES AND REQUIREMENTS.
10. SUPPORT ALL CABLING DRAPED OR LYING LOOSE ABOVE EXISTING CEILINGS WHICH ARE SCHEDULED TO BE REMOVED. TIE WRAP CABLING TO JOISTS OR OTHER STRUCTURAL MEMBERS AS REQUIRED. UPON THE COMPLETION OF THE PROJECT, NO WIRING SHALL BE LYING ON ACCESSIBLE CEILINGS.

POWER PLAN GENERAL NOTES

1. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR SHARED NEUTRAL CONDUCTORS WHICH THE MINIMUM SIZE SHALL BE #10 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS AND BRANCH FEEDS TO POWER OUTLETS SHALL BE 3/4". 1/2" CONDUIT IS ACCEPTABLE FOR BRANCH WIRING TO END OF THE LINE RECEPTACLES ONLY. ALL POWER BRANCH CIRCUITS SHALL TERMINATE AT 20A/1-POLE CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE.
2. THE CONTRACTOR SHALL PROVIDE ALL PENETRATIONS, SLEEVES, AND SEALANT AS REQUIRED THROUGH PARTITIONS TO ACCOMMODATE THE FIRE ALARM, PAGING, CLOCK, VOICE, AND DATA CABLING. ANY PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE PROPERLY SEALED AND TREATED TO MAINTAIN THE FIRE STOPPING RATING OF THE WALLS, FLOORS, AND CEILINGS.
3. BACKBOXES ARE TO BE MOUNTED OFFSET, NOT BACK TO BACK.
4. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
5. UNLESS INDICATED OTHERWISE, ALL MATERIALS REQUIRED TO PROVIDE BRANCH CIRCUITS AND FEEDERS ARE TO BE NEW.
6. DURING THE COURSE OF INVESTIGATION AND DEMOLITION, IF IT IS DETERMINED THAT IT MAY BE FEASIBLE TO UTILIZE EXISTING MATERIALS FOR BRANCH CIRCUITS AND FEEDERS, CONTRACTOR SHALL NOTIFY ENGINEER FOR APPROVAL PRIOR TO PERFORMING ANY WORK.
7. REFER TO MECHANICAL SHEETS FOR ADDITIONAL EQUIPMENT INFORMATION.
8. DRAWINGS DO NOT REPRESENT ALL EXISTING FIRE ALARM DEVICES. INITIATING AND NOTIFICATION DEVICES NOT SHOWN ON THE DRAWINGS ARE EXISTING TO REMAIN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN OPERATION OF THE EXISTING DEVICES NOT SHOWN.
9. EXISTING FIRE ALARM SYSTEM SHALL BE OPERATIONAL AT ALL TIMES. THE OCCUPIED AREA OF THE BUILDING SHALL NOT BE LEFT UNPROTECTED AT ANY TIME. IF AN INTERRUPTION OF FIRE ALARM SYSTEM IS REQUIRED TO FACILITATE DEVICE INSTALLATION, PROVIDE 48 HOURS OF ADVANCE NOTICE TO THE OWNER AND THE LOCAL FIRE DEPARTMENT. CONTRACTOR SHALL HIRE AN AUTHORIZED PERSONNEL TO WATCH/GUARD ANY UNPROTECTED AREAS OF THE BUILDING WHERE NECESSARY.
10. UNLESS INDICATED ON ARCHITECTURAL DRAWINGS, THE CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL CORING, CUTTING, PATCHING, REPAIRING, REFINISHING, AND REMOVAL/REPLACEMENT OF NEW OR EXISTING BUILDING CONSTRUCTION REQUIRED TO ACCOMMODATE THE INSTALLATION OR REMOVAL OF THEIR WORK. REMOVE, STORE, AND REINSTALL CEILING TILES AS REQUIRED TO INSTALL WORK ABOVE EXISTING REMOVABLE CEILINGS WHICH REMAIN; REPLACE TILES BROKEN OR DAMAGED DURING CONSTRUCTION. ALL PATCHING, REPAIRING, AND REFINISHING WORK TO OTHER FINISHES AND STRUCTURAL ELEMENTS SHALL BE PERFORMED BY THOSE REGULARLY INVOLVED IN THAT TRADE AND SHALL MATCH THE ADJACENT CONSTRUCTION AS CLOSELY AS POSSIBLE WHILE MAINTAINING EXISTING FIRE RATINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXISTING FIRE RATINGS OF CEILINGS AND PARTITIONS SYSTEMS. 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 OR REMOVAL OF EXISTING WORK SHALL BE REPAIRED, REPLACED, AND PAID FOR BY THE INSTALLING CONTRACTOR TO THE SATISFACTION OF THE ARCHITECT AND OWNER. REFER TO ARCHITECTURAL DRAWINGS FOR EXISTING BUILDING CONSTRUCTION THAT IS TO REMAIN AND, THEREFORE, SUBJECT TO PATCHING, REPAIRING, REFINISHING, AND REMOVAL/REPLACEMENT.
11. REMOVE AND REINSTALL CEILING MOUNTED DEVICES AS REQUIRED TO ALLOW INSTALLATION OF FEEDERS, BRANCH CIRCUITS, MECHANICAL PIPING, AND DUCT WORK. DEVICES INCLUDE BUT ARE NOT LIMITED TO: LUMINAIRES, SPEAKERS, FIRE ALARM, AND PAGING DEVICES.
12. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
13. SPECIAL ATTENTION SHALL BE PAID TO ALL CONDUIT ROUTING IN OPEN CEILING SPACE FOR AESTHETIC PURPOSES. ALL EXPOSED CONDUITS SHALL BE ROUTED PERPENDICULAR AND PARALLEL TO BUILDING LINES AND TIGHT TO CEILING/STRUCTURAL CORNERS. WHERE THIS IS NOT FEASIBLE, SUBMIT CONDUIT ROUTING PLAN TO ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
15. IN EXISTING WORK WHEN UTILIZING EXISTING SPACES OR SPARES, CONTRACTOR SHALL PROVIDE DEDICATED NEUTRAL FOR EACH BRANCH CIRCUIT UNLESS HANDLE TIES ARE UTILIZED TO MEET THE REQUIREMENTS OF ARTICLE 210.4(B).

BIDDING NOTE

SEE DRAWINGS ME-100 FOR GENERAL NOTES AND ADDITIONAL DETAILS APPLICABLE TO THIS TRADE'S WORK.

LEGATARCHITECTS
DESIGN | PERFORMANCE | SUSTAINABILITY

Oak Brook
Park District

CENTRAL PARK WEST MECHANICAL RENOVATIONS

1500 Forest Gate Road
Oak Brook, IL 60523

ARCHITECT
Legat Architects
2015 Spring Road, Suite 175
Oak Brook, IL 60523
P: 630.990.3535
www.legat.com

M.E.P. ENGINEER
20/10 Engineering
1216 Tower Road
Schaumburg, IL 60173
P: 847.882.2010
www.2010engineering.com

SIGNATURE ______
DATE ______

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	12.03.19

PROJECT NUMBER 220005.00
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CHECKED BY

ELECTRICAL NOTES, SCHEDULES, AND SYMBOL LEGEND

1 E-301
ISSUED FOR BIDDING