## M/E ROOF PLAN NOTES BY SYMBOL

- 1. PROVIDE 30A/2P NON-FUSED DISCONNECT SWITCH IN NEMA 3R ENCLOSURE MOUNTED TO UNISTRUT FRAME SUPPORTED FROM EQUIPMENT SUPPORT RAILS. MAKE FINAL FLEXIBLE CONNECTION TO EQUIPMENT IN 'LFMC' RACEWAY.
- 2. PROVIDE 60A/2P NON-FUSED DISCONNECT SWITCH IN NEMA 3R ENCLOSURE MOUNTED TO UNISTRUT FRAME SUPPORTED FROM EQUIPMENT SUPPORT RAILS. MAKE FINAL FLEXIBLE CONNECTION TO EQUIPMENT IN 'LFMC' RACEWAY.
- 3. PHOTOCELL FOR CONTROL OF EXTERIOR LIGHTS. SEE DETAIL 1:E6.3
- 4. MOUNT CONDENSING UNITS ON STRUCTURAL FRAME SYSTEM. COORDINATE EXACT MOUNTING REQUIREMENTS WITH ARCHITECT AND STRUCTURAL ENGINEER.
- 5. ROUTE REFRIGERANT PIPING FROM CONDENSING UNIT TO MATCHING EVAPORATOR COIL CONCEALED IN WALLS OR EQUIPMENT CLOSETS. PROVIDE ROOF CURB AT REFRIGERANT PIPING ROOF PENETRATION. PROVIDE PIPING PENETRATION ASSEMBLY EQUAL TO ALTA PRODUCTS SIGREST PIP CHASE HOUSING WITH CURB AND EXIT SEALS FOR REFRIGERANT PIPING AND ELECTRICAL CONDUIT AND ADDITIONAL SPARE EXIT SEAL. FIELD COORDINATE CURB LOCATION/ REFRIGERANT PIPING IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS FOR LONG LENGTH APPLICATIONS. SUBMIT CALCULATIONS AND SIZING RECOMMENDATIONS FOR EACH UNIT BASED ON LINE LENGTH AND SUCTION LIFT.





الجاری	<section-header><section-header><section-header><section-header><section-header><section-header><text><text></text></text></section-header></section-header></section-header></section-header></section-header></section-header>	<b>ODDESGILATION CONDESCIPATION CONDES</b>
	- MATCH LINE	Z30 N Z30 N Z85.8
$\begin{array}{c} 2^{2} \text{ VIR} \\ 2^{2} \text{ VIR} \\ 0 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$		LEE LOFTS, PHASE II, BUILDING 2 HISTORIC REHAB. (APARTMENTS, COMMERCIAL) SALINA, KANSAS
o <del>- −</del> 2" VTR		14654 17 Feb. 2023 Bor KANSAS. IV REVISION:
		DATE: February 15, 2023 JOB: 20-3120 SHEET NO.:



HVAC	SYMBOLS	PLUMB	ING SYMBOLS		
	RECTANGULAR SUPPLY DUCT UP		SANITARY DRAIN BELOW GRADE	Z↓ Z	CHECK VALVE
×	RECTANGULAR SUPPLY DUCT DOWN	+	SANITARY DRAIN ABOVE GRADE	~	TEMPERATURE AND PRESSURE RELIEF VALVE
Ø	ROUND DUCT UP		SANITARY VENT	<del>+</del>	WALL HYDRANT
0	ROUND DUCT DOWN	·	DOMESTIC COLD WATER		FLUSH TANK WATER CLOSET
	RECTANGULAR RETURN DUCT UP	· · ·	DOMESTIC HOT WATER		DUAL LEVEL ELECTRIC WATER COOLER
	RECTANGULAR RETURN DUCT DOWN	<u> </u>	DOMESTIC HOT WATER RECIRC	$\boxtimes$	SHOWER
$\boxtimes$	SQUARE SUPPLY DIFFUSER	w	WATER SERVICE	$\boxtimes$	SERVICE SINK
$\square$	SQUARE RETURN DIFFUSER	FP	FIRE PROTECTION SERVICE	())Gł	FLOOR DRAIN
$\sim$	FLEXIBLE DUCTWORK - MAX 5'	f⊢	SHORT RADIUS 90° ELBOW		FLOOR SINK
	RIGID DUCTWORK	——ю	PIPE TURNED UP	$\bigcirc$	SELF-RIMMING LAVATORY
<b></b>	MANUAL BALANCING DAMPER	c <del></del>	PIPE TURNED DOWN	·	BATHTUB
-	FIRE DAMPER	— <del>1</del> 01—	TEE UP		TWO COMPARTMENT KITCHEN SINK
<b>[</b> ]	WALL GRILLE (SUPPLY OR RETURN)		TEE DOWN	X"	DRAIN TAG (X=SIZE)
	THERMOSTAT	+x	SHORT RADIUS 45° ELBOW	X"	VENT TAG (X=SIZE)
	90° ELBOW WITH TURNING VANES	- <del>'+'</del> -	TEE	$\langle X^{"} \rangle$	WASTE STACK VENT TAG (X=SIZE)
XX	GRILLE/DIFFUSER TAG	исо	CLEANOUT		
X XX	TOP: DEVICE TAG (SEE SCHEDULE) MIDDLE: NECK SIZE	<b>—</b>	PIPE REDUCER		
	BOTTOM: AIRFLOW	<b>₽</b>	BALL VALVE		

GENE	RAL SYMBOLS
	DETAIL REFERENCE
#	—— DETAIL NUMBER
##	—— SHEET NUMBER
	ELEVATION REFERENCE
#	DETAIL NUMBER
##	SHEET NUMBER
	SECTION CUT
#/	DETAIL NUMBER
##	SHEET NUMBER
(#)	KEYED PLAN NOTE
	REVISION NOTE
•	ELEVATION
	CONNECT TO EXISTING. FIELD VERIFY LOCATION & MATERIAL OF EXISTING



LST Consulting Engineers, PA MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 Www.LSTengineers.com mai@LSTengineers.com

Project 22059 FEBRUARY 2023







## SYMBOL MODIFICATION

OA	OUTDOOR AIR
RA	RETURN AIR
SA	SUPPLY AIR
MC	MECHANICAL CONTRACTOR
тс	TEMPERATURE CONTROL CONTRACTOR
EC	ELECTRICAL CONTRACTOR
cc	

- GC GENERAL CONTRACTOR
- AFF ABOVE FINISHED FLOOR
- AFG ABOVE FINISHED GRADE BG BELOW GRADE
- FG FINISHED GRADE FFCO FINISH FLOOR CLEAN OUT
- FWCO FINISH WALL CLEAN OUT
- FGCO FINISH GRADE CLEAN OUT
- UNO UNLESS NOTED OTHERWISE





## (#) HVAC PLAN NOTES BY SYMBOL

- PROVIDE LOUVERED DRYER EXHAUST CAP WITH BIRD BARS, DEFLECTO OR EQUIVALENT. 1.

LST Consulting Engineers, PA

MANHATTANWICHITA4809 Vue Du Lac Place, Suite 201<br/>Manhattan, KS 66503<br/>785.587.8042125 S. Washington, Suite 150<br/>Wichita, Kansas 67202<br/>316.285.0696

N

		LIOW STRUCTORE CLUTCHER. SEE DE <u>ALTERNATE:</u> PROV DUCT WITH MILL PH 1" INSULATED AIR C	TAIL 2:M6.3 FOR ADDITIO IDE ALTERNATE PRICING F IOSPHATIZED EXTERIOR, P IOSPHATIZED EXTERIOR, P
	© 'BC-2'		
-10"Ø 14/12 			
1/4" = 1'-0"	HVAC PLAN		

• ALL EXPOSED DUCTWORK SHALL BE SPIRAL DUCT MOUNTED AS HIGH AS POSSIBLE BELOW STRUCTURE, UTILIZING CABLE HANGING SYSTEM EQUAL TO DUCTMATE ONAL INFO.

<u>NOTE:</u>

FOR SPIRAL DOUBLE WALL INSULATED PERFORATED GALVANIZED LINER, AND 1985 SMACNA STANDARDS.

## (#) HVAC PLAN NOTES BY SYMBOL

- PROVIDE LOUVERED DRYER EXHAUST CAP WITH BIRD BARS, DEFLECTO OR EQUIVALENT. 1. PROVIDE FULL SIZED DUCT CONNECTION AT LOUVER AND TRANSITION TO DUCT SIZE 2.
- INDICATED. SLOPE FIRST 5 FT OF DUCT TOWARDS EXTERIOR.
- 3. COORDINATE EXACT LOUVER LOCATION AND WALL OPENING REQUIREMENTS WITH ARCHITECT, G.C., AND STRUCTURAL ENGINEER.
- PROVIDE UL LISTED DRYER BOX EQUAL TO IN-O-VATE TECHNOLOGIES MODEL 425, INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. COORDINATE EXACT LOCATION WITH ARCHITECT. PROVIDE 4" DRYER EXHAUST UP CONCEALED IN WALL AND ROUTE TO DRYER EXHAUST WALL TERMINATION WITH BACKDRAFT DAMPER AS INDICATED ON PLANS. MANUFACTURER'S MAXIMUM ALLOWABLE DUCT LENGTH = 38' WITH TWO ELBOWS. PROVIDE PERMANENT LABEL INDICATING EQUIVALENT LENGTH PER IMC 504. COORDINATE EXACT REQUIREMENTS WITH EQUIPMENT PROVIDED. NOTE: ANNULAR SPACE AROUND DUCT IS TO BE SEALED AT ALL PENETRATION OF
- FLOORS AND CEILINGS WITH U.L. FIRE STOPPING SYSTEMS. PROVIDE EXHAUST FAN WITH BRICK VENT EQUAL TO GREENHECK MODEL BVE808. ROUTE 6"Ø 5. EXHAUST DUCT FROM FAN AND TRANSITION TO CONNECTION AT BRICK VENT. COORDINATE EXACT LOCATION AND WALL OPENING REQUIREMENTS WITH ARCH. AND G.C..
- 6. INTERLOCK EACH MAKE-UP AIR FAN WITH MATCHING DRYER. COORDINATE WITH E.C.. CONNECT OUTDOOR AIR DUCT TO RETURN AIR DUCT. PROVIDE BALANCING DAMPERS AND 7 BALANCE AS INDICATED ON PLANS, SEE DETAIL 3:M6.1 FOR MORE INFORMATION.
- WASTE AND VENT PLANS FOR MORE INFORMATION. COORDINATE EXACT LOCATION WITH ARCH. AND G.C.

9.

- CLOSET. 11. 8"Ø DUCT DOWN, SEE M1.1 FOR CONTINUATION.
- 12. MOUNT BOTTOM OF RETURN DUCT AT 8" A.F.F.

- 16. PROVIDE EXHAUST GRILLE WITH DAMPER.
- 17. PROVIDE BALANCING DAMPER AND BALANCE AS INDICATED ON PLANS.
- SEE DETAIL 1:M6.1 FOR MORE INFORMATION.
- MINIMUM 6" CLEARANCE BETWEEN DUCT AND DECK.



8. ROUTE CONDENSATE FROM INDOOR UNIT DOWN IN WALL TO FLOOR SINK IN BASEMENT. SEE MOUNT INDOOR UNIT HIGH ON WALL ABOVE DOOR SWING BUT BELOW PAINT LINE.

10. ROUTE CONDENSATE FROM INDOOR UNIT THROUGH WALL TO FLOOR DRAIN IN EQUIPMENT

13. BLOWER COIL TO BE ORIENTED IN THE DOWNFLOW POSITION. PROVIDE 24/12 SUPPLY DUCT DOWN TO BASEMENT, SEE M1.1 FOR CONTINUATION. 14. LOUVERS FOR FUTURE TENANT USE. CAP, SEAL AND INSULATE DUCT OPENING. 15. PROVIDE 120V MOTORIZED DAMPER INTERLOCKED WITH 'ERV'. COORDINATE WITH E.C.

Q<del>--</del>UP TO 'BC-7'

SD-C 10x6 200

18. TRANSFER AIR DUCT WITH 1/2" DUCT LINER AND (2) 90° ELBOWS UP MOUNTED HIGH IN WALL.

19. RETURN AIR DUCT WITH 1/2" DUCT LINER AND (1) 90° ELBOW UP MOUNTED HIGH IN WALL,

20. PROVIDE CONDENSATE LIFT PUMP AND ROUTE TO NEAREST FLOOR SINK IN BASEMENT.



MANHATTANWICHITA4809 Vue Du Lac Place, Suite 201<br/>Manhattan, KS 66503<br/>785.587.8042125 S. Washington, Suite 150<br/>Wichita, Kansas 67202<br/>316.285.0696

Project 22059

LST Consulting Engineers, PA www.LSTengineers.com mail@LSTengineers.com FEBRUARY 2023





TORIC

**HIS** 

SALINA

DATE: February 15, 2023 JOB: 20−3120 □



REVISION:

SHEET NO .:







- ALL EXPOSED DUCTWORK SHALL BE SPIRAL DUCT MOUNTED AS HIGH AS POSSIBLE BELOW STRUCTURE, UTILIZING CABLE HANGING SYSTEM EQUAL TO DUCTMATE CLUTCHER. SEE DETAIL 2:M6.3 FOR ADDITIONAL INFO.
- <u>ALTERNATE:</u> PROVIDE ALTERNATE PRICING FOR SPIRAL DOUBLE WALL INSULATED DUCT WITH MILL PHOSPHATIZED EXTERIOR, PERFORATED GALVANIZED LINER, AND 1" INSULATED AIR GAP, MANUFACTURED TO 1985 SMACNA STANDARDS.



## (#) HVAC PLAN NOTES BY SYMBOL

- PROVIDE LOUVERED DRYER EXHAUST CAP WITH BIRD BARS, DEFLECTO OR EQUIVALENT. 1. PROVIDE FULL SIZED DUCT CONNECTION AT LOUVER AND TRANSITION TO DUCT SIZE 2.
- INDICATED. SLOPE FIRST 5 FT OF DUCT TOWARDS EXTERIOR. 3. COORDINATE EXACT LOUVER LOCATION AND WALL OPENING REQUIREMENTS WITH
- ARCHITECT, G.C., AND STRUCTURAL ENGINEER.

PROVIDE UL LISTED DRYER BOX EQUAL TO IN-O-VATE TECHNOLOGIES MODEL 425, INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. COORDINATE EXACT LOCATION WITH ARCHITECT. PROVIDE 4" DRYER EXHAUST UP CONCEALED IN WALL AND ROUTE TO DRYER EXHAUST WALL TERMINATION WITH BACKDRAFT DAMPER AS INDICATED ON PLANS. MANUFACTURER'S MAXIMUM ALLOWABLE DUCT LENGTH = 38' WITH TWO ELBOWS. PROVIDE PERMANENT LABEL INDICATING EQUIVALENT LENGTH PER IMC 504. COORDINATE EXACT REQUIREMENTS WITH EQUIPMENT PROVIDED. NOTE: ANNULAR SPACE AROUND DUCT IS TO BE SEALED AT ALL PENETRATION OF

- FLOORS AND CEILINGS WITH U.L. FIRE STOPPING SYSTEMS.
- WASTE AND VENT PLANS FOR MORE INFORMATION. COORDINATE EXACT LOCATION WITH ARCH. AND G.C.

9.

- CLOSET. 11. 8"Ø DUCT DOWN, SEE M1.1 FOR CONTINUATION.
- 12. MOUNT BOTTOM OF RETURN DUCT AT 8" A.F.F.
- DOWN TO BASEMENT, SEE M1.1 FOR CONTINUATION.

8. ROUTE CONDENSATE FROM INDOOR UNIT DOWN IN WALL TO FLOOR SINK IN BASEMENT. SEE MOUNT INDOOR UNIT HIGH ON WALL ABOVE DOOR SWING BUT BELOW PAINT LINE.

10. ROUTE CONDENSATE FROM INDOOR UNIT THROUGH WALL TO FLOOR DRAIN IN EQUIPMENT

13. BLOWER COIL TO BE ORIENTED IN THE DOWNFLOW POSITION. PROVIDE 24/12 SUPPLY DUCT 14. LOUVERS FOR FUTURE TENANT USE. CAP, SEAL AND INSULATE DUCT OPENING.

15. PROVIDE 120V MOTORIZED DAMPER INTERLOCKED WITH 'ERV'. COORDINATE WITH E.C.



LST Consulting Engineers, PA MANHATTANWICHITA4809 Vue Du Lac Place, Suite 201<br/>Manhattan, KS 66503<br/>785.587.8042125 S. Washington, Suite 150<br/>Wichita, Kansas 67202<br/>316.285.0696 www.LSTengineers.com

mail@LSTengineers.com FEBRUARY 2023

GillamR S Ð C N บี ا<u>م</u> ш

MM

Ζ

Σ

REHAB

HISTORIC

SALINA

LL O

Ш

HAS (APART

ſſ

Ш

Φ



**REVISION:** 



- ALL EXPOSED DUCTWORK SHALL BE SPIRAL DUCT MOUNTED AS HIGH AS POSSIBLE BELOW STRUCTURE, UTILIZING CABLE HANGING SYSTEM EQUAL TO DUCTMATE CLUTCHER. SEE DETAIL 2:M6.3 FOR ADDITIONAL INFO.
- ALTERNATE: PROVIDE ALTERNATE PRICING FOR SPIRAL DOUBLE WALL INSULATED DUCT WITH MILL PHOSPHATIZED EXTERIOR, PERFORATED GALVANIZED LINER, AND 1" INSULATED AIR GAP, MANUFACTURED TO 1985 SMACNA STANDARDS.

- 1.
- MOUNT BOTTOM OF RETURN GRILLE AT 8" A.F.F. 3. COORDINATE WITH ARCH.
- WASTE AND VENT PLANS FOR MORE INFORMATION.
- 6. COORDINATE EXACT LOCATION WITH ARCH. AND G.C. ROUTE CONDENSATE FROM INDOOR UNIT THROUGH WALL TO FLOOR DRAIN IN EQUIPMENT 7. CLOSET.
- 8. OF WALL.
- 9. THROUGH CLOSET.
- BLOWER COIL.



PROVIDE EXHAUST FAN WITH BRICK VENT EQUAL TO GREENHECK MODEL BVE808. ROUTE 6"Ø EXHAUST DUCT FROM FAN AND TRANSITION TO CONNECTION AT BRICK VENT. COORDINATE EXACT LOCATION AND WALL OPENING REQUIREMENTS WITH ARCH. AND G.C..

INSTALL RETURN/TRANSFER GRILLES TO LIMIT VISIBILITY THROUGH FACE OF GRILLE, TYPICAL. MOUNT GRILLES AS HIGH AS POSSIBLE, BUT ENTIRELY ABOVE OR BELOW PAINT LINE,

CONNECT OUTDOOR AIR DUCT TO RETURN AIR DUCT. PROVIDE BALANCING DAMPERS AND

BALANCE AS INDICATED ON PLANS, SEE DETAIL 3:M6.1 FOR MORE INFORMATION. ROUTE CONDENSATE FROM INDOOR UNIT DOWN IN WALL TO FLOOR SINK IN BASEMENT. SEE

MOUNT INDOOR UNIT HIGH ON WALL ABOVE DOOR SWING BUT BELOW PAINT LINE.

MOUNT BOTTOM OF TRANSFER GRILLE AT 8" A.F.F., INSTALL TRANSFER GRILLES ON EACH SIDE

TRANSITION DUCT DOWN BELOW LOW ROOF AREA, ROUTE DUCT AS HIGH AS POSSIBLE

10. ROUTE 10" RETURN DUCT UP TO FLOOR ABOVE, CONNECT TO 12x12 RETURN DUCT AT

11. ROUTE 6"x6" DUCT IN JOIST SPACE AND UP TO FLOOR ABOVE.

12. CONNECT 6"Ø OUTDOOR AIR DUCT TO RETURN AIR DUCT. PROVIDE BALANCING DAMPERS AND BALANCE AS INDICATED ON PLANS, SEE DETAIL 4:M6.1 FOR MORE INFORMATION. 13. PROVIDE OUTDOOR AIR WITH BRICK VENT EQUAL TO GREENHECK MODEL BVE808, ROUTE 6"Ø OUTDOOR AIR DUCT FROM BLOWER COIL AND TRANSITION TO CONNECTION AT BRICK VENT.

LST Consulting Engineers, PA Project 22059

MANHATTANWICHITA4809 Vue Du Lac Place, Suite 201<br/>Manhattan, KS 66503<br/>785.587.8042125 S. Washington, Suite 150<br/>Wichita, Kansas 67202<br/>316.285.0696 www.LSTengineers.com

mail@LSTengineers.com FEBRUARY 2023

Φ GillamRe S one N Σ

INA



- ALL EXPOSED DUCTWORK SHALL BE SPIRAL DUCT MOUNTED AS HIGH AS POSSIBLE BELOW STRUCTURE, UTILIZING CABLE HANGING SYSTEM EQUAL TO DUCTMATE CLUTCHER. SEE DETAIL 2:M6.3 FOR ADDITIONAL INFO.
- ALTERNATE: PROVIDE ALTERNATE PRICING FOR SPIRAL DOUBLE WALL INSULATED DUCT WITH MILL PHOSPHATIZED EXTERIOR, PERFORATED GALVANIZED LINER, AND 1" INSULATED AIR GAP, MANUFACTURED TO 1985 SMACNA STANDARDS.

## **# HVAC PLAN NOTES BY SYMBOL**

- 1.
- MOUNT BOTTOM OF RETURN GRILLE AT 8" A.F.F. 3. COORDINATE WITH ARCH.
- WASTE AND VENT PLANS FOR MORE INFORMATION.
- 6. COORDINATE EXACT LOCATION WITH ARCH. AND G.C. 7.
- CLOSET. 8. OF WALL.
- 9. THROUGH CLOSET.
- BLOWER COIL.

PROVIDE EXHAUST FAN WITH BRICK VENT EQUAL TO GREENHECK MODEL BVE808. ROUTE 6"Ø EXHAUST DUCT FROM FAN AND TRANSITION TO CONNECTION AT BRICK VENT. COORDINATE EXACT LOCATION AND WALL OPENING REQUIREMENTS WITH ARCH. AND G.C..

INSTALL RETURN/TRANSFER GRILLES TO LIMIT VISIBILITY THROUGH FACE OF GRILLE, TYPICAL. MOUNT GRILLES AS HIGH AS POSSIBLE, BUT ENTIRELY ABOVE OR BELOW PAINT LINE,

CONNECT OUTDOOR AIR DUCT TO RETURN AIR DUCT. PROVIDE BALANCING DAMPERS AND

BALANCE AS INDICATED ON PLANS, SEE DETAIL 3:M6.1 FOR MORE INFORMATION. ROUTE CONDENSATE FROM INDOOR UNIT DOWN IN WALL TO FLOOR SINK IN BASEMENT. SEE

MOUNT INDOOR UNIT HIGH ON WALL ABOVE DOOR SWING BUT BELOW PAINT LINE. ROUTE CONDENSATE FROM INDOOR UNIT THROUGH WALL TO FLOOR DRAIN IN EQUIPMENT

MOUNT BOTTOM OF TRANSFER GRILLE AT 8" A.F.F., INSTALL TRANSFER GRILLES ON EACH SIDE

TRANSITION DUCT DOWN BELOW LOW ROOF AREA, ROUTE DUCT AS HIGH AS POSSIBLE

10. ROUTE 10" RETURN DUCT UP TO FLOOR ABOVE, CONNECT TO 12x12 RETURN DUCT AT

11. ROUTE 6"x6" DUCT IN JOIST SPACE AND UP TO FLOOR ABOVE.

12. CONNECT 6"Ø OUTDOOR AIR DUCT TO RETURN AIR DUCT. PROVIDE BALANCING DAMPERS AND BALANCE AS INDICATED ON PLANS, SEE DETAIL 4:M6.1 FOR MORE INFORMATION. 13. PROVIDE OUTDOOR AIR WITH BRICK VENT EQUAL TO GREENHECK MODEL BVE808, ROUTE 6"Ø

Φ GillamRe S one N RCIA Ш MM 0 C Ζ Σ HAS (APART

LST Consulting Engineers, PA

MANHATTANWICHITA4809 Vue Du Lac Place, Suite 201<br/>Manhattan, KS 66503<br/>785.587.8042125 S. Washington, Suite 150<br/>Wichita, Kansas 67202<br/>316.285.0696

www.LSTengineers.com

mail@LSTengineers.com

Project 22059

FEBRUARY 2023

E LOFT HISTORIC Щ SALINA, 14654 REVISION:

**TS, PI** REHAB.

DATE: February 15, 2023 JOB: 20−3120 □ SHEET NO .:

M1.6



- ALL EXPOSED DUCTWORK SHALL BE SPIRAL DUCT MOUNTED AS HIGH AS POSSIBLE

## **# HVAC PLAN NOTES BY SYMBOL**

- 1.

PROVIDE EXHAUST FAN WITH BRICK VENT EQUAL TO GREENHECK MODEL BVE808. ROUTE 6"Ø

LST Consulting Engineers, PA MANHATTANWICHITA4809 Vue Du Lac Place, Suite 201<br/>Manhattan, KS 66503<br/>785.587.8042125 S. Washington, Suite 150<br/>Wichita, Kansas 67202<br/>316.285.0696

www.LSTengineers.com

mail@LSTengineers.com



- ALL EXPOSED DUCTWORK SHALL BE SPIRAL DUCT MOUNTED AS HIGH AS POSSIBLE BELOW STRUCTURE, UTILIZING CABLE HANGING SYSTEM EQUAL TO DUCTMATE CLUTCHER. SEE DETAIL 2:M6.3 FOR ADDITIONAL INFO.
- ALTERNATE: PROVIDE ALTERNATE PRICING FOR SPIRAL DOUBLE WALL INSULATED DUCT WITH MILL PHOSPHATIZED EXTERIOR, PERFORATED GALVANIZED LINER, AND 1" INSULATED AIR GAP, MANUFACTURED TO 1985 SMACNA STANDARDS.

## **HVAC PLAN NOTES BY SYMBOL**

- 1.
- MOUNT BOTTOM OF RETURN GRILLE AT 8" A.F.F. 3. COORDINATE WITH ARCH.
- WASTE AND VENT PLANS FOR MORE INFORMATION. 6.
- COORDINATE EXACT LOCATION WITH ARCH. AND G.C. 7. CLOSET.
- 8.

PROVIDE EXHAUST FAN WITH BRICK VENT EQUAL TO GREENHECK MODEL BVE808. ROUTE 6"Ø EXHAUST DUCT FROM FAN AND TRANSITION TO CONNECTION AT BRICK VENT. COORDINATE EXACT LOCATION AND WALL OPENING REQUIREMENTS WITH ARCH. AND G.C..

INSTALL RETURN/TRANSFER GRILLES TO LIMIT VISIBILITY THROUGH FACE OF GRILLE, TYPICAL. MOUNT GRILLES AS HIGH AS POSSIBLE, BUT ENTIRELY ABOVE OR BELOW PAINT LINE,

CONNECT OUTDOOR AIR DUCT TO RETURN AIR DUCT. PROVIDE BALANCING DAMPERS AND

BALANCE AS INDICATED ON PLANS, SEE DETAIL 3:M6.1 FOR MORE INFORMATION. ROUTE CONDENSATE FROM INDOOR UNIT DOWN IN WALL TO FLOOR SINK IN BASEMENT. SEE

MOUNT INDOOR UNIT HIGH ON WALL ABOVE DOOR SWING BUT BELOW PAINT LINE. ROUTE CONDENSATE FROM INDOOR UNIT THROUGH WALL TO FLOOR DRAIN IN EQUIPMENT

MOUNT BOTTOM OF TRANSFER GRILLE AT 8" A.F.F., INSTALL TRANSFER GRILLES ON EACH SIDE

N Φ GillamRe S one N



DATE: February 15, 2023 JOB: 20−3120 □ M1.8

REVISION:

SHEET NO .:



Project 22059

mail@LSTengineers.com FEBRUARY 2023



LST Consulting Engineers, PA



- ALL EXPOSED DUCTWORK SHALL BE SPIRAL DUCT MOUNTED AS HIGH AS POSSIBLE BELOW STRUCTURE, UTILIZING CABLE HANGING SYSTEM EQUAL TO DUCTMATE CLUTCHER. SEE DETAIL 2:M6.3 FOR ADDITIONAL INFO.
- ALTERNATE: PROVIDE ALTERNATE PRICING FOR SPIRAL DOUBLE WALL INSULATED DUCT WITH MILL PHOSPHATIZED EXTERIOR, PERFORATED GALVANIZED LINER, AND 1" INSULATED AIR GAP, MANUFACTURED TO 1985 SMACNA STANDARDS.

- 1.
- MOUNT BOTTOM OF RETURN GRILLE AT 8" A.F.F. 3. COORDINATE WITH ARCH.
- WASTE AND VENT PLANS FOR MORE INFORMATION. 6.
- COORDINATE EXACT LOCATION WITH ARCH. AND G.C. 7. CLOSET.
- 8. OF WALL.
- 9. THROUGH CLOSET.
- BLOWER COIL.



PROVIDE EXHAUST FAN WITH BRICK VENT EQUAL TO GREENHECK MODEL BVE808. ROUTE 6"Ø EXHAUST DUCT FROM FAN AND TRANSITION TO CONNECTION AT BRICK VENT. COORDINATE EXACT LOCATION AND WALL OPENING REQUIREMENTS WITH ARCH. AND G.C..

INSTALL RETURN/TRANSFER GRILLES TO LIMIT VISIBILITY THROUGH FACE OF GRILLE, TYPICAL.

MOUNT GRILLES AS HIGH AS POSSIBLE, BUT ENTIRELY ABOVE OR BELOW PAINT LINE,

CONNECT OUTDOOR AIR DUCT TO RETURN AIR DUCT. PROVIDE BALANCING DAMPERS AND

BALANCE AS INDICATED ON PLANS, SEE DETAIL 3:M6.1 FOR MORE INFORMATION. ROUTE CONDENSATE FROM INDOOR UNIT DOWN IN WALL TO FLOOR SINK IN BASEMENT. SEE

MOUNT INDOOR UNIT HIGH ON WALL ABOVE DOOR SWING BUT BELOW PAINT LINE.

ROUTE CONDENSATE FROM INDOOR UNIT THROUGH WALL TO FLOOR DRAIN IN EQUIPMENT

MOUNT BOTTOM OF TRANSFER GRILLE AT 8" A.F.F., INSTALL TRANSFER GRILLES ON EACH SIDE

TRANSITION DUCT DOWN BELOW LOW ROOF AREA, ROUTE DUCT AS HIGH AS POSSIBLE

10. ROUTE 10" RETURN DUCT UP TO FLOOR ABOVE, CONNECT TO 12x12 RETURN DUCT AT

11. ROUTE 6"x6" DUCT IN JOIST SPACE AND UP TO FLOOR ABOVE.

LST Consulting Engineers, PA MANHATTANWICHITA4809 Vue Du Lac Place, Suite 201<br/>Manhattan, KS 66503<br/>785.587.8042125 S. Washington, Suite 150<br/>Wichita, Kansas 67202<br/>316.285.0696

www.LSTengineers.com mail@LSTengineers.com FEBRUARY 2023

Project 22059

N Φ GillamRe S one N Ζ RCIA Ш MM 0 C Ζ Σ HAS (APART E LOFTS, PH HISTORIC REHAB. ( Ш Ш SALINA, **REVISION:** DATE: February 15, 2023 JOB: 20−3120 □ SHEET NO .: M1.10



- ALL EXPOSED DUCTWORK SHALL BE SPIRAL DUCT MOUNTED AS HIGH AS POSSIBLE BELOW STRUCTURE, UTILIZING CABLE HANGING SYSTEM EQUAL TO DUCTMATE CLUTCHER. SEE DETAIL 2:M6.3 FOR ADDITIONAL INFO.
- ALTERNATE: PROVIDE ALTERNATE PRICING FOR SPIRAL DOUBLE WALL INSULATED DUCT WITH MILL PHOSPHATIZED EXTERIOR, PERFORATED GALVANIZED LINER, AND 1" INSULATED AIR GAP, MANUFACTURED TO 1985 SMACNA STANDARDS.

- 1.
- MOUNT BOTTOM OF RETURN GRILLE AT 8" A.F.F. 3. COORDINATE WITH ARCH.
- WASTE AND VENT PLANS FOR MORE INFORMATION.
- 6. COORDINATE EXACT LOCATION WITH ARCH. AND G.C. 7. CLOSET.
- 8. OF WALL.
- 9. THROUGH CLOSET.
- BLOWER COIL.



PROVIDE EXHAUST FAN WITH BRICK VENT EQUAL TO GREENHECK MODEL BVE808. ROUTE 6"Ø EXHAUST DUCT FROM FAN AND TRANSITION TO CONNECTION AT BRICK VENT. COORDINATE EXACT LOCATION AND WALL OPENING REQUIREMENTS WITH ARCH. AND G.C..

INSTALL RETURN/TRANSFER GRILLES TO LIMIT VISIBILITY THROUGH FACE OF GRILLE, TYPICAL.

MOUNT GRILLES AS HIGH AS POSSIBLE, BUT ENTIRELY ABOVE OR BELOW PAINT LINE,

CONNECT OUTDOOR AIR DUCT TO RETURN AIR DUCT. PROVIDE BALANCING DAMPERS AND BALANCE AS INDICATED ON PLANS, SEE DETAIL 3:M6.1 FOR MORE INFORMATION. ROUTE CONDENSATE FROM INDOOR UNIT DOWN IN WALL TO FLOOR SINK IN BASEMENT. SEE

MOUNT INDOOR UNIT HIGH ON WALL ABOVE DOOR SWING BUT BELOW PAINT LINE.

ROUTE CONDENSATE FROM INDOOR UNIT THROUGH WALL TO FLOOR DRAIN IN EQUIPMENT

MOUNT BOTTOM OF TRANSFER GRILLE AT 8" A.F.F., INSTALL TRANSFER GRILLES ON EACH SIDE

TRANSITION DUCT DOWN BELOW LOW ROOF AREA, ROUTE DUCT AS HIGH AS POSSIBLE

10. ROUTE 10" RETURN DUCT UP TO FLOOR ABOVE, CONNECT TO 12x12 RETURN DUCT AT

11. ROUTE 6"x6" DUCT IN JOIST SPACE AND UP TO FLOOR ABOVE.

12. CONNECT 6"Ø OUTDOOR AIR DUCT TO RETURN AIR DUCT. PROVIDE BALANCING DAMPERS AND BALANCE AS INDICATED ON PLANS, SEE DETAIL 4:M6.1 FOR MORE INFORMATION. 13. PROVIDE OUTDOOR AIR WITH BRICK VENT EQUAL TO GREENHECK MODEL BVE808, ROUTE 6"Ø OUTDOOR AIR DUCT FROM BLOWER COIL AND TRANSITION TO CONNECTION AT BRICK VENT.

LST Consulting Engineers, PA Project 22059

MANHATTANWICHITA4809 Vue Du Lac Place, Suite 201<br/>Manhattan, KS 66503<br/>785.587.8042125 S. Washington, Suite 150<br/>Wichita, Kansas 67202<br/>316.285.0696

www.LSTengineers.com mail@LSTengineers.com

FEBRUARY 2023

Ζ 

1 Σ

N GillamRe S one N C) RCIA ш MM 0 C Σ AR AR

HAB

RE



- ALL EXPOSED DUCTWORK SHALL BE SPIRAL DUCT MOUNTED AS HIGH AS POSSIBLE BELOW STRUCTURE, UTILIZING CABLE HANGING SYSTEM EQUAL TO DUCTMATE CLUTCHER. SEE DETAIL 2:M6.3 FOR ADDITIONAL INFO.
- ALTERNATE: PROVIDE ALTERNATE PRICING FOR SPIRAL DOUBLE WALL INSULATED DUCT WITH MILL PHOSPHATIZED EXTERIOR, PERFORATED GALVANIZED LINER, AND 1" INSULATED AIR GAP, MANUFACTURED TO 1985 SMACNA STANDARDS.

- 1.
- MOUNT BOTTOM OF RETURN GRILLE AT 8" A.F.F. 3. COORDINATE WITH ARCH.
- WASTE AND VENT PLANS FOR MORE INFORMATION.
- 6. COORDINATE EXACT LOCATION WITH ARCH. AND G.C. 7. CLOSET.



PROVIDE EXHAUST FAN WITH BRICK VENT EQUAL TO GREENHECK MODEL BVE808. ROUTE 6"Ø EXHAUST DUCT FROM FAN AND TRANSITION TO CONNECTION AT BRICK VENT. COORDINATE EXACT LOCATION AND WALL OPENING REQUIREMENTS WITH ARCH. AND G.C..

INSTALL RETURN/TRANSFER GRILLES TO LIMIT VISIBILITY THROUGH FACE OF GRILLE, TYPICAL.

MOUNT GRILLES AS HIGH AS POSSIBLE, BUT ENTIRELY ABOVE OR BELOW PAINT LINE,

CONNECT OUTDOOR AIR DUCT TO RETURN AIR DUCT. PROVIDE BALANCING DAMPERS AND BALANCE AS INDICATED ON PLANS, SEE DETAIL 3:M6.1 FOR MORE INFORMATION.

ROUTE CONDENSATE FROM INDOOR UNIT DOWN IN WALL TO FLOOR SINK IN BASEMENT. SEE

MOUNT INDOOR UNIT HIGH ON WALL ABOVE DOOR SWING BUT BELOW PAINT LINE.

ROUTE CONDENSATE FROM INDOOR UNIT THROUGH WALL TO FLOOR DRAIN IN EQUIPMENT

Φ FEBRUARY 2023 GillamR S Ð C N บี Ř MM ſ Σ Ш HAS (APART E LOFTS, PH HISTORIC REHAB. ( Щ SALINA, 14654 REVISION: DATE: February 15, 2023 JOB: 20−3120 □ SHEET NO .:

M1.12

MANHATTANWICHITA4809 Vue Du Lac Place, Suite 201<br/>Manhattan, KS 66503<br/>785.587.8042125 S. Washington, Suite 150<br/>Wichita, Kansas 67202<br/>316.285.0696 www.LSTengineers.com

LST Consulting Engineers, PA

mail@LSTengineers.com

Project 22059







- CO

Ζ

**MMERCI** 

0 (

Ζ

Σ

H

Ч Ц

SALINA









**IST Consulting Engineers, PA** MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 **IST SCIENCIPICAL STREMA WICHITA** 125 S. Washington, Suite 150 Wichita, Kansas 67202 316.285.0696

www.LSTengineers.com mail@LSTengineers.com

PLUMBING	SIZING	SYMBOLS

(X")	DRAIN (X = SIZE)
Χ"	VENT (X = SIZE)
X"	WASTE STACK VENT (X = SIZE)





IST Consulting Engineers, PA MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 125 S. Washington, Suite 150 Wichita, Kansas 67202 316.285.0696

www.LSTengineers.com mail@LSTengineers.com FEBRUARY 2023

OnesGillamRe 4. Ninth 1881 Main Street, Sui



DATE: February 15, 2023 JOB: 20−3120 □





**LST Consulting Engineers, PA** MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 125 S. Washington, Suite 150 Wichita, Kansas 67202 316.285.0696

www.LSTengineers.com mail@LSTengineers.com N

GillamRer

FEBRUARY 2023

# PLUMBING SIZING SYMBOLS (X") DRAIN (X = SIZE)

Ĺ	DRAIN (X = SIZE)
Χ"	VENT (X = SIZE)
X"	WASTE STACK VENT (X = SIZE)





IST Consulting Engineers, PA MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 125 S. Washington, Suite 150 Wichita, Kansas 67202 316.285.0696

www.LSTengineers.com mail@LSTengineers.com

**JonesGillamRer** N. Ninth 1881 Main Street, Suite



Project 22059





**LST Consulting Engineers, PA** MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 125 S. Washington, Suite 150 Wichita, Kansas 67202 316.285.0696

www.LSTengineers.com mail@LSTengineers.com FEBRUARY 2023

### PLUMBING SIZING SYMBOLS (X") DRAIN (X = SIZE) Χ" VENT (X = SIZE) (X")



Project 22059





DATE: February 15, 2023 JOB: 20−3120 □ SHEET NO .:

M1.20





IST Consulting Engineers, PA MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 125 S. Washington, Suite 150 Wichita, Kansas 67202 316.285.0696

www.LSTengineers.com mail@LSTengineers.com

onesGillamRe







**LST Consulting Engineers, PA** MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 125 S. Washington, Suite 150 Wichita, Kansas 67202 316.285.0696

www.LSTengineers.com mail@LSTengineers.com

FEBRUARY 2023

onesGillamRenz

PLUMBING SIZING SYMBOLS		
(X")	DRAIN (X = SIZE)	
Χ"	VENT (X = SIZE)	
X"	WASTE STACK VENT (X = SIZE)	







IST Consulting Engineers, PA MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 316.285.0696

www.LSTengineers.com mail@LSTengineers.com FEBRUARY 2023 N

## PLUMBING SIZING SYMBOLS

(X") DRAIN (X = SIZE) Χ" VENT (X = SIZE)  $\langle X^{"} \rangle$ WASTE STACK VENT (X = SIZE)













		ALTERNATE MATERIAL/SIZE	
		Cross-linked polyethylene (PEX)	Polypropylene (PP)
ш	1/2"	3/4"	1/2"
	3/4"	1"	1"
ED S	1"		1-1/4"
A PIP	1-1/4"		1-1/2"
R I	1-1/2"		2"
DE N	2"		2-1/2"
0	2-1/2"		3"
U U	3"		3-1/2"
Note: Pipe sizes indicated on drawings are for Type L copper pipe. If alternate materials are used, sizes shall be as indicated above. Where no pipe size is shown, use of indicated material in design pipe size is prohibited. Do not use materials other than those listed.			





		ALTERNATE MATERIAL/SIZE		
		Cross-linked polyethylene (PEX)	Polypropylene (PP)	
Гщ.	1/2"	3/4"	1/2"	
	3/4"	1"	1"	
	1"		1-1/4"	
PIP	1-1/4"		1-1/2"	
22	1-1/2"		2"	
	2"		2-1/2"	
10 1	2-1/2"		3"	
0	3"		3-1/2"	
Note: Pipe sizes indicated on drawings are for Type L copper pipe. If alternate materials are used, sizes shall be as indicated above. Where no pipe size is				





IST Consulting Engineers, PA MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 125 S. Washington, Suite 150 Wichita, Kansas 67202 316.285.0696

www.LSTengineers.com mail@LSTengineers.com FEBRUARY 2023





## DOMESTIC WATER PLAN NOTES BY SYMBOL

- 4. MOUNT WALL HYDRANT 18" AFG.



EXISTING JOISTS. UTILIZE COPPER OR RIGID PEX, ROUTED PERPENDICULAR TO BUILDING SURFACES. NEATLY TRAIN PIPING TOGETHER ALONG EXISTING CONSTRUCTION AND COORDINATE WITH OTHER TRADES. OBTAIN APPROVAL OF ROUTING FROM ARCHITECT PRIOR TO ROUGHING IN.



IST Consulting Engineers, PA MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 125 S. Washington, Suite 150 Wichita, Kansas 67202 316.285.0696

Project 22059

www.LSTengineers.com mail@LSTengineers.com FEBRUARY 2023

GillamRe

S

one

1. ROUTE PIPING DOWN TO FLOOR BELOW ALONG EXTERIOR WALL AND CONCEALED IN WALLS, COORDINATE WITH ARCHITECT AND G.C.

2. UP TO APARTMENT EQUIPMENT CLOSET ABOVE, SEE M1.29 FOR CONTINUATION.

3. UP TO APARTMENT EQUIPMENT CLOSET ABOVE, SEE M1.30 FOR CONTINUATION.





## DOMESTIC WATER PLAN NOTES BY SYMBOL

- 4. MOUNT WALL HYDRANT 18" AFG.



EXISTING JOISTS. UTILIZE COPPER OR RIGID PEX, ROUTED PERPENDICULAR TO BUILDING SURFACES. NEATLY TRAIN PIPING TOGETHER ALONG EXISTING CONSTRUCTION AND COORDINATE WITH OTHER TRADES. OBTAIN APPROVAL OF ROUTING FROM ARCHITECT PRIOR TO ROUGHING IN.



IST Consulting Engineers, PA MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 125 S. Washington, Suite 150 Wichita, Kansas 67202 316.285.0696

Project 22059

www.LSTengineers.com mail@LSTengineers.com FEBRUARY 2023

1. ROUTE PIPING DOWN TO FLOOR BELOW ALONG EXTERIOR WALL AND CONCEALED IN WALLS, COORDINATE WITH ARCHITECT AND G.C.

2. UP TO APARTMENT EQUIPMENT CLOSET ABOVE, SEE M1.29 FOR CONTINUATION.

3. UP TO APARTMENT EQUIPMENT CLOSET ABOVE, SEE M1.30 FOR CONTINUATION.



DATE: February 15, 2023 JOB: 20−3120 □ SHEET NO .:

M1.30



• EXPOSED PIPING TO BE ROUTED TIGHT TO BOTTOM OF EXISTING JOISTS. UTILIZE COPPER OR RIGID PEX, ROUTED PERPENDICULAR TO BUILDING SURFACES. NEATLY TRAIN PIPING TOGETHER ALONG EXISTING CONSTRUCTION AND COORDINATE WITH OTHER TRADES. OBTAIN APPROVAL OF ROUTING FROM ARCHITECT PRIOR TO ROUGHING IN.







• EXPOSED PIPING TO BE ROUTED TIGHT TO BOTTOM OF EXISTING JOISTS. UTILIZE COPPER OR RIGID PEX, ROUTED PERPENDICULAR TO BUILDING SURFACES. NEATLY TRAIN PIPING TOGETHER ALONG EXISTING CONSTRUCTION AND COORDINATE WITH OTHER TRADES. OBTAIN APPROVAL OF ROUTING FROM ARCHITECT PRIOR TO ROUGHING IN.





- EXACT REQUIREMENTS WITH EQUIPMENT PROVIDED BY OTHERS. (TYPICAL FOR ALL APARTMENTS)
- (TYPICAL FOR ALL APARTMENTS)

 DOMESTIC WATER PLAN NOTES BY SYMBOL 1. PROVIDE VALVED 1/2" HW BRANCH BELOW SINK AND CONNECT DISHWASHER. COORDINATE

2. PROVIDE 1" BRANCH WITH SHUT-OFF VALVE IN EQUIPMENT CLOSET FOR EACH APARTMENT.

LST Consulting Engineers, PA MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 316.285.0696

Project 22059

www.LSTengineers.com mail@LSTengineers.com FEBRUARY 2023

GillamRe

S

C








### <u>NOTE:</u>













### <u>NOTE:</u>

• EXPOSED PIPING TO BE ROUTED TIGHT TO BOTTOM OF



LST Consulting Engineers, PA MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 316.285.0696



RGY RECOVERY VEN	NTILATOR SCHEDULE

(	GY RECO	VERY VEI	NTILATOR	SCH	EDULE															
			AID						PERFORMANCE											
	MANUFATURER	MODEL NUMBER	TYPE		FLOW	E.S.P. ("W.C.)		JK (IIF)	0.A. D	B/WB	ROOM AIF	R DB/RH	SUPPLY A	NR DB/WB	FILTERS	MCA	МОСР	VOLTAGE/PHASE	WEIGHT (LBS.)	NOTES
				SUPPLY	EXHAUST		SUPPLY	EXHAUST	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER						
	RENEWAIRE	HE.5XJINV	ENTHALPY STATIC PLATE	1165	1050	0.7	1	1	101/73.8	3.4/1.9	75/50	65/35	83.7/68.2	44.3/34.8	SA: MERV 8 EA: MERV 8	7.7	15	208V/1 PH	504	1,2,3,4

1. PROVIDE WITH SINGLE POINT ELECTRICAL CONNECTION WITH DISCONNECT SWITCH.

2. PROVIDE WITH EC MOTORS.

r N	AKE-UP	AIR FAN	SCHEDULE						
	MEC	MODEL		FAN PERFO	RMANCE	ELECTRICAL	CONNECTION	WEIGHT	NOTES
	MFG.	MODEL	ITPE	AIRFLOW (CFM)	E.S.P. ("W.C.)	HP	VOLTS/PH	(LBS)	NOTES
4,5	GREENHECK	SQ-80-D	DIRECT DRIVE CENTRIFUGAL INLINE FAN WITH FILTER HOUSING	220	0.4"	1/12	120V	81	1, 2, 3

1. Provide factory mounted and wired disconnect switch.

2. Provide with manufacturer's filter box accessory with MERV 8 pleated filter.

US	T FAN SC	CHEDULE							
	MEC	MODEL	TVDE	FAN PERFO	RMANCE	ELECTRICAL	CONNECTION	WEIGHT	NOTES
	MFG.	MODEL	ITPE	AIRFLOW (CFM)	E.S.P. ("W.C.)	НР	VOLTS/PH	(LBS)	NOTES
	GREENHECK	SP-B110	DIRECT DRIVE CABINET EXHAUST FAN	80	0.33"	80 WATTS	120V	12	1, 2, 3

. Provide factory mounted and wired disconnect switch.

2. Provide with speed controller mounted on motor.

B. Provide manufacturers brick vent or hooded wall cap, as indicated on drawings.

DUVER/INTA	KE HOOD	<b>SCHEDULE</b>

MARK	MANUFACTURER	MODEL	SIZE	FREE AREA (SF)	FINISH	SCREEN	DAMPER	SERVICE	DESCRIPTION	NOTES
L-1	GREENHECK	ESD-435	24"H x 48"W x 4" D	3.84	KYNAR, COLOR AS SELECTED BY ARCH.	BIRD		INTAKE	ALUMINUM, DRAINABLE BLADE LOUVER	1
2,3,4	GREENHECK	ESD-435	12"H x 36"W x 4" D	1.07	KYNAR, COLOR AS SELECTED BY ARCH.	BIRD		INTAKE	ALUMINUM, DRAINABLE BLADE LOUVER	1
L-5	GREENHECK	ESD-435	18"H x 36"W x 4" D	1.93	KYNAR, COLOR AS SELECTED BY ARCH.	BIRD		INTAKE	ALUMINUM, DRAINABLE BLADE LOUVER	1

1. Coordinate frame type and mounting with Arch.,G.C., and Structural Engineer.

	EVICE SCI		<b>_</b>				1	Г	1		
			A	PPLIC	CATIC	ON					
MARK	MANUFATURER	MODEL	SUPPLY	RETURN	EXHAUST	TRANSFER	FINISH	MOUNTING	DAMPER	DESCRIPTION	NOTE
SD-A	PRICE	SDG AL	•				Mill Aluminum	Spiral Duct	Yes	Spriral duct mounted aluminum double deflection supply grille with front blades parallel to long dimension, size as indicated on drawings	
SD-B	PRICE	LBMH-26C	•				White	Floor	No	Heavy duty aluminum bar grille with 3/16" bars spaced at 7/16" with 15° deflection, size as indicated on drawings	
SD-C	PRICE	620	•				White	Surface Wall/ Duct	No	Aluminum double deflection supply grille with front blades parallel to long dimension, size as indicated on drawings	
SD-D	REGGIO REGISTERS	826	•				Black Steel	Floor	No	Black cast iron scroll pattern floor grille	
RG-A	PRICE	530		•		•	White	Surface Wall	No	Steel louvered return grille, size as indicated on drawings.	
RG-B	PRICE	LBMH-26C	•				Mill	Floor	No	Heavy duty aluminum bar grille with 3/16" bars spaced at 7/16" with 15° deflection, size as indicated on drawings	
RG-C	REGGIO REGISTERS	3232		•			Black Steel	Surface Wall	No	Black cast iron scroll pattern floor grille	
EG-A	PRICE	530			•		White	Surface Wall	No (U.N.O.)	Steel louvered exhaust grille, size as indicated on drawings.	

ENERAL NOTES:

• Maximum noise criteria shall be 25.

• Runouts to diffusers shall be same size as neck, U.N.O.

• Paint objects visible through grilles with flat black paint.

• Provide mounting frame as required for ceiling type. Coordinate with Architect.

• Verify finish with Architect, all devices shall be suitable for field painting.

CONI	DENSING	UNIT SCHI	EDULE									
		MODEL		SUPPLY		CO	OLING CAPAC	ITY		E	LECTRICA	<b>NL</b>
MARK	MANUF.	MODEL	NOMINAL TONS	CFM	OA DB	ENT AIR DB/WB	SENS MBH	тот мвн	MIN SEER	MCA	МОСР	V/PH
CU-1	CARRIER	24ACC418A003	1.5	600	105	75/63	13.17	15.62	14	11.7	20	208/1
CU-2	CARRIER	24ACC424A003	2	800	105	75/63	17.67	21.05	14	14.1	20	208/1
CU-4	CARRIER	24ACC436A003	3	1200	105	75/63	25.49	30.39	14	18.1	30	208/1
CU-6	CARRIER	24ACC448A003	4	1600	105	75/63	31.40	39.89	14	20.8	35	208/1
CU-7	CARRIER	24ACC460A003	5	1950	105	75/63	41.27	50.24	14	27.5	40	208/1
CU-6 CU-7	CARRIER	24ACC448A003 24ACC460A003	4 5	1600 1950	105 105	75/63 75/63	31.40 41.27	39.89 50.24	14	20.8 27.5	35 40	20 20

Notes:

accumulators, etc. as required.

2. Verify minimum energy rating requirements with local AHJ.

3. Provide with R140a refrigerant.

BLC	)
MARK	
BC-1	
BC-2	
BC-4	
BC-6	
BC-7	
Note	s
	1
	2
	3
	4
	5

		LK SCH	LDULL				
MARK	MANUF.	MODEL	MOUNTING	WATTS	VOLTAGE/PHASE	DESCRIPTION	NOTES
EH-1,2,3,4,5	TRANE	UHEC-052AA	SUSPENDED	5,000	208/1	Fan forced electric wall heater	1,2,3,4
EWH-1,2,3	TRANE	UHAA	WALL	1,500	120/1	Architectural fan forced wall heater	5,6,7
NOTES:							
. Provide with in	ntegral disconne	ct switch.					
2. Provide moun	ting bracket as r	required					
3. Mount as high	n as possible, pe	r manufacturers	recommendations.				
4. Provide with 2	24V thermostat.						
5. Provide with h	nigh temp. therm	al cutout and fa	an delay.				

6. Provide with integral thermostat and unit mounted disconnect switch.

'. Provide with surface mounting frame.



LST Consulting Engineers, PA 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 125 S. Washington, Suite 15 Wichita, Kansas 67202 316.285.0696

Project 22059

www.LSTengineers.com mail@LSTengineers.com FEBRUARY 2023

1. Refrigerant lines shall be field fabricated. Coordinate line sizing requirements with equipment manufacturer for length of run for each apartment. Provide suction

### OWER COIL SCHEDULE

_										
	MANUE	MODEL		FAN		HEATING	V/Ph	MOTOR	МСА	MOCP
	MANOI.	MODEL	CFM	ESP	SPEED	KW	v/TII	FLA	MCA	MOCI
	CARRIER	FB4CNP018	600	0.3	MEDIUM	5	208/1	2.8	26.1	30
	CARRIER	FB4CNP030	800	0.3	MED-LOW	8	208/1	2.8	39.6	40
	CARRIER	FB4CNP042	1200	0.3	MED-LOW	10	208/1	4.1	50.4	60
	CARRIER	FB4CNP048	1600	0.3	MEDIUM	10	208/1	6.0	52.8	60
	CARRIER	FB4CNP061	1950	0.3	HIGH	15	208/1	6.0	53.8/ 22.7	60/25

Single point connection required, coordinate the exact electrical requirements of equipment provided with E.C.

Provide all accessories required for downflow operation where indicated on drawings.

15KW electric heater is two circuit 208/1ph with circuit breaker. Coordinate exact requirements of equipment provided with E.C.

Provide with manufacturer's fan coil filter cabinet accessory at return air end with MERV 8 filter.

Provide with 7-day programmable thermostat

### FIFCTRIC HEATER SCHEDIIIE



DATE: February 15, 2023 JOB: 20-3120 SHEET NO .:









COMMON AREA WATER HEATER PIPING DIAGRAM 3 NO SCALE



		DECONDITION		TRIM		ROUGH-IN	I SIZES		NOT
MARK	MANUFACTURER	DESCRIPTION	MANUFACTURER	DESCRIPTION	WASTE	VENT	CW	НW	NOTI
WC-A	KOHLER	Model 3999-0 "Highline" ADA compliant flush tank water closet, white vitreous china, two piece, 12" rough-in, elongated 16-1/2" high bowl, siphon jet flushing action, 1.28 GPF, polished	KOHLER	#K-4636-0 white, closed front plastic seat with slow closing lid.	4"	2"	1/2"		1
WC-B	KOHLER	Model 3999-0 "Highline" ADA compliant flush tank water closet, white vitreous china, two piece, 12" rough-in, elongated 16-1/2" high bowl, siphon jet flushing action, 1.28 GPF, polished chrome actuator located on open side of room.	KOHLER	#4650-0 Lustra white, open front, plastic seat with cover	4"	2"	1/2"		1
LAV-A	KOHLER	Model 2196-4-0 self-rimming lavatory, white vitreous china, 20"W x 17", faucet holes on 4" centers.	KOHLER	Model 15182-4RA single handle faucet. Provide pop-up drain.	2"	1-1/2"	1/2"	1/2"	2,4
LAV-B	AMERICAN STANDARD	Model 0610.000 rectangular undermount lavatory, white vitreous china, 17"W x 13".	MOEN	Model 6145 single handle faucet, matte black finish. Provide pop-up drain.	2"	1-1/2"	1/2"	1/2"	1,2,
BS	BLANCO	Model Quatrus R0 Medium single compartment 18 GA Stainless steel sink, satin finish, undermount, 23"x16"x9"D inside	DELTA	Model 9159-DST single handle sink faucet with pull-down sprayer, matte black finish. Provide basket strainer.	2"	1-1/2"	1/2"	1/2"	2,4
KS-A	JUST	Model DL-2233-A-GR two compartment 18 GA stainless steel sink, self rimming, 14"x16"x8"D	DELTA	Model 400-HDF single handle kitchen sink faucet with hose spray attachment. Chrome finish. Provide basket strainer.	2"	1-1/2"	1/2"	1/2"	2,4
		inside, fully undercoated, faucet holes as req.	IN-SINK-ERATOR	"Badger 5" garbage disposal, 1/2hp, 120V, cord and plug connected.					
KS-B	JUST	Model DL-ADA-2233-A-GR two compartment 18 GA stainless steel sink, self rimming, 14"x16"x5"D inside, fully undercoated, faucet	DELTA	Model 400-HDF single handle kitchen sink faucet with hose spray attachment. Chrome finish. Provide basket strainer.	2"	1-1/2"	1/2"	1/2"	1,3,
		holes as req., and drain holes center rear.	IN-SINK-ERATOR	"Badger 5" garbage disposal, 1/2hp, 120V, cord and plug connected.					
KS-C	BLANCO	Model Liven Silgranit single compartment granite composite sink, 22-1/4"x16-15/16"x12"D inside, faucet holes as req., metallic gray finish. Coordinate mounting type with Arch.	MOEN	Model 87194 single handle high arc kitchen sink faucet with spring pulldown sprayer. Stainless finish. Provide basket strainer.	2"	1-1/2"	1/2"	1/2"	2
ВТ	AQUARIUS	Model A 6000 TS OT 2P cast acrylic ADA tub/shower, 60"W x33-3/4"D x78"H, with integral soap/toiletry shelves and grab bars in accordance with ADA requirements, seat at end of tub, right or left hand rough-in as required, white finish.	DELTA	Model R10000-UNWS/T13H252 pressure balancing tub/shower valve with single metal lever handle, handshower with double check valves, flexible hose, 24" stainless steel slide bar, metal lever handshower diverter valve, and shower head with arm.	2"	1-1/2"	1/2"	1/2"	1,2
SH-A	AQUARIUS	Model 'G-3600-BF-1S' reinforced fiberglass ADA shower, 36"W x36"D x77"H, with integral soap/toiletry shelves, integral seat and grab bars in accordance with ADA requirements. Right or left hand rough-in as required, center drain, white finish.	KOHLER	#K-304 pressure balancing valve with integral temperature limits and stops, #K-TS10584-4 valve trim, #K-355 wall supply elbow, #K-9514 60" hose, #K-10549 hand shower, and #K-8524/K-349 slide bar. Entire assembly shall have rubbed bronze finish.	2"	1-1/2"	1/2"	1/2"	1
SH-B	AQUARIUS	Model G-6036-BF-2.0 reinforced fiberglass ADA roll-in shower, 60"W x33"D x77"H, with integral soap/toiletry shelves and grab bars in accordance with ADA requirements, fold-up seat, right or left hand rough-in as required, white finish.	DELTA	Model R10000-UNWS/T13220-H2OT pressure balancing shower valve with integral temperature limits, single metal lever handle, handshower with double check valves, flexible hose, and 24" stainless steel slide bar.	2"	1-1/2"	1/2"	1/2"	1
SS	FIAT	Model MSB-2424 one piece molded stone mop basin, 24" square, stainless steel integral drain body with caulk connection, stainless steel wall guards.	DELTA	Model 28T9 faucet with hose thread outlet, vacuum breaker, pail hook, wall brace, metal lever handles.	3"	1-1/2"	3/4"	3/4"	4
EWC	ELKAY	Model LZSTL8WSLK ADA compliant dual height, sel stainless steel basin, front push bar actuator, lead	I If-contained combin Ifree cooling systen	hation bottle filler and water cooler with a capable of cooling 8.0 GPH, 120 volts.	2"	1-1/2"	1/2"		
WH	WOODFORD	Model 25 frost proof wall hydrant with anti-siphon	vacuum breaker, m	netal handle.			3/4"		
RH	WOODFORD	Model RHY2-MS frost proof roof hydrant with ASSE integral vent that allows drainage with 1/8" drain h manufacturers roof mounting system consisting of boot, and shims as required. Coordinate installation	1052 double check tole drilled and tapp cast iron hydrant s on with G.C	k backflow preventer that is field testable, bed in body of hydrant. Provide with support, under deck flange, well seal, EPDM			3/4"		
ССВ	WATER TITE	Model W4700 recessed washing machine box with turn adaptor ball valves, sweat connection.	2"PVC/ABS drain co	oupling and knockout test cap. Two, 1/4	2"	2"	1/2"	1/2"	
ICB	WATER TITE	Model W9700 ice maker connection box with 1/4 t	urn ball valve and 1	/2" sweat copper connection.			1/2"		
FD-A	SIOUX CHIEF	Series 833 adjustable floor drain with nickel bronz and condensate funnel.	e strainer. Provide	Proset Trapguard trap protection device	2"				
FD-B	SIOUX CHIEF	Series 833 adjustable floor drain with nickel bronz	e strainer. Provide	Proset Trapguard trap protection device.	2"				
FS	SIOUX CHIEF	Series 861 PVC floor sink with PVC strainer. Provid	le Proset Trapguarc	I trap protection device.	3"				
HWH-A	A.O. SMITH	Model ENT-40, 40 gallon electric water heater, (2) r rise. Minimum 0.95 Energy Factor. Supplied with te	non simultaneous 4 emperature & press	500 watts, 208 volt / 1-phase heating elementer valve and brass drain valve.	nts, 21 GPF	l recovery	@ 90°F	temp	5
HWH-B	RHEEM	Model ELD52-TB, 50 gallon electric water heater, (2 with temperature & pressure relief valve and brass	?) 4500 watt, 208 vo drain valve.	olt / 3-phase heating elements, 41 GPH recov	ery @ 90°F	temp rise	e. Suppl	ied	
HWP	BELL & GOSSETT	Model NBF-33 circulation pump, bronze body, 10 C	GPM @ 10' head, 12	0 VAC. Provide clamp-on aquastat for pump o	control.				

1. Fixture and installation to meet requirements of Americans with Disabilities Act.

2. Provide Dearborn supplies with stops and escutcheon plate, 1-1/4" cast brass p-trap.

3. Insulate water and waste piping below lavatory. Utilize insulation kit equivalent to LavGuard by Truebro.

4. Trim shall be provided with polished chrome finish.

5. Mount water heater on stand equivalent to Oatey water heater stand.



LST Consulting Engineers, PA MANHATTAN WICHITA 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 125 S. Washington, Suite 15 Wichita, Kansas 67202 316.285.0696

Project 22059

www.LSTengineers.com mail@LSTengineers.com FEBRUARY 2023





(1) HEAT PUMP DIAGRAM

MITSUBISHI ELECTRIC TRANE HVAC US: CITY MULTI VRF OUTDOOR UNIT SCHEDULE													
				Nom System									
				Connected	Design Cooling	Design Heating	Max Pipe Length	Corrected	Corrected		Electrical-Per Mo	odule	
		Nominal Cooling	Nominal Heating	Capacity (% of	Outdoor Temp	Outdoor Temp	from BC or 1st	Cooling Total	Heating Capacity		208/230		
Tag Reference	Model Number	Capacity (BTU/h)	Capacity (BTU/h)	NOM)	DB (°F)	WB (°F)	Joint (feet)	Capacity (BTU/h)	(BTU/h)	Voltage / Phase	MCA 208/230	RFS	MOCP
										208/230V / 1-			
HP-1	NTXMSM36A142AA	36,000.0	42,000.0	77.8%	103.0	-0.7	60.0	32,376.8	23,460.5	phase	29	30	40
										208/230V / 1-			
HP-2	NTXMSM36A142AA	36,000.0	42,000.0	77.8%	103.0	-0.7	90.0	32,376.8	23,303.4	phase	29	30	40
										208/230V / 1-			
HP-3	NTXMSM36A142AA	36,000.0	42,000.0	100.0%	103.0	-0.7	40.0	32,376.8	21,586.3	phase	29	30	40

MITSUBISHI ELECTRIC TRANE HVAC US: CITY MULTI VRF INDOOR UNIT SCHEDULE													
			Nominal	Nominal		Corrected Capacity							
			Cooling	Heating	Cooling	Cooling Total		Heating	Heating		Power Cooling		
Tag			Capacity	Capacity	Diversity	Capacity	Cooling Sensible	Diversity	Capacity	Voltage /	208V/230V	Power Heating	Electrical
Reference	Model	Туре	(BTU/h)	(BTU/h)	Full/Partial	(BTU/h)	Capacity (BTU/h)	Full/Partial	(BTU/h)	Phase	(kW)	208V/230V (kW)	MCA/MFS
		Wall -			PARTIAL			FULL		208/230V/1-			
IU-1-1	TPKFYP008LM140A	Mounted	8,000.0	9,000.0	DEMAND	7,408.2	5,105.4	DEMAND	6,703.0	phase	0.03	0.02	0.24/0.24/15
		Wall -			PARTIAL			FULL		208/230V/1-			
IU-1-2	TPKFYP008LM140A	Mounted	8,000.0	9,000.0	DEMAND	7,408.2	5,105.4	DEMAND	6,703.0	phase	0.03	0.02	0.24/0.24/15
		Wall -			PARTIAL			FULL		208/230V/1-			
IU-1-3	TPKFYP012LM140A	Mounted	12,000.0	13,500.0	DEMAND	11,112.3	7,425.7	DEMAND	10,054.5	phase	0.04	0.03	0.24/0.24/15
		Wall -			PARTIAL			FULL		208/230V/1-			
IU-2-1	TPKFYP008LM140A	Mounted	8,000.0	9,000.0	DEMAND	7,408.2	5,105.4	DEMAND	6,658.1	phase	0.03	0.02	0.24/0.24/15
		Wall -			PARTIAL			FULL		208/230V/1-			
IU-2-2	TPKFYP008LM140A	Mounted	8,000.0	9,000.0	DEMAND	7,408.2	5,105.4	DEMAND	6,658.1	phase	0.03	0.02	0.24/0.24/15
		Wall -			PARTIAL			FULL		208/230V/1-			
IU-2-3	TPKFYP012LM140A	Mounted	12,000.0	13,500.0	DEMAND	11,112.3	7,425.7	DEMAND	9,987.2	phase	0.04	0.03	0.24/0.24/15
		Wall -			PARTIAL			FULL		208/230V/1-			
IU-3-1	TPKFYP012LM140A	Mounted	12,000.0	13,500.0	DEMAND	11,112.3	7,425.7	DEMAND	7,195.4	phase	0.04	0.03	0.24/0.24/15
		Wall -			PARTIAL			FULL		208/230V/1-			
IU-3-2	TPKFYP012LM140A	Mounted	12,000.0	13,500.0	DEMAND	11,112.3	7,425.7	DEMAND	7,195.4	phase	0.04	0.03	0.24/0.24/15
		Wall -			PARTIAL			FULL		208/230V/1-			
IU-3-3	TPKFYP012LM140A	Mounted	12,000.0	13,500.0	DEMAND	11,112.3	7,425.7	DEMAND	7,195.4	phase	0.04	0.03	0.24/0.24/15

This drawing is schematic in nature. Final routing of piping & wiring shall be determined by the installing contractor and/or designer of record

- (_	LST Consu MANHATTA 4809 Vue Du Lac Place Manhattan, KS 60 785.587.8042
	rn Project 22059

**LST Consulting Engineers, PA** MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 125 S. Washington, Suite 150 Wichita, Kansas 67202 316.285.0696

www.LSTengineers.com mail@LSTengineers.com FEBRUARY 2023













D&V ISOMETRIC NO SCALE

VTR

5 D&V ISOMETRIC NO SCALE









SEE SYMBOLS LEGEND FOR SIZING SYMBOLS

HORIZONTAL BRANCH DRAIN.

WET VENTED HORIZONTAL BRANCH DRAIN.

SCHEDULE FOR INDIVIDUAL FIXTURE REQUIREMENTS.

FIXTURE TAGS ARE GENERIC. SEE PLANS AND PLUMBING FIXTURE

SIZES SHOWN FOR FIXTURE DRAINS MAY EXCEED THOSE SHOWN FOR MINIMUM ROUGH-IN SIZE ON PLUMBING FIXTURE SCHEDULE. UTILIZE

PIPING LAYOUT SHOWN MAINTAINS TRAP ARM REQUIREMENTS OF UPC TABLE 1002.2. IF FIELD ADJUSTMENTS OF LOCATION OF BRANCH DRAINS AND RISERS IS REQUIRED, ENSURE TRAP ARM REQUIREMENTS ARE MET AND INCREASE DRAIN SIZES IF REQUIRED. FOR BATHROOM GROUPS IN APARTMENTS, HORIZONTAL WET VENTING IS SHOWN. INSTALL IN ACCORDANCE WITH 908.2 OF THE

UNIFORM PLUMBING CODE, INCLUDING BUT NOT LIMITED TO:

EACH BRANCH DRAIN FOR WET VENTED BATHROOM GROUPS
 SHALL CONNECT INDEPENDENTLY TO THE WENT VENTED

• EACH FIXTURE DRAIN SHALL CONNECT HORIZONTALLY TO THE

DO NOT CONNECT FIXTURES OUTSIDE OF BATHROOM GROUPS
 TO WET VENTED HORIZONTAL BRANCH DRAIN.

RISER DIAGRAM NOTES:

LARGER SIZES SHOWN.

-( 3" )

-(3")

LST Consulting Engineers, PA MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 L25 S. Washington, Suite 150 Wichita, Kansas 67202 316.285.0696

mail@LSTengineers.com
FEBRUARY 2023



VTR

LAV

2"

9 D&V ISOMETRIC NO SCALE





8 D&V ISOMETRIC NO SCALE





---• Ю — — E ----- E L ----- E I ----- E (

## CIRCUIT AND RACEWAY SYMBOLS

#	CIRCUIT DESIGNATION: ——— TOP INDICATES PANEL OF CIRCUIT ORIGIN ——— BOTTOM INDICATES CIRCUIT NUMBER
-	HOMERUN - WIRING TO PANEL OF CIRCUIT ORIGIN
•	PARTIAL HOMERUN - WIRING TO PANEL OF CIRCUIT ORIGI
	CONDUIT CONCEALED IN WALL OR ABOVE CEILING
	CONDUIT BELOW GRADE OR EMBEDDED IN CONCRETE
c	LINE VOLTAGE CIRCUIT CONDUCTORS SHORT = HOT/TRACER/SWITCH LEG CONDUCTOR LONG = NEUTRAL (GROUNDED) CONDUCTOR CURVED = GROUNDING (BONDING) CONDUCTOR
	CONDUIT STUB OUT WITH NYLON END BUSHING
o	CONDUIT TURNED UP
ə	CONDUIT TURNED DOWN
• -	GROUNDING CONNECTION

### LIGHTING SYMBOLS

	PENDANT OR SURFACE MOUNTED LINEAR LUMINAIRE
	LED STRIP LIGHT
)	SURFACE MOUNTED ROUND LIGHT
)	RECESSED DOWNLIGHT
0	WALL MOUNTED LUMINAIRE
)	DECORATIVE PENDANT
$\otimes$	SINGLE FACE EXIT SIGN - WALL AND CEILING MOUNTED WITH DIRECTIONAL ARROWS AS INDICATED ON PLANS
	DOUBLE FACE EXIT SIGN - WALL AND CEILING MOUNTED WITH DIRECTIONAL ARROWS AS INDICATED ON PLANS
C	REMOTE EMERGENCY LIGHTING UNIT

### **POWER SYMBOLS**

Э-	SINGLE RECEPTACLE
<b>)</b> =	DUPLEX RECEPTACLE
₽	DOUBLE DUPLEX RECEPTACLE
❹#	SPECIAL RECEPTACLE (# = NEMA CONFIGURATION)
3	FLUSH FLOOR DUPLEX RECEPTACLE
A	SINGLE POLE WALL SWITCH
<b>A</b> 2	TWO POLE WALL SWITCH
<b>A</b> 3	THREE WAY WALL SWITCH
<b>ኯ</b> <sub>K</sub>	KEYED WALL SWITCH
<b>A</b> DT	SINGLE POLE, DOUBLE THROW (SPDT) SWITCH (CENTER OFF)
<b>"</b>	MOTOR HP RATED SWITCH WITHOUT OVERLOAD PROTECTION
<b>A</b> os	LINE VOLTAGE OCCUPANCY SENSING WALL SWITCH
A <sub>OS2</sub>	DUAL RELAY LINE VOLTAGE OCCUPANCY SENSING WALL SWITCH
33	LOW VOLTAGE OCCUPANCY SENSOR
РР	POWER PACK FOR LOW VOLTAGE OCCUPANCY SENSORS
ſĊ	TIME CLOCK
P	EXTERIOR PHOTOCELL
С	CONTACTOR
CS	CURRENT SWITCH
•	PUSH BUTTON OPERATOR
ΓR	CLASS 2 TRANSFORMER POWER SUPPLY
IS	DOOR ANNUNCIATOR A/V HORN STROBE
D	JUNCTION BOX
7	MOTOR
D.	MOTORIZED DAMPER
ጉ	DISCONNECT SWITCH
	BRANCH CIRCUIT PANELBOARD
/////)	DISTRIBUTION TYPE PANELBOARD

### TELECOMMUNICATIONS SYMBOLS

1	APARTMENT PHONE OUTLET				
>	APARTMENT CATV OUTLET				
$\triangleright$	APARTMENT COMBINATION PHONE/CATV OUTLET				
1	COMMONS AREA TELECOMMUNICATIONS OUTLET ROUGH-IN				
В	TELECOMMUNICATIONS GROUNDING BUSBAR				
	TELEPHONE TERMINAL BOARD				
TE ELECTRICAL SYMPOLS					

# SITE ELECTRICAL SYMBOLS

E <b>— —</b>	UNDERGROUND ELECTRICAL SERVICE LATERAL
UG —	UNDERGROUND ELECTRICAL PRIMARY
UG e	EXISTING UNDERGROUND ELECTRICAL PRIMARY
<sup>он</sup> е—	EXISTING OVERHEAD ELECTRICAL PRIMARY
-0	POLE MOUNTED AREA LIGHT
	POWER COMPANY PAD MOUNTED UTILITY TRANSFORMER
7	POWER COMPANY UTILITY POLE

# FIRE ALARM SYMBOLS

- FACP FIRE ALARM CONTROL PANEL
- FAA FIRE ALARM REMOTE ANNUNCIATOR PANEL
  - MANUAL PULL STATION
- HEAT DETECTOR

Ρ

- SMOKE DETECTOR ଡ AM
- ADDRESSABLE MONITORING MODULE NOTIFICATION HORN APPLIANCE
- $\bowtie$ NOTIFICATION STROBE APPLIANCE
- NOTIFICATION HORN/STROBE APPLIANCE  $\boxtimes \triangleleft$
- NAC NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANEL
- R FIRE ALARM RELAY
- ELECTROMAGNETIC DOOR HOLDER ю
- SMOKE DAMPER OR COMBINATION FIRE/SMOKE DAMPER
- FIRE SPRINKLER FLOW SWITCH  $\diamond \bullet$
- FIRE SPRINKLER TAMPER SWITCH
- FIRE SPRINKLER BELL/GONG OR HORN/STROBE £  $\bigcirc$ 120V COMBINATION CO/SMOKE ALARM

### SYMBOL MODIFYING DESIGNATORS

- CLG CEILING MOUNTED • FLUSH MOUNTED IN SUSPENDED OR HARD CEILINGS
- SURFACE MOUNTED TO STRUCTURE ABOVE IN OPEN CEILINGS
- MOUNT BOTTOM OF DEVICE AT 6" ABOVE COUNTERTOP СТ
- ΕM PROVIDE LUMINAIRE WITH EMERGENCY BATTERY BACKUP
- GROUND FAULT CIRCUIT INTERRUPTING DEVICE GFI
- NIGHTLIGHT WIRED TO UNSWITCHED HOT CONDUCTOR NL
- WP PROVIDE WEATHERPROOF ENCLOSURE FOR DEVICE XX" MOUNTING HEIGHT OF DEVICE ABOVE FINISHED FLOOR

BBR	EVIATIONS	C.	PROVIDE NYLON BUSH		
A	AMPERES OR AMPS	<b>—</b> D.	PROVIDE	BLANK, STAI	
AC	ALTERNATING CURRENT		OUTLETS	S NOT ACTIVA	
AFF	ABOVE FINISH FLOOR	Ε.	PROVIDE	SUITABLE PU	
AFG	ABOVE FINISH GRADE	F.	TELECO	MUNICATIO	
AIC	AMPS INTERRUPTING CURRENT		ACX FIR	E RESISTANT F	
BG	BELOW GRADE		HARDWA	ARE WITH A FL	
С	CONDUIT		COATS (	OF LIGHT GRA	
CATV	CABLE TELEVISION		EQUIPME	NT.	
СВ	CIRCUIT BREAKER	G.	ALL TEL	ECOM PHONE	
со	CONDUIT ONLY (WITH PULL STRING)		OWNFR.	INT AND TEST	
DC					
DS	DISCONNECT SWITCH				
E	ELECTRICAL				
EC					
FMT				FIRE	
FA	FIRE ALARM				
FG	FINISH GRADE			1. VISUA	
FMC				DEVI	
G					
در مر	GENERAL CONTRACTOR			DEVI	
				.1.	
GEPE				*тор	
				88" V	
нр				3 AUDIC	
				DEVI	
				4. <u>PULL S</u> HIGH	
				_	
			-		
			$\mathbf{i}$		
MLU					
N NC	NEUTRAL (GROUNDED) CONDUCTOR			$\searrow$	
NC					
			C A	00"	
NEC			, c		
			8	30" - — — —	
NFPA					
			7	′2" — — — —	
OH			6	54" – – – –	
PB					
PH or $\phi$			5	54" — — — —	
PVC				0"	
RCPT	RECEPTACLE		2		
SCC					
SCCR	SHORT CIRCUIT CURRENT RATING				
SPD	SURGE PROTECTION DEVICE				
SPDT	SINGLE POLE, DOUBLE THROW				
SYM -	SYMMETRICAL			RECEPT	
Т	TELEPHONE				
	I ELEVISION		1	6"	
IYP				9"	
UG				Ĩ	
U.L.	UNDERWRITERS LABORATORY				
UPS	UNINTERRUPTIBLE POWER SUPPLY				
UNO	UNLESS NOTED OTHERWISE				
VA	VOLT-AMPS				
W	WATT(S)		/		

# GENERAL ELECTRICAL NOTES

- MECHANICAL INSTALLATION.
- DRAWINGS PRIOR TO FINAL PLACEMENT.
- CONDUIT WITH ARCHITECT.
- H. DEFINITION OF TERMS

# **TELECOMMUNICATIONS GENERAL NOTES**

- INDICATED ON SHEET E6.2.
- BASEMENT OVERHEAD.

- No Scale

A. ELECTRICAL EQUIPMENT AND DEVICES SHALL BE "LISTED" AND "IDENTIFIED" AS RATED FOR A MINIMUM OF 75°C CONDUCTOR TERMINATION.

B. THE CIRCUITING OF ALL LIGHT AND RECEPTACLE OUTLETS HAS BEEN SHOWN ON THE PLANS, AND THE CONTRACTOR SHALL FOLLOW THIS CIRCUITING LAYOUT .

C. CIRCUIT ALL EMERGENCY LIGHTS, NIGHT LIGHTS AND EXIT LIGHTS TO AN UNSWITCHED HOT CONDUCTOR, UPSTREAM OF ALL CONTROLS.

D. WALL MOUNTED HVAC CONTROL DEVICES (THERMOSTATS, TEMPERATURE SENSORS, ETC) SHALL BE PROVIDED BY MECHANICAL CONTRACTOR. UNLESS NOTED OTHERWISE, ELECTRICAL CONTRACTOR SHALL PROVIDE SINGLE GANG WALL BOX AT 46" AFF AND 1/2" CONDUIT TO ASSOCIATED EQUIPMENT CONTROLLER. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS OF DEVICES.

E. COORDINATE INSTALLATION OF ELECTRICAL WORK AT THE CEILING TO PROVIDE THE GREATEST POSSIBLE CLEARANCE FOR INSTALLATION OF PLUMBING AND

F. VERIFY EXACT PLACEMENT OF ALL DEVICES SHOWN ON THE ELECTRICAL CONSTRUCTION DOCUMENTS WITH ARCHITECTURAL, MECHANICAL AND PLUMBING

G. NEW ELECTRICAL DEVICES SHOWN ON EXISTING MASONRY WALLS SHALL BE SURFACE MOUNTED IN GALVANIZED BOXES WITH EMT CONDUIT. COORDINATE ROUTING OF

\* SHALL - ACTION THAT IS REQUIRED WITHOUT OPTION OR QUALIFICATION. \* FURNISH - CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING.

\* INSTALL - CONTRACTOR SHALL BE RESPONSIBLE FOR LABOR AND CONSTRUCTION EQUIPMENT NECESSARY TO SET IN PLACE, CONNECT, CALIBRATE AND TEST EQUIPMENT FURNISHED BY HIM OR OTHERS. \* PROVIDE - CONTRACTOR SHALL FURNISH AND INSTALL

A. PROVIDE COMPLETE WIRED PHONE AND CATV OUTLETS IN APARTMENT UNITS AS

B. AT TELECOMMUNICATIONS OUTLETS IN COMMON AREAS, PROVIDE 4" SQUARE x 2-1/8" DEEP BOX WITH 1-GANG DEVICE RING AND (1) 1" CONDUIT STUBBED INTO

> HINGS FOR ALL CONDUIT ENDS NOT CONNECTED TO A BOX OR T CABLING FROM DAMAGE.

> INLESS STEEL COVER PLATES FOR ALL COMMON AREA TELECOM ATED BY OWNER.

PULL STRING IN ALL EMPTY CONDUITS.

ONS TERMINAL BOARDS SHALL CONSIST OF TWO LAYERS OF 3/4" PLYWOOD PERMANENTLY FASTENED TO THE WALL BY MEANS OF LIZING GALVANIZED, ZINC PLATED, OR STAINLESS STEEL FLAT HEAD. MOUNT BOTTOM AT 6" AFF AND PAINT WITH TWO AY FIRE RETARDANT SEALER PRIOR TO INSTALLATION OF ANY

E/DATA CABLING, JACKS, CONNECTORS, TERMINATIONS, TING FOR COMMONS AREA OUTLETS SHALL BE PROVIDED BY

### ALARM DEVICE MOUNTING

<u>L UNIT</u> CE BOTTOM 80" ABOVE HIGHEST FLOOR LEVEL OR TOP 6" BELOW CEILING; WHICHEVER IS LOWER (PER ADA)

ICE BOTTOM 80" ABOVE HIGHEST FLOOR LEVEL OR TOP 6" BELOW CEILING; WHICHEVER IS LOWER (PER ADA)

P OF UNIT NOT LESS THAN 90" ABOVE FLOOR AND NOT LESS THAN 6" BELOW CEILING (NFPA) (BOTTOM AT WITH CMU COURSES). MOUNT AT NFPA HEIGHT ONLY IF REQUIRED BY LOCAL AHJ.

<u>2/VISUAL UNIT</u> ICE BOTTOM 80" ABOVE HIGHEST FLOOR LEVEL OR TOP 6" BELOW CEILING; WHICHEVER IS LOWER (PER ADA) IEST OPERABLE PART SHALL NOT BE MORE THAN 48" ABOVE THE FLOOR (FRONT APPROACH) (PER ADA)



*ELECTRICAL DEVICE MOUNTING HEIGHTS* 



### LST Consulting Engineers, PA MANHATTAN 4809 Vue Du Lac Place, Suite 201 WICHITA 125 S. Washington, Suite 15 Manhattan, KS 66503 785.587.8042 Wichita, Kansas 67202 316.285.0696

www.LSTengineers.com mail@LSTengineers.com Project 22059 FEBRUARY 2023





 $\underbrace{1}_{1/16"} = \underbrace{1' - 0"}_{1' - 0"}$ 

AT ALL AREAS WHERE EXPOSED, CIRCUITRY CONDUITS TOGETHER AND ROUTE NEATLY AT UNDERSIDE OF JOIST STRUCTURE, PARALLEL AND PERPENDICULAR TO BUILDING SURFACES. BRANCH CIRCUITRY SHALL BE ROUTED OVERHEAD TO FULLEST EXTENT POSSIBLE. WITH WIRING TO INDIVIDUAL DEVICES ON EXISTING BRICK WALLS INSTALLED VERTICALLY FROM ABOVE. ALL HORIZONTAL RACEWAY INSTALLATION ON WALLS SHALL OCCUR ABOVE PAINTLINE. OBTAIN APPROVAL OF ROUTING WITH ARCHITECT PRIOR TO INSTALLATION, AND COORDINATE INSTALLATION WITH OTHER TRADES.

- ALL ACCESSIBLE APARTMENTS AND ALSO AT APARTMENTS DESIGNATED HEARING-IMPAIRED. REFER TO DETAIL 2, SHEET E1.5.
- FIELD COORDINATE EXACT MOUNTING LOCATION.
- 3. SWITCH CLOSEST TO THE DOOR SHALL CONTROL ALL LIGHTS IN BATHROOM, AND THE OTHER SWITCH SHALL CONTROL THE EXHAUST FAN.
- WITH 9V BATTERY BACKUP, INTERCONNECTED TO OTHERS IN SAME APARTMENT. DEVICE SHALL HAVE CARBON MONOXIDE DETECTOR AND PHOTOELECTRIC TYPE SMOKE DETECTOR WITH SOUNDER HORN HAVING AN 85dB OUTPUT AT 10', SHALL HAVE A SINGLE BUTTON FOR TEST/SILENCE AND LED INDICATOR LIGHTS, AND SHALL BE UL 217 LISTED. BRK #SC7010B OR EQUAL.

- CONNECTION OF DISHWASHER. PROVIDE CORD AND GROUNDING PLUG AS REQUIRED.
- ELECTRIC WATER HEATER.
- LIGHT FIXTURES.





![](_page_46_Figure_0.jpeg)

![](_page_47_Figure_0.jpeg)

![](_page_48_Figure_0.jpeg)

![](_page_48_Picture_38.jpeg)

LST Consulting Engineers, PA MANHATTAN WICHITA 125 S. Washington, Suite 15 Wichita, Kansas 67202 1809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503

316.285.0696

www.LSTengineers.com mail@LSTengineers.com FEBRUARY 2023

785.587.8042

H11 33 OFFICE 159 ŔR [161] HALL [163] OFFICE 158 H11 35 ©\$ H11 41 CONFERENCE 157 H11 37 WORK ROOM [156]

![](_page_48_Figure_42.jpeg)

AT ALL AREAS WHERE EXPOSED, CIRCUITRY CONDUITS TOGETHER AND ROUTE NEATLY AT UNDERSIDE OF JOIST STRUCTURE, PARALLEL AND PERPENDICULAR TO BUILDING SURFACES. BRANCH CIRCUITRY SHALL BE ROUTED **OVERHEAD TO FULLEST EXTENT POSSIBLE.** WITH WIRING TO INDIVIDUAL DEVICES ON EXISTING BRICK WALLS INSTALLED VERTICALLY FROM ABOVE. ALL HORIZONTAL RACEWAY INSTALLATION ON WALLS SHALL OCCUR ABOVE PAINTLINE. OBTAIN APPROVAL OF ROUTING WITH ARCHITECT PRIOR TO INSTALLATION, AND COORDINATE INSTALLATION WITH OTHER TRADES.

- ALL ACCESSIBLE APARTMENTS AND ALSO AT APARTMENTS DESIGNATED HEARING-IMPAIRED. REFER TO DETAIL 2, SHEET E1.5.
- FIELD COORDINATE EXACT MOUNTING LOCATION.
- BATHROOM, AND THE OTHER SWITCH SHALL CONTROL THE EXHAUST FAN.
- AND PHOTOELECTRIC TYPE SMOKE DETECTOR WITH SOUNDER HORN HAVING AN 85dB OUTPUT AT 10', SHALL HAVE A SINGLE BUTTON FOR TEST/SILENCE AND LED INDICATOR LIGHTS, AND SHALL BE UL 217 LISTED. BRK #SC7010B OR EQUAL.

- ELECTRIC WATER HEATER.
- LIGHT FIXTURES.

![](_page_49_Figure_12.jpeg)

- AND LOW VOLTAGE TRANSFORMER AT ALL ACCESSIBLE APARTMENTS AND ALSO AT APARTMENTS DESIGNATED HEARING-IMPAIRED. INSTALL HORN/STROBE APPLIANCE AT 80" AFF. INSTALL TRANSFORMER IN DOUBLE GANG JUNCTION BOX ABOVE HORN/STROBE WITH BLANK COVER PLATE AND PROVIDE "DOOR".
- 15. CO-LOCATE RECEPTACLE NEXT TO TELECOMM DISTRIBUTION BOX. LIGHTING CONTROL DIAGRAM" ON SHEET E6.3

- F6.3
- LANDING
- SHEET E6.1

![](_page_49_Figure_23.jpeg)

![](_page_50_Figure_0.jpeg)

# D EAST SECOND FLOOR ELECTRICAL PLAN

E1.6

AT ALL AREAS WHERE EXPOSED, CIRCUITRY CONDUITS TOGETHER AND ROUTE NEATLY AT UNDERSIDE OF JOIST STRUCTURE, PARALLEL AND PERPENDICULAR TO BUILDING SURFACES. BRANCH CIRCUITRY SHALL BE ROUTED OVERHEAD TO FULLEST EXTENT POSSIBLE, WITH WIRING TO INDIVIDUAL DEVICES ON EXISTING BRICK WALLS INSTALLED VERTICALLY FROM ABOVE. ALL HORIZONTAL RACEWAY INSTALLATION ON WALLS SHALL OCCUR ABOVE PAINTLINE. OBTAIN APPROVAL OF ROUTING WITH ARCHITECT PRIOR TO INSTALLATION, AND COORDINATE INSTALLATION WITH OTHER TRADES.

- ALL ACCESSIBLE APARTMENTS AND ALSO AT APARTMENTS DESIGNATED HEARING-IMPAIRED. REFER TO DETAIL 2, SHEET E1.5.
- FIELD COORDINATE EXACT MOUNTING LOCATION.
- 3. SWITCH CLOSEST TO THE DOOR SHALL CONTROL ALL LIGHTS IN BATHROOM, AND THE OTHER SWITCH SHALL CONTROL THE EXHAUST FAN.
- WITH 9V BATTERY BACKUP, INTERCONNECTED TO OTHERS IN SAME APARTMENT. DEVICE SHALL HAVE CARBON MONOXIDE DETECTOR AND PHOTOELECTRIC TYPE SMOKE DETECTOR WITH SOUNDER HORN HAVING AN 85dB OUTPUT AT 10', SHALL HAVE A SINGLE BUTTON FOR TEST/SILENCE AND LED INDICATOR LIGHTS, AND SHALL BE UL 217 LISTED. BRK #SC7010B OR EQUAL.

- CONNECTION OF DISHWASHER. PROVIDE CORD AND GROUNDING PLUG AS REQUIRED.
- ELECTRIC WATER HEATER.

![](_page_51_Figure_13.jpeg)

![](_page_52_Figure_0.jpeg)

![](_page_52_Picture_37.jpeg)

125 S. Washington, Suite 15 Wichita, Kansas 67202

Ð

R

E

0

![](_page_52_Figure_41.jpeg)

E1.8

AT ALL AREAS WHERE EXPOSED, CIRCUITRY CONDUITS TOGETHER AND ROUTE NEATLY AT UNDERSIDE OF JOIST STRUCTURE, PARALLEL AND PERPENDICULAR TO BUILDING SURFACES. BRANCH CIRCUITRY SHALL BE ROUTED OVERHEAD TO FULLEST EXTENT POSSIBLE, WITH WIRING TO INDIVIDUAL DEVICES ON EXISTING BRICK WALLS INSTALLED VERTICALLY FROM ABOVE. ALL HORIZONTAL RACEWAY INSTALLATION ON WALLS SHALL OCCUR ABOVE PAINTLINE. OBTAIN APPROVAL OF ROUTING WITH ARCHITECT PRIOR TO INSTALLATION, AND COORDINATE INSTALLATION WITH OTHER TRADES.

- ALL ACCESSIBLE APARTMENTS AND ALSO AT APARTMENTS DESIGNATED HEARING-IMPAIRED. REFER TO DETAIL 2, SHEET E1.5.
- 3. SWITCH CLOSEST TO THE DOOR SHALL CONTROL ALL LIGHTS IN BATHROOM, AND THE OTHER SWITCH SHALL CONTROL THE EXHAUST FAN.
- WITH 9V BATTERY BACKUP, INTERCONNECTED TO OTHERS IN SAME APARTMENT. DEVICE SHALL HAVE CARBON MONOXIDE DETECTOR AND PHOTOELECTRIC TYPE SMOKE DETECTOR WITH SOUNDER HORN HAVING AN 85dB OUTPUT AT 10', SHALL HAVE A SINGLE BUTTON FOR TEST/SILENCE AND LED INDICATOR LIGHTS, AND SHALL BE UL 217 LISTED. BRK #SC7010B OR EQUAL.

- CONNECTION OF DISHWASHER. PROVIDE CORD AND GROUNDING PLUG AS REQUIRED.
- ELECTRIC WATER HEATER.
- LIGHT FIXTURES.

UNSWITCHED CIRCUIT.

![](_page_53_Figure_25.jpeg)

![](_page_54_Figure_0.jpeg)

![](_page_54_Picture_38.jpeg)

LST Consulting Engineers, PA MANHATTAN WICHITA 125 S. Washington, Suite 15 Wichita, Kansas 67202 1809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 316.285.0696 785.587.8042

www.LSTengineers.com

mail@LSTengineers.com FEBRUARY 2023

(14)50 433 (12)433 <u>HWH</u> (8) 434

![](_page_54_Picture_42.jpeg)

RCI ſ Ш Σ 0 Σ HAS (APAR1 REHAB. の HISTORIC Ц О Ш

![](_page_54_Picture_44.jpeg)

个 E1.10

AT ALL AREAS WHERE EXPOSED, CIRCUITRY CONDUITS TOGETHER AND ROUTE NEATLY AT UNDERSIDE OF JOIST STRUCTURE, PARALLEL AND PERPENDICULAR TO BUILDING SURFACES. BRANCH CIRCUITRY SHALL BE ROUTED OVERHEAD TO FULLEST EXTENT POSSIBLE, WITH WIRING TO INDIVIDUAL DEVICES ON EXISTING BRICK WALLS INSTALLED VERTICALLY FROM ABOVE. ALL HORIZONTAL RACEWAY INSTALLATION ON WALLS SHALL OCCUR ABOVE PAINTLINE. OBTAIN APPROVAL OF ROUTING WITH ARCHITECT PRIOR TO INSTALLATION, AND COORDINATE INSTALLATION WITH OTHER TRADES.

- ALL ACCESSIBLE APARTMENTS AND ALSO AT APARTMENTS DESIGNATED HEARING-IMPAIRED. REFER TO DETAIL 2, SHEET E1.5.
- FIELD COORDINATE EXACT MOUNTING LOCATION.
- BATHROOM, AND THE OTHER SWITCH SHALL CONTROL THE EXHAUST FAN.
- WITH 9V BATTERY BACKUP, INTERCONNECTED TO OTHERS IN SAME APARTMENT. DEVICE SHALL HAVE CARBON MONOXIDE DETECTOR AND PHOTOELECTRIC TYPE SMOKE DETECTOR WITH SOUNDER HORN HAVING AN 85dB OUTPUT AT 10', SHALL HAVE A SINGLE BUTTON FOR TEST/SILENCE AND LED INDICATOR LIGHTS, AND SHALL BE UL 217 LISTED. BRK #SC7010B OR EQUAL.

- CONNECTION OF DISHWASHER. PROVIDE CORD AND GROUNDING

![](_page_55_Figure_12.jpeg)

![](_page_56_Figure_0.jpeg)

8  $\mathbf{G}$ O 

![](_page_56_Figure_40.jpeg)

ADDENDUM #1

**REVISION**:

JOB:

SHEET NO .:

### **REFER TO ELECTRICAL PLANS ON SHEETS E1.5** THRU E1.12 FOR 120V SMOKE ALARMS TO BE INSTALLED IN ALL APARTMENT UNITS OTHER THAN ACCESSIBLE AND HEARING IMPAIRED UNITS.

AT ALL AREAS WHERE EXPOSED, CIRCUITRY SHALL BE INSTALLED IN EMT RACEWAY. GROUP CONDUITS TOGETHER AND ROUTE NEATLY AT UNDERSIDE OF JOIST STRUCTURE, PARALLEL AND PERPENDICULAR TO BUILDING SURFACES. BRANCH CIRCUITRY SHALL BE ROUTED OVERHEAD TO FULLEST EXTENT POSSIBLE, WITH WIRING TO INDIVIDUAL DEVICES ON EXISTING BRICK WALLS INSTALLED VERTICALLY FROM ABOVE. ALL HORIZONTAL RACEWAY INSTALLATION ON WALLS SHALL OCCUR ABOVE PAINTLINE. OBTAIN APPROVAL OF ROUTING WITH ARCHITECT PRIOR TO INSTALLATION, AND COORDINATE INSTALLATION WITH OTHER TRADES.

## (#) PLAN NOTES BY SYMBOL

- 1. INSTALL HEAT DETECTOR IN ELEVATOR PIT. SEE DETAIL 2:E6.2.
- 2. ELEVATOR LOBBY SMOKE DETECTOR. SEE DETAIL 2:E6.2.
- 3. PROVIDE 3/4" CONDUIT WITH (2) CAT 6 CABLES FROM FIRE ALARM CONTROL PANEL TO MAIN TELEPHONE TERMINAL BOARD IN BASEMENT.
- 4. COORDINATE FINAL LOCATIONS OF ALL CATV AND PHONE OUTLETS IN APARTMENT UNITS WITH OWNER. ALL CABLING ROUTED EXPOSED OVERHEAD AND ON EXISTING WALLS SHALL BE INSTALLED IN 3/4" EMT. SEE 3:E6.2 FOR OUTLET DETAILS. HOMERUN BACKBONE COAX AND CAT 6 CABLES TO ROOM INDICATED.
- 5. TELECOMMUNICATIONS TERMINAL BOARD FOR SERVICE PROVIDER COMMUNICATIONS EQUIPMENT. 8' WIDE X 8' HIGH.
- 6. TELECOMMUNICATIONS GROUNDING BUSBAR. SEE DETAIL 3:E6.1.
- 7. MAIN TELECOMMUNICATIONS TERMINAL BOARD, 12' LONG X 8' HIGH.
- 8. PROVIDE ALL REQUIRED FIRE ALARM RELAYS AND MONITORING MODULES FOR ALL FIRE SPRINKLER FLOW SWITCHES,
- TAMPER SWITCHES AND BELL/GONG. COORDINATE REQUIREMENTS WITH FIRE SPRINKLER CONTRACTOR. 9. (3) 4" CONDUITS FOR COMMUNICATIONS SERVICES. ROUTE BELOW GRADE AND TERMINATE AT UTILITY EASEMENT. PROVIDE PULL STRING IN EACH RACEWAY. CORE DRILL THROUGH EXISTING BASEMENT WALL BELOW GRADE, AND PROVIDE MODULAR MECHANICAL SEALS AROUND CONDUITS (LINK-SEAL OR EQUAL). SEAL INTERIOR OF CONDUITS WITH FOAM DUCT SEALANT (POLYWATER "FST" OR EQUAL), AFTER INSTALLATION OF CABLING. CAP ANY UNUSED
- CONDUITS. 10. TELECOM DISTRIBUTION DEVICE FOR APARTMENT UNIT MOUNTED AT APPROXIMATELY 4'-0" AFF. SEE DETAIL 3:E6.2 FOR MORE INFORMATION.
- 11. FIRE ALARM SYSTEM SMOKE DETECTOR WITH 520 Hz LOW FREQUENCY SOUNDER BASE CAPABLE OF PRODUCING AN ANSI TEMPORAL 3 TONE FOR FIRE ALARM AND ANSI TEMPORAL 4 TONE FOR CO ALARM.
- 12. FIRE ALARM SYSTEM COMBINATION CO / SMOKE DETECTOR WITH 520 Hz LOW FREQUENCY SOUNDER BASE CAPABLE OF PRODUCING AN ANSI TEMPORAL 3 TONE FOR FIRE ALARM AND ANSI TEMPORAL 4 TONE FOR CO ALARM.

![](_page_57_Figure_15.jpeg)

- 13. FIRE ALARM ADDRESSABLE CONTROL MODULE FOR CONTROL OF APARTMENT UNIT'S NOTIFICATION APPLIANCE CIRCUIT. MODULE SHALL BE PROGRAMMED TO ACTIVATE APARTMENT UNIT'S NOTIFICATION APPLIANCES UPON GENERAL BUILDING FIRE ALARM AND UPON ACTIVATION OF ANY SMOKE DETECTOR OR CO DETECTOR WITHIN APARTMENT UNIT. MOUNT FLUSH IN WALL AT 8'-0" AFF.
- 14. (2) 3" EMT CONDUIT SLEEVES WITH NYLON BUSHINGS FOR TELECOMM CABLES
- 15. ROUTE CAT 6 AND COAX HOMERUN CABLES IN 3/4" CONDUIT WHERE EXPOSED OVERHEAD. TERMINATE CONDUIT AT CABLE TRAY IN HALLWAY. SEE DETAIL 3:E6.2 FOR MORE INFORMATION.
- 16. (2) 3" CONDUITS FROM OVERHEAD IN BASEMENT, THROUGH FIRST FLOOR AND TERMINATED 4" ABOVE FIRST FLOOR FOR COMMUNICATIONS SERVICE PROVIDER INSTALLED BACKBONE CABLING.
- 17. (2) 3" CONDUIT SLEEVES FROM OVERHEAD IN FIRST FLOOR, TERMINATED 4" ABOVE SECOND FLOOR FOR COMMUNICATIONS SERVICE PROVIDER INSTALLED BACKBONE CABLING. 18. (2) 3" CONDUIT SLEEVES FROM OVERHEAD IN SECOND FLOOR, TERMINATED 4" ABOVE 4TH FLOOR FOR
- COMMUNICATIONS SERVICE PROVIDER INSTALLED BACKBONE CABLING 19. 2"H x 6"W WIRE BASKET CABLE TRAY FOR TELECOM CABLING. INSTALL AT MINIMUM 8' AFF TO BOTTOM OF TRAY. SUSPEND FROM STRUCTURE WITH SUPPORTS AT 8'-0" ON CENTER, MAXIMUM.
- 20. 1-1/4" EMT CONDUIT HOMERUN TO IT ROOM 144. COMBINE NO MORE THAT 3 WALL BOXES TO A SINGLE HOMERUN U.N.O. CONDUITS SERVING ONE WALL BOX SHALL BE 1", ALL OTHERS SHALL BE 1-1/4". PROVIDE A DEDICATED PULL STRUNG FROM EACH WALL BOX TO IT BACK BOARD.

	<text><text><text><text><text><text></text></text></text></text></text></text>	rs, PA HTA Jton, Suite 150 hsas 67202 5.0696 ARY 2023	JODDODODIDIDIDIDI       JUDDODODIDIDIDI         730 N. Ninth       1881 Main Street, Suite 301         730 N. Ninth       1881 Main Street, Suite 301         Salina, KS 67401       Kansas City, MO 64108         785.827.0386       jgr@jgrarchitects.com
			FILL DULUNG A FMENTS, COMMERCIAL) KANSAS
			HISTORIC REHAB. (APAR) SALINA,
			14654         7 Feb. 2023         14654         7 Feb. 2023         1000000000000000000000000000000000000

REFER TO ELECTRICAL PLANS ON SHEETS E1.5
THRU E1.12 FOR 120V SMOKE ALARMS TO BE
INSTALLED IN ALL APARTMENT UNITS OTHER
THAN ACCESSIBLE AND HEARING IMPAIRED UNITS.

AT ALL AREAS WHERE EXPOSED, CIRCUITRY SHALL BE INSTALLED IN EMT RACEWAY. GROUP CONDUITS TOGETHER AND ROUTE NEATLY AT UNDERSIDE OF JOIST STRUCTURE, PARALLEL AND PERPENDICULAR TO BUILDING SURFACES. BRANCH CIRCUITRY SHALL BE ROUTED OVERHEAD TO FULLEST EXTENT POSSIBLE, WITH WIRING TO INDIVIDUAL DEVICES ON EXISTING BRICK WALLS INSTALLED VERTICALLY FROM ABOVE. ALL HORIZONTAL RACEWAY INSTALLATION ON WALLS SHALL OCCUR ABOVE PAINTLINE. OBTAIN APPROVAL OF ROUTING WITH ARCHITECT PRIOR TO INSTALLATION, AND COORDINATE INSTALLATION WITH OTHER TRADES.

LIN

 $\cup$ 

ര

ଡ

 $\odot$ 

## (#) PLAN NOTES BY SYMBOL

- 1. INSTALL HEAT DETECTOR IN ELEVATOR PIT. SEE DETAIL 2:E6.2.
- 2. ELEVATOR LOBBY SMOKE DETECTOR. SEE DETAIL 2:E6.2.
- 3. PROVIDE 3/4" CONDUIT WITH (2) CAT 6 CABLES FROM FIRE ALARM CONTROL PANEL TO MAIN TELEPHONE TERMINAL BOARD IN BASEMENT.
- 4. COORDINATE FINAL LOCATIONS OF ALL CATV AND PHONE OUTLETS IN APARTMENT UNITS WITH OWNER. ALL CABLING ROUTED EXPOSED OVERHEAD AND ON EXISTING WALLS SHALL BE INSTALLED IN 3/4" EMT. SEE 3:E6.2 FOR OUTLET DETAILS. HOMERUN BACKBONE COAX AND CAT 6 CABLES TO ROOM INDICATED.
- 5. TELECOMMUNICATIONS TERMINAL BOARD FOR SERVICE PROVIDER COMMUNICATIONS EQUIPMENT. 8' WIDE X 8' HIGH.
- 6. TELECOMMUNICATIONS GROUNDING BUSBAR. SEE DETAIL 3:E6.1.
- 7. MAIN TELECOMMUNICATIONS TERMINAL BOARD, 12' LONG X 8' HIGH.

ଡ

- 8. PROVIDE ALL REQUIRED FIRE ALARM RELAYS AND MONITORING MODULES FOR ALL FIRE SPRINKLER FLOW SWITCHES, TAMPER SWITCHES AND BELL/GONG. COORDINATE REQUIREMENTS WITH FIRE SPRINKLER CONTRACTOR. 9. (3) 4" CONDUITS FOR COMMUNICATIONS SERVICES. ROUTE BELOW GRADE AND TERMINATE AT UTILITY EASEMENT.
- PROVIDE PULL STRING IN EACH RACEWAY. CORE DRILL THROUGH EXISTING BASEMENT WALL BELOW GRADE, AND PROVIDE MODULAR MECHANICAL SEALS AROUND CONDUITS (LINK-SEAL OR EQUAL). SEAL INTERIOR OF CONDUITS WITH FOAM DUCT SEALANT (POLYWATER "FST" OR EQUAL), AFTER INSTALLATION OF CABLING. CAP ANY UNUSED CONDUITS.
- 10. TELECOM DISTRIBUTION DEVICE FOR APARTMENT UNIT MOUNTED AT APPROXIMATELY 4'-0" AFF. SEE DETAIL 3:E6.2 FOR MORE INFORMATION.
- 11. FIRE ALARM SYSTEM SMOKE DETECTOR WITH 520 Hz LOW FREQUENCY SOUNDER BASE CAPABLE OF PRODUCING AN ANSI TEMPORAL 3 TONE FOR FIRE ALARM AND ANSI TEMPORAL 4 TONE FOR CO ALARM.
- 12. FIRE ALARM SYSTEM COMBINATION CO / SMOKE DETECTOR WITH 520 Hz LOW FREQUENCY SOUNDER BASE CAPABLE OF PRODUCING AN ANSI TEMPORAL 3 TONE FOR FIRE ALARM AND ANSI TEMPORAL 4 TONE FOR CO ALARM.

![](_page_58_Figure_15.jpeg)

- GENERAL BUILDING FIRE ALARM AND UPON ACTIVATION OF ANY SMOKE DETECTOR OR CO DETECTOR WITHIN APARTMENT UNIT. MOUNT FLUSH IN WALL AT 8'-0" AFF.
- AT CABLE TRAY IN HALLWAY. SEE DETAIL 3:E6.2 FOR MORE INFORMATION.
- FOR COMMUNICATIONS SERVICE PROVIDER INSTALLED BACKBONE CABLING.
- COMMUNICATIONS SERVICE PROVIDER INSTALLED BACKBONE CABLING.
- SUSPEND FROM STRUCTURE WITH SUPPORTS AT 8'-0" ON CENTER, MAXIMUM.
- STRUNG FROM EACH WALL BOX TO IT BACK BOARD.

![](_page_58_Figure_30.jpeg)

![](_page_58_Figure_32.jpeg)

![](_page_59_Figure_0.jpeg)

	<image/> <image/> <image/> <image/> <image/> <image/> <image/> <image/> <image/> <text><text><text></text></text></text>	Participation       Participation<
		S, PHASE II, BUILDING EHAB. (APARTMENTS, COMMERCIAL) KANS
		LEE LOFTS HISTORIC RI SALINA, SALINA
		REVISION:
		DATE: February 15, 2023 JOB: 20-3120 SHEET NO.: E1.15

![](_page_60_Figure_0.jpeg)

AT ALL AREAS WHERE EXPOSED, CIRCUITRY UNDERSIDE OF JOIST STRUCTURE, PARALLEL BRANCH CIRCUITRY SHALL BE ROUTED OVERHEAD TO FULLEST EXTENT POSSIBLE, WITH WIRING TO INDIVIDUAL DEVICES ON FROM ABOVE. ALL HORIZONTAL RACEWAY INSTALLATION ON WALLS SHALL OCCUR ABOVE PAINTLINE. OBTAIN APPROVAL OF ROUTING WITH ARCHITECT PRIOR TO INSTALLATION, AND COORDINATE INSTALLATION WITH OTHER TRADES.

- TERMINAL BOARD IN BASEMENT.
- HIGH.

- FOR MORE INFORMATION.
- ANSI TEMPORAL 3 TONE FOR FIRE ALARM AND ANSI TEMPORAL 4 TONE FOR CO ALARM.

![](_page_61_Figure_15.jpeg)

AT ALL AREAS WHERE EXPOSED, CIRCUITRY UNDERSIDE OF JOIST STRUCTURE, PARALLEL BRANCH CIRCUITRY SHALL BE ROUTED OVERHEAD TO FULLEST EXTENT POSSIBLE, WITH WIRING TO INDIVIDUAL DEVICES ON FROM ABOVE. ALL HORIZONTAL RACEWAY INSTALLATION ON WALLS SHALL OCCUR ABOVE PAINTLINE. OBTAIN APPROVAL OF ROUTING WITH ARCHITECT PRIOR TO INSTALLATION, AND COORDINATE

- TERMINAL BOARD IN BASEMENT.
- HIGH.

- FOR MORE INFORMATION.

![](_page_62_Figure_15.jpeg)

AT ALL AREAS WHERE EXPOSED, CIRCUITRY BRANCH CIRCUITRY SHALL BE ROUTED OVERHEAD TO FULLEST EXTENT POSSIBLE, WITH WIRING TO INDIVIDUAL DEVICES ON FROM ABOVE. ALL HORIZONTAL RACEWAY INSTALLATION ON WALLS SHALL OCCUR ABOVE PAINTLINE. OBTAIN APPROVAL OF ROUTING WITH ARCHITECT PRIOR TO INSTALLATION, AND COORDINATE INSTALLATION WITH OTHER TRADES.

- TERMINAL BOARD IN BASEMENT.
- OUTLET DETAILS. HOMERUN BACKBONE COAX AND CAT 6 CABLES TO ROOM INDICATED.
- HIGH.

- CONDUITS.
- FOR MORE INFORMATION.

![](_page_63_Figure_15.jpeg)

![](_page_64_Figure_0.jpeg)

AT ALL AREAS WHERE EXPOSED, CIRCUITRY SHALL BE INSTALLED IN EMT RACEWAY. GROUP CONDUITS TOGETHER AND ROUTE NEATLY AT UNDERSIDE OF JOIST STRUCTURE, PARALLEL AND PERPENDICULAR TO BUILDING SURFACES. BRANCH CIRCUITRY SHALL BE ROUTED OVERHEAD TO FULLEST EXTENT POSSIBLE, WITH WIRING TO INDIVIDUAL DEVICES ON EXISTING BRICK WALLS INSTALLED VERTICALLY FROM ABOVE. ALL HORIZONTAL RACEWAY INSTALLATION ON WALLS SHALL OCCUR ABOVE PAINTLINE. OBTAIN APPROVAL OF ROUTING WITH ARCHITECT PRIOR TO INSTALLATION, AND COORDINATE INSTALLATION WITH OTHER TRADES.

ш

LN

CH

# (#) PLAN NOTES BY SYMBOL

- 1. INSTALL HEAT DETECTOR IN ELEVATOR PIT. SEE DETAIL 2:E6.2.
- 2. ELEVATOR LOBBY SMOKE DETECTOR. SEE DETAIL 2:E6.2.
- 3. PROVIDE 3/4" CONDUIT WITH (2) CAT 6 CABLES FROM FIRE ALARM CONTROL PANEL TO MAIN TELEPHONE TERMINAL BOARD IN BASEMENT.
- 4. COORDINATE FINAL LOCATIONS OF ALL CATV AND PHONE OUTLETS IN APARTMENT UNITS WITH OWNER. ALL CABLING ROUTED EXPOSED OVERHEAD AND ON EXISTING WALLS SHALL BE INSTALLED IN 3/4" EMT. SEE 3:E6.2 FOR OUTLET DETAILS. HOMERUN BACKBONE COAX AND CAT 6 CABLES TO ROOM INDICATED.
- 5. TELECOMMUNICATIONS TERMINAL BOARD FOR SERVICE PROVIDER COMMUNICATIONS EQUIPMENT. 8' WIDE X 8' HIGH.
- 6. TELECOMMUNICATIONS GROUNDING BUSBAR. SEE DETAIL 3:E6.1.
- 7. MAIN TELECOMMUNICATIONS TERMINAL BOARD, 12' LONG X 8' HIGH.
- 8. PROVIDE ALL REQUIRED FIRE ALARM RELAYS AND MONITORING MODULES FOR ALL FIRE SPRINKLER FLOW SWITCHES, TAMPER SWITCHES AND BELL/GONG. COORDINATE REQUIREMENTS WITH FIRE SPRINKLER CONTRACTOR.
- 9. (3) 4" CONDUITS FOR COMMUNICATIONS SERVICES. ROUTE BELOW GRADE AND TERMINATE AT UTILITY EASEMENT. PROVIDE PULL STRING IN EACH RACEWAY. CORE DRILL THROUGH EXISTING BASEMENT WALL BELOW GRADE, AND PROVIDE MODULAR MECHANICAL SEALS AROUND CONDUITS (LINK-SEAL OR EQUAL). SEAL INTERIOR OF CONDUITS WITH FOAM DUCT SEALANT (POLYWATER "FST" OR EQUAL), AFTER INSTALLATION OF CABLING. CAP ANY UNUSED CONDUITS.
- 10. TELECOM DISTRIBUTION DEVICE FOR APARTMENT UNIT MOUNTED AT APPROXIMATELY 4'-0" AFF. SEE DETAIL 3:E6.2 FOR MORE INFORMATION.
- 11. FIRE ALARM SYSTEM SMOKE DETECTOR WITH 520 Hz LOW FREQUENCY SOUNDER BASE CAPABLE OF PRODUCING AN ANSI TEMPORAL 3 TONE FOR FIRE ALARM AND ANSI TEMPORAL 4 TONE FOR CO ALARM.
- 12. FIRE ALARM SYSTEM COMBINATION CO / SMOKE DETECTOR WITH 520 Hz LOW FREQUENCY SOUNDER BASE CAPABLE OF PRODUCING AN ANSI TEMPORAL 3 TONE FOR FIRE ALARM AND ANSI TEMPORAL 4 TONE FOR CO ALARM.

![](_page_64_Figure_15.jpeg)

- 13. FIRE ALARM ADDRESSABLE CONTROL MODULE FOR CONTROL OF APARTMENT UNIT'S NOTIFICATION APPLIANCE CIRCUIT. MODULE SHALL BE PROGRAMMED TO ACTIVATE APARTMENT UNIT'S NOTIFICATION APPLIANCES UPON GENERAL BUILDING FIRE ALARM AND UPON ACTIVATION OF ANY SMOKE DETECTOR OR CO DETECTOR WITHIN APARTMENT UNIT. MOUNT FLUSH IN WALL AT 8'-0" AFF.
- 14. (2) 3" EMT CONDUIT SLEEVES WITH NYLON BUSHINGS FOR TELECOMM CABLES
- 15. ROUTE CAT 6 AND COAX HOMERUN CABLES IN 3/4" CONDUIT WHERE EXPOSED OVERHEAD. TERMINATE CONDUIT AT CABLE TRAY IN HALLWAY. SEE DETAIL 3:E6.2 FOR MORE INFORMATION.
- 16. (2) 3" CONDUITS FROM OVERHEAD IN BASEMENT, THROUGH FIRST FLOOR AND TERMINATED 4" ABOVE FIRST FLOOR FOR COMMUNICATIONS SERVICE PROVIDER INSTALLED BACKBONE CABLING. 17. (2) 3" CONDUIT SLEEVES FROM OVERHEAD IN FIRST FLOOR, TERMINATED 4" ABOVE SECOND FLOOR FOR
- COMMUNICATIONS SERVICE PROVIDER INSTALLED BACKBONE CABLING. 18. (2) 3" CONDUIT SLEEVES FROM OVERHEAD IN SECOND FLOOR, TERMINATED 4" ABOVE 4TH FLOOR FOR
- COMMUNICATIONS SERVICE PROVIDER INSTALLED BACKBONE CABLING 19. 2"H x 6"W WIRE BASKET CABLE TRAY FOR TELECOM CABLING. INSTALL AT MINIMUM 8' AFF TO BOTTOM OF TRAY. SUSPEND FROM STRUCTURE WITH SUPPORTS AT 8'-0" ON CENTER, MAXIMUM.
- 20. 1-1/4" EMT CONDUIT HOMERUN TO IT ROOM 144. COMBINE NO MORE THAT 3 WALL BOXES TO A SINGLE HOMERUN U.N.O. CONDUITS SERVING ONE WALL BOX SHALL BE 1", ALL OTHERS SHALL BE 1-1/4". PROVIDE A DEDICATED PULL STRUNG FROM EACH WALL BOX TO IT BACK BOARD.

![](_page_64_Figure_30.jpeg)

AT ALL AREAS WHERE EXPOSED, CIRCUITRY BRANCH CIRCUITRY SHALL BE ROUTED OVERHEAD TO FULLEST EXTENT POSSIBLE, WITH WIRING TO INDIVIDUAL DEVICES ON FROM ABOVE. ALL HORIZONTAL RACEWAY INSTALLATION ON WALLS SHALL OCCUR ABOVE PAINTLINE. OBTAIN APPROVAL OF ROUTING WITH ARCHITECT PRIOR TO INSTALLATION, AND COORDINATE INSTALLATION WITH OTHER TRADES.

- TERMINAL BOARD IN BASEMENT.
- OUTLET DETAILS. HOMERUN BACKBONE COAX AND CAT 6 CABLES TO ROOM INDICATED.
- HIGH.

- FOR MORE INFORMATION.
- OF PRODUCING AN ANSI TEMPORAL 3 TONE FOR FIRE ALARM AND ANSI TEMPORAL 4 TONE FOR CO ALARM.

![](_page_65_Figure_14.jpeg)

![](_page_66_Figure_0.jpeg)

AT ALL AREAS WHERE EXPOSED, CIRCUITRY UNDERSIDE OF JOIST STRUCTURE, PARALLEL BRANCH CIRCUITRY SHALL BE ROUTED OVERHEAD TO FULLEST EXTENT POSSIBLE, WITH WIRING TO INDIVIDUAL DEVICES ON FROM ABOVE. ALL HORIZONTAL RACEWAY INSTALLATION ON WALLS SHALL OCCUR ABOVE PAINTLINE. OBTAIN APPROVAL OF ROUTING WITH ARCHITECT PRIOR TO INSTALLATION, AND COORDINATE INSTALLATION WITH OTHER TRADES.

- TERMINAL BOARD IN BASEMENT.
- HIGH.

- CONDUITS.
- FOR MORE INFORMATION.
- ANSI TEMPORAL 3 TONE FOR FIRE ALARM AND ANSI TEMPORAL 4 TONE FOR CO ALARM.
- OF PRODUCING AN ANSI TEMPORAL 3 TONE FOR FIRE ALARM AND ANSI TEMPORAL 4 TONE FOR CO ALARM.

![](_page_67_Figure_15.jpeg)

![](_page_68_Figure_0.jpeg)

UNDERSIDE OF JOIST STRUCTURE, PARALLEL BRANCH CIRCUITRY SHALL BE ROUTED OVERHEAD TO FULLEST EXTENT POSSIBLE, WITH WIRING TO INDIVIDUAL DEVICES ON FROM ABOVE. ALL HORIZONTAL RACEWAY INSTALLATION ON WALLS SHALL OCCUR ABOVE PAINTLINE. OBTAIN APPROVAL OF ROUTING WITH ARCHITECT PRIOR TO INSTALLATION, AND COORDINATE

- TERMINAL BOARD IN BASEMENT.
- HIGH.

- CONDUITS.
- FOR MORE INFORMATION.

![](_page_68_Figure_15.jpeg)

![](_page_69_Figure_0.jpeg)

### NOTES:

- COMMON GROUNDING ELECTRODE CONDUCTOR BUSBAR SHALL BE 1/4" THICK x 4" WIDE x 24" LONG, TIN PLATED COPPER BUSBAR. PROVIDE COMPLETE WITH INSULATING STAND OFFS, STAINLESS STEEL BRACKETS AND MOUNTING BOLTS. MOUNT ON WALL AT 18" AFF. ERICO #EGBA14424CCT OR EQUAL.
- 2. ALL CONNECTIONS TO GROUNDING BUSBAR SHALL BE MADE USING COMPRESSION TYPE LUGS (BURNDY 'YAZ' SERIES OR EQUAL). MECHANICAL LUGS ARE NOT ACCEPTABLE.
- 3. INSTALL ALL GROUNDING ELECTRODE CONDUCTORS IN 3/4" CONDUIT WHERE EXPOSED AND WHERE SUBJECT TO PHYSICAL DAMAGE.
- 4. CONTRACTOR SHALL MEASURE RESISTANCE TO GROUND AND PROVIDE ADDITIONAL GROUND ROD OR PLATE ELECTRODES AS REQUIRED UNTIL A RESISTANCE TO GROUND OF 25 OHMS OR LESS IS ACHIEVED.

![](_page_69_Figure_6.jpeg)

COMMERCIAL SPACE & APARTMENT FEEDER SCHEDULE					
Apartment #	Feeder Size				
222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432 523, 524, 525, 526, 527, 528, 529, 530, 531	<u>CU</u> : (3) #1/0,#4G IN 1-1/2" C. OR MC CABLE OR <u>AL</u> : (3) #3/0, #2G IN 1-1/2"C. OR MC CABLE				
233, 234, 334, 434, 532, 534	<u>CU</u> : (3) #2/0, #4G IN 1-1/2" C. OR MC CABLE OR <u>AL</u> : (3) #4/0, #1G IN 2"C. OR MC CABLE				
333, 433, 533	<u>CU</u> : (3) #3/0, #4G IN 2" C. OR MC CABLE OR <u>AL</u> : (3) #250 KCM, #2G IN 2"C. OR MC CABLE				
PANEL 'C2' (COMMERCIAL SPACE #1, ROOM #142)	<u>CU</u> : (4) #3/0, #6G IN 2" C. OR <u>AL</u> : (4) #250 KCM, #4G IN 2-1/2"C.				
PANEL 'C1' (COMMERCIAL SPACE #2, ROOM #143)	<u>CU</u> : (4) #1/0, #6G IN 2" C. OR <u>AL</u> : (4) #3/0, #4G IN 2"C.				
NOTES:					
1. Voltage drop has been accounted for in sizes indicated, further	up-sizing of feeders is not necessary				
2. Ensure meter center and load center lugs are adequately sized for	or proper conductor termination.				

3. Feeders must be installed in EMT where exposed. MC Cable is allowed only where concealed in walls.

- All conductor sizes are based on copper, U.N.O. • Entire installation shall comply with NEC.
- Contact Information: Bradley Carlson
  - Westar Energy
- Bradley.Carlson@westarenergy.com
- (940) 390-2495
- rated with main to provide 65 kAIC rating for each meter center system.
- All meter center components shall be NEMA 3R.
- All dimensions based on Square D equipment.
- attached to the meter base with exterior rated adhesive.

![](_page_69_Figure_22.jpeg)

![](_page_69_Figure_24.jpeg)

B RESIDENTIAL TENANT METER CENTER 'RMC'

RTMENT	FEEDER	SCHEDULE

• Coordinate all responsibilities and requirements with utility company and pay associated fees.

• Coordinate final location of meter assemblies with utility company. Provide shop drawings of proposed equipment whether as specified or substituted to utility company for approval. • Meter Center main circuit breakers shall be fully rated for 65 kAIC. Provide branch breakers series

• Provide all necessary blocking and/or steel channel behind meter centers to create a flush/plumb mounting surface and to infill space where existing stone and brick meet.

For each meter, provide a permanent brass, stainless steel or aluminum tag identifying the apartment/space served. Tags shall be stamped with minimum 1/4" high letters and securely

CONTINUE TO UTILITY TRANSFORMER. SEE SITE PLAN, E1.0, FOR TRANSFORMER LOCATION.

![](_page_69_Picture_37.jpeg)

### **IST Consulting Engineers, PA** MANHATTAN 4809 Vue Du Lac Place, Suite 201 WICHITA 125 S. Washington, Suite 15 Wichita, Kansas 67202 316.285.0696 Manhattan, KS 66503 785.587.8042

www.LSTengineers.com mail@LSTengineers.com FEBRUARY 2023

roject 22059

Ē σ Gill S **(**) RCIA Σ Σ ART 4 Δ AB Т S RE ORIC ⊢ SIH SALINA Ш

REVISION: DATE: February 15, 2023 JOB: 20-3120 SHEET NO .: **E6**.

![](_page_70_Figure_0.jpeg)

3. HEAT DETECTORS IN THE ELEVATOR HOISTWAY AND ELEVATOR EQUIPMENT ROOM WILL SEND A SIGNAL TO THE SHUNT-TRIP SWITCH POWERING THE ELEVATOR SO AS TO SHUT DOWN POWER TO THAT CIRCUIT. (THIS IS A NON-AUTO RESET SWITCH). WHEN THE SPRINKLER HEAD HAS REACHED ITS CRITICAL TEMPERATURE OF 165° F., THE HEAD WILL BEGIN DISCHARGE OF WATER.

# 2 ELEVATOR INTERLOCK WITH FIRE ALARM No Scale

# 1 ELECTRICAL RISER DIAGRAM - HOUSE SERVICE No Scale

· (_	IST Consulting MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042	Engineers, PA wichita 125 S. Washington, Suite 150 Wichita, Kansas 67202 316.285.0696	301 108 0m
TH FLOOR	www.LSTengi Project 22059	neers.com FEBRUARY 2023	Jones Gilam Ren       730 N. Ninth     1881 Main Street, Suite       730 N. Ninth     1881 Main Street, Suite       730 Salina, KS 67401     Kansas City, MO 64       785.827.0386     Jgr@jgrarchitects.0
RD FLOOR			BUILDING 2 COMMERCIAL) KANSAS
IND FLOOR			DFTS, PHASE II, DRIC REHAB. (APARTMENTS,
IST FLOOR			LEE LC HISTO SALINA,
BASEMENT			14654 17 Feb. 2023 REVISION:
			DATE: February 15, 2023 JOB: 20-3120 SHEET NO.:

AIC SYM		
	571	h floor
1ECH 436		
ABLE SCC: (AIC SYM		
	4TI	h floor
1ECH		
336		
ABLE SUC: (AIC SYM		
	3RI	D FLOOR
1ECH 236		
ABLE SCC: (AIC SYM		
	2N	
	H12 HISTORIC OFFICE	
ABLE SCC:		
	ES A #	
	15	T FLOOR
	)	
ABLE SCC:		

	HT FIXTUR	E SCHEDULE							
MARK			LAMP /	LED DATA		MOUNTING			NOTES
MARK	MANUFACTORER	MODEL NOMBER	LUMENS	COLOR	BALLASTY DRIVER	MOONTING	FINISH	DESCRIPTION	NOTES
A	HALO	SMD6R12930WH	1,200	3000°K	PHASE DIMMING	SURFACE	WHITE	6"Ø SURFACE MOUNT DOWNLIGHT WITH ACRYLIC LENS; 90 CRI	4,5
В	SEAGULL	15030EN-829	(2) 10W LED A19	3000°K	PHASE DIMMING LAMPS	SURFACE	BRONZE	52" DIAMETER CEILING FAN WITH LED LIGHT KIT	4
CE	H.E. WILLIAMS	WMA-4-L80/835-AF-EM/10W-DIM-UNV	8,000	3500°K	0-10V DIMMMING	SURFACE WALL	WHITE	4' ARCHITECTURAL WALL BRACKET UP/DOWN LIGHT WITH FROSTED ACRYLIC LENS AND 10W EMERGENCY BATTERY	
D	METALUX	4SNLED-LD5-56SL-LW-UNV-L830-CD1	5,900	3500°K	0-10V DIMMING	SURFACE	WHITE	4' LED STRIP WITH FROSTED LENS, WIDE DISTRIBUTION	
DE	METALUX	4SNLED-LD5-56SL-LW-UNV-EL14W-L830-CD1	5,900	3500°K	0-10V DIMMING	SURFACE	WHITE	4' LED STRIP WITH FROSTED LENS, WIDE DISTRIBUTION WITH 14W EMERGENCY BATTERY	8
Ε	SURE-LITES	SEL25SD		WHITE	N/A	WALL AT 7'-6" AFF	WHITE	TWIN HEAD POLYCARBONATE EMERGENCY LIGHT	1,2
E1	MULE	EOE-BB-10L3-B-DG	(2) 10W LED	WHITE	N/A	ON WALL ABOVE DOOR	BRONZE	DIE-CAST ALUMINUM EMERGENCY LIGHT WITH POLYCARBONATE LENS, INTEGRAL BATTERY	1,2,3,5
F	CAPITAL LIGHTING	PORTMAN SKU 148631MB-537	(3) 9.5W LED A19	3000°K	N/A	WALL AT 7'-0"	BURNT SIENNA	3-LAMP LED VANITY LIGHT	4
G	(BY OWNER)	(BY OWNER)		3000°K	FIXED OUTPUT	PENDANT	(BY OWNER)	DECORATIVE PENDANT SELECTED BY OWNER, PROVIDED AND INSTALLED BY E.C.	4
н	H.E. WILLIAMS	AX2D-4-L33/835-S-AC/D48-DIM-UNV	3,300	3,500°K	0-10V DIMMING	SURFACE	MATTE ALUMINUM	4' DIRECT ARCHITECTURAL SUSPENDED, EXTRUDED ALUMINUM NARROW CHANNEL WITH FROSTED ACRYLIC LENS	9
JE	H.E. WILLIAMS	ASM-4-L46/835-S-S-A-EM/10WLP-DRV-UNV	4,600	3500°K	FIXED OUTPUT	SURFACE	WHITE	4' ARCHITECTURAL SURFACE MOUNT WITH RIBBED ACRYLIC DIFFUSER, DIE-FORMED ALUMINUM HOUSING AND 10W EMERGENCY BATTERY	8
к	H.E. WILLIAMS	WMA-2-L20/835-AF-DIM-UNNV	2,000	3500°K	0-10V DIMMMING	SURFACE WALL	WHITE	2' ARCHITECTURAL WALL BRACKET UP/DOWN LIGHT WITH FROSTED ACRYLIC LENS	
м	H.E. WILLIAMS	96-4-L40/835-HIAFR-WET/1-DRV-UNV	4,000	3500°K	FIXED OUTPUT DRIVER	WALL AT 7'-6" AFF (TO BOTTOM)	WHITE	4' FULLY ENCLOSED AND GASKETED INDUSTRIAL FIXTURE WITH FROSTED, RIBBED, IMPACT-RESISTANT ACRYLIC LEN	5
Р	REJUVENATION	SEE DESCRIPTION	990	2700°K	FIXED OUTPUT DRIVER	PENDANT	OLD BRASS	HOLLYWOOD 6" FITTER LED PENDANT WITH ART DECO WEDDING CAKE GLOBE SHADE	
Q	INSIGHT LIGHTING	MQ2-50-40K-7°UP/100°DN-WM2-6-INT-TBL-VS	3,280 UP 2,800 DN	4000°K	FIXED OUTPUT DRIVER	WALL AT 12'-0" AFF (FIRST FLOOR)	BLACK	DIE-CAST DIRECTIONAL FACADE LIGHT, 6" ARM, 7° NARROW UPLIGHT, 100° WIDE FLOOD DOWNLIGHT, CUTOFF VISOR	5
RI	MCGRAW-EDISON	GWC-AF-01-LED-E1-T2-BK-800	5,000	4000°K	FIXED OUTPUT DRIVER	WALL AT 12'-0" AFF (FIRST FLOOR)	BLACK	DIE-CAST WALL PACK, TYPE II DISTRIBUTION	5
R2	MCGRAW-EDISON	GWC-AF-01-LED-E1-T3-BK-800	5,000	4000°K	FIXED OUTPUT DRIVER	WALL AT 12'-0" AFF (FIRST FLOOR)	BLACK	DIE-CAST WALL PACK, TYPE III DISTRIBUTION	5
XI	MULE	MXBRU-SD		RED	N/A	CEILING/WALL/END	WHITE	SINGLE FACE POLYCARBONATE LED EXIT	1,2
X2	MULE	MXBRU-SD		RED	N/A	CEILING/END	WHITE	DOUBLE FACED POLYCARBONATE LED EXIT	1,2
XE	MULE	SQC-LED-1-R-WW-SD	 1 WATT	RED WHITE	N/A	CEILING/WALL	WHITE	SINGLE FACE COMINATION POLYCARBONATE EXIT SIGN/TWIN HEAD EMERGENCY LIGHT	1,2

GENERAL:

• All interior LED fixtures shall be min. 80 CRI.

• All exterior LED fixtures shall be 4000°k corrected color temperature, min. 70 CRI.

• All light fixtures shall be provided with universal drivers capable of operating at 120V or 208V UNO.

• All LED fixtures shall adhere to LM79 and LM80 standards.

NOTES:

1. Fixture shall have self-diagnostic/self-testing electronics.

2. Provide with emergency battery integral charger.

3. Fixture shall be capable of operation in temperatures ranging from -4°F through 104°F.

4. Fixture/lamps shall be Energy Star rated.

5. U.L. listed for 'wet location'.

6. Provide fixture with 7" arm and 20' square, steel pole. See detail 2:E1.0 for more information.

7. Fixture/pole assembly shall be rated for 100 mph wind loads. Provide with vibration damper per manufacturer's recommendations.

8. Provide fixture with integral emergency battery pack to operate fixture at 1300 lumen output for 90 minutes upon loss of normal power.

9. Suspend fixture using aircraft cable with bottom at 10'-0". Provide fixtures with straight cord and quick connect harness.

Ρ	anel Designation: Location: Voltage: Enclosure:	C1 COMMERCIAL SPACE 208Y/120V-3Ph-4W NEMA 1	Mounting: Recessed Flush Bus Amps: 225 MCB Amps: MLO Other: 22 KAIC Series Rated Provide integral OR external surge suppression devi						
Circuit #	Load Description	Co nduct ors	C/B Size	C/B Size	C/B Conductors Load Description Cir				
1	LTG: Open Space	2#12,#12G,1/2"C	20/1	30 / 2	2#10,#10G	Electric Heater 'EH-3'	2		
3	LTG: Elec Room	2#12,#12G,1/2"C	20/1			(5 kW)	4		
5	RCPT: North Wall	2#12,#12G,1/2"C	20/1	30/2	2#10,#10G	Electric Heater 'EH-4'	6		
7	RCPT: North Wall	2#12,#12G,1/2"C	20/1			(5 kW)	8		
9	RCPT: Ee ast Wall	2#12,#12G,1/2"C	20/1	30 / 2	2#10,#10G	Electric Heater 'EH-5'	10		
11	RCPT: South Wall	2#12,#12G,1/2"C	20/1			(5kW)	12		
13	RCPT: Panel Board	2#12,#12G,1/2"C	20/1	20 / 1		SPARE	14		
15	RCPT: West Wall	2#12,#12G,1/2"C	20/1	20 / 1		SPARE	16		
17	SPARE		20/1	20/1		SPARE	18		
19	SPARE		20/1	20/1		SPARE	20		
21	SPARE		20/1	20/1		SPARE	22		
23	SPARE		20/1	20 / 1		SPARE	24		
25	SPARE		20/1	20 / 1		SPARE	26		
27	SPARE		20/1	20 / 1		SPARE	28		
29	SPARE		20/1	20 / 1		SPARE	3 <mark>0</mark>		
31	SPARE		20/1			BLANK	32		
33	SPARE		20/1		_	BLANK	34		
35	SPARE		20/1			BLANK	36		
37	SPARE		20/1		_	BLANK	38		
39	SPARE		20/1			BLANK	40		
41	SPARE		20/1			BLANK	42		

Panel Designation: C2 Location: COMMERCIAL SPACE 143 Voltage: 208Y/120V-3Ph-4W Enclosure: NEMA 1					Mounting: Recessed Flush Bus Amps: 225 MCB Amps: MLO Other: 22 KAIC Series Rated Provide integral OR external surge suppresion device				
Circuit #	Load Description	Conduct ors	C/B Size	C/B Size	Conductors	Load Descript ion	Circuit #		
1	LTG: Open Space	2#12,#12G,1/2"C	20/1	30 / 2	2#10,#10G	Electric Heater 'EH-1'	2		
3	RCPT: North Wall	2#12,#12G,1/2"C	20/1			(5kW)	4		
5	RCPT: East Wall	2#12,#12G,1/2"C	20/1	30 / 2	2#10,#10G	Electric Heater 'EH-2'	6		
7	RCPT: South Wall	2#12,#12G,1/2"C	20/1			(5kW)	8		
9	RCPT: West Wall	2#12,#12G,1/2"C	20/1	20 / 1	-	SPARE	10		
11	SPARE		20/1	20 / 1		SPARE	12		
13	SPARE		20/1	20 / 1		SPARE	14		
15	SPARE		20/1	20 / 1		SPARE	16		
17	SPARE	_	20/1	20 / 1	-	SPARE	18		
19	SPARE		20/1	20 / 1	-	SPARE	20		
21	SPARE		20/1	20 / 1	-	SPARE	22		
23	SPARE		20/1	20 / 1	-	SPARE	24		
25	SPARE		20/1	20 / 1	ļ	SPARE	26		
27	SPARE		20/1	20 / 1	-	SPARE	28		
29	SPARE		20/1	20 / 1	ļ	SPARE	30		
31	SPARE		20/1		_	BLANK	32		
33	SPARE		20/1			BLANK	34		
35	SPARE		20/1			BLANK	36		
37	SPARE		20/1			BLANK	38		
39	SPARE		20/1			BLANK	40		
41	SPARE		20/1			BLANK	42		

		I	Mounting: Bus Amps: MCB Amps: Other:				
		Circuit #	Conduct ors				
	2	1	DISPOSAL	2#12, #12G, 1/2"C	15/1	20 / 1	2#12, #12G, 1/2"C
	2	3	DIS HWAS HER	2#12, #12G, 1/2"C	15/1	50 / 2	3# 6, # 10G, 1"C
6	2	5	HOOD/MICROWAVE	2#12, #12G, 1/2"C	15/1		
	2	7	REFRIGERATOR	2#12, #12G, 1/2"C	15/1	30 / 2	2#10, #10G, 1/2"C
	2	9	COUNTER TOP RCPTS	2#12, #12G, 1/2"C	20/1		
	2	11	COUNTER TOP RCPTS	2#12, #12G, 1/2"C	20/1	/ 2	2#12, #12G, 1/2"C
	1	13	LIVING ROOM RCPTS	2#12, #12G, 1/2"C	20/1		
		15	BATHROOM	2#12, #12G, 1/2"C	20/1	-/2	SEE NOTE 5
	1	17	BEDROO M	2#12, #12G, 1/2"C	20/1		
		<mark>1</mark> 9	SPACE ONLY	-			
		21	SPACE ONLY				
		23	SPACE ONLY				

			Voltage: Enclosure:		MCB Amps: Other		
		Circuit #	Load Description	Conduct ors	C/B Size	C/B Size	Conduct ors
	2	1	DISPOSAL	2#12,#12G,1/2"C	15/1	20/1	2#12,#12G,1/2"C
	2	3	DIS HWAS HER	2#12, #12G, 1/2"C	15/1	50/2	3# 6, # 10G, 1"C
6	2	5	HOOD/MICROWAVE	2#12,#12G,1/2"C	15/1		
	2	7	REFRIGERATOR	2#12,#12G,1/2"C	15/1	30/2	2#10, #10G, 1/2"C
	2	9	COUNTER TOP RCPTS	2#12,#12G,1/2"C	20/1		
	2	11	COUNTER TOP RCPTS	2#12,#12G,1/2"C	20/1	/ 2	SEE NOTE 4
	1	13	LIVING ROOM RCPTS	2#12,#12G,1/2"C	20/1		
		15	BATHROOM#1	2#12,#12G,1/2"C	20/1	-/2	SEE NOTE 5
	1	17	BEDROOM#1	2#12,#12G,1/2"C	20/1		
		19	BEDROOM#2	2#12,#12G,1/2"C	20/1		
	5	21	BEDROOM#3	2#12,#12G,1/2"C	20 / 1		
		23	BATHROOM#2	2#12,#12G,1/2"C	20/1		

Location: 2BR/3BR APARTMENT UNIT

Panel Designation: (APT #)

![](_page_71_Figure_20.jpeg)

Mounting: Recessed Flush Bus Amps: 125 MLO 22 KAIC Series Rated Load Description Circuit # KITCHEN/LIVING RM LIGHTS 2 RANGE 4 6 WATER HEATER 8 10 CONDENSING UNIT 12 4 14 16 **BLOWER COIL** 18 SPACE ONLY 20 SPACE ONLY 22

SPACE ONLY

24

![](_page_71_Picture_22.jpeg)

### LST Consulting Engineers, PA MANHATTAN 4809 Vue Du Lac Place, Suite 201 Manhattan, KS 66503 785.587.8042 125 S. Washington, Suite 150 Wichita, Kansas 67202 316.285.0696

www.LSTengineers.com mail@LSTengineers.com Project 22059 FEBRUARY 2023

- NOTES: A. WHERE ELECTRICAL BOXES ARE INSTALLED IN FIRE RATED ASSEMBLIES (CEILINGS, WALLS, ETC.), ENSURE THAT THE INSTALLATION OF BOXES MAINTAINS FIRE RATINGS. SUBMIT PRODUCT DATA AND U.L. LISTINGS TO DEMONSTRATE SUITABILITY OF FIRE RATING PRODUCTS.
- B. THE USE OF NM CABLE IS <u>PROHIBITED</u>. REFER TO SPECIFICATION 260519 FOR APPROVED WIRING METHODS.
- C. ALL RECEPTACLES IN APARTMENT UNITS SHALL BE TAMPER-RESISTANT TYPE.

## **#** PANEL SCHEDULE NOTES BY SYMBOL

- 1. CIRCUIT SHALL BE PROTECTED BY AFCI TYPE BREAKER.
- 2. CIRCUIT SHALL BE PROTECTED BY COMBINATION AFCI/GFCI TYPE BREAKER.
- PROVIDE BREAKERS AND CIRCUITRY FOR BLOWER COILS AS FOLLOWS:
   <u>BC-1</u>:APTS #131, #134, #211, #220, #311, #320, #411, #420, #511;
- BREAKER: 30A/2P; CIRCUITRY: 2#10, #10G, 3/4"C.
   <u>BC-2</u>: APTS #133, #212, #213, #215, #217, #221, #312, #313, #315, #217, #221, #312, #515, #517, #221, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518, #518
- #317, #320, #412, #413, #415, #417, #421, #512, #513, #515, #517, #520, #521; BREAKER: 40A/2P; CIRCUITRY: 2#8, #10G, 3/4"C.
  BC-3: APTS #136, #214, #216, #218, #314, #316, #318, #414, #416, #142, #144, #416, #144, #416, #144, #416, #144, #416, #144, #416, #144, #416, #144, #416, #144, #416, #144, #416, #144, #416, #144, #416, #144, #416, #144, #416, #144, #144, #146, #144, #144, #146, #144, #144, #146, #144, #144, #146, #144, #144, #146, #144, #144, #146, #144, #144, #146, #144, #144, #146, #144, #144, #146, #144, #144, #146, #144, #144, #146, #144, #144, #146, #144, #144, #146, #144, #146, #144, #144, #146, #144, #146, #144, #146, #144, #146, #144, #146, #144, #146, #144, #146, #144, #146, #144, #146, #144, #146, #144, #146, #144, #146, #144, #146, #144, #146, #144, #146, #144, #146, #144, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #146, #14
- #418, #514, #516, #518; BREAKER: 60A/2P; CIRCUITRY: 2#4, #10G, 1"C.
  <u>BC-4</u>: APTS #132, #219, #319, #419, #519; BREAKER: 60A/2P; CIRCUITRY: 2#4, #10G, 1"C.
- <u>BC-7</u>: APTS #209, #309, #409, #509; BREAKER: 60A/2P; CIRCUITRY: 2#4, #10G, 1"C.
- PROVIDE BREAKERS AND CIRCUITRY FOR CONDENSING UNITS AS FOLLOWS:
   <u>CU-1</u>:APTS #131, #134, #211, #220, #311, #320, #411, #420, #511;
- BREAKER: 20A/2P; CIRCUITRY: 2#12, #12G, 1/2"C.
  <u>CU-2</u>: APTS #133, #212, #213, #215, #217, #221, #312, #313, #315, #317, #320, #412, #413, #415, #417, #421, #512, #513, #515, #517,
- #520, #521; BREAKER: 20A/2P; CIRCUITRY: 2#12, #12G, 1/2"C.
  <u>CU-3</u>: APTS #136, #214, #216, #218, #314, #316, #318, #414, #416, #418, #514, #516, #518; BREAKER: 25A/2P; CIRCUITRY: 2#10, #10C
- #418, #514, #516, #518; BREAKER: 25A/2P; CIRCUITRY: 2#10, #10G, 3/4"C.
- <u>CU-4</u>: APTS #132, #219, #319, #419, #519; BREAKER: 30A/2P;
- CIRCUITRY: 2#10, #10G, 3/4"C.
- <u>CU-7</u>: APTS #209, #309, #409, #509; BREAKERS: 40A/2P; CIRCUITRY 2#8, #10G., 3/4"C.
- 5. CIRCUIT ONLY APPLICABLE FOR THREE BEDROOM UNITS. FOR TWO BEDROOM UNIT , LEAVE CIRCUIT AS A BLANK SPACE.
- 6. CIRCUIT SHALL BE SPARE IN ADA APARTMENTS

![](_page_71_Figure_45.jpeg)

![](_page_71_Figure_46.jpeg)

![](_page_71_Figure_47.jpeg)

![](_page_71_Figure_48.jpeg)

![](_page_71_Figure_49.jpeg)

**E6.3**
Panel Designation: H01					Mounting: Surface					
	Location:	BSMT		Bus Amps: 225						
	Voltage:	208Y/120V-3Ph-4W		MCB Amps: MLO						
	Enclosure:	NEMA 1		Other: 22 KAIC Series Rated						
				Provide integral OK external surge suppresion device						
Circuit #	Load Descript ion	Conduct ors	C/B Size	C/B Size	Conduct ors	Load Descript ion	Circuit #			
1				20/1	2#12,#12G, 1/2"C	FPSS Floww/Tamper/Bell	2			
3	Water Heater	3#8,#10G, 3/4"C	35/3	20/1	2#12,#12G, 1/2"C	Main Telecomm Backboard	4			
5	(9kW)			20/1	2#12,#12G, 1/2"C	Main Telecomm Backboard	6			
7				20/1	2#12,#12G, 1/2"C	LTS: East Basmanet	8			
9	Water Heater	3#8,#10G, 3/4"C	35/3	20/1	2#12,#12G, 1/2"C	LTS:WestBasement	10			
11	(9kW)			20/1	2#12,#12G, 1/2"C	RCPT: NE Basement	12			
13				20/1	2#12,#12G, 1/2"C	RCPT:SE Basement	14			
15	Water Heater	3#8,#10G, 3/4"C	35/3	20/1	2#12,#12G, 1/2"C	RCPT: NW Basment	16			
17	(9kW)			20/1	2#12,#12G, 1/2"C	RCPT: SW Basement	18			
19	HW Circ Pump	2#12,#12G, 1/2"C	20 / 1	20/1	2#12,#12G, 1/2"C	Elevator Pit LTS & RCPT	20			
21	Energu Recovery Unit	2#12,#12G, 1/2"C	15/2	20/1	2#12,#12G, 1/2"C	Dryer Make-Up Air Fans	22			
23	'ERV-1'			20/1		SPARE	24			
25	'ERV-1' Motorized Dampers	2#12,#12G, 1/2"C	20/1	20/1		SPARE	26			
27	Blower Coil 'BC-2'	2#8,#10G,1/2"C	40 / 2	20/1		SPARE	28			
29	East Side			20/1		SPARE	30			
31	Blower Coil 'BC-2'	2#8,#10G,1/2"C	40/2	20/1		SPARE	32			
33	West Side			20/1		SPARE	34			
35	Sewage Ejector			20/1		SPARE	36			
37	(1 HP)	3#12,#12G, 1/2"C	15/5	20/1		SPARE	38			
39				20/1		SPARE	40			
41	SPARE		20/1	20/1		SPARE	42			

	Panel Designation: H11				Mounting: Surface						
		Voltage:	208V/120V/206 AW/								
		voltage:			Other 10 KAK						
		Enclosure:	NEMA I		Provide integral OP external surge suppression devices						
					Provide integral OK external surge suppresion de						
	Circuit #	Load Descript ion	Conduct ors	C/B Size	C/B Size	Conduct ors	Load Descript ion	Circuit #			
	1	LTS: Lobby, Stair 2	2#12,#12G,1/2"C	20/1	60/2	3# 4,# 10G,1"C	Blower Coil 'BC-6'	2			
	3	RCPT: Lobby	2#12,#12G,1/2"C	20/1			52.6 MCA	4			
	5	LTS: Community Rm	2#12,#12G,1/2"C	20/1	60/2	3# 4,# 10G,1"C	Blower Coil 'BC-7'	6			
	7	RCPT: Community Rm	2#12,#12G,1/2"C	20 / 1			CKT #1:53.8 MCA	8			
2	9	RCPT: Comm Rm EWC	2#12,#12G,1/2"C	20/1	25/2	3#10,#10G,1/2"C	Blower Coil 'BC-7'	10			
	11	RCPT:Vest,RR	2#12,#12G,1/2"C	20 / 1			CKT #2:22.7 MCA	12			
	13	RCPT:IT,Mech	2#12,#12G,1/2"C	20/1	20/1	2#12,#12G,1/2"C	Clothes Washer	14			
	15	RCPT: IT BackBd	2#12,#12G,1/2"C	20 / 1	20/1	2#12,#12G,1/2"C	Clothes Washer	16			
	17	RCPT: П BackBd	2#12,#12G,1/2"C	20 / 1	20/1	2#12,#12G,1/2"C	Clothes washer	18			
1	19	FACP	2#12,#12G,1/2"C	20/1	20/1	2#12,#12G,1/2"C	Clothes Washer	20			
	21	RCPT:Mech,RR	2#12,#12G,1/2"C	20/1	20/1	2#12,#12G,1/2"C	Clothes Washer	22			
	23	RCPT: Refrigerator	2#12,#12G,1/2"C	20/1	30/2	3#10,#10G,1/2"C	Clothes Dryer	24			
	25	RCPT: Microwave	2#12,#12G,1/2"C	20 / 1				26			
	27	RCPT: Kitchenette	2#12,#12G,1/2"C	20/1	30/2	3#10,#10G,1/2"C	Clothes Dryer	28			
	29	RCPT: Kitchenette	2#12,#12G,1/2"C	20/1				30			
	31	RCPT: Dishwasher	2#12,#12G,1/2"C	20 / 1	30/2	3#10,#10G,1/2"C	Clothes Dryer	32			
	33	RCPT: Office 159	2#12,#12G,1/2"C	20 / 1				34			
	35	RCPT: Office 158	2#12,#12G,1/2"C	20/1	30/2	3#10,#10G,1/2"C	Clothes Dryer	36			
	37	RCPT: Conference 157	2#12,#12G,1/2"C	20/1				38			
	<mark>3</mark> 9	LTS: Office Area	2#12,#12G,1/2"C	20/1	30/2	3#10,#10G,1/2"C	Clothes Dryer	40			
	41	RCPT: Work Room Column	2#12,#12G,1/2"C	20/1				42			
	43	RCPT: Work Room West	2#12,#12G,1/2"C	20/1	20/1	2#12,#12G,1/2"C	Wall He ater 'EWH-1'	44			
	45	RCPT: Work Room Counter	2#12,#12G,1/2"C	20 / 1	20/1	2#12,#12G,1/2"C	Wall He ater 'EWH-2'	46			
	47	LTS: Exterior Wall Mtd	2#10,#10G,1/2"C	20/1	20/1		SPARE	48			
	49	Lighting Contactor	2#12,#12G,1/2"C	20/1	20/1		SPARE	50			
	51	SPARE		20 / 1	20/1		SPARE	52			
	53	SPARE		20/1	20/1		SPARE	54			
	55	SPARE		20 / 1	20/1		SPARE	<mark>5</mark> 6			
	57	SPARE		20/1	20/1		SPARE	58			
	59	SPARE		20/1	20/1		SPARE	60			



Pan

29

Circuit # 9 11 13 15 17 19 21 23 25

Par

27

29

Circuit #	
1	
3	
5	
7	
9	
11	
13	
15	
17	
19	
21	
23	
25	
27	

29

F	Panel Designation:	H12	Mounting: Surface								
	Location:	HIST. OFFICE 137	Bus Amps: 100								
	Voltage:	208Y/120V-3Ph-4W	MCB Amps: MLO								
	Enclosure:	NEMA 1		Other: 10 KAIC							
				Provide integral OR external surge suppresion device							
#	Load Description	Conductors	C/B Size	C/B Size	Conduct ors	Load Descript ion	Circuit #				
	LTG: Stair S1	2#12,#12G,1/2"C	20 / 1	20/1	2#12,#12G,1/2"C	Wall He ater 'EWH-3'	2				
	LTG: Historic Office	2#12,#12G,1/2"C	20 / 1	25 / 2	2#10,#10G,1/2"C	Blower Coil 'BC-7'	4				
	LTG: N. Window	2#12,#12G,1/2"C	20/1			Circuit #1	6				
	LTG: Center Window	2#12,#12G,1/2"C	20 / 1	60 / 2	2#8,#10G,1/2"C	Blower Coil 'BC-7'	8				
	LTG: S. Window	2#12,#12G,1/2"C	20 / 1			Circuit # 2	10				
	RCPT: N. Office	2#12,#12G,1/2"C	20 / 1	20 / 1		SPARE	12				
	RCPT: W. Office	2#12,#12G,1/2"C	20 / 1	20/1		SPARE	14				
	RCPT: S. Office	2#12,#12G,1/2"C	20/1	20/1		SPARE	<mark>16</mark>				
	RCPT: E. Office	2#12,#12G,1/2"C	20 / 1	20/1		SPARE	18				
	SPARE		20 / 1	20/1		SPARE	20				
	SPARE	_	20 / 1	20/1		SPARE	22				
	SPARE		20 / 1	20 / 1		SPARE	24				
	BLANK	_				BLANK	26				
	BLANK					BLANK	28				
	BLANK	-				BLANK	30				

nel Designation:	H21		Mounting: Surface						
Location:	MECH 236		Bus Amps: 100						
Voltage:	208Y/120V-3Ph-4W		MCB Amps: MLO						
Enclosure:	NEMA 1			Other:	10 KAIC				
				Provide integral OR e	external surge suppresion	on device			
Load Descript ion	Conductors	C/B Size	C/B Size	Conduct ors	Load Description	Circuit #			
LTG: Corridor	2#12,#12G,1/2"C	20 / 1	30 / 2	2#10,#10G,1/2"C	Blower Coil 'BC-1'	2			
RCPT: Tele BackBoard	2#12,#12G,1/2"C	20 / 1			Rm 236	4			
RCPT: Tele BackBoard	2#12,#12G,1/2"C	20/1	30/2	2#10,#10G,1/2"C	Water Heater 'HWH-A'	6			
Fire Alarm NAC Panel	2#12,#12G, 1/2"C	20 / 1				8			
RCPT: East Corridor	2#12,#12G, 1/2"C	20 / 1	15/1	2#12,#12G,1/2"C	Circ Pump 'HWP'	10			
RCPT: West Corridor	2#12,#12G, 1/2"C	20 / 1	30 / 2	2#10,#10G,1/2"C	Blower Coil 'BC-1'	12			
SPARE		20 / 1			Rm 239	14			
SPARE		20/1	20 / 1		SPARE	16			
SPARE		20 / 1	20 / 1		SPARE	18			
SPARE		20 / 1	20 / 1		SPARE	20			
SPARE		20 / 1	20 / 1	_	SPARE	22			
SPARE		20 / 1	20 / 1		SPARE	24			
BLANK	-				BLANK	26			
BLANK					BLANK	28			
BLANK					BLANK	30			

nel Designation:	H31			Mounting:	Surface				
l ocation:	MECH 336		Bus Amps: 100						
Voltage:	208Y/120V-3Ph-4W		MCB Amps: MIO						
Enclosure:				Other					
Linciosure.				Browide integral OP		n davica			
				Provide integrator e	external surge suppresic	on device			
Load Descript ion	Conduct ors	C/B Size	C/B Size	Conduct ors	Load Descript ion	Circuit #			
LTG: Corridor	2#12,#12G, 1/2"C	20/1	20/1		SPARE	2			
RCPT: East Corridor	2#12,#12G, 1/2"C	20/1	20/1		SPARE	4			
RCPT: West Corridor	2#12,#12G, 1/2"C	20 / 1	20/1		SPARE	6			
SPARE		20 / 1	20/1		SPARE	8			
SPARE		20/1	20/1		SPARE	10			
SPARE		20/1	20/1		SPARE	12			
SPARE		20 / 1	20/1		SPARE	14			
SPARE		20 / 1	20/1		SPARE	16			
SPARE		20 / 1	20/1		SPARE	18			
SPARE		20 / 1	20/1		SPARE	20			
SPARE		20 / 1	20/1		SPARE	22			
SPARE		20 / 1	20/1		SPARE	24			
BLANK				1	BLANK	26			
BLANK					BLANK	28			
BLANK					BLANK	30			

1	Panel Designation:	H41		Mounting: Surface					
	Location:	MECH 436		Bus Amps: 100					
	Voltage:	208Y/120V-3Ph-4W		MCB Amps: MLO					
	Enclosure:	NEMA 1		Other: 10 KAIC					
					Provide integral OR (	external surge suppresi	on device		
Circuit #	Load Descript ion	Conduct ors	C/B Size	C/B Size	Conductors	Load Descript ion	Circuit #		
1	LTG: Corridor	2#12,#12G, 1/2"C	20/1	30/2	2#10,#10G, 1/2"C	Blower Coil 'BC-1'	2		
3	RCPT: Tele BackBoard	2#12,#12G, 1/2"C	20/1			Rm 436	4		
5	RCPT: Tele BackBoard	2#12,#12G, 1/2"C	20 / 1	30/2	2#10,#10G, 1/2"C	Blower Coil 'BC-1'	6		
7	Fire Alarm NAC Panel	2#12,#12G, 1/2"C	20/1			Rm 439	8		
9	RCPT: East Corridor	2#12,#12G, 1/2"C	20/1	20/1		SPARE	10		
11	RCPT: West Corridor	2#12,#12G, 1/2"C	20 / 1	20/1		SPARE	12		
13	SPARE		20 / 1	20/1		SPARE	14		
15	SPARE		20/1	20/1		SPARE	16		
17	SPARE		20/1	20/1		SPARE	18		
19	SPARE		20/1	20/1		SPARE	20		
21	SPARE		20/1	20/1		SPARE	22		
23	SPARE		20/1	20/1		SPARE	24		
25	BLANK					BLANK	26		
27	BLANK					BLANK	28		
29	BLANK					BLANK	30		

Panel Designation: H51 Location: MECH 539 Voltage: 208Y/120V-3Ph-4W Enclosure: NEMA 1				Mounting: Surface Bus Amps: 225 MCB Amps: MLO Other: 22 KAIC Series Rated Provide integral OR external surge suppression devic					
Circuit #	Load Description	Conductors	C/B Size	C/B Size	Conduct ors	Load Description	Circuit #		
1	LTG: Corridor	2#12,#12G,1/2"C	20/1	20/1		SPARE	2		
3	RCPT: East Corridor	2#12,#12G,1/2"C	20/1	20/1		SPARE	4		
5	RCPT: West Corridor	2#12,#12G,1/2"C	20 / 1				6		
7	Condensing Unit 'CU-1'	2#12,#12G,1/2"C	20 / 2	60/3	3#6,#10G,1"C	ELEVATOR	8		
9	(2nd Floor RM 236)						10		
11	Condensing Unit 'CU-1'	2#12,#12G,1/2"C	20/2	20/1	2#12, #12G, 1/2"C	ELEV. CAB LTS/RCPT/EXH	12		
13	(4th Floor Rm 436)			40 / 2	2#8,#10G,1/2"C	Condensing Unit 'CU-7'	14		
15	Condensing Unit 'CU-1'	2#12,#12G,1/2"C	20 / 2			(1 sr Floor Admin)	16		
17	(2nd Floor Rm 239)			35 / 2	2#8,#10G,1/2"C	Condensing Unit 'CU-6'	18		
19	Condensing Unit 'CU-1'	2#12,#12G,1/2"C	20/2			(1 st Floor Commons)	20		
21	(4th Floor Rm 439)			40 / 2	2#8,#10G,1/2"C	Condensing Unit 'CU-7'	22		
23	Condensing Unit 'CU-2'	2#12,#12G,1/2"C	20/2			(1 st Flr Historic Office)	24		
25	(BSMT East)			20/1	2#12, #12G, 1/2"C	RCPT: Roof West	26		
27	Condensing Unit 'CU-2'	2#12,#12G,1/2"C	20/2	20/1	2#12, #12G, 1/2"C	RCPT: Roof East	28		
29	(BSMT East)			40 / 2	2#8,#10G,1/2"C	Heat Pump 'HP-1'	30		
31	SPARE		20/1				32		
33	SPARE		20/1	15/2	2#12,#12G,1/2"C	Indoor Units	34		
35	SPARE		20/1			'IU-1-1,2,3'	36		
37	SPARE		20/1	40 / 2	2#8,#10G,1/2"C	Heat Pump 'HP-2'	38		
39	SPARE		20/1				40		
41	SPARE		20/1	15/2	2#12,#12G,1/2"C	Indoor Units	42		
43	SPARE		20/1			'IU-2-1,2,3'	44		
45	SPARE		20/1	40 / 2	2#8,#10G,1/2"C	Heat Pump 'HP-3'	46		
47	SPARE		20/1				48		
<mark>4</mark> 9	BLANK		<u>4</u> _3.	15/2	2#12,#12G, 1/2"C	Indoor Units	50		
51	BLANK					'IU-3-1,2,3'	52		
53	BLANK					BLANK	54		

## **#** PANEL SCHEDULE NOTES BY SYMBOL

1. PROVIDE LOCK-ON CLIP FOR BREAKER.

2. PROVIDE GFCI CIRCUIT BREAKER



## 

www.LSTengineers.com mail@LSTengineers.com

FEBRUARY 2023 Project 22059



**REVISION:** DATE: February 15, 2023 JOB: 20-3120 SHEET NO .: **E6.4**