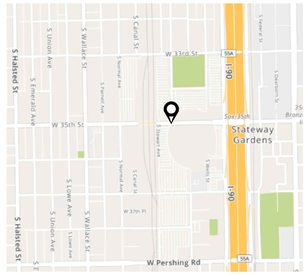
ISFA/GRF - EM SYSTEM MODIFICATION

333 W. 35TH STREET
CHICAGO, IL 60616

ABBREVIATIONS

A,AMP	AMPERE
ABV	ABOVE
AC	ALTERNATING CURRENT
ACL	ACROSS THE LINE
ACT	ACOUSTICAL CEILING TILE
AD	ACCESS DOOR
ADA	AMERICANS WITH DISABILITIES ACT
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AF	AMP FUSE
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERES INTERRUPTING CAPACITY
AIEE	AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
AL	ALUMINUM
ALM	ALARM
ALT	ALTERNATE
ANN	ANNUNCIATOR
AS	AMP SWITCH
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AVC	ABOVE COUNTER
AWG	AMERICAN WIRE GAUGE
BAL	BALLAST
BASC	BUILDING AUTOMATION SYSTEM CONTRACTOR
BGB	BUILDING GROUND BOX
BHP	BREAK HORSEPOWER
BKR	BREAKER
C	CONDUIT
CAB	CABINET
CAT	CATALOG
CATV	CABLE TELEVISION
C.B.	CIRCUIT BREAKER
CBC	CHICAGO BUILDING CODE
CCTV	CLOSED CIRCUIT TELEVISION
CCW	COUNTERCLOCKWISE
CD	CANDELA
CECO	COMMONWEALTH EDISON COMPANY
CIC	CABLE IN CONDUIT
CKT	CIRCUIT
CL	CENTER LINE
CLG	CEILING
CLK	CLOCK
CLO	CLOSET
CLSD	CLOSED
COAX	COAXIAL
COL	COLUMN
COM	COMMON
COMED	COMED COMPANY
CONC	CONCRETE
CT	CURRENT TRANSFORMER
CU	COPPER
C.U.	COEFFICIENT OF UTILIZATION
CUH	CABINET UNIT HEATER
CW	CLOCKWISE
DB	DECIBEL
DC	DIRECT CURRENT
DEG	DEGREE
DEMO	DEMOLITION
DN	DOWN
DO	DRAW OUT
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
DS	DISCONNECT SWITCH
DT	DUST TIGHT
DW	DISHWASHER
DWG	DRAWING
ELARA	ELARA ENGINEERING
EA	EACH
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EHD	ELECTRIC HAND DRYER
ELEC	ELECTRIC
ELEV	ELEVATOR
EM	EMERGENCY
EMT	ELECTRIC METALLIC TUBING (THIN WALL CONDUIT)
ENG	ENGINEER
EP	EXPLOSION PROOF
EPO	ELECTRIC POWER OFF
EQ	EQUIPMENT
ER#	EXISTING TO RELOCATE
EUH	ELECTRIC UNIT HEATER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WALL HEATER
EX	EXISTING TO REMAIN
EXT	EXTERIOR
F	FUSE
FA	FIRE ALARM
FB	FLOOR BOX
FC	FOOTCANDLE
FDC	FIRE DEPARTMENT CONNECTION
FDR	FEEDER
FF	FINISHED FLOOR
FIXT	LIGHT FIXTURE
FLA	FULL LOAD AMPS
FLUOR	FLUORESCENT
FPB	FAN POWERED BOX
FS	FUSED SWITCH
FT	FEET
FURN	FURNITURE
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
FWD	FORWARD
G,GRD	GROUND
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GHW	GALVANIZED HEAVY WALL STEEL CONDUIT
H	HOT
HD	HEAVY DUTY
HDCP	HANDICAPPED
HGB	HOGAN GROUND BOX
HID	HIGH INTENSITY DISCHARGE
HOA	HANDS-OFF-AUTO
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HV	HIGH VOLTAGE
HZ	HERTZ (CYCLES/SECOND)
I	CURRENT
IC	INTERRUPTING CAPACITY
IG	ISOLATED GROUND
IMC	INTERMEDIATE GRADE CONDUIT
IN	INCH
INC	INCANDESCENT
INFO	INFORMATION
INSUL	INSULATION
ISC	INSTANTANEOUS SHORT CIRCUIT
JB	JUNCTION BOX
KEC	KITCHEN EQUIPMENT CONTRACTOR
KO	KNOCKOUT
KS	KEYED SWITCH
KVA	KILOVOLT-AMPERE
KW	KILOWATT
KWH	KILOWATT-HOUR
L#	LINE
LCD	LIQUID CRYSTAL DISPLAY
LED	LIGHT EMITTING DIODE
LS	LOUD SPEAKER
LTG	LIGHTING
LV	LOW VOLTAGE
MAG	MAGNETIC
MAN	MANUAL
MAT	MATERIAL
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCCB	MOLDED CASE CIRCUIT BREAKER
MCM	THOUSAND CIRCULAR MILLS
MCS	MOLDED CASE SWITCH
MECH	MECHANICAL
MFR	MANUFACTURER
MH	METAL HALIDE
MICRO	MICROWAVE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOCP	MAXIMUM OVER CURRENT PROTECTION
MTD	MOUNTED
MTR	MOTOR
MTS	MANUAL TRANSFER SWITCH
MV	MERCURY VAPOR
N,NEUT	NEUTRAL
NAC	NOTIFICATION APPLIANCE CIRCUITS
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPENED
NTS	NOT TO SCALE
OCP	OVER CURRENT PROTECTION
OL	OVERLOAD
OVHD	OVERHEAD
P	POLES
PA	PUBLIC ADDRESS
PB	PULL BOX
PE	PROFESSIONAL ENGINEER
PCU	PACKAGED CONTROL UNIT
PH	PHASE
PL	PROPERTY LINE
PNL	PANEL
PRI	PRIMARY
PROT.	PROTECTION OR PROTECTIVE
PT	POTENTIAL TRANSFORMER
PTD	PAINTED
PVC	POLYVINYL CHLORIDE (ELECTRIC GRADE)
PWR	POWER
QTY	QUANTITY
R	RESISTANCE
RC	REMOTE CONTROL
RCP	REFLECTED CEILING PLAN
REF	REFRIGERATOR
REV	REVERSE OR REVISION
RECP	RECEPTACLE
RM	ROOM
RMC	RIGID METAL CONDUIT (GALVANIZED)
RMS	ROOT MEAN SQUARE
RT	RAIN TIGHT
RTG	RATING
RVNR	REDUCED VOLTAGE NON-REVERSING
RVR	REDUCED VOLTAGE REVERSING
S	SWITCH
SEC	SECONDARY
SC	SHORT CIRCUIT
SCH	SCHEDULE
SF	SQUARE FOOT
SP	SINGLE POLE
SPC	SINGLE POINT CONNECTION
SPDT	SINGLE POLE DOUBLE THROW
SPEC	SPECIFICATION
SPKR	SPEAKER
SPST	SINGLE POLE SINGLE THROW
SS	STAINLESS STEEL
STA	STATION
STD	STANDARD
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
SYS	SYSTEM
T	TRIP
TC	TERMINAL CABINET
TEL	TELEPHONE
TEL.CL.	TELEPHONE CLOSET
TEMP	TEMPORARY
TERM.	TERMINAL
TL	TWIST LOCK
TRF	TRANSFORMER
TS	TIME SWITCH
TTC	TELEPHONE TERMINAL CABINET
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITER'S LABORATORIES
UNG	UNGROUNDED
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT
VA	VOLT-AMPERE
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
VP	VAPOR PROOF
VT	VAPOR TIGHT
W	WATT OR WIRE (DEPENDING ON CONTEXT)
W/D	WASHER DRYER
WG	WIRE GUARD
W/O	WITHOUT
WP	WEATHERPROOF
WT	WATER TIGHT
X	DEMOLISH EXISTING
XFMR	TRANSFORMER
YR	YEAR

NOTE: NOT ALL ABBREVIATIONS LISTED ABOVE MAY BE USED OR APPEAR IN THESE DRAWINGS.



1 LOCATION MAP
SCALE: NO SCALE

SHEET LIST

E0.01	ELECTRICAL TITLE SHEET
E1.01	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 1.17.03
E1.02	ELECTRICAL NEW WORK PLAN - CONDUIT ROUTING
E1.03	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 1.22.05
E1.04	ELECTRICAL NEW WORK PLAN - CONDUIT ROUTING
E1.05	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 1.29.07
E1.06	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 1.38.04
E1.07	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOMS 1.44.02 & 1.46.01
E1.08	ELECTRICAL NEW WORK PLAN - SPORTS AUTHORITY BUILDING - GROUND LEVEL ELECTRICAL ROOMS
E1.09	ELECTRICAL NEW WORK PLAN - SPORTS AUTHORITY BUILDING - GROUND LEVEL ATS ROOM
E1.21	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 2.08.01
E1.22	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 2.29.02
E1.23	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 2.53.01
E1.24	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 2.59.01
E1.31	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 3.29.04
E1.32	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 3.38.04
E1.41	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 4.17.03
E1.42	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 4.22.01
E1.43	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 4.29.07
E1.44	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 4.38.03
E1.45	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 4.43.02
E1.51	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 5.17.05
E1.52	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 5.22.05
E1.53	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 5.29.04
E1.54	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 5.43.06
E1.61	ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 6.29.01
E2.01	ELECTRICAL NEW WORK PLAN - GROUND LEVEL OVERALL
E2.02	ELECTRICAL NEW WORK PLAN - LEVEL 100 OVERALL
E2.03	ELECTRICAL NEW WORK PLAN - LEVEL 200 OVERALL
E2.04	ELECTRICAL NEW WORK PLAN - LEVEL 300 OVERALL
E2.05	ELECTRICAL NEW WORK PLAN - LEVEL 400 OVERALL
E2.06	ELECTRICAL NEW WORK PLAN - LEVEL 500 OVERALL
E3.01	ELECTRICAL RISER DIAGRAM - RIGHT FIELD GENERATOR NEW WORK
E3.02	ELECTRICAL RISER DIAGRAM -LEFT FIELD GENERATOR NEW WORK
E3.03	ELECTRICAL RISER DIAGRAM - PARKING LOT 'B' GENERATOR NEW WORK
E4.01	ELECTRICAL PANEL SCHEDULES - HEALTH LIFE SAFETY
E4.02	ELECTRICAL PANEL SCHEDULES - NON-HEALTH LIFE SAFETY
E4.03	ELECTRICAL PANEL SCHEDULES - SPORTS AUTHORITY BUILDING
E5.01	ELECTRICAL SPECIFICATIONS

POWER SYMBOLS

	PANELBOARD
	DISTRIBUTION PANEL, SWITCHGEAR, OR OTHER CABINET (AS NOTED)
ATS	TRANSFER SWITCH
T	TRANSFORMER
	NON-FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	COMBINATION STARTER WITH FUSE DISCONNECT SWITCH
KO	ELECTRICAL METER (UTILITY)

NOTE: NOT ALL SYMBOLS LISTED ABOVE MAY BE USED OR APPEAR IN THESE DRAWINGS.

GENERAL NOTES

1. FURNISH AND INSTALL ANY CIRCUIT BREAKERS AS REQUIRED FOR THE RELOCATION OF BRANCH CIRCUITS. EC SHALL USE SAME MAKE AND MODEL OF THE EXISTING CIRCUIT BREAKERS IN THE PANELBOARD WHERE BRANCH CIRCUITS ARE BEING RELOCATED TO.
2. EC SHALL LABEL ALL NEW ELECTRICAL EQUIPMENT BEING INSTALLED AND PROVIDE TYPED CIRCUIT DIRECTORY. EC SHALL ALSO CLARIFY WHERE NEW ELECTRICAL EQUIPMENT IS FED FROM WITH LABEL TOO.
3. ALL RELOCATED BRANCH CIRCUITS ARE ASSUMED BASED ON THE EXISTING CIRCUIT DIRECTORY FOR EACH PANELBOARD. EC SHALL CONFIRM EACH CIRCUIT BEING RELOCATED IS CORRECT ACCORDING TO THE PANEL SCHEDULE. IF THE RELOCATED BRANCH CIRCUIT IS A LIFE SAFETY LOAD, THEN EC SHALL CONTACT ELECTRICAL ENGINEER TO CONFIRM IF BRANCH CIRCUIT SHOULD BE RELOCATED OR NOT.
4. EACH BRANCH CIRCUIT BEING RELOCATED SHALL HAVE WIRE SIZE ACCORDING TO THE CHART BELOW: "WIRE SIZED BASED ON LENGTH OF BRANCH CIRCUIT." THE LENGTH OF THE BRANCH CIRCUIT BEING RELOCATED WILL DETERMINE THE WIRE SIZE AND CONDUIT SIZE THAT THE EC WILL INSTALL FOR THE RELOCATED BRANCH CIRCUIT.

WIRE SIZE BASED ON LENGTH OF BRANCH CIRCUIT (VOLTAGE DROP OF BRANCH CIRCUITS)

LENGTH OF BRANCH CIRCUIT =	UP TO 55FT	55 TO 90 FT	90 TO 140 FT	140 TO 225 FT	225 TO 360 FT	ABOVE 360 FEET
20A BRANCH CIRCUIT =	#12	#10	#8	#6	#4	#3
30A BRANCH CIRCUIT =	#10	#8	#6	#4	#2	#1

. EC SHALL USE WIRE SIZE LISTED ABOVE BASED ON THE LENGTH OF THE BRANCH CIRCUIT BE ADDED, RELOCATED, OR EXTENDED

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ISSUE/REVISION:

REV.	DATE	DESCRIPTION
-	11/12/21	ISSUED FOR BID

PROJECT:
ISFA GRF - EM SYSTEM MODIFICATION
333 W. 35TH ST. CHICAGO, IL 60616

DRAWING TITLE:
ELECTRICAL TITLE SHEET

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1:1

SHEET NO.
E0.01

KEYED ELECTRICAL NEW WORK SHEET NOTES ⑧

1. DISCONNECT AND REMOVE BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES. EC SHALL RELOCATE BRANCH CIRCUITS TO NON HEALTH LIFE SAFETY PANEL AS SHOWN IN THE PANEL SCHEDULES.
2. FURNISH AND INSTALL CONDUIT AND WIRES FROM THE EXISTING EMERGENCY PANELBOARD FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANELBOARD. EC SHALL FURNISH AND INSTALL ANY CIRCUIT BREAKERS REQUIRED FOR THE RELOCATION OF THE EXISTING BRANCH CIRCUITS. REFER TO PANEL SCHEDULES FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANEL.
3. EXISTING DISTRIBUTION PANELBOARD SHALL REMAIN. DISCONNECT AND REMOVE EXISTING FUSE SWITCH AND ASSOCIATED FUSES. FURNISH AND INSTALL NEW 100A FUSE SWITCH WITH NEW 100A FUSES AS SHOWN IN THE RISER DIAGRAM. FURNISH AND INSTALL NEW CONDUIT AND WIRES FOR NEW PANELBOARD 'CRP-3-8' IN ELECTRICAL ROOM 3.29.02.
4. FURNISH AND INSTALL NEW CONDUIT AND WIRES FOR THE RELOCATION OF BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES.
5. FURNISH AND INSTALL NEW CONDUIT AND FEEDER AS SHOWN IN THE RISER DIAGRAM.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.01 FOR OVERALL PLAN OF THE GROUND LEVEL.

1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 1.17.03

SCALE: 1/4" = 1'-0" 0 2' 4' 8'

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ISFA GRF - EM SYSTEM MODIFICATION

333 W. 35TH ST. CHICAGO, IL 60616

DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 1.17.03

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

SHEET NO.
E1.01

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. FURNISH AND INSTALL NEW CONDUIT AND WIRES FOR THE RELOCATION OF BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES.
2. FURNISH AND INSTALL NEW CONDUIT AND FEEDER AS SHOWN IN THE RISER DIAGRAM.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.01 FOR OVERALL PLAN OF THE GROUND LEVEL.

1 ELECTRICAL NEW WORK PLAN - CONDUIT ROUTING FROM 1.22.05 TO 1.17.03

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

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DRAWING TITLE:

ELECTRICAL NEW WORK PLAN - CONDUIT ROUTING FROM 1.22.05 TO 1.17.

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/8" = 1'-0"

SHEET NO.

E1.02

KEYED ELECTRICAL NEW WORK SHEET NOTES ⑧

1. DISCONNECT AND REMOVE BRANCH CIRCUIT AS SHOWN IN THE PANEL SCHEDULES. EC SHALL RELOCATE BRANCH CIRCUIT TO NON HEALTH LIFE SAFETY PANEL AS SHOWN IN THE PANEL SCHEDULES.
2. FURNISH AND INSTALL NEW CONDUIT AND WIRES FOR THE RELOCATION OF BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES.
3. FURNISH AND INSTALL NEW CONDUIT AND FEEDER AS SHOWN IN THE ELECTRICAL RISER DIAGRAM.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.01 FOR OVERALL PLAN OF THE GROUND LEVEL.

1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 1.22.05

SCALE: 1/4" = 1'-0" 0 2' 4' 8'

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DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 1.22.05

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/8" = 1'-0"

SHEET NO.

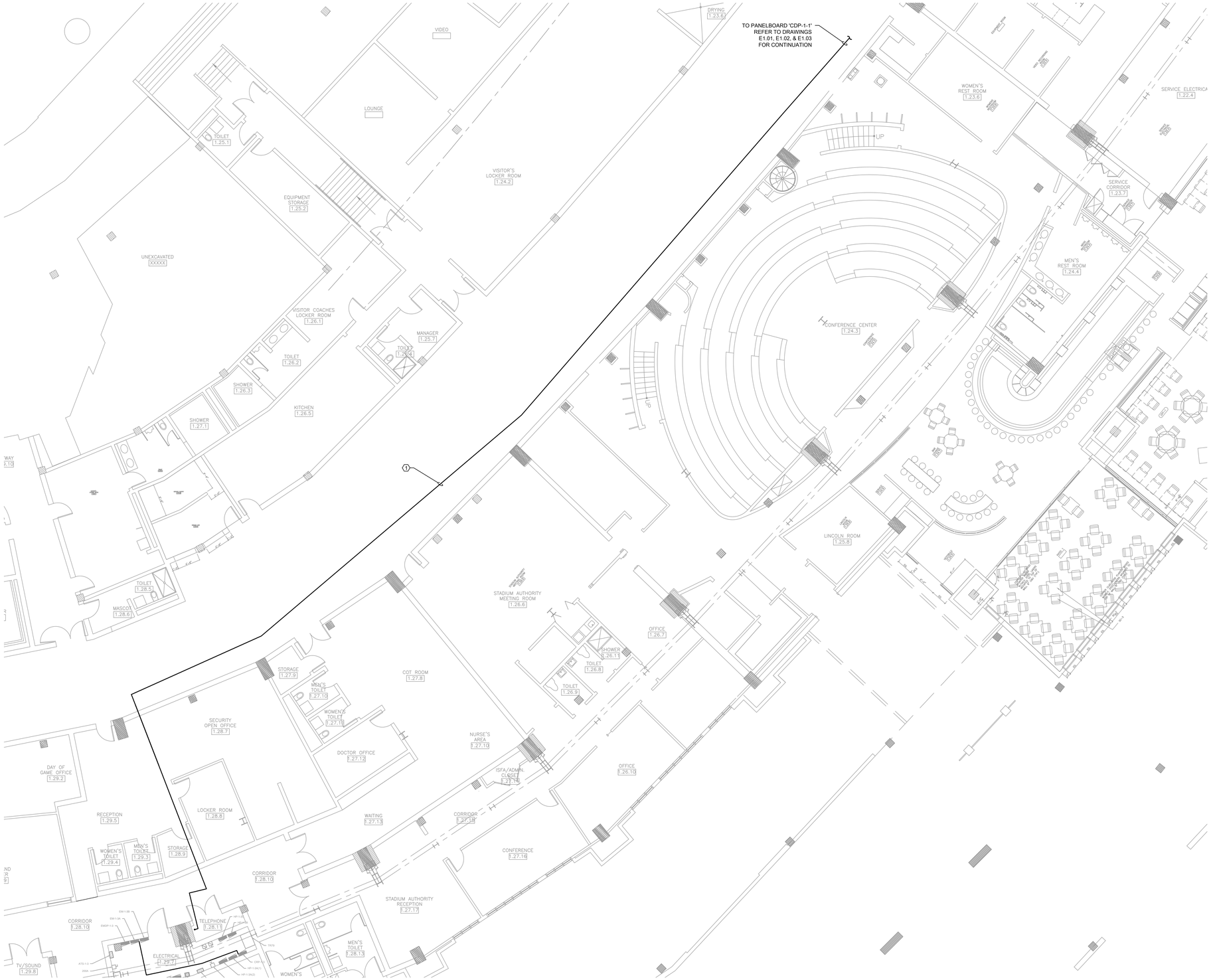
E1.03

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. FURNISH AND INSTALL CONDUIT AND FEEDER AS SHOWN IN THE ELECTRICAL RISER DIAGRAM FOR NEW PANELBOARD 'CRP-3-8'.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.01 FOR OVERALL PLAN OF THE GROUND LEVEL.



1 ELECTRICAL NEW WORK PLAN - CONDUIT ROUTING FROM 1.29.07 TO 1.22.05 NEW WORK PLAN

SCALE: 1/8" = 1'-0" 0 4' 8' 16'

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333 W. 35TH ST. CHICAGO, IL 60616

DRAWING TITLE:

ELECTRICAL NEW WORK PLAN - CONDUIT ROUTING FROM 1.29.07 TO 1.22.05 NEW WORK PLAN

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/8" = 1'-0"

SHEET NO.

E1.04

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. DISCONNECT AND REMOVE BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES. EC SHALL RELOCATE BRANCH CIRCUITS TO NON HEALTH LIFE SAFETY PANEL AS SHOWN IN THE PANEL SCHEDULES.
2. FURNISH AND INSTALL NEW CONDUIT AND WIRES FROM THE EXISTING EMERGENCY PANELBOARD FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANELBOARD. EC SHALL FURNISH AND INSTALL ANY CIRCUIT BREAKERS REQUIRED FOR THE RELOCATION OF THE EXISTING BRANCH CIRCUITS. REFER TO PANEL SCHEDULES FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANEL.
3. FURNISH AND INSTALL NEW CONDUIT AND WIRES FOR THE RELOCATION OF BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES.
4. FURNISH AND INSTALL NEW CONDUIT AND FEEDER AS SHOWN IN THE ELECTRICAL RISER DIAGRAM.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.01 FOR OVERALL PLAN OF THE GROUND LEVEL.

1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 1.29.07

SCALE: 1/4" = 1'-0" 0 2' 4' 8'

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DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 1.29.07

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

SHEET NO.
E1.05

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PRELIMINARY - NOT FOR CONSTRUCTION

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. DISCONNECT AND REMOVE BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES. EC SHALL RELOCATE BRANCH CIRCUITS TO NON HEALTH LIFE SAFETY PANEL AS SHOWN IN THE PANEL SCHEDULES.
2. FURNISH AND INSTALL CONDUIT AND WIRES FROM THE EXISTING EMERGENCY PANELBOARD FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANELBOARD. EC SHALL FURNISH AND INSTALL ANY CIRCUIT BREAKERS REQUIRED FOR THE RELOCATION OF THE EXISTING BRANCH CIRCUITS. REFER TO PANEL SCHEDULES FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANEL. FURNISH AND INSTALL CONDUIT AND FEEDER FROM EXISTING NON HEALTH LIFE-SAFETY PANELBOARD AS SHOWN ON THE ELECTRICAL RISER DIAGRAM. DISCONNECT AND REMOVE EXISTING CONDUIT AND FEEDER FROM THE SOURCE.
3. FURNISH AND INSTALL NEW CONDUIT AND WIRES FOR THE RELOCATION OF BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES.
4. FURNISH AND INSTALL NEW CONDUIT AND FEEDER AS SHOWN IN THE ELECTRICAL RISER DIAGRAM.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.01 FOR OVERALL PLAN OF THE GROUND LEVEL.

1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 1.38.04

SCALE: 1/4" = 1'-0" 0 2' 4' 8'

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DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 1.38.04

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

SHEET NO.
E1.06

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. DISCONNECT AND REMOVE BRANCH CIRCUIT AS SHOWN IN THE PANEL SCHEDULES. EC SHALL RELOCATE BRANCH CIRCUIT TO NON HEALTH LIFE SAFETY PANEL AS SHOWN IN THE PANEL SCHEDULES.
2. FURNISH AND INSTALL CONDUIT AND WIRES FROM THE EXISTING EMERGENCY PANELBOARD FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANELBOARD. EC SHALL FURNISH AND INSTALL ANY CIRCUIT BREAKERS REQUIRED FOR THE RELOCATION OF THE EXISTING BRANCH CIRCUITS. REFER TO PANEL SCHEDULES FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANEL. RE-FEED EXISTING PANELBOARD EM-1-4A(1) FROM THIS PANELBOARD AS SHOWN BY THE CONDUIT ROUTING.
3. FURNISH AND INSTALL NEW NON HEALTH LIFE SAFETY PANELBOARD AS SCHEDULED. REFER TO PANEL SCHEDULES AND ELECTRICAL RISER DIAGRAM FOR MORE INFORMATION.
4. FURNISH AND INSTALL NEW AUTOMATIC TRANSFER SWITCH FOR NEW PANELBOARD. REFER TO ELECTRICAL RISER DIAGRAM FOR MORE INFORMATION.
5. FURNISH AND INSTALL NEW NORMAL POWER FEED FOR 'ATS-1-5C' FROM THIS DISTRIBUTION PANELBOARD. REFER TO ELECTRICAL RISER DIAGRAM FOR MORE INFORMATION. EC SHALL USE EXISTING 100A SPARE FUSE SWITCH. FURNISH AND INSTALL NEW 100A FUSES, CONDUIT, AND WIRES TO NEW AUTOMATIC TRANSFER SWITCH.
6. DISCONNECT AND REMOVE POWER FOR EXISTING GATE-6 TRANSFORMER. EC SHALL RE-TERMINATE THE EXISTING FEEDER FOR THE EXISTING TRANSFORMER FROM NEW PANELBOARD 'CRP-1-6.' EC SHALL EXTEND EXISTING FEEDER AND CONDUIT AS REQUIRED. REFER TO ELECTRICAL RISER DIAGRAM FOR MORE INFORMATION.
7. FURNISH AND INSTALL NEW CONDUIT AND FEEDER AS SHOWN IN THE ELECTRICAL RISER DIAGRAM.
8. FURNISH AND INSTALL NEW SURGE PROTECTIVE DEVICE AS SHOWN IN THE RISER DIAGRAM.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.01 FOR OVERALL PLAN OF THE GROUND LEVEL.

1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOMS 1.44.02 & 1.46.01

SCALE: 1/8" = 1'-0" 0 4' 8' 16'

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PROJECT:
ISFA GRF - EM SYSTEM MODIFICATION

333 W. 35TH ST. CHICAGO, IL 60616

DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOMS 1.44.02 & 1.46.01

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/8" = 1'-0"

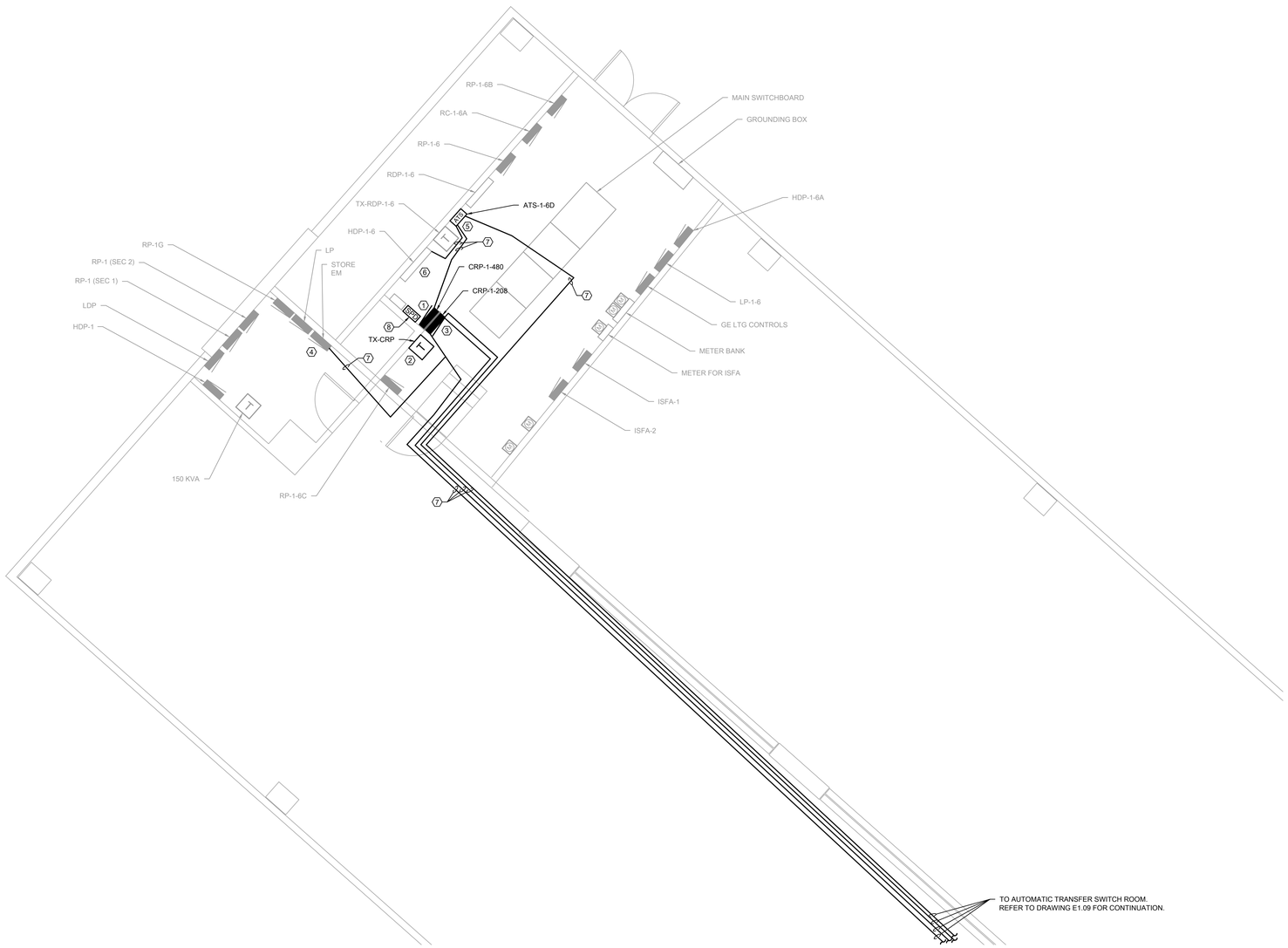
SHEET NO.
E1.07

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. FURNISH AND INSTALL NEW PANELBOARD AS SCHEDULED. EC SHALL FURNISH AND INSTALL UNASTRUT METAL BRACKETS FOR INSTALLATION OF THE TWO NEW PANELBOARDS AND ASSOCIATED SURGE PROTECTION DEVICES.
2. FURNISH AND INSTALL NEW TRANSFORMER AS SHOWN ON THE ELECTRICAL RISER DIAGRAM. EC SHALL HANG THE TRANSFORMER FROM CEILING. FURNISH AND INSTALL SUPPORTS FOR TRANSFORMER.
3. FURNISH AND INSTALL NEW PANELBOARD AS SCHEDULED.
4. DISCONNECT AND REMOVE BRANCH CIRCUIT AS SHOWN IN THE PANEL SCHEDULES. EC SHALL RELOCATE BRANCH CIRCUIT TO NON HEALTH LIFE SAFETY PANEL AS SHOWN IN THE PANEL SCHEDULES.
5. FURNISH AND INSTALL NEW AUTOMATIC TRANSFER SWITCH. REFER TO ELECTRICAL RISER DIAGRAM FOR MORE INFORMATION.
6. FURNISH AND INSTALL NEW 100A FRAME FUSE SWITCH WITH 100A FUSES IN EXISTING SPACE IN PANELBOARD. FURNISH AND INSTALL NEW CONDUIT AND WIRES FROM EXISTING PANELBOARD TO NEW AUTOMATIC TRANSFER SWITCH. REFER TO ELECTRICAL RISER DIAGRAM FOR MORE INFORMATION.
7. FURNISH AND INSTALL NEW CONDUIT AND WIRES AS SHOWN IN THE ELECTRICAL RISER DIAGRAM OR PANEL SCHEDULES.
8. FURNISH AND INSTALL (2) NEW SURGE PROTECTION DEVICES AS SHOWN IN THE ELECTRICAL RISER DIAGRAM.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.01 FOR OVERALL PLAN OF THE GROUND LEVEL.



1 ELECTRICAL NEW WORK PLAN - SPORTS AUTHORITY BUILDING - GROUND LEVEL ELECTRICAL ROOMS

SCALE: 1/4" = 1'-0" 0 2' 4' 8'

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-	11/12/21	ISSUED FOR BID

PROJECT:
ISFA GRF - EM SYSTEM MODIFICATION

333 W. 35TH ST. CHICAGO, IL 60616

DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - SPORTS AUTHORITY BUILDING - GROUND LEVEL ELECTRICAL ROOMS

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

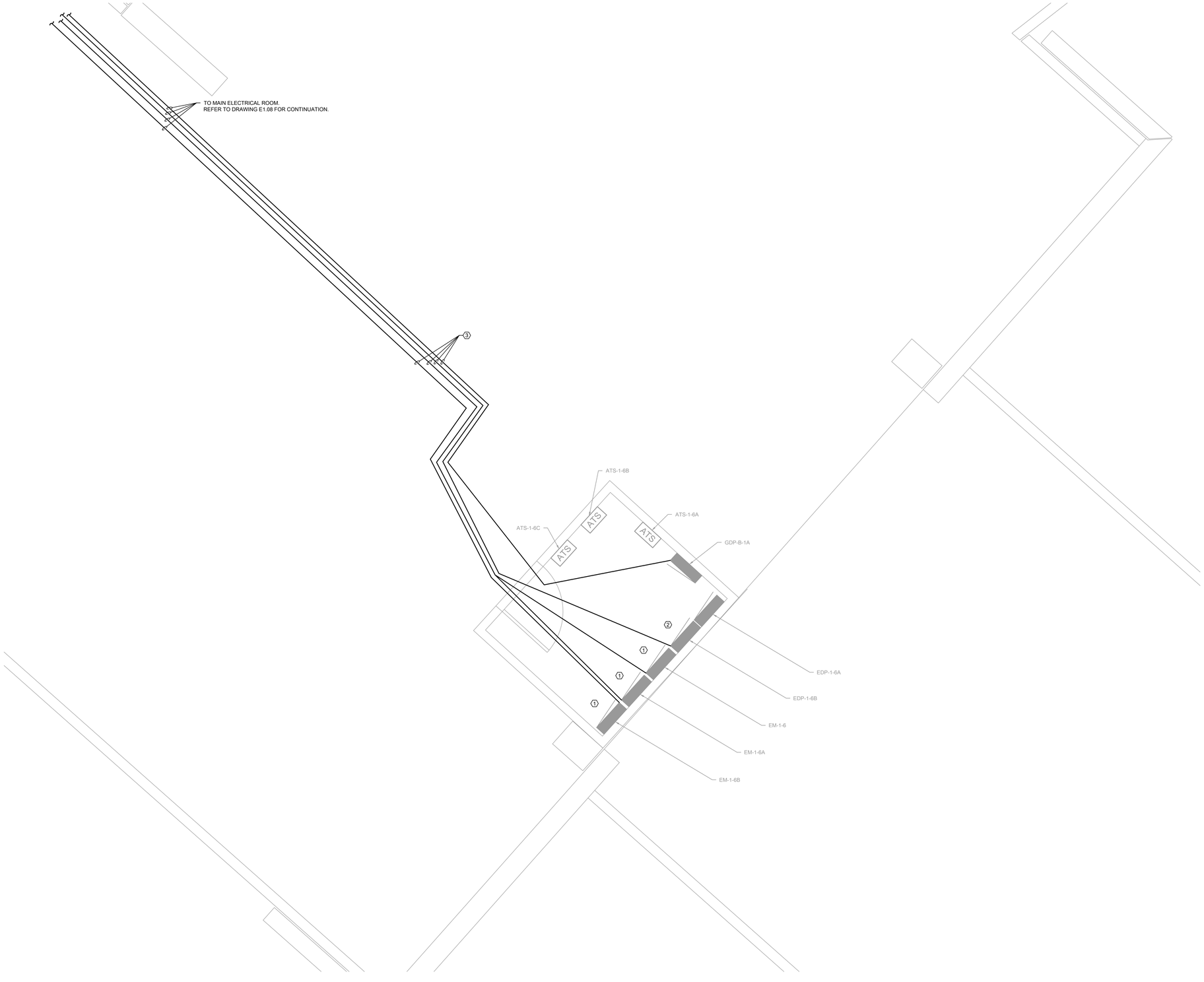
SHEET NO.
E1.08

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. DISCONNECT AND REMOVE BRANCH CIRCUIT AS SHOWN IN THE PANEL SCHEDULES. EC SHALL RELOCATE BRANCH CIRCUIT TO NON HEALTH LIFE SAFETY PANEL AS SHOWN IN THE PANEL SCHEDULES.
2. EXISTING PANELBOARD TO REMAIN. DISCONNECT EXISTING FEED FOR PANEL 'CMD-RP-1' FROM THIS DISTRIBUTION PANELBOARD. EC SHALL EXTEND EXISTING FEEDER TO NEW PANEL 'CRP-1-208.' EC SHALL FURNISH AND INSTALL NEW CONDUIT AND WIRES TO RE-FEED THE EXISTING FEEDER FROM NEW PANELBOARD. EC SHALL REPLACE EXISTING 60A SPARE FUSE SWITCH WITH NEW 100A FUSE SWITCH WITH 100A FUSES FOR NEW AUTOMATIC TRANSFER SWITCH 'ATS-1-6D.'
3. FURNISH AND INSTALL NEW CONDUIT AND WIRES AS SHOWN IN THE ELECTRICAL RISER DIAGRAM OR PANEL SCHEDULES.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.01 FOR OVERALL PLAN OF THE GROUND LEVEL.



1 ELECTRICAL NEW WORK PLAN - SPORTS AUTHORITY BUILDING - GROUND LEVEL ATS ROOM

SCALE: 1/2" = 1'-0" 0 1' 2' 4'

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PROJECT:
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333 W. 35TH ST. CHICAGO, IL 60616

DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - SPORTS AUTHORITY BUILDING - GROUND LEVEL ATS ROOM

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/2" = 1'-0"

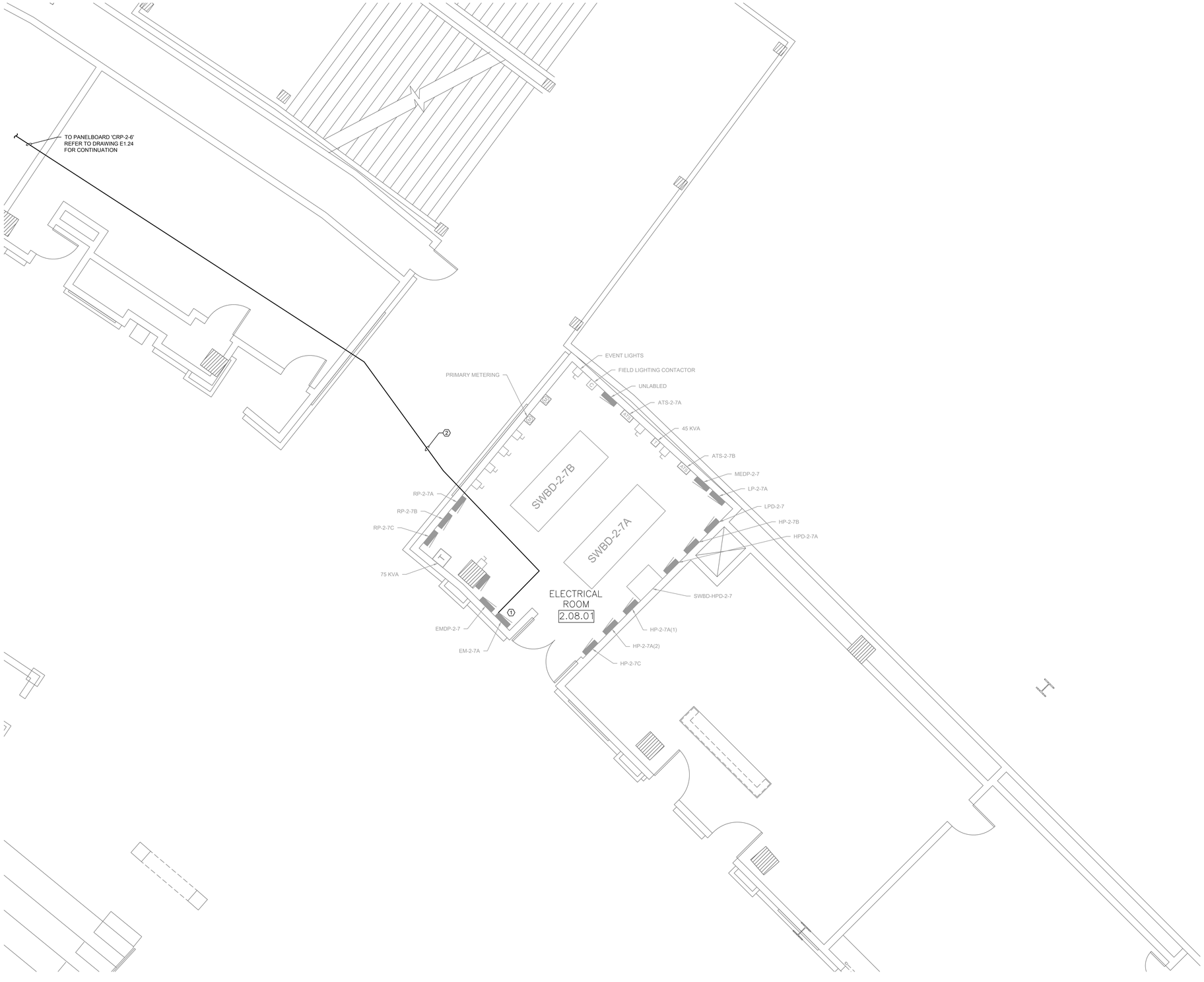
SHEET NO.
E1.09

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. DISCONNECT AND REMOVE BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES. EC SHALL RELOCATE BRANCH CIRCUITS TO NON HEALTH LIFE SAFETY PANEL AS SHOWN IN THE PANEL SCHEDULES.
2. FURNISH AND INSTALL NEW CONDUIT AND WIRES FOR THE RELOCATION OF BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.02 FOR OVERALL PLAN OF THE 100 LEVEL.



1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 2.08.01

SCALE: 1/4" = 1'-0"

0 2' 4' 8'

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DRAWING TITLE:

ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 2.08.01

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

SHEET NO.

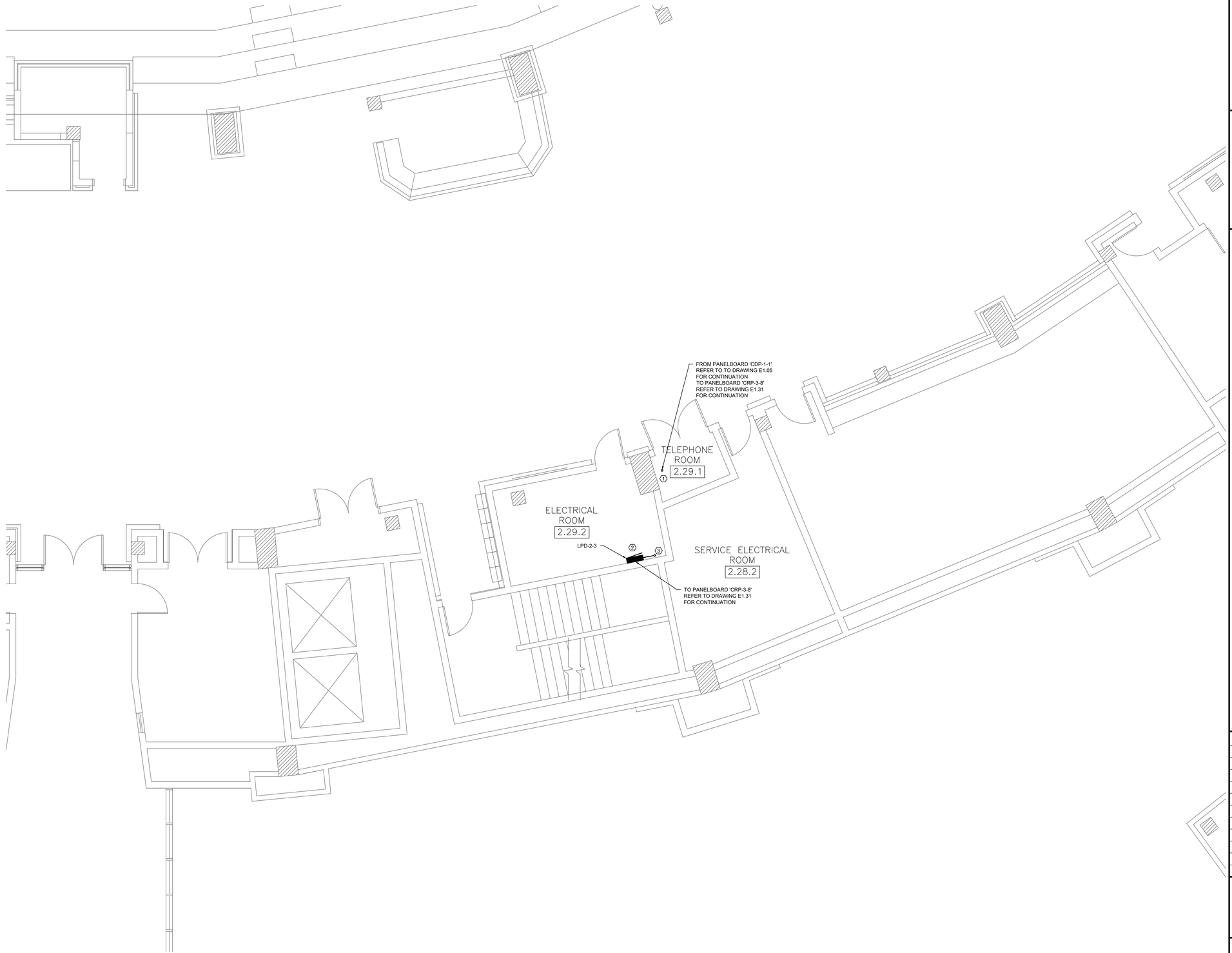
E1.21

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. PROVIDE NEW 1" CORE IN CEILING AND FLOOR FOR NEW CONDUIT ROUTING TO ELECTRICAL ROOM 3.29.04. EC SHALL SCAN FLOOR PRIOR TO CORING. FURNISH AND INSTALL FIRE STOPPING CAULK ONCE CONDUIT HAS BEEN INSTALLED.
2. DISCONNECT AND REMOVE POWER FOR EXISTING GATE-4 TRANSFORMER. EC SHALL RE-TERMINATE THE EXISTING FEEDER FOR THE EXISTING TRANSFORMER FROM NEW PANELBOARD 'CRP-3-8.' EC SHALL EXTEND EXISTING FEEDER AND CONDUIT AS REQUIRED. REFER TO ELECTRICAL RISER DIAGRAM FOR MORE INFORMATION.
3. FURNISH AND INSTALL NEW CONDUIT AND FEEDER FOR THE EXTENSION OF EXISTING GATE-4 TRANSFORMER FEEDER AS SHOWN IN THE ELECTRICAL RISER DIAGRAM. EC SHALL CORE EXISTING CEILING AS REQUIRED FOR NEW CONDUIT AND WIRES. SCAN CEILING PRIOR TO CORING. EC SHALL PROVIDE FIRE-STOPPING CAULK ONCE CONDUIT HAS BEEN INSTALLED.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.02 FOR OVERALL PLAN OF THE 100 LEVEL.



1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 2.29.02

SCALE: 1/8" = 1'-0" 0 4' 8' 16'

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DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 2.29.02

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/8" = 1'-0"

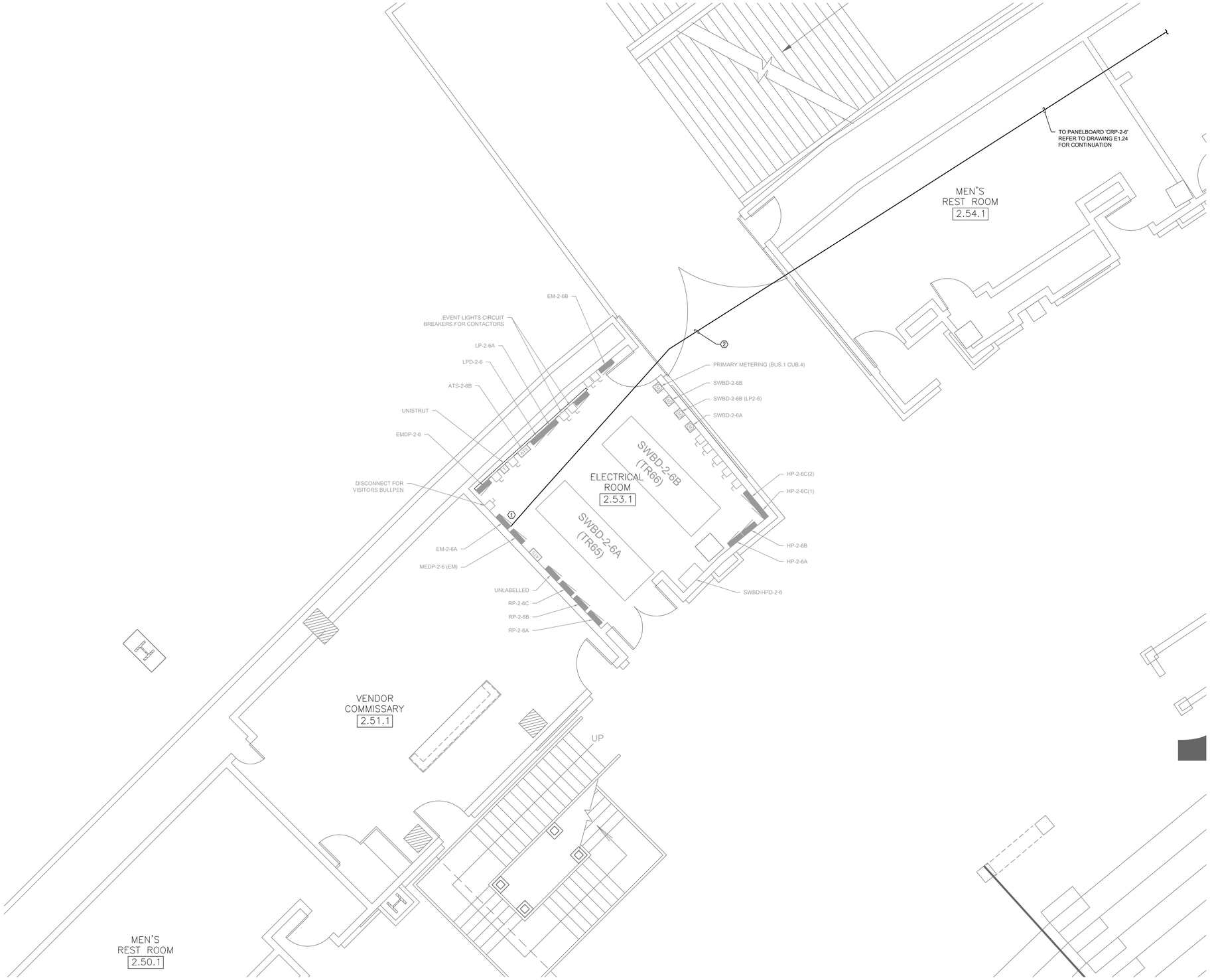
SHEET NO.
E1.22

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. DISCONNECT AND REMOVE BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES. EC SHALL RELOCATE BRANCH CIRCUITS TO NON HEALTH LIFE SAFETY PANEL AS SHOWN IN THE PANEL SCHEDULES.
2. FURNISH AND INSTALL NEW CONDUIT AND WIRES FOR THE RELOCATION OF BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.02 FOR OVERALL PLAN OF THE 100 LEVEL.



1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 2.53.01

SCALE: 1/4" = 1'-0"

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PROJECT:
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DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 2.53.01

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

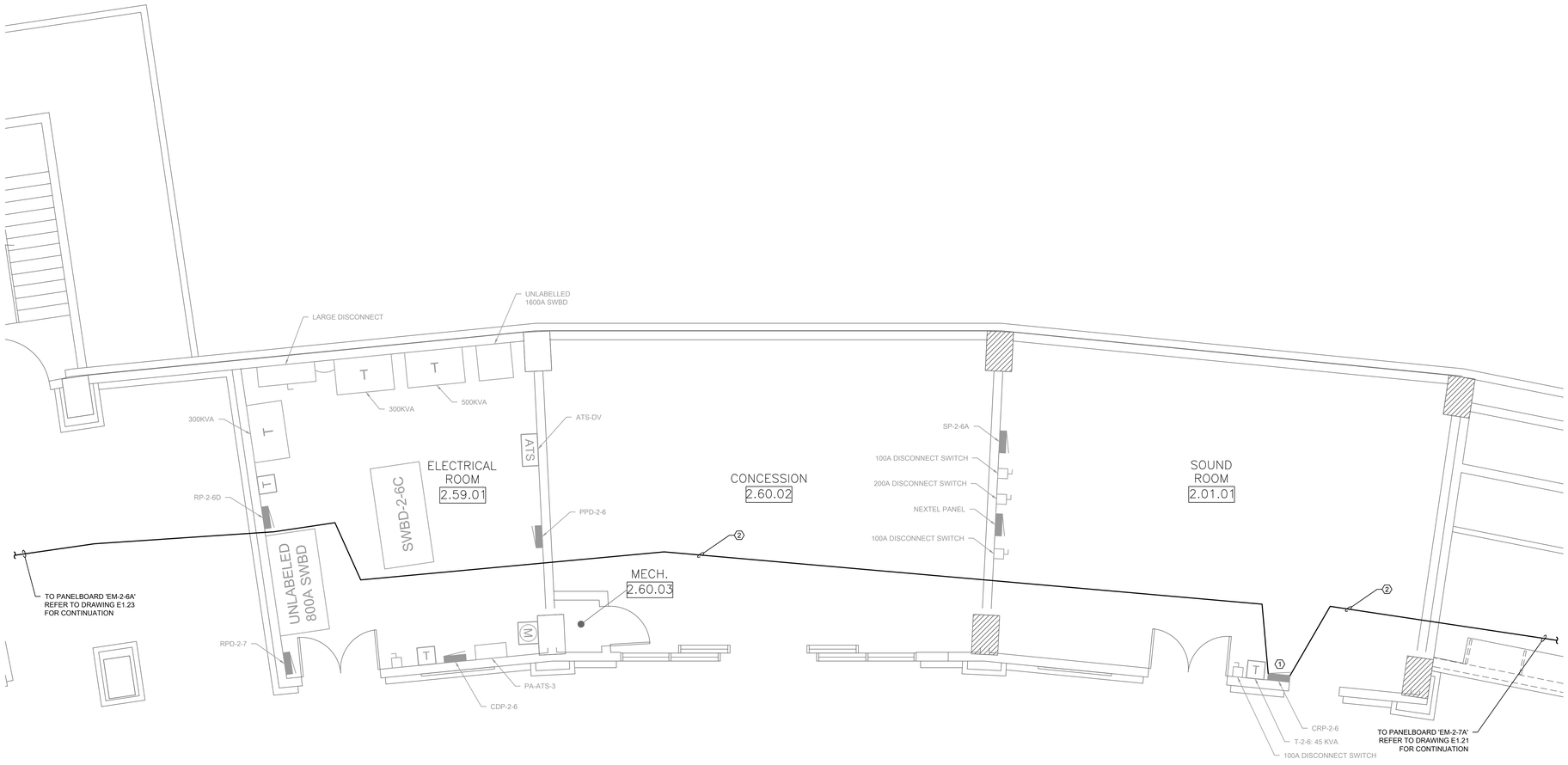
SHEET NO.
E1.23

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. FURNISH AND INSTALL CONDUIT AND WIRES FROM THE EXISTING EMERGENCY PANELBOARDS FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANELBOARD. EC SHALL FURNISH AND INSTALL ANY CIRCUIT BREAKERS REQUIRED FOR THE RELOCATION OF THE EXISTING BRANCH CIRCUITS. REFER TO PANEL SCHEDULES FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANEL.
2. FURNISH AND INSTALL NEW CONDUIT AND WIRES FOR THE RELOCATION OF BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.02 FOR OVERALL PLAN OF THE 100 LEVEL.



1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 2.59.01

SCALE: 1/4" = 1'-0" 0 2' 4' 8'

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333 W. 35TH ST. CHICAGO, IL 60616

DRAWING TITLE:

ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 2.59.01

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

SHEET NO.

E1.24

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. DISCONNECT AND REMOVE BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES. EC SHALL RELOCATE BRANCH CIRCUITS TO NON HEALTH LIFE SAFETY PANEL AS SHOWN IN THE PANEL SCHEDULES.
2. FURNISH AND INSTALL NEW PANELBOARD AS SCHEDULED. REFER TO PANEL SCHEDULES AND ELECTRICAL RISER DIAGRAM FOR MORE INFORMATION.
3. FURNISH AND INSTALL NEW CONDUIT AND FEEDER AS SHOWN IN THE ELECTRICAL RISER DIAGRAM.
4. FURNISH AND INSTALL SURGE PROTECTION DEVICE AS SHOWN IN THE ELECTRICAL RISER DIAGRAM.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.03 FOR OVERALL PLAN OF THE 200 LEVEL.

1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 3.29.04

SCALE: 1/4" = 1'-0" 0 2' 4' 8'

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333 W. 35TH ST. CHICAGO, IL 60616

DRAWING TITLE:

ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 3.29.04

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

SHEET NO.

E1.31

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. DISCONNECT AND REMOVE BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES. EC SHALL RELOCATE BRANCH CIRCUITS TO NON HEALTH LIFE SAFETY PANEL AS SHOWN IN THE PANEL SCHEDULES.
2. FURNISH AND INSTALL NEW CONDUIT AND WIRES FOR THE RELOCATION OF BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES. EC SHALL CORE EXISTING CEILING AS REQUIRED FOR NEW CONDUIT AND WIRES. SCAN FLOOR PRIOR TO CORING. EC SHALL PROVIDE FIRE-STOPPING CAULK ONCE CONDUIT HAS BEEN INSTALLED.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.03 FOR OVERALL PLAN OF THE 200 LEVEL.

1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 3.38.04

SCALE: 1/4" = 1'-0" 0 2' 4' 8'

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PROJECT:
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DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 3.38.04

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

SHEET NO.
E1.32

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. FURNISH AND INSTALL CONDUIT AND WIRES FROM THE EXISTING EMERGENCY PANELBOARD FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANELBOARD. EC SHALL FURNISH AND INSTALL ANY CIRCUIT BREAKERS REQUIRED FOR THE RELOCATION OF THE EXISTING BRANCH CIRCUITS. REFER TO PANEL SCHEDULES FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANEL.
2. FURNISH AND INSTALL NEW 3/4" CONDUIT AND WIRES FROM EMERGENCY PANELBOARD ABOVE FOR BRANCH CIRCUIT TO BE RELOCATED PER PANEL SCHEDULES. EC SHALL CORE EXISTING CEILING AND PROVIDE FIRE STOPPING CAULK ONCE CONDUIT HAS BEEN INSTALLED. EC SHALL SCAN FLOOR PRIOR TO CORING.
3. FURNISH AND INSTALL NEW CONDUIT AND WIRES FOR THE RELOCATION OF BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.04 FOR OVERALL PLAN OF THE 300 LEVEL.

1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 4.17.03

SCALE: 1/4" = 1'-0" 0 2' 4' 8'

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DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 4.17.03

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

SHEET NO.

E1.41

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. FURNISH AND INSTALL CONDUIT AND WIRES FROM THE EXISTING EMERGENCY PANELBOARD FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANELBOARD. EC SHALL FURNISH AND INSTALL ANY CIRCUIT BREAKERS REQUIRED FOR THE RELOCATION OF THE EXISTING BRANCH CIRCUITS. REFER TO PANEL SCHEDULES FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANEL.
2. FURNISH AND INSTALL NEW 3/4" CONDUIT AND WIRES FROM EMERGENCY PANELBOARD ABOVE FOR BRANCH CIRCUIT TO BE RELOCATED PER PANEL SCHEDULES. EC SHALL CORE EXISTING CEILING AND PROVIDE FIRE STOPPING CAULK ONCE CONDUIT HAS BEEN INSTALLED. EC SHALL SCAN CEILING PRIOR TO CORING.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.04 FOR OVERALL PLAN OF THE 300 LEVEL.

1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 4.22.01

SCALE: 1/4" = 1'-0" 0 2' 4' 8'

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DRAWING TITLE:

ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 4.22.01

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

SHEET NO.

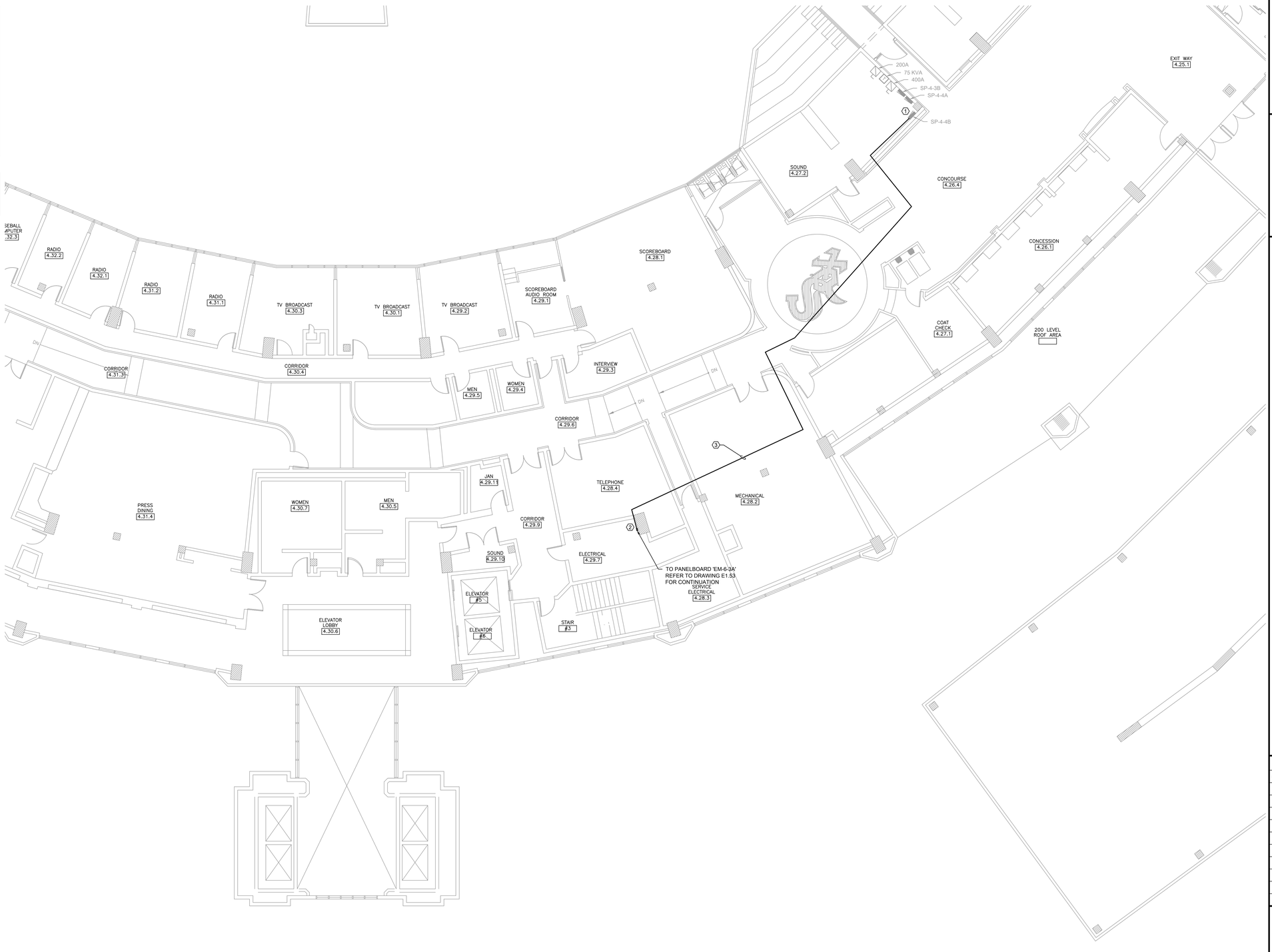
E1.42

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. FURNISH AND INSTALL CONDUIT AND WIRES FROM THE EXISTING EMERGENCY PANELBOARDS FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANELBOARD. EC SHALL FURNISH AND INSTALL ANY CIRCUIT BREAKERS REQUIRED FOR THE RELOCATION OF THE EXISTING BRANCH CIRCUITS. REFER TO PANEL SCHEDULES FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANEL.
2. FURNISH AND INSTALL NEW 3/4" CONDUIT AND WIRES FROM EMERGENCY PANELBOARD ABOVE FOR BRANCH CIRCUIT TO BE RELOCATED PER PANEL SCHEDULES. EC SHALL CORE EXISTING CEILING AND PROVIDE FIRE STOPPING CAULK ONCE CONDUIT HAS BEEN INSTALLED. EC SHALL SCAN CEILING PRIOR TO CORING.
3. FURNISH AND INSTALL NEW CONDUIT AND WIRES FOR THE RELOCATION OF BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.04 FOR OVERALL PLAN OF THE 300 LEVEL.



1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 4.29.07

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

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DRAWING TITLE:
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DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/8" = 1'-0"

SHEET NO.
E1.43

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KEYED ELECTRICAL NEW WORK SHEET NOTES

1. FURNISH AND INSTALL CONDUIT AND WIRES FROM THE EXISTING EMERGENCY PANELBOARD FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANELBOARD. EC SHALL FURNISH AND INSTALL ANY CIRCUIT BREAKERS REQUIRED FOR THE RELOCATION OF THE EXISTING BRANCH CIRCUITS. REFER TO PANEL SCHEDULES FOR THE BRANCH CIRCUITS TO BE RELOCATED TO THIS PANEL.
2. FURNISH AND INSTALL NEW 3/4" CONDUIT AND WIRES FROM EMERGENCY PANELBOARD BELOW FOR BRANCH CIRCUITS TO BE RELOCATED AS SHOWN IN THE PANEL SCHEDULES. EC SHALL CORE EXISTING FLOOR AND PROVIDE FIRE STOPPING CAULK ONCE CONDUIT HAS BEEN INSTALLED. EC SHALL SCAN FLOOR PRIOR TO CORING.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.04 FOR OVERALL PLAN OF THE 300 LEVEL.

1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 4.38.03

SCALE: 1/4" = 1'-0"

0 2 4 8

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DRAWING TITLE:

ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 4.38.03

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

SHEET NO.

E1.44

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. FURNISH AND INSTALL NEW PANELBOARD AS SCHEDULED. REFER TO PANEL SCHEDULES FOR MORE DETAILED INFORMATION. EC SHALL CONNECT EXISTING CIRCUITS TO BE RELOCATED FROM EMERGENCY PANELBOARD AS SHOWN IN THE PANEL SCHEDULES.
2. FURNISH AND INSTALL NEW TRANSFORMER. REFER TO ELECTRICAL RISER DIAGRAM FOR MORE INFORMATION.
3. FURNISH AND INSTALL NEW 3/4" CONDUIT AND WIRES FOR THE BRANCH CIRCUITS TO BE RELOCATED TO NEW NON HEALTH LIFE SAFETY PANELBOARD BELOW AS SHOWN IN THE PANEL SCHEDULES. EC SHALL CORE EXISTING CEILING AS REQUIRED FOR NEW CONDUIT AND WIRES. EC SHALL PROVIDE FIRE-STOPPING CAULK ONCE CONDUIT HAS BEEN INSTALLED. EC SHALL SCAN FLOOR & CEILING PRIOR TO CORING.
4. FURNISH AND INSTALL NEW CONDUIT AND WIRES AS SHOWN IN THE ELECTRICAL RISER DIAGRAM FOR THE NEW FEEDER FOR NEW PANELBOARD IN THIS ROOM. EC SHALL CORE EXISTING FLOOR FOR NEW CONDUIT AND WIRES. EC SHALL SCAN FLOOR PRIOR TO CORING.
5. FURNISH AND INSTALL NEW DISCONNECT SWITCH AS SHOWN IN THE ELECTRICAL RISER DIAGRAM.
6. FURNISH AND INSTALL SURGE PROTECTION DEVICE AS SHOWN IN THE ELECTRICAL RISER DIAGRAM.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.04 FOR OVERALL PLAN OF THE 300 LEVEL.

1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 4.43.02

SCALE: 1/4" = 1'-0" 0 2' 4' 8'

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PROJECT:
ISFA GRF - EM SYSTEM MODIFICATION

333 W. 35TH ST. CHICAGO, IL 60616

DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 4.43.02

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

SHEET NO.

E1.45

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. DISCONNECT AND REMOVE BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES. EC SHALL RELOCATE BRANCH CIRCUITS TO NON HEALTH LIFE SAFETY PANEL AS SHOWN IN THE PANEL SCHEDULES.
2. FURNISH AND INSTALL NEW 3/4" CONDUIT AND WIRES FOR THE BRANCH CIRCUIT TO BE MOVED TO NON HEALTH LIFE SAFETY PANELBOARD AS SHOWN IN THE PANEL SCHEDULES. EC SHALL CORE EXISTING FLOOR AS REQUIRED FOR NEW CONDUIT AND WIRES. EC SHALL PROVIDE FIRE-STOPPING CAULK ONCE CONDUIT HAS BEEN INSTALLED. EC SHALL SCAN FLOOR PRIOR TO CORING.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.05 FOR OVERALL PLAN OF THE 400 LEVEL.

1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 5.17.05

SCALE: 1/4" = 1'-0" 0 2' 4' 8'

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DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 5.17.05

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

SHEET NO.

E1.51

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. DISCONNECT AND REMOVE BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES. EC SHALL RELOCATE BRANCH CIRCUITS TO NON HEALTH LIFE SAFETY PANEL AS SHOWN IN THE PANEL SCHEDULES.
2. FURNISH AND INSTALL NEW 3/4" CONDUIT AND WIRES FOR THE BRANCH CIRCUIT TO BE MOVED TO NON HEALTH LIFE SAFETY PANELBOARD AS SHOWN IN THE PANEL SCHEDULES. EC SHALL CORE EXISTING FLOOR AS REQUIRED FOR NEW CONDUIT AND WIRES. EC SHALL SCAN FLOOR PRIOR TO CORING. EC SHALL PROVIDE FIRE-STOPPING CAULK ONCE CONDUIT HAS BEEN INSTALLED.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.05 FOR OVERALL PLAN OF THE 400 LEVEL.

1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 5.22.05

SCALE: 1/4" = 1'-0" 0 2' 4' 8'

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DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 5.22.05

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

SHEET NO.

E1.52

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. FURNISH AND INSTALL NEW 3/4" CONDUIT AND WIRES FOR THE BRANCH CIRCUIT TO BE MOVED TO NON HEALTH LIFE SAFETY PANELBOARD AS SHOWN IN THE PANEL SCHEDULES. EC SHALL CORE EXISTING CEILING AND FLOOR AS REQUIRED FOR NEW CONDUIT AND WIRES. EC SHALL PROVIDE FIRE-STOPPING CAULK ONCE CONDUIT HAS BEEN INSTALLED. EC SHALL SCAN FLOOR AND CEILING PRIOR TO CORING.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.05 FOR OVERALL PLAN OF THE 400 LEVEL.

1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 5.29.04

SCALE: 1/4" = 1'-0" 0 2' 4' 8'

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DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 5.29.04

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

SHEET NO.

E1.53

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. DISCONNECT AND REMOVE BRANCH CIRCUIT AS SHOWN IN THE PANEL SCHEDULES. EC SHALL RELOCATE BRANCH CIRCUIT TO NON HEALTH LIFE SAFETY PANEL AS SHOWN IN THE PANEL SCHEDULES.
2. FURNISH AND INSTALL NEW 3/4" CONDUIT AND WIRES FOR THE BRANCH CIRCUITS TO BE MOVED TO NEW NON HEALTH LIFE SAFETY PANELBOARD BELOW AS SHOWN IN THE PANEL SCHEDULES. EC SHALL CORE EXISTING FLOOR AS REQUIRED FOR NEW CONDUIT AND WIRES. EC SHALL PROVIDE FIRE-STOPPING CAULK ONCE CONDUIT HAS BEEN INSTALLED. EC SHALL SCAN FLOOR PRIOR TO CORING.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.05 FOR OVERALL PLAN OF THE 400 LEVEL.

1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 5.43.06

SCALE: 1/4" = 1'-0"

0 2' 4' 8'

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PROJECT:

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DRAWING TITLE:

ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 5.43.06

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

SHEET NO.

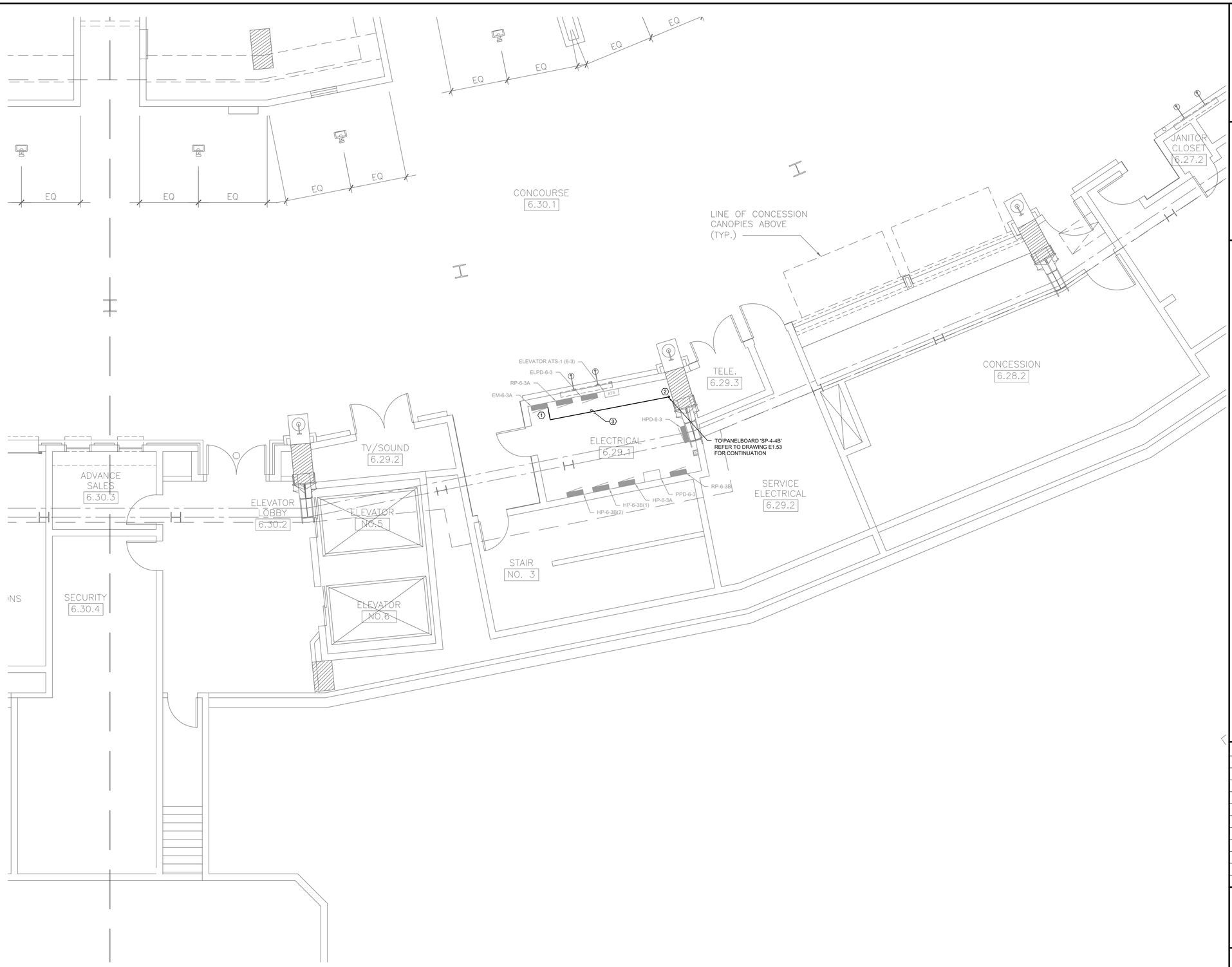
E1.54

KEYED ELECTRICAL NEW WORK SHEET NOTES

1. DISCONNECT AND REMOVE BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES. EC SHALL RELOCATE BRANCH CIRCUITS TO NON HEALTH LIFE SAFETY PANEL AS SHOWN IN THE PANEL SCHEDULES.
2. FURNISH AND INSTALL NEW 3/4" CONDUIT AND WIRES FOR THE BRANCH CIRCUITS TO BE MOVED TO NEW NON HEALTH LIFE SAFETY PANELBOARD BELOW AS SHOWN IN THE PANEL SCHEDULES. EC SHALL CORE EXISTING FLOOR AS REQUIRED FOR NEW CONDUIT AND WIRES. EC SHALL PROVIDE FIRE-STOPPING CAULK ONCE CONDUIT HAS BEEN INSTALLED. EC SHALL SCAN FLOOR PRIOR TO CORING.
3. FURNISH AND INSTALL NEW CONDUIT AND WIRES FOR THE RELOCATION OF BRANCH CIRCUITS AS SHOWN IN THE PANEL SCHEDULES.

KEY PLAN GENERAL NOTE

1. REFER TO SHEET E2.06 FOR OVERALL PLAN OF THE 500 LEVEL.



1 ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 6.29.01

SCALE: 1/4" = 1'-0" 0 2 4 6'

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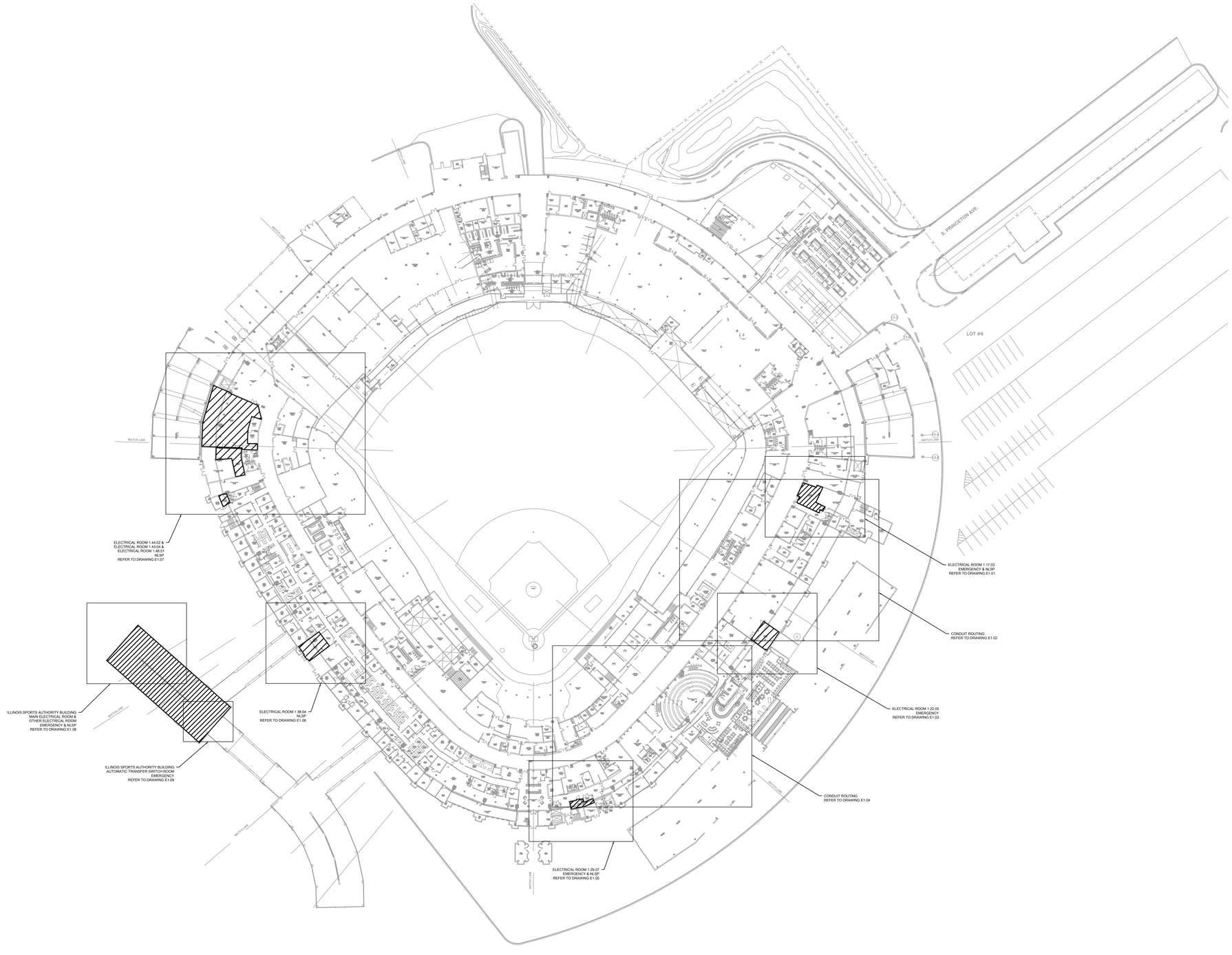
DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - ELECTRICAL ROOM 6.29.01

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/4" = 1'-0"

SHEET NO.
E1.61



1 ELECTRICAL NEW WORK PLAN - GROUND LEVEL OVERALL

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

0 16' 32' 64'

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PROJECT:

ISFA GRF - EM SYSTEM MODIFICATION

333 W. 35TH ST. CHICAGO, IL 60616

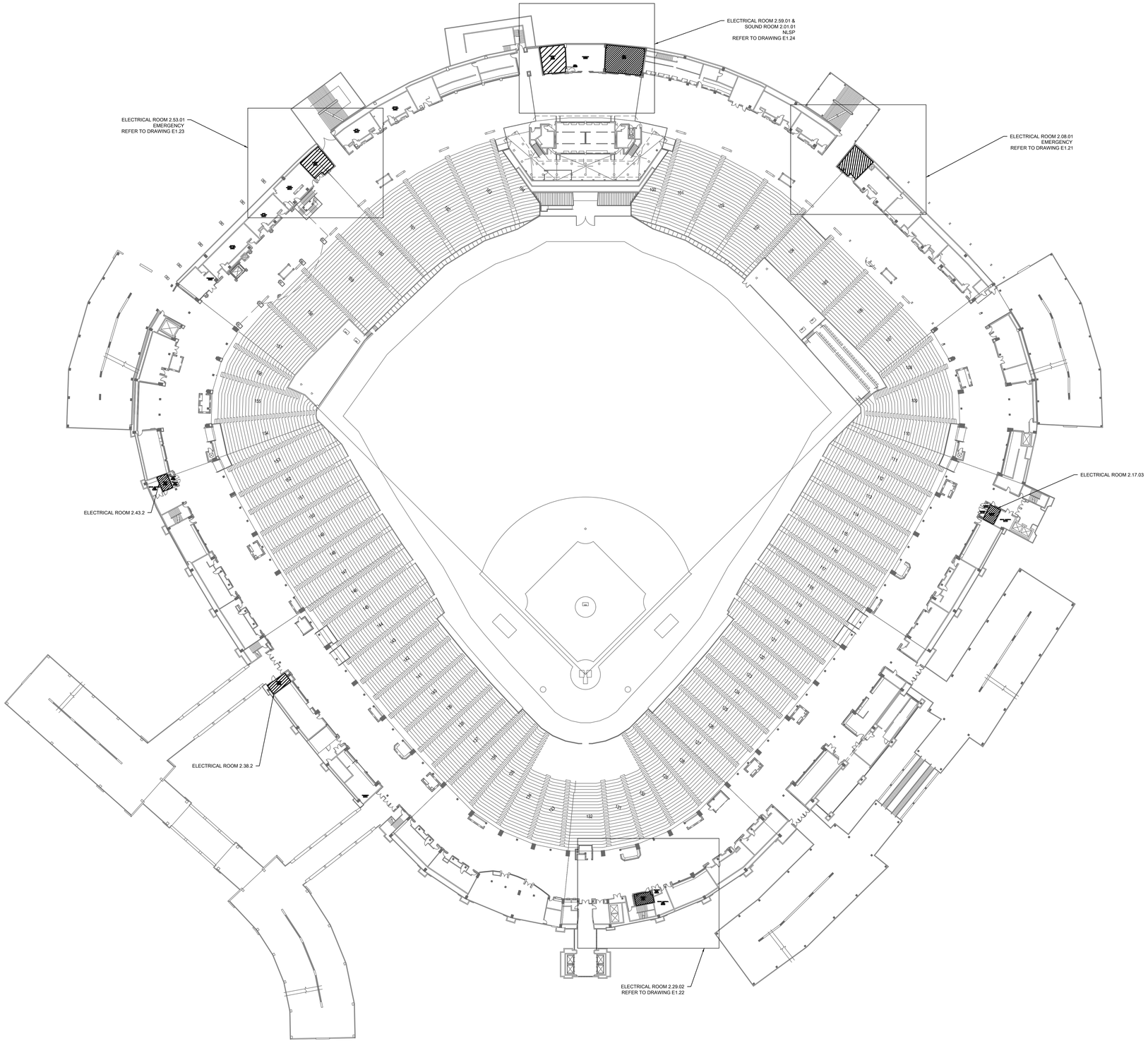
DRAWING TITLE:

ELECTRICAL NEW WORK PLAN - GROUND LEVEL OVERALL

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/32" = 1' 0"

SHEET NO.

E2.01



1 ELECTRICAL NEW WORK PLAN - LEVEL 100 OVERALL

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

0 16' 32' 64'

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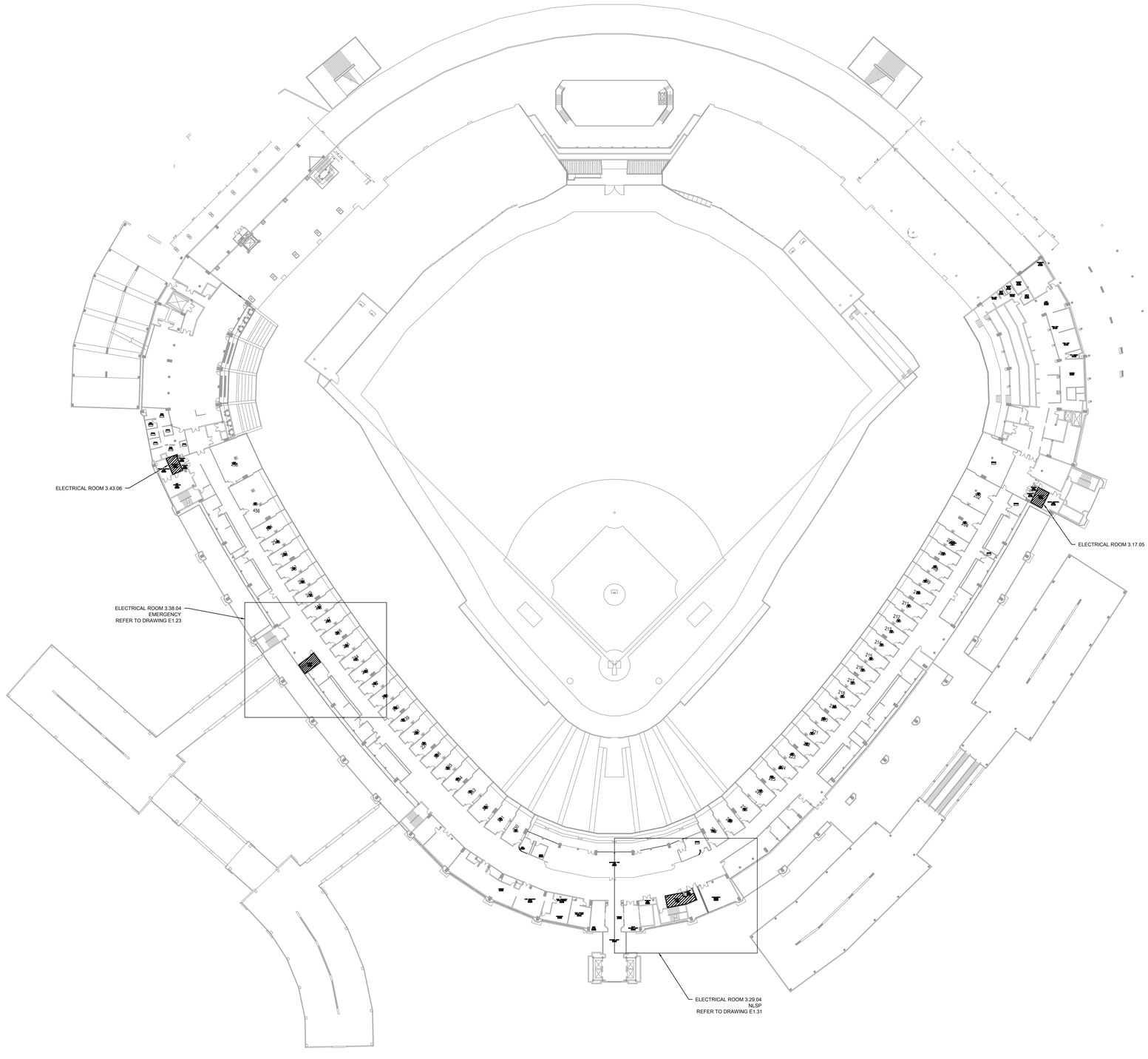
DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - LEVEL 100 OVERALL

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/32" = 1' 0"

SHEET NO.

E2.02



1 ELECTRICAL NEW WORK PLAN - LEVEL 200 OVERALL

SCALE: 1/32" = 1'-0" 0 16' 32' 64'

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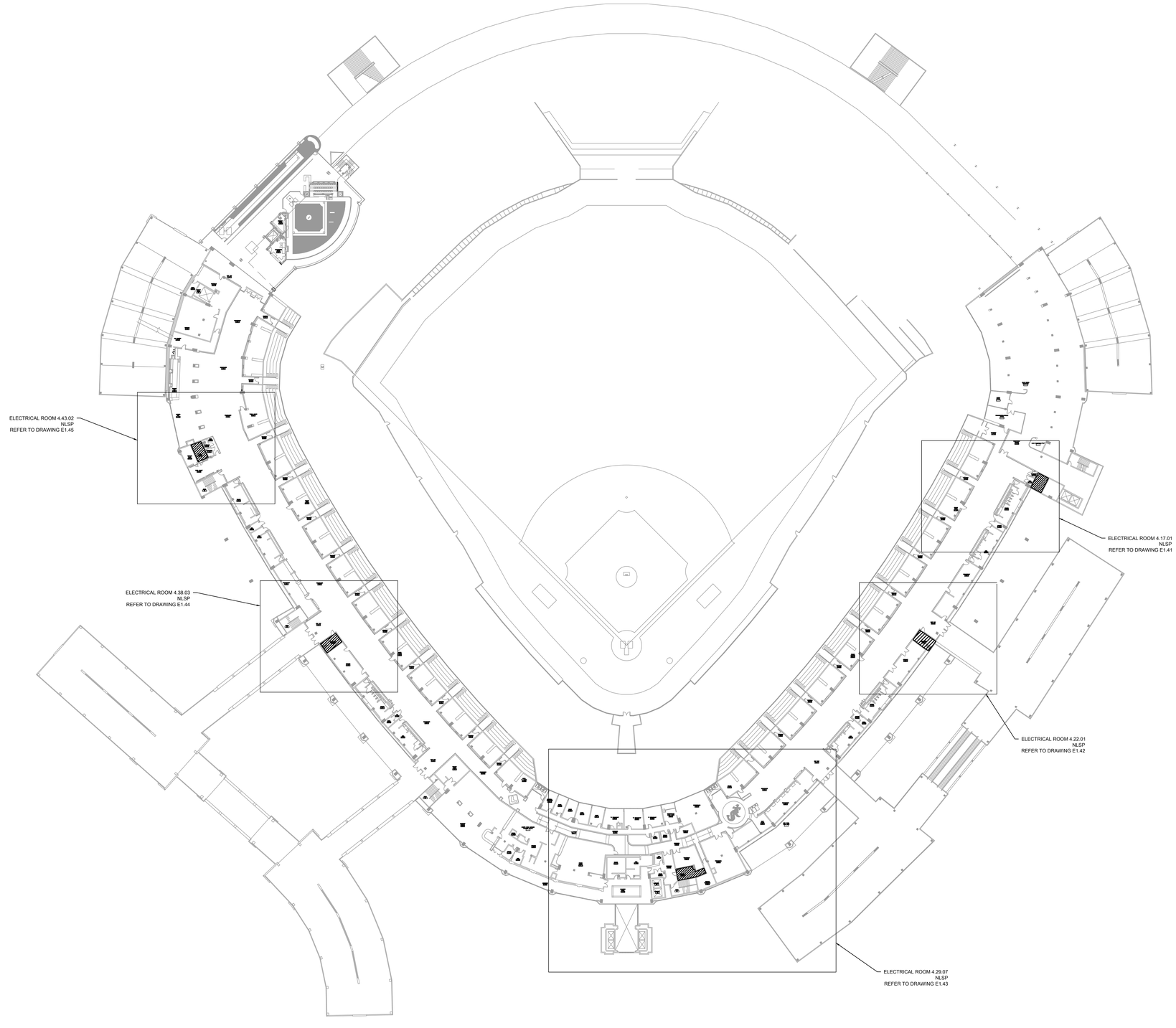
DRAWING TITLE:
ELECTRICAL NEW WORK PLAN - LEVEL 200 OVERALL

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/32" = 1' 0"

SHEET NO.

E2.03



1 ELECTRICAL NEW WORK PLAN - LEVEL 300 OVERALL

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

0 16' 32' 64'

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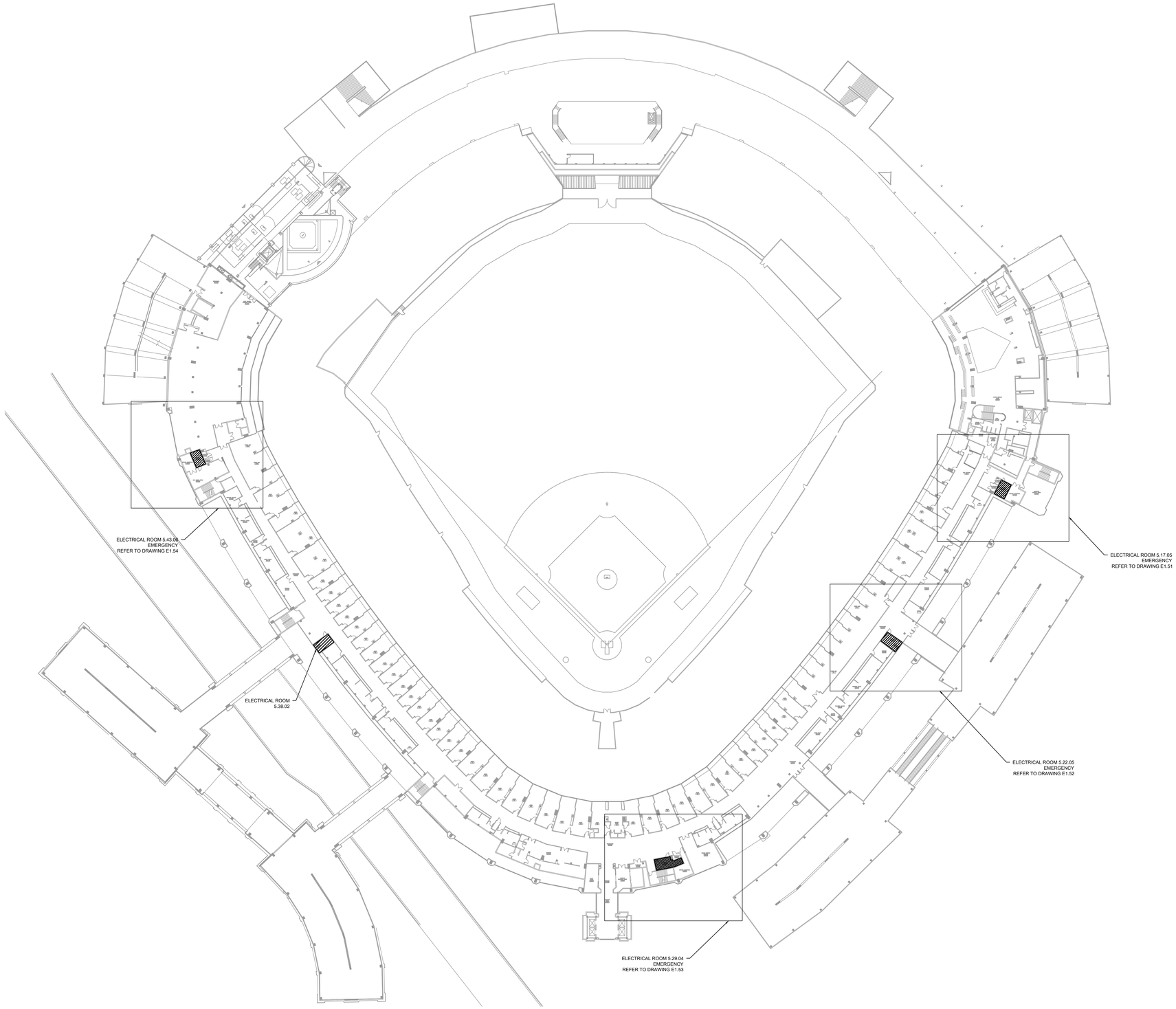
DRAWING TITLE:

ELECTRICAL NEW WORK PLAN - LEVEL 300 OVERALL

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/32" = 1" 0"

SHEET NO.

E2.04



1 ELECTRICAL NEW WORK PLAN - LEVEL 400 OVERALL

SCALE: 1/32" = 1'-0" 0 16' 32' 64'

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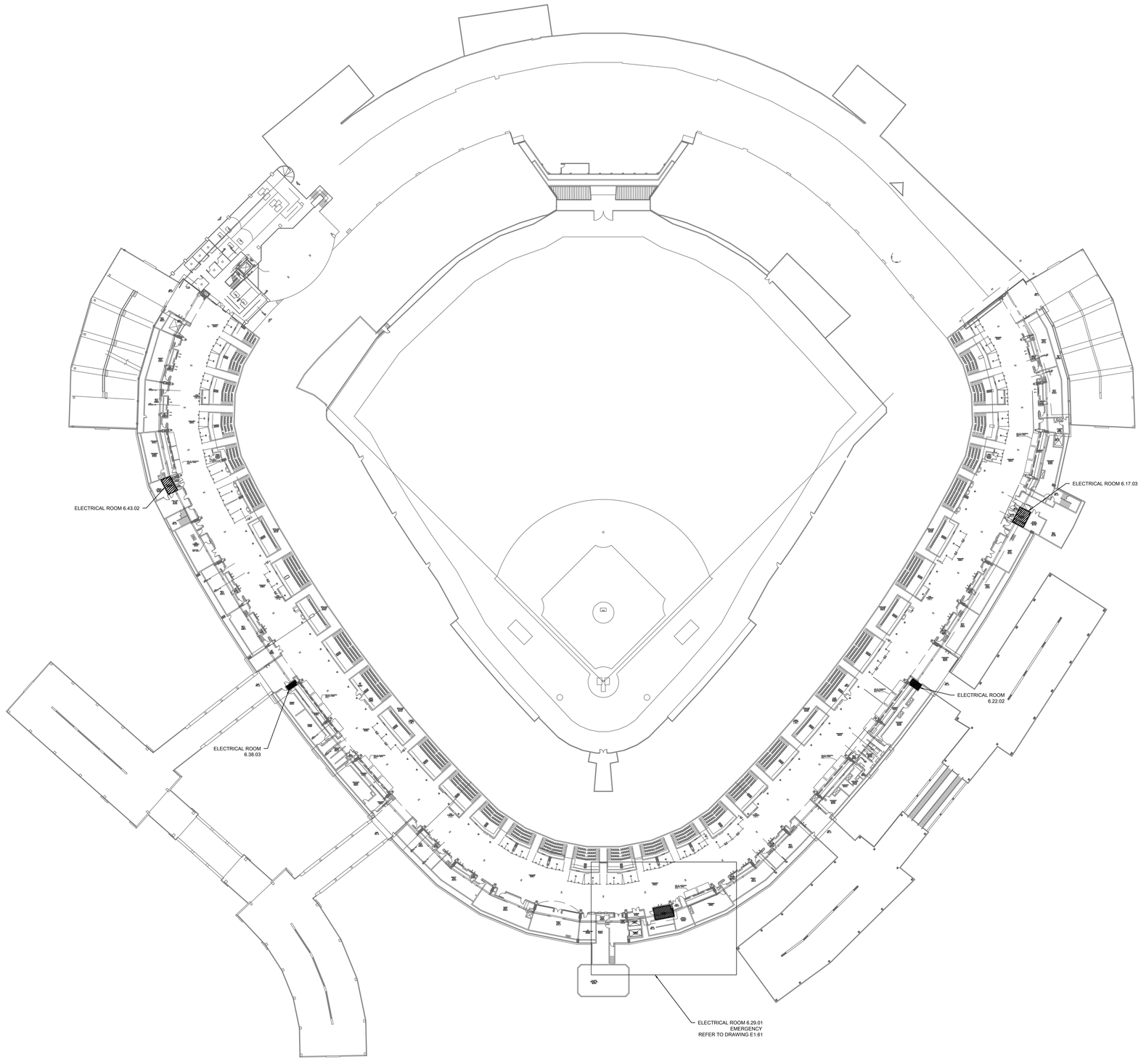
DRAWING TITLE:

ELECTRICAL NEW WORK PLAN - LEVEL 400 OVERALL

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/32" = 1' 0"

SHEET NO.

E2.05



1 ELECTRICAL NEW WORK PLAN - LEVEL 500 OVERALL

SCALE: 1/32" = 1'-0" 0 16' 32' 64'

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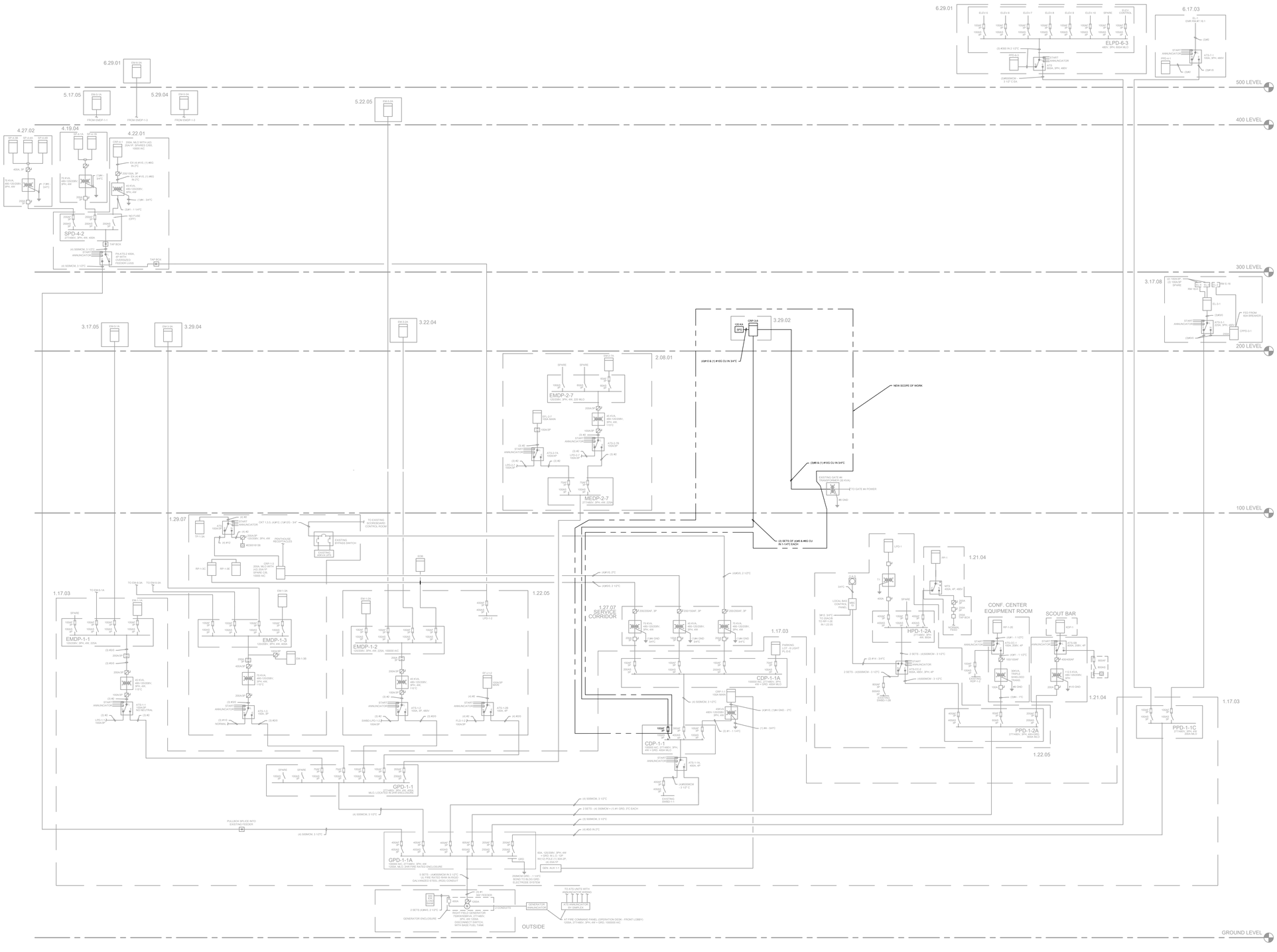
DRAWING TITLE:

ELECTRICAL NEW WORK PLAN - LEVEL 500 OVERALL

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1/32" = 1' 0"

SHEET NO.

E2.06



1 ELECTRICAL NEW WORK RISER DIAGRAM - RIGHT FIELD GENERATOR

SCALE:

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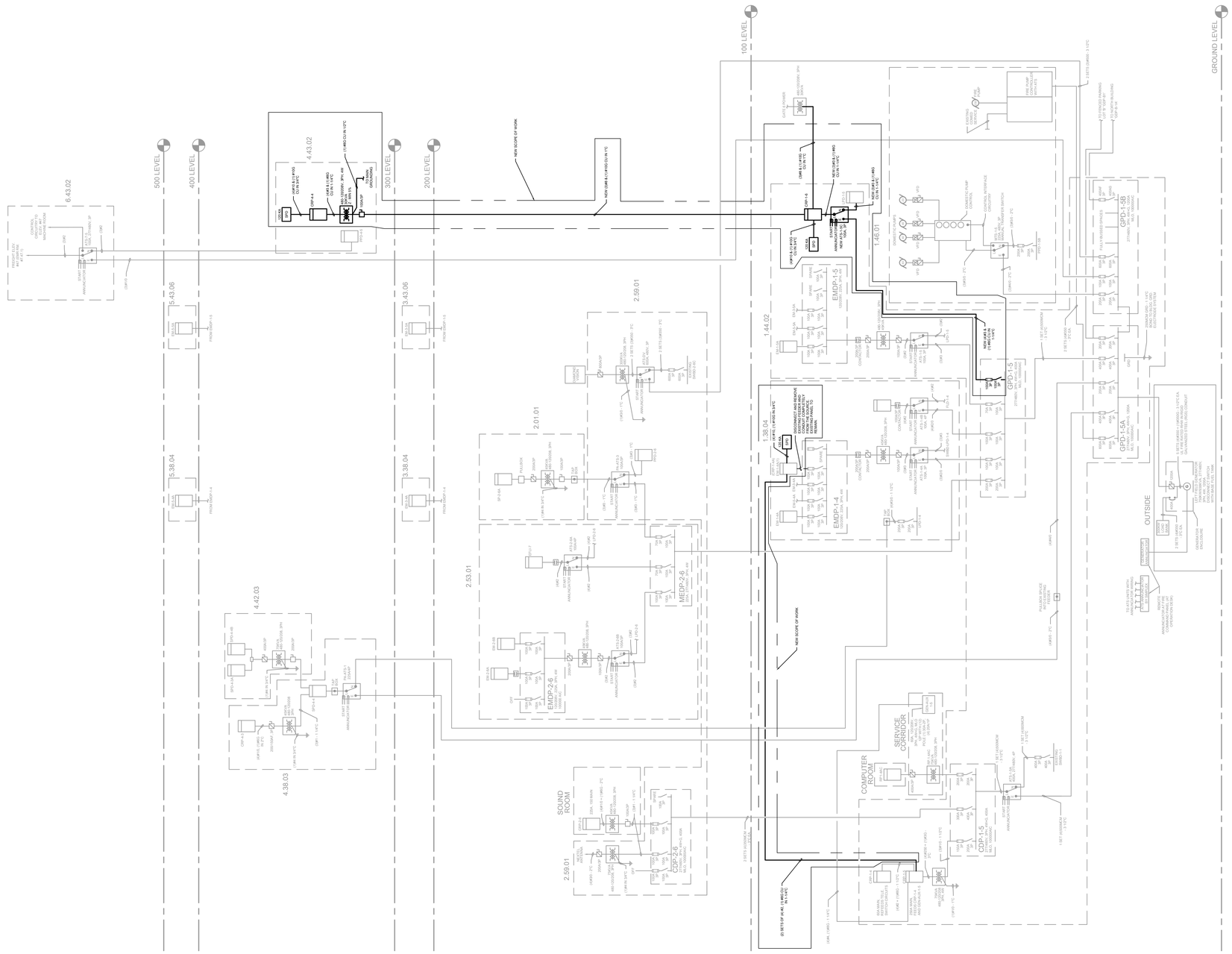
DRAWING TITLE:

ELECTRICAL RISER DIAGRAM - RIGHT FIELD GENERATOR

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	NTS

SHEET NO.

E3.01



1 ELECTRICAL NEW WORK RISER DIAGRAM - LEFT FIELD GENERATOR

SCALE:

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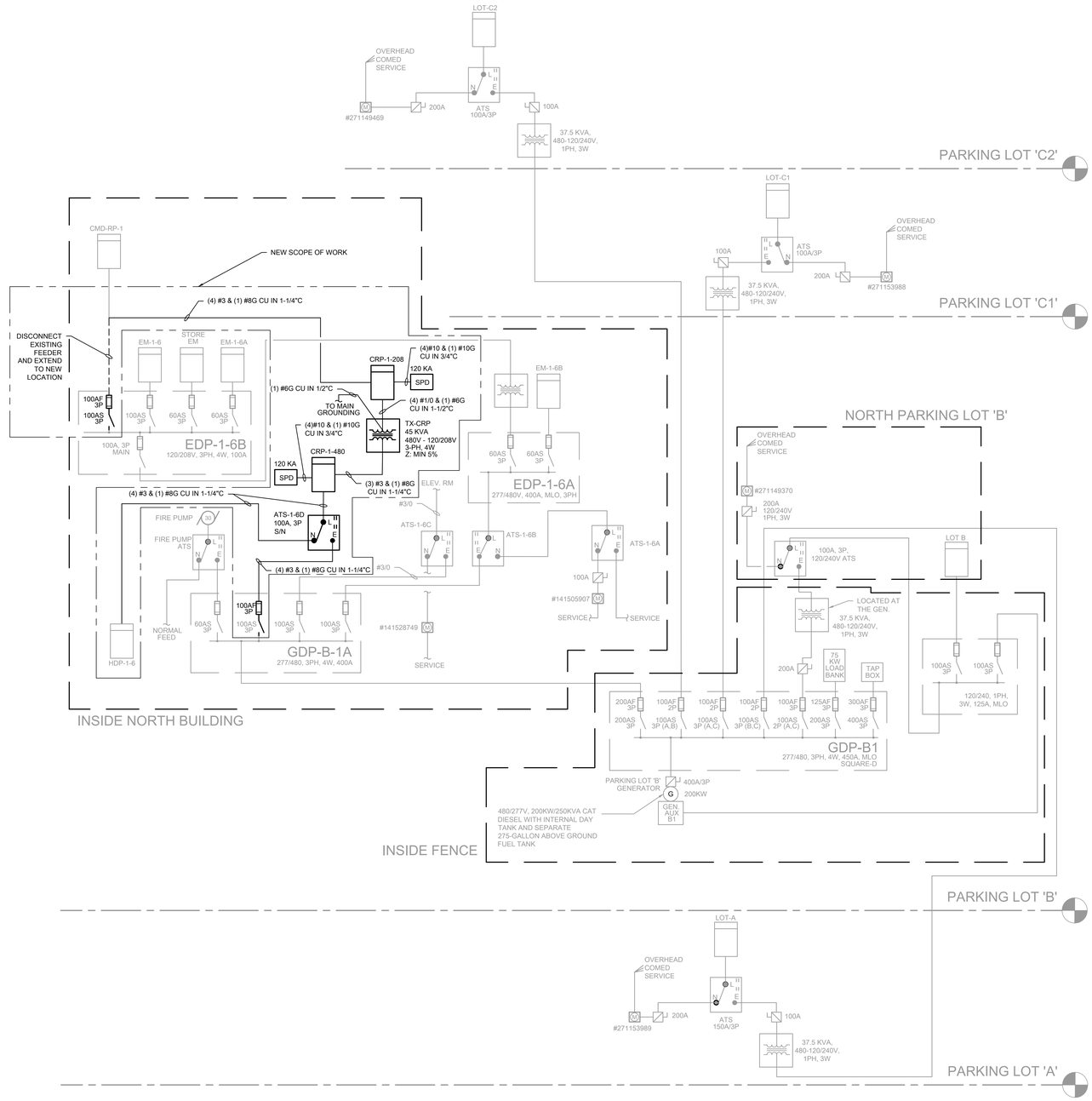
DRAWING TITLE:

ELECTRICAL RISER DIAGRAM - LEFT FIELD GENERATOR NEW WORK

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	NTS

SHEET NO.

E3.02



1 ELECTRICAL NEW WORK RISER DIAGRAM - PARKING LOT 'B' GENERATOR
SCALE:

THREE PHASE FEEDER/BRANCH CIRCUIT VOLTAGE DROP SUMMARY								
DESCRIPTION	VOLT	AMP	WIRE	SET	LENGTH	CONDUIT	P.F	VD%
GDP-B-1A TO ATS-1-6D	480	80	3	1	180	STEEL	0.85	1.93%
CRP-1-5 TO EM-1-4A	208	80	2	2	298	STEEL	0.85	3.00%
CRP-1-6 TO CRP-4-4	480	40	8	1	160	STEEL	0.85	2.63%
CDP-1-1 TO CRP-3-8	480	80	3	2	530	STEEL	0.85	2.84%

2 VOLTAGE DROP CALCULATIONS FOR NEW PANELBOARDS
SCALE:

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PROJECT:
ISFA GRF - EM SYSTEM MODIFICATION
333 W. 35TH ST. CHICAGO, IL 60616

DRAWING TITLE:
ELECTRICAL RISER DIAGRAM - PARKING LOT GENERATORS

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	NTS

SHEET NO.
E3.03

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PANELBOARD: EM-1-4A (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-	C/B TYPE	-
MAIN TYPE:	MAIN LUGS	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	C/B	POS		POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
EM-1-4A	EM-1-4A(1)	CAMERA POWER SUPPLY "B"				20	1	A	2	20				EMERG LTS 1.36.1, 35.4, 35.8, 36.7	-	-
-	-	EMERG LTS 1.60.1				20	3	B	4	20				EMERG LTS 1.36.1, 37.4, 37.6, 38.1	-	-
-	-	EMERG LTS 1.40.13, 41.3, 41.10, 60.1				20	5	C	6	20				EMERG LTS 1.37.3, 36.1, 38.	-	-
-	-	EXIT SIGN 1.40.13, 41.3, 41.10, 60.1				20	7	A	8	20				EMERG LTS 1.37.3, 39.2, 40.2, 41.1	-	-
-	-	SPARE				20	9	B	10	20				EXIT SIGN 1.35.4, 35.8, 38.1, 38.2, 60.1, 37.3, 39.2, 40.2, 41.1	-	-
-	-	EXIT SIGN 1.38.4, 38.9, CORR, 39.9, 40.13, 37.17, 36.7, 37.16, 34.5, 35.12				20	11	C	12	20				TOWER EM CONTACTOR	-	-
-	-	LTG 1.38.4, 38.9, CORR, 39.9, 40.13, 37.19, 36.13				20	13	A	14	20				SPARE	-	-
-	-	LTG 1.37.17, 35.12, 34.12, 36.7, 36.8				20	15	B	16	20				SPARE	-	-
-	-	SPARE				20	17	C	18	20				SPARE	-	-
-	-					20	19	A	20	20					-	-
						20	21	B	22	20						
-	-					20	23	C	24	20					-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: EM-1-4A(1) (CRP-1-4A)** — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-	C/B TYPE	-
MAIN TYPE:	MAIN LUGS	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE	MOVE	SERVES	A	B	C	C/B	POS		POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-					20	1	A	2	20					-	-
-	-					20	3	B	4	20				WHITE SOX SERVER RM, LIEBERT COMPRESSOR	-	-
-	-					20	5	C	6	20					-	-
-	-	WHITE SOX SERVER RM,				20	7	A	8	20				WHITE SOX SERVER RM,	-	-
-	-	CARRIER COMPRESSOR				20	9	B	10	20				CARRIER COMPRESSOR	-	-
-	-	CARRIER CONDENSATE PUMP				20	11	C	12	20				CARRIER CONDENSATE PUMP	-	-
-	-					20	13	A	14	20				CAMERA POWER SUPPLY "B"	EM-1-4A	EM-1-4A(1)
-	-					20	15	B	16	20					-	-
-	-					20	17	C	18	20					-	-
-	-					20	19	A	20	20					-	-
		WHITE SOX SERVER RM,				20	21	B	22	20						
-	-	LIEBERT CONDENSATE PUMP				20	23	C	24	20					-	-
			0	0	0						0	0	0			

** EC SHALL RENAME & RELABEL THIS PANELBOARD TO CRP-1-4A

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: EM-1-5A (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-	C/B TYPE	-
MAIN TYPE:	MAIN LUGS	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE	MOVE TO	SERVES	A	B	C	C/B	POS		POS	C/B	A	B	C	SERVES	MOVE	MOVE TO
-	-	EXIT SIGN RAMP #6				20	1	A	2	20				EMERG LTS 1.45.2, 46.1, 60.1	-	-
-	-	EMERG LTS RAMP #6 1.47.3				20	3	B	4	20				EMERG LTS 1.43.6, 43.7, 44.2, 60.1	-	-
-	-	SPARE				20	5	C	6	20				EMERG LTS 1.42.5, STAIR #6, 60.1	-	-
EM-1-5A	CRP-1-5	CAM 7, 8, 19, 20				20	7	A	8	20				EXIT SIGN 1.42.5, STAIR #6, 44.3, 44.2, 60.1	-	-
EM-1-5A	CRP-1-5	CAM 6, 18				20	9	B	10	20				SPARE	-	-
-	-	SPARE				20	11	C	12	20				EXIT SIGN 1.45.1, 45.4, 47.1, 47.4	-	-
-	-	SPARE				20	13	A	14	20				EMERG LTS 1.42.4, 42,3, 43.1, 45.1	-	-
-	-					20	15	B	16	20					-	-
-	-					20	17	C	18	20					-	-
-	-					20	19	A	20	20					-	-
						20	21	B	22	20						
-	-					20	23	C	24	20					-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: EM-2-6A (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE	MOVE TO	SERVES	A	B	C	C/B	POS		POS	C/B	A	B	C	SERVES	MOVE	MOVE TO
-	-	EXIT SIGN 1.54.1, 52.2, AREA 'H' OUTSIDE				20	1	A	2	20				EMERG LTS 1.60.1, 58.7	-	-
-	-	EMERG LTS 1.53.3 AREA 'H' OUTSIDE STAIRS				20	3	B	4	20				EMERG LTS 1.59.3	-	-
-	-	EMERG LTS 1.54.1				20	5	C	6	20				EXIT SIGN 1.49.1, 60.1, STAIR #10, 58.7, 59.8, 59.6, 59.1, 59.4, 59.3	-	-
-	-	EMERG LTS 1.54.1, BULL PEN				20	7	A	8	20				EMERG LTS 1.49.2, 60.1	-	-
-	-	EMERG LTS 1.54.1, 53.6				20	9	B	10	20				EMERG LTS 1.60.1, 57.1, 59.5, STAIR #10	-	-
-	-	TOWER AVIATION LIGHTS C-1, C-2				20	11	C	12	20					-	-
-	-	EXIT SIGN 2.49.1				20	13	A	14	20				EMERG LTS 1.58.1, 59.1, 58.4, 58.6	-	-
-	-	EMERG LTS 2.49.1, 50.1, 51.1				20	15	B	16	20				EXIT SIGN 1.58.1, 59.1	-	-
-	-					20	17	C	18	20					-	-
-	-	EXIT SIGN CONCOURSE H, J, 2.58.1				20	19	A	20	20				"HD" POLES CONCOURSE H, J	-	-
-	-	EMERG LTS 2.57.3, 57.1, 57.3, 58.1, STAIR #10, 59.1				20	21	B	22	20				SHADOW TRAFFIC CAMERA	EM-2-6A	CRP-2-6
-	-	EMERG LTS 2.53.1, RAMP. 54.1, 55.1				20	23	C	24	20					-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: EM-5-5A (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	C/B	POS		POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-	EMERG LTG LOGE COL 43-45.5/D-F				20	1	A	2	20				EMERG LTG UPPER CONC COL 44-45.5/E-F	-	-
-	-	EMERG LTG LOGE COL 41-44/D-E				20	3	B	4	20				DOOR STRAKE/CAMERA HALL	EM-5-5A	CRP-4-4
-	-	EMERG LTG LOGE COL 45-48/D-F				20	5	C	6	20				EMERG LTG ELEV #11 CAB	-	-
-	-	EXIT LOGE COL 41-48/D-F				20	7	A	8	20				EXIT U.S. COL 41-44/D-E U.C. COL 41-44/E-F	-	-
-	-	EMERG LTG RAMP #6 LEVEL 4-5				20	9	B	10	20				SPARE (EXIT) RAMP #6 LEVEL 4-5	-	-
-	-	EMERG LTG RAMP #6 LEVEL 5.5-6				20	11	C	12	20				EMERG LTG UPPER CONC COL 41-44/E-F BATHROOM	-	-
-	-	EXIT UPPER CONC COL 44-48/E-F				20	13	A	14	20				EMERG LTG UPPER CONC COL 41-46/D-E OVERHEAD	-	-
-	-	EMERG LTG UPPER SUITE COL 41-44/D-E				20	15	B	16	20				EMERG LTG UPPER CONC COL 46-48/D-E OVERHEAD	-	-
-	-	EMERG LTG UPPER CONC COL 41-48/D				20	17	C	18	20				EMERG LTG WINDSCREEN "G"	-	-
-	-	EXIT UPPER CONC COL 41-48/D				20	19	A	20	20				EMERG LTG WINDSCREEN "F" & "G"	-	-
-	-	EMERG LTG UPPER SUITE COL 44-48/D-F				20	21	B	22	20				EMERG LTG WINDSCREEN "F" & "G"	-	-
-	-	EXIT UPPER SUITE COL 44-48/D-E				20	23	C	24	20				EMERG LTG WINDSCREEN "F" & "G"	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: EM-3-4A (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	C/B	POS		POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-	EMERG LTG MC AREA "E" STAIR #5, 2.37.1, 40.1				20	1	A	2	20				RAMP 4 EM LTG L.S LEVEL & ESCALATOR	-	-
-	-	EMERG LTG MC AREA "E" 2.36.4, 36.1, 38.3, 38.1, 37.1				20	3	B	4	20				RAMP 4 EM LTG MAIN CONCOURSE	-	-
-	-	EXIT SIGN RAMP 5				20	5	C	6	20				EXIT SIGN 3.37.6, STAIR #5, ALT #7	-	-
-	-	EXIT SIGN MC AREA "E"				20	7	A	8	20				RAMP 4 EXIT SIGN	-	-
-	-	EXIT SIGN MC STAIR #5 AREA "E"				20	9	B	10	20				EMERG LTS 3.37.6, STAIR #5, ALT #7	-	-
-	-	RAMP 5 EM LTG L.S LEVEL & ESCALATOR				20	11	C	12	20				EMERG LTS 3.36.4, 37.5, 37.4	-	-
-	-	RAMP 5 EM LTG MAIN CONCOURSE				20	13	A	14	20				RAMP 4 EM LTG 1.5 LEVEL & ESCALATOR	-	-
-	-	RAMP 5 EM LTG 1.5 LEVEL & ESCALATOR				20	15	B	16	20				RAMP 4 EM LTG 1.5 SERVICE LEVEL	-	-
-	-	RAMP 5 EM LTG SERVICE LEVEL				20	17	C	18	20				SW RAMP 4 CAM	EM-3-4A	CRP-4-3
-	-	4TH FLOOR SUITE STAIR LGHT				20	19	A	20	20				NE RAMPS CAM	EM-3-4A	CRP-4-3
-	-	4TH FLOOR SUITE STAIR LIGHT				20	21	B	22	20				2ND FLOOR SUITES STAIR LT.	-	-
-	-					20	23	C	24	20				2ND FLOOR SUITES STAIR	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: EM-2-7A (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	NO
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	C/B	POS		POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-	EMERG LTS 1.60.1, 12.3, 12.1, 8.2				20	1	A	2	20				EMERG LTS 1.9.1, 1.1.2	-	-
-	-	EXIT SIGNS 1.60.1, 8.2, 9.1				20	3	B	4	20				EMERG LTS 1.9.1	-	-
-	-	EMERG LTS 1.60.1				20	5	C	6	20				EMERG LTS 1.9.1	-	-
-	-	EMERG LTS 1.60.1				20	7	A	8	20				EMERG LTS 1.9.1	-	-
-	-	EMERG LTS 1.1.2, 3.3, 2.2				20	9	B	10	20				EMERG LTS 1.8.1, 9.1, BULL PEN	-	-
-	-	EMERG LTS 1.8.2				20	11	C	12	20				EMERG LTS 1.9.1	-	-
-	-	F/A COMPRESSOR				20	13	A	14	20				EMERG LTS 1.9.1	-	-
-	-	EMERG LTS 2.8.1, 7.1, 6.1, 4.1				20	15	B	16	20				EMERG LTS 1.9.1	-	-
-	-	EMERG LTS 2.3.1, 1.1, 60.2, 4.1				20	17	C	18	20				EMERG LTS 1.8.1, 9.1	-	-
-	-	EXIT SIGNS AREA 'K' TKT BOOTH, 2.60.1, 3.1, 3.2.1				20	19	A	20	20				EFL-2-7	EM-2-7A	CRP-2-6
-	-	AVIATION TOWER LIGHTS C-3, C-4				20	21	B	22	20				"HD" POLE CONCOURSE K, J	-	-
-	-	EMERG LTS 2.12.1, 11.1, 10.1, 9.1				20	23	C	24	20				"HD" POLE CONCOURSE K	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: EM-5-2A (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	C/B	POS		POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-	EMERG LTG LOGE "C"				20	1	A	2	20				EMERG LTG UPPER CONC "C"	-	-
-	-					20	3	B	4	20				EMERG LTG UPPER CONC "C"	-	-
-	-	EMERG LTG LOGE "C" BATHROOMS				20	5	C	6	20				EMERG LTG UPPER CONC "C" EXITS	-	-
-	-	EMERG LTG UPPER CONC "C"				20	7	A	8	20				EMERG LTG RAMP #2 LEVEL 6	-	-
-	-	EXIT UPPER CONC "C", EXIT LOGE "C"				20	9	B	10	20				EMERG LTG RAMP #2 LEVEL 5	-	-
-	-	AVIATION LIGHTS				20	11	C	12	20				EMERG LTG RAMP #2 LEVEL 4	-	-
-	-	EXIT UPPER SUITE "C"				20	13	A	14	20				SPARE (EXIT) RAMPS 2 & 3 LEVELS 4 & 5	-	-
-	-	EMERG LTG UPPER SUITE "C"				20	15	B	16	20				EMERG LTG UPPER CONC "C"	-	-
-	-	EMERG LTG UPPER SUITE "C"				20	17	C	18	20				REMOTE CAMS	EM-5-2A	CRP-4-1
-	-	EMERG LTG WINDSCREEN "C"				20	19	A	20	20				EMERG LTG RMAP #3 LEVELS 5 & 6	-	-
-	-	EMERG LTG WINDSCREEN "C"				20	21	B	22	20				EMERG LTG NORTH ESCALATOR LEVEL 6	-	-
-	-	EMERG LTG WINDSCREEN "C"				20	23	C	24	20				EMERG LTG RAMP #3 LEVEL 4	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: EM-5-1A (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	C/B	POS		POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-	EMERG LTG LOGE "B"				20	1	A	2	20				EMERG LTG AREA "B" 5TH FL UPPER SUITES	-	-
-	-	EXIT LTG LOW STADIUM CLUB				20	3	B	4	20				EXIT LTG AREA "B" 5TH FL	-	-
-	-	EMERG LTG LOGE "B" STAD CLUB & BATH				20	5	C	6	20					-	-
-	-	EMERG LTG LOW STAD CLUB				20	7	A	8	20				EMERG LTG ELEV#3 CAB 5.17.8	-	-
-	-	EMERG LTG LOW STAD CLUB				20	9	B	10	20				EMERG LTG ELEV#4 CAB 5.17.8	-	-
-	-	500 EXIT LIGHTING				20	11	C	12	20				EMERG LTG UPPER CONC "B"	-	-
-	-	EMERG LTG WINDSCREEN "A" & "B"				20	13	A	14	20				EMERG LTG UPPER CONC "A"	-	-
-	-	EMERG LTG WINDSCREEN "A" & "B"				20	15	B	16	20				EMERG LTG UPPER CONC "B"	-	-
-	-	EMERG LTG WINDSCREEN "A" & "B"				20	17	C	18	20				EMERG LTG WINDSCREEN "A"	-	-
-	-	EMERG LTG 5TH FL STAD CLUB				20	19	A	20	20				EMERG LTG RAMP #1 5TH & 6TH LEVELS	-	-
-	-	EMERG LTG 5TH FL STAD CLUB				20	21	B	22	20				EMERG LTG RAMP #1 LEVELS 4 & 5 STAD CL	-	-
-	-					20	23	C	24	20				EMERG LTG RAMP #1 LEVELS 3 & 4	-	-
EM-5-1A	SP-4-1B	ISFA SERVER				20	25	A	26	20				SPARE (EXIT) RAMP #1	-	-
-	-	EMERG LTG UPPER CONC "A" & "B"				20	27	B	28	20				EMERG LTG UPPER CONC #1	-	-
-	-					20	29	C	30	20				EMERG LTG ELEV #1 CAB	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: EM-6-3A (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE	MOVE TO	SERVES	A	B	C	C/B	POS		POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-	EMERG LTG ELEV #7 CAB 6.30.5				20	1	A	2	20				EMERG LTG ELEV #5 CAB	-	-
-	-	EMERG LTG ELEV #8 CAB 6.30.5				20	3	B	4	20				EMERG LTG ELEV #6 CAB	-	-
-	-	EMERG LTG ELEV #9 CAB 6.30.5				20	5	C	6	20				EXIT UPPER CONC COL 25.5-28/E	-	-
-	-	EMERG LTG ELEV #10 CAB 6.30.5				20	7	A	8	20				GIFT SHOP CAM	EM-6-3A	SP-4-4B
-	-					20	9	B	10	20					-	-
-	-	EMERG LTG UPPER CONC COL 26-28.5/E-F				20	11	C	12	20					-	-
-	-	EMERG LTS UPPER CONC COL 26-28.5 STAND + OVERHEAD + BATHROOM				20	13	A	14	20					-	-
-	-	EMERG LTG UPPER CONC COL 26-35 OVERHEAD				20	15	B	16	20				SPARE	-	-
-	-	EMERG LTG UPPER CONC COL 26.5-35/D AISLES				20	17	C	18	20				SPARE	-	-
-	-	EMERG LTG UPPER CONC COL 32-35/E BATHROOMS				20	19	A	20	20				SPARE	-	-
-	-					20	21	B	22	20				SPARE	-	-
-	-					20	23	C	24	20				SPARE	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: EM-3-3A (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	C/B	POS		POS	C/B	A	B	C	SERVES	MOVE	MOVE TO
-	-	SPARE				20	1	A	2	20				EMERG LTS 3.30.1, 31.1, 32.1, 32.3	-	-
-	-	EMERG LTS AREA "D", STAIR #4 2.34.1, 33.1				20	3	B	4	20				EMERG LTS 3.32.4, 31.2, 32.6	-	-
-	-	EMERG LTS AREA "D", 2.27.1, 26.1, 28.1, BATHROOMS				20	5	C	6	20				GTE4 RAMP CAM	EM-3-3A	CRP-3-8
-	-	EXIT SIGN AREA "D", STAIR #4				20	7	A	8	20				EXIT SIGN 3.30.1, 32.2, 32.3, 30.4, 32.4	-	-
-	-	EMERG LTS 2.32.1, 32.3, GIFT SHOP				20	9	B	10	20				EXIT SIGN 3.30.4, 30.1, 28.2	-	-
-	-	EMERG LTS 2.32.1, GIFT SHOP				20	11	C	12	20					-	-
-	-	EXIT SIGN STAIR #3				20	13	A	14	20				EMERG LTS 3.30.4	-	-
-	-	EMERG LTS STAIR #3				20	15	B	16	20				EMERG LTS 3.28.3, 30.4, 30.1, 28.2, 28.1	-	-
-	-	EXIT SIGNS 2.32.2				20	17	C	18	20				EMERG LTS 30.4, 29.2, 29.1, STAIR #9, 30.1	-	-
-	-	EMERG LTS 2.30.3, 30.2, 30.4, 31.1, 31.2, ELEVATOR PIT				20	19	A	20	20				EXIT SIGN STAIR #3, 30.4, 29.2	-	-
-	-	EMERG LTS STAIR #4, 30.4				20	21	B	22	20				EMERG LTS 3.30.8, 30.5, 30.7, 30.6, 30.4	-	-
-	-	EXIT SIGN STAIR #4, 30.4				20	23	C	24	20				400 SUIT STAIR LIGHTS	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: EM-1-3A (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	C/B	POS		POS	C/B	A	B	C	SERVES	MOVE	MOVE TO
-	-	EXIT SIGN 1.26.6, 27.8, 27.18, 27.15, 27.13, 27.17, 30.7, 30.8, 28.10, 29.5				20	1	A	2	20				EXIT SIGN 1.60.1, 31.8, 32.7, 31.9, 33.2, 33.7	-	-
-	-	EMERG LTG 1.27.17, 28.10, 29.5, 30.7, 30.8				20	3	B	4	20				EMERG LTG 1.30.7, 31.9, 31.8, 33.2	-	-
-	-	EMERG LTG 1.26.6, 27.8, 27.18, 27.15, 28.7				20	5	C	6	20				EMERG LTG 1.31.9, 32.7, 33.2, 32.8, 33.7	-	-
-	-	EMERG LTG 1.29.10, 30.1, 30.2, 31.1				20	7	A	8	20					-	-
-	-	EMERG LTG 1.60.1				20	9	B	10	20					-	-
-	-	EMERG LTG 1.30.1, 1.33.1, 35.8				20	11	C	12	20					-	-
-	-	EXIT SIGN 1.60.1, 28.7, 29.10, 30.1, 32.3, 32.1, 33.1, 35.8				20	13	A	14	20					-	-
EM-1-3A	CRP-1-3	PANIC SYSTEM				20	15	B	16	20					-	-
-	-					20	17	C	18	20					-	-
EM-1-3A	CRP-1-3	CMC UPS				50	19	A	20	20					-	-
							21	B	22	20					-	-
-	-					20	23	C	24	20					-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: EM-1-2A (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-	C/B TYPE	-
MAIN TYPE:	MAIN LUGS	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE	SERVES	A	B	C	C/B	POS		POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-	EMERG LTS 1C 1.60.1				20	1	A	2	20				SPARE	-	-
-	-	EMERG LTS 1.21.6				20	3	B	4	20				SPARE	-	-
-	-	EMERG LTS 1.23.7, 24.3				20	5	C	6	20				SPARE	-	-
-	-	EXIT SIGN 1.21.6, 23.7, 24.3				20	7	A	8	20				SPARE	-	-
-	-	EXIT SIGN 1C 1.60.1				20	9	B	10	20				SPARE	-	-
-	-	EMERG LTG 1.20.1, 21.1				20	11	C	12	20				RAMP SOUTH EXITS	-	-
-	-	EXIT SIGN 1.25.3, 25.4, 24.2, 23.4, 22.2, 22.1, 21.2, 20.1, 20.3				20	13	A	14	20				RAMP NORTH	-	-
-	-	EMERG LTS 1.25.3, 25.2, 25.4, 24.2, 23.3, 23.4, 23.6, 22.2, 22.1, 21.1, 20.1				20	15	B	16	20				RAMPS SOUTH	-	-
-	-					20	17	C	18	20				RAMP NORTH	-	-
-	-	EM LITE BATHROOM				20	19	A	20	20				EFLI-2-	EM-1-2A	CRP-1-1
-	-	EXIT LITE SCOUT BAR				20	21	B	22	20				EM LITE SCOUT BAR	-	-
-	-					20	23	C	24	20				EM LITE SCOUT BAR	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: EM-1-1A (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-	C/B TYPE	-
MAIN TYPE:	MAIN LUGS	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE	MOVE TO	SERVES	A	B	C	C/B	POS		POS	C/B	A	B	C	SERVES	MOVE	MOVE TO
-	-	EMERG LTG 1.14.4, 16.4				20	1	A	2	20				EXIT SIGN RAMP 'A', 60.1	-	-
-	-	EMERG LTG 1.15.5, 15.6, 16.2, 15.8, 18.11				20	3	B	4	20				EXIT SIGN 1.17.3, 60.1, 17.9, 17.4, 17.10	-	-
EM-1-1A	CRP-1-1	SPRINKLER COMP & TRUCK DOCK				20	5	C	6	20				EXIT SIGN 1.18.10, 19.1	-	-
-	-	EXIT SIGN 1.14.4,16.3				20	7	A	8	20				EMERG LTG 1.17.3, 17.9, 18.6, 18.11, 18.4, 17.10	-	-
-	-	EXIT SIGN 1.16.1				20	9	B	10	20				EMERG LTG 1.60.1	-	-
-	-	SPARE				20	11	C	12	20				EMERG LTG 1.13.3, RAMP 'A'	-	-
-	-	EMERG LTG 1.13.1, 14.1, 14.2, 15.3, 16.1				20	13	A	14	20				EMERG LTG 1.18.10, 18.9, 18.5, 19.1	-	-
-	-	SPARE				20	15	B	16	20				EMERG LTG 1.19.2, 19.1, 18.2, 17.2, 17.1	-	-
-	-	SPARE				20	17	C	18	20				EXIT SIGN 1.19.1, 18.1	-	-
-	-					20	19	A	20	20					-	-
EM-1-1A	CRP-1-1	SOUTH RAMP CAM (2)				20	21	B	22	20					-	-
EM-1-1A	CRP-1-1	CAM 21, 22, 23, 25				20	23	C	24	20					-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

ELARA

30 N. Wolf Rd., Second Floor
Hillside, IL 60162

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

ISSUE/REVISION:

REV.	DATE	DESCRIPTION
-	11/12/21	ISSUED FOR BID

PROJECT:
ISFA GRF - EM SYSTEM MODIFICATION

333 W. 35TH ST. CHICAGO, IL 60616

DRAWING TITLE:
ELECTRICAL PANEL SCHEDULES - HEALTH LIFE SAFETY

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1:1

SHEET NO.
E4.01

XX/XX/XXXX ISSUED FOR XXXXXXXX

PRELIMINARY - NOT FOR CONSTRUCTION

PANELBOARD: CRP-1-1 (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	42
BUS AMPS.:	225 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	150 AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE	MOVE TO	SERVES	A	B	C	C/B	POS	PH	POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-	GEN-AUX 1-1				60	1	A	2	20				SPARE	-	-
-	-						3	B	4	20				SPARE	-	-
-	-						5	C	6	20				SPARE	-	-
EM-1-1A	CRP-1-1	**SPRINKLER COMP & TRUCK**				20	7	A	8	20				SPARE	-	-
EM-1-1A	CRP-1-1	**SOUTH RAMP CAM(2)**				20	9	B	10	20				SPARE	-	-
EM-1-1A	CRP-1-1	**CAM 21, 22, 23, 25**				20	11	C	12	20				SPARE	-	-
EM-1-2A	CRP-1-1	**EFL1-2**				20	13	A	14	20				SPARE	-	-
-	-	SPARE				20	15	B	16	20				SPARE	-	-
-	-	SPARE				20	17	C	18	20				SPARE	-	-
-	-	SPARE				20	19	A	20	20				SPARE	-	-
-	-	SPARE				20	21	B	22	20				SPARE	-	-
-	-	SPARE				20	23	C	24	20				SPARE	-	-
-	-	SPARE				20	25	A	26	20				SPARE	-	-
-	-	SPARE				20	27	B	28	20				SPARE	-	-
-	-	SPARE				20	29	C	30	20				SPARE	-	-
-	-	SPARE				20	31	A	32	20				SPARE	-	-
-	-	SPARE				20	33	B	34	20				SPARE	-	-
-	-	SPARE				20	35	C	36	20				SPARE	-	-
-	-	SPARE				20	37	A	38	20				SPARE	-	-
-	-	SPARE				20	39	B	40	20				SPARE	-	-
-	-	SPARE				20	41	C	42	20				SPARE	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: CRP-1-3 (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	42
BUS AMPS.:	225 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	125 AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	C/B	POS	PH	POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-	SPARE				20	1	A	2	20				EXISTING LOAD	-	-
-	-	EXISTING LOAD				20	3	B	4	20				EXISTING LOAD	-	-
		SPARE				20	5	C	6	20				EXISTING LOAD	-	-
-	-	ISFA SERVER				20	7	A	8	50				**CMC UPS**	EM-1-3A	CRP-1-3
-	-	ISFA OFFICE				20	9	B	10							
-	-	ISFA OFFICE				20	11	C	12	20				**PANIC SYSTEM**	EM-1-3A	CRP-1-3
-	-	INTERVIEW ROOM LIGHTS				20	13	A	14	20				LIGHTS INTERVIEW ROOM	-	-
-	-	INTERVIEW ROOM LIGHTS				20	15	B	16	20				LIGHTS INTERVIEW ROOM	-	-
-	-	INTERVIEW ROOM LIGHTS				20	17	C	18	20				LIGHTS INTERVIEW ROOM	-	-
-	-	INTERVIEW ROOM LIGHTS				20	19	A	20	20				WALL RECEPT INTERVIEW ROOM	-	-
-	-	INTERVIEW ROOM LIGHTS				20	21	B	22	20				WALL RECEPT INTERVIEW ROOM	-	-
-	-	INTERVIEW ROOM LIGHTS				20	23	C	24	20				SPARE	-	-
-	-	INTERVIEW ROOM LIGHTS				20	25	A	26	20				SPARE	-	-
-	-	INTERVIEW ROOM LIGHTS				20	27	B	28	20				SPARE	-	-
-	-	INTERVIEW ROOM LIGHTS				20	29	C	30	20				SPARE	-	-
-	-	220V PRINTER				20	31	A	32					3RD FLOOR PANEL	-	-
-	-						33	B	34	60					-	-
-	-	PRINTER				20	35	C	36						-	-
-	-	SPARE				20	37	A	38					MAIN CIRCUIT BREAKER	-	-
-	-	SPARE				20	39	B	40	100					-	-
-	-	SPARE				20	41	C	42						-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: CRP-1-5 (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	42
BUS AMPS.:	400 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	C/B	POS	PH	POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-	GEN-AUX 1-5					1	A	2					CRP-1-4	-	-
-	-					60	3	B	4	60					-	-
-	-						5	C	6						-	-
EM-1-5A	CRP-1-5	**CAM 7,8,19,20**				20	7	A	8					**EM-1-4A(1) : RENAMED CRP-1-4A**	EMDP-1-4	CRP-1-5
EM-1-5A	CRP-1-5	**CAM 6,18**				20	9	B	10	100						
-	-	SPARE				20	11	C	12							
-	-	SPARE				20	13	A	14	20				SPARE	-	-
-	-	SPARE				20	15	B	16	20				SPARE	-	-
-	-	SPARE				20	17	C	18	20				SPARE	-	-
-	-	SPARE				20	19	A	20	20				SPARE	-	-
-	-	SPARE				20	21	B	22	20				SPARE	-	-
-	-	SPARE				20	23	C	24	20				SPARE	-	-
-	-	SPARE				20	25	A	26	20				SPARE	-	-
-	-	SPARE				20	27	B	28	20				SPARE	-	-
-	-	SPARE				20	29	C	30	20				SPARE	-	-
-	-	SPARE				20	31	A	32	20				SPARE	-	-
-	-	SPARE				20	33	B	34	20				SPARE	-	-
-	-	SPARE				20	35	C	36	20				SPARE	-	-
-	-	SPARE				20	37	A	38	20				SPARE	-	-
-	-	SPARE				20	39	B	40	20				SPARE	-	-
-	-	SPARE				20	41	C	42	20				SPARE	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

NEW PANELBOARD: CRP-1-6 (NEW) — LOCATION: SEE DWG.

VOLTAGE:	480Y/277-3PHASE-4W	C/B TYPE	BOLT-ON
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	30
BUS AMPS.:	125 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	100 AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	18 KA	CU EQ. GND. BUS:	NO
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	C/B	POS	PH	POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
LPD-1-5	CRP-1-6	**GATE 6 TRANSFORMER**	10000				1	A	2		10000			**CRP-4-4 TRANSFORMER (30KVA)**	-	-
				10000		50	3	B	4	50		10000			-	-
					10000		5	C	6				10000		-	-
-	-	SPARE				20	7	A	8					**SURGE PROTECTION DEVICE**	-	-
-	-	SPARE				20	9	B	10	30					-	-
-	-	SPARE				20	11	C	12						-	-
-	-	SPARE				20	13	A	14	20				SPARE	-	-
-	-	SPARE				20	15	B	16	20				SPARE	-	-
-	-	SPARE				20	17	C	18	20				SPARE	-	-
-	-	SPARE				20	19	A	20	20				SPARE	-	-
-	-	SPARE				20	21	B	22	20				SPARE	-	-
-	-	SPARE				20	23	C	24	20				SPARE	-	-
-	-	SPARE				20	25	A	26	20				SPARE	-	-
-	-	SPARE				20	27	B	28	20				SPARE	-	-
-	-	SPARE				20	29	C	30	20				SPARE	-	-
			10000	10000	10000						10000	10000	10000			

A	20000
B	20000
C	20000
TOTAL (VA)	60000
CONNEC. AMPS	72.2

PANELBOARD: CRP-2-6 (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	42
BUS AMPS.:	225 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	150 AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	C/B	POS	PH	POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-	EXISTING LOAD				20	1	A	2	20				SCOREBOARD BOWL CAMERAS	-	-
-	-	ACCESS PANEL				20	3	B	4	20				SCOREBOARD BOWL CAMERAS	-	-
EM-2-7A	CRP-2-6	**EFL-2-7**				20	5	C	6	20				SPARE	-	-
EM-2-6A	CRP-2-6	**SHADOW TRAFFIC CAMERA**				20	7	A	8	20				SPARE	-	-
-	-	SPARE				20	9	B	10	20				SPARE	-	-
-	-	SPARE				20	11	C	12	20				SPARE	-	-
-	-	SPARE				20	13	A	14	20				SPARE	-	-
-	-	SPARE				20	15	B	16	20				SPARE	-	-
-	-	SPARE				20	17	C	18	20				SPARE	-	-
-	-	SPARE				20	19	A	20	20				SPARE	-	-
-	-	SPARE				20	21	B	22	20				SPARE	-	-
-	-	SPARE				20	23	C	24	20				SPARE	-	-
-	-	SPARE				20	25	A	26	20				SPARE	-	-
-	-	SPARE				20	27	B	28	20				SPARE	-	-
-	-	SPARE				20	29	C	30	20				SPARE	-	-
-	-	SPARE				20	31	A	32	20				SPARE	-	-
-	-	SPARE				20	33	B	34	20				SPARE	-	-
-	-	SPARE				20	35	C	36	20				SPARE	-	-
-	-	SPARE				20	37	A	38	20				SPARE	-	-
-	-	SPARE				20	39	B	40	20				SPARE	-	-
-	-	SPARE				20	41	C	42	20				SPARE	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: CRP-4-1 (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN LUGS	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	42
BUS AMPS.:	225 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	C/B	POS	PH	POS	C/B	A	B	C	SERVES	MOVE	MOVE TO
EM-5-2A	CRP-4-1	**REMOTE CAMS**				20	1	A	2	20				SPARE	-	-
		SPARE				20	3	B	4	20				SPARE	-	-
-	-	SPARE				20	5	C	6	20				SPARE	-	-
-	-	SPARE				20	7	A	8	20				SPARE	-	-
-	-	SPARE				20	9	B	10	20				SPARE	-	-
-	-	SPARE				20	11	C	12	20				SPARE	-	-
-	-	SPARE				20	13	A	14	20				SPARE	-	-
-	-	SPARE				20	15	B	16	20				SPARE	-	-
-	-	SPARE				20	17	C	18	20				SPARE	-	-
-	-	SPARE				20	19	A	20	20				SPARE	-	-
-	-	SPARE				20	21	B	22	20				SPARE	-	-
-	-	SPARE				20	23	C	24	20				SPARE	-	-
-	-	SPARE				20	25	A	26	20				SPARE	-	-
-	-	SPARE				20	27	B	28	20				SPARE	-	-
-	-	SPARE				20	29	C	30	20				SPARE	-	-
-	-	SPARE				20	31	A	32	20				SPARE	-	-
-	-	SPARE				20	33	B	34	20				SPARE	-	-
-	-	SPARE				20	35	C	36	20				SPARE	-	-
-	-	SPARE				20	37	A	38	20				SPARE	-	-
-	-	SPARE				20	39	B	40	20				SPARE	-	-
-	-	SPARE				20	41	C	42	20				SPARE	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: CRP-4-3 (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	42
BUS AMPS.:	225 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	C/B	POS	PH	POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
EM-3-4A	CRP-4-3	**SW RAMP 4 CAM**				20	1	A	2	20				COMCAST	-	-
EM-3-4A	CRP-4-3	**NE RAMPS CAM**				20	3	B	4	20				COMCAST	-	-
-	-	SPARE				20	5	C	6	20				COMCAST	-	-
-	-	SPARE				20	7	A	8	20				SPARE	-	-
-	-	SPARE				20	9	B	10	20				SPARE	-	-
-	-	SPARE				20	11	C	12	20				SPARE	-	-
-	-	SPARE				20	13	A	14	20				SPARE	-	-
-	-	SPARE				20	15	B	16	20				SPARE	-	-
-	-	SPARE				20	17	C	18	20				SPARE	-	-
-	-	SPARE				20	19	A	20	20				SPARE	-	-
-	-	SPARE				20	21	B	22	20				SPARE	-	-
-	-	SPARE				20	23	C	24	20				SPARE	-	-
-	-	SPARE				20	25	A	26	20				SPARE	-	-
-	-	SPARE				20	27	B	28	20				SPARE	-	-
-	-	SPARE				20	29	C	30	20				SPARE	-	-
-	-	SPARE				20	31	A	32	20				SPARE	-	-
-	-	SPARE				20	33	B	34	20				SPARE	-	-
-	-	SPARE				20	35	C	36	20				SPARE	-	-
-	-	SPARE				20	37	A	38	20				SPARE	-	-
-	-	SPARE				20	39	B	40	20				SPARE	-	-
-	-	SPARE				20	41	C	42	20				SPARE	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

NEW PANELBOARD: CRP-4-4 (NEW) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	BOLT-ON
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	125 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	110 AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	BOND SCREW
INT.RATING:	22 KA	CU EQ. GND. BUS:	YES
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	C/B	POS	PH	POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
EM-5-5A	CRP-4-4	**DOOR STRAKE/CAMERA**				20	1	A	2					**SURGE PROTECTION DEVIC**	-	-
-	-	SPARE				20	3	B	4	30					-	-
-	-	SPARE				20	5	C	6						-	-
-	-	SPARE				20	7	A	8	20				SPARE	-	-
-	-	SPARE				20	9	B	10	20				SPARE	-	-
-	-	SPARE				20	11	C	12	20				SPARE	-	-
-	-	SPARE				20	13	A	14	20				SPARE	-	-
-	-	SPARE				20	15	B	16	20				SPARE	-	-
-	-	SPARE				20	17	C	18	20				SPARE	-	-
-	-	SPARE				20	19	A	20	20				SPARE	-	-
-	-	SPARE				20	21	B	22	20				SPARE	-	-
-	-	SPARE				20	23	C	24	20				SPARE	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

NEW PANELBOARD: CRP-3-8 (NEW) — LOCATION: SEE DWG.

VOLTAGE:	480Y/277-3PHASE-4W	C/B TYPE	BOLT-ON
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	18 KA	CU EQ. GND. BUS:	NO
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	C/B	POS	PH	POS	C/B	A	B	C	SERVES	MOVE FROM	MOVE TO
LPD-2-3	CRP-3-8	**GATE-4 TRANSFORMER**	10000				1	A	2					**SURGE PROTECTION DEVICE**	-	-
				10000		45	3	B	4	30					-	-
					10000		5	C	6						-	-
EM-3-3A	CRP-3-8	**GTE4 RAMP CAM**				20	7	A	8	20				SPARE	-	-
-	-	SPARE				20	9	B	10	20				SPARE	-	-
-	-	SPARE				20	11	C	12	20				SPARE	-	-
-	-	SPARE				20	13	A	14	20				SPARE	-	-
-	-	SPARE				20	15	B	16	20				SPARE	-	-
-	-	SPARE				20	17	C	18	20				SPARE	-	-
-	-	SPARE				20	19	A	20	20				SPARE	-	-
-	-	SPARE				20	21	B	22	20				SPARE	-	-
-	-	SPARE				20	23	C	24	20				SPARE	-	-
			10000	10000	10000						0	0	0			

A	10000
B	10000
C	10000
TOTAL (VA)	30000
CONNEC. AMPS	36.1

PANELBOARD: SP-4-1B (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN LUGS	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	100 AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE	MOVE TO	SERVES	A	B	C	C/B	POS	PH	POS	C/B	A	B	C	SERVES	MOVE	MOVE TO
EM-5-1A	SP-4-1B	**ISFA SERVER**				20	1	A	2	20				EXISTING CIRCUIT	-	-
-	-	SPARE				20	3	B	4	20				SPARE	-	-
-	-	SPARE				20	5	C	6	20				SPARE	-	-
-	-	SPARE				20	7	A	8	20				SPARE	-	-
-	-	SPARE				20	9	B	10	20				SPARE	-	-
-	-	SPARE				20	11	C	12	20				SPARE	-	-
-	-	SPARE				20	13	A	14	20				SPARE	-	-
-	-	SPARE				20	15	B	16	20				SPARE	-	-
-	-	SPARE				20	17	C	18	20				SPARE	-	-
-	-	SPARE				20	19	A	20	20				SPARE	-	-
-	-	SPARE				20	21	B	22	20				SPARE	-	-
-	-	SPARE				20	23	C	24	20				SPARE	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: SP-4-4B (EXISTING) — LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN LUGS	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	42
BUS AMPS.:	225 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	200 AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	NO
BUS OPT:	-	INTEGRAL TVSS	-

MOVE	MOVE TO	SERVES	A	B	C	C/B	POS	PH	POS	C/B	A	B	C	SERVES	MOVE	MOVE TO
-	-	SOUND RACK D-7				20	1	A	2	20				SOUND RACK D-7	-	-
-	-	SOUND RACK D-7				20	3	B	4	20				SOUND RACK D-7	-	-
-	-	SOUND RACK D-8				20	5	C	6	20				SOUND RACK D-8	-	-
-	-	SOUND RACK D-8				20	7	A	8	20				SOUND RACK D-11	-	-
-	-	SOUND RACK D-11				20	9	B	10	20				SOUND RACK D-10	-	-
-	-	SOUND RACK D-10				20	11	C	12	20				SOUND RACK D-11	-	-
-	-	SOUND RACK D-10				20	13	A	14	20				SOUND RACK D-9	-	-
EM-6-3A	SP-4-4B	**GIFT SHOP CAM**				20	15	B	16	-				SPACE	-	-
-	-	**GTE4 RAMP CAM**				20	17	C	18	-				SPACE	-	-
-	-	SPACE				-	19	A	20	-				SPACE	-	-
-	-	SPACE				-	21	B	22	-				SPACE	-	-
-	-	SPACE				-	23	C	24	-				SPACE	-	-
-	-	SPACE				-	25	A	26	-				SPACE	-	-
-	-	SPACE				-	27	B	28	-				SPACE	-	-
-	-	SPACE				-	29	C	30	-				SPACE	-	-
-	-	SPACE				-	31	A	32	-				SPACE	-	-
-	-	SPACE				-	33	B	34	-				SPACE	-	-
-	-	SPACE				-	35	C	36	-				SPACE	-	-
-	-	SPACE				-	37	A	38	-				SPACE	-	-
-	-	SPACE				-	39	B	40	-				SPACE	-	-
-	-	SPACE				-	41	C	42	-				SPACE	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

ELARA

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

ISSUE/REVISION:

REV.	DATE	DESCRIPTION
-	11/12/21	ISSUED FOR BID

PROJECT:
ISFA GRF - EM SYSTEM MODIFICATION

333 W. 35TH ST. CHICAGO, IL 60616

DRAWING TITLE:
ELECTRICAL PANEL SCHEDULES - NON-HEALTH LIFE SAFETY

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1:1

SHEET NO.
E4.02

XX/XX/XXXX ISSUED FOR XXXXXXXX
PRELIMINARY - NOT FOR CONSTRUCTION

PANELBOARD: EM-1-6 (EXISTING) LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	32
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE	MOVE TO	SERVES	A	B	C	CKT				CKT	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-	RM #003, 004, 009, 017, 008, 005 LIGHTS				15	1	A	2	20				FACP AT CORRIDOR #017	-	-
-	-	RM #006 LOBBY LIGHT				15	3	B	4	20				BLUESTAR EM LIGHTS	-	-
-	-	BLUESTAR 1ST FLOOR EXITS				15	5	C	6	20				BLUESTAR EM LIGHTS	-	-
-	-	BLUESTAR 2ND FLOOR EXITS				20	7	A	8	15				3RD LEVEL LIGHTS WEST	-	-
-	-	LIGHTS AT NORTH DOOR OF ATRIUM				15	9	B	10	15				3RD LEVEL LIGHTS CENTER	-	-
-	-	4TH LEVEL LIGHTS WEST				15	11	C	12	15				3RD LEVEL LIGHTS EAST	-	-
-	-	4TH LEVEL LIGHTS CENTER				15	13	A	14	15				3RD LEVEL EXIT	-	-
-	-	4TH LEVEL LIGHTS EAST				15	15	B	16	20				3RD LEVEL BRIDGE	-	-
-	-	5TH LEVEL LIGHTS WEST				15	17	C	18	20					-	-
-	-	5TH LEVEL LIGHTS CENTER				15	19	A	20	30				BLUESTAR	-	-
		5TH LEVEL LIGHTS EAST				15	21	B	22	-				SPARE		
-	-	5TH LEVEL BRIDGE LIGHTS				15	23	C	24	20				EXIT 015, 017	-	-
-	-	EM LIGHTS WEST TICKET BOOTH				20	25	A	26	15				EM LIGHTS RM 015A, 015, 015B	-	-
EM-1-6	CRP-1-208	EM CAMERA 3RD LEVEL				20	27	B	28	20				ELEVATOR LIGHTS		
EM-1-6	CRP-1-208	BAS PANEL				15	29	C	30	20				ELEVATOR LIGHTS	-	-
EM-1-6	CRP-1-208	DGP TELEPHONE ROOM				15	31	A	32	-				SPARE	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: EM-1-6A (EXISTING) LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	30
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE	MOVE TO	SERVES	A	B	C	CKT				CKT	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-	FIRE PUMP ROOM LIGHTS				20	1	A	2	20				ROOM 008 AIR COMPRESSOR	EM-1-6A	CRP-1-208
-	-	FIRE ALARM BELLS				20	3	B	4							
-	-	FIRE PUMP SUPERVISE				20	5	C	6							
-	-	DOMESTIC WATER ACCUATOR VALVE 008				20	7	A	8	15				DOMESTIC WATER VALVE	EM-1-6A	CRP-1-208
-	-	BLUESTAR LIGHTS				20	9	B	10							
-	-	BLUESTAR LIGHTS				20	11	C	12	-				SPACE	-	-
-	-	BLUESTAR LIGHTS				20	13	A	14	-				SPACE	-	-
-	-	BLUESTAR LIGHTS				20	15	B	16	-				SPACE	-	-
-	-	BLUESTAR LIGHTS				20	17	C	18	-				SPACE	-	-
-	-	SPACE				20	19	A	20	-				SPACE	-	-
-	-	SPACE				-	21	B	22	-				SPACE	-	-
-	-	SPACE				-	23	C	24	-				SPACE	-	-
-	-	SPACE				-	25	A	26	-				SPACE	-	-
-	-	SPACE				-	27	B	28	20				SPARE	-	-
-	-	SPACE				-	29	C	30						-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: EM-1-6B (EXISTING) LOCATION: SEE DWG.

VOLTAGE:	480Y/277-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN LUGS	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	30
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE	MOVE TO	SERVES	A	B	C	CKT				CKT	A	B	C	SERVES	MOVE	MOVE TO
-	-	SPARE				15	1	A	2	15				LIGHTS IN ROOM #002 SHELL	-	-
-	-	SPARE				15	3	B	4	15				SPARE	-	-
-	-	SPARE				15	5	C	6	15				SPARE	-	-
-	-	SPARE				15	7	A	8	15				SPARE	-	-
-	-	SPARE				15	9	B	10	15				SPARE	-	-
-	-	SPARE				15	11	C	12	15				SPARE	-	-
-	-	SPARE				15	13	A	14	15				SPARE		
-	-	SPARE				15	15	B	16	30				SOUTH CORRIDOR CELING HEATERS	EM-1-6B	CRP-1-480
-	-	SPARE				15	17	C	18	30				SOUTH CORRIDOR CELING HEATERS	EM-1-6B	CRP-1-480
-	-	SPARE				15	19	A	20	15				SPARE	-	-
-	-	SPARE				15	21	B	22	15				SPARE	-	-
-	-	SPARE				15	23	C	24	15				SPARE	-	-
-	-	SPARE				15	25	A	26	15				SPARE	-	-
-	-	SPARE				15	27	B	28	15				SPARE	-	-
-	-	SPARE				15	29	C	30	15				SPARE	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

NEW PANELBOARD: CRP-1-480 (NEW) LOCATION: SEE DWG.

VOLTAGE:	480Y/277-3PHASE-4W	C/B TYPE	BOLT-ON
MAIN TYPE:	MAIN LUGS	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	125 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	18 KA	CU EQ. GND. BUS:	YES
BUS OPT:	-	INTEGRAL TVSS	

MOVE FROM	MOVE TO	SERVES	A	B	C	CKT				CKT	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-	NEW TRANSFORMER (TX-CRP)	15000			70	1	A	2	30				SURGE PROTECTION DEVIC	-	-
				15000			3	B	4						-	-
					15000		5	C	6						-	-
EM-1-6B	CRP-1-480	SOUTH CORRIDOR CEILING				30	7	A	8	20				SPARE	-	-
EM-1-6B	CRP-1-480	SOUTH CORRIDOR CEILING				30	9	B	10	20				SPARE	-	-
-	-	SPARE				20	11	C	12	20				SPARE	-	-
-	-	SPARE				20	13	A	14	20				SPARE	-	-
-	-	SPARE				20	15	B	16	20				SPARE	-	-
-	-	SPARE				20	17	C	18	20				SPARE	-	-
-	-	SPARE				20	19	A	20	20				SPARE	-	-
-	-	SPARE				20	21	B	22	20				SPARE	-	-
-	-	SPARE				20	23	C	24	20				SPARE	-	-
			15000	15000	15000						0	0	0			

A	15000
B	15000
C	15000
TOTAL (VA)	45000
CONNEC. AMPS	54.1

NEW PANELBOARD: CRP-1-208 (NEW) LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	BOLT-ON
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	225 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	150 AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	BOND SCREW
INT.RATING:	22 KA	CU EQ. GND. BUS:	YES
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	CKT				CKT	A	B	C	SERVES	MOVE FROM	MOVE TO
EM-1-6	CRP-1-208	BAS PANEL				15	1	A	2					ROOM 008 AIR COMPRESSOR	EM-1-6A	CRP-1-208
EM-1-6	CRP-1-208	EM CAMERA 3RD LEVEL RAMP				20	3	B	4	20						
EM-1-6	CRP-1-208	DGP TELEPHONE ROOM				15	5	C	6							
STORE EM	CRP-1-208	ELEVATOR SUMP PUMP				20	7	A	8	15				DOMESTIC WATER VALVE	EM-1-6A	CRP-1-208
-	-	SPARE				20	9	B	10							
-	-	SPARE				20	11	C	12	20				SPARE	-	-
-	-	SPARE				20	13	A	14						-	-
-	-	SPARE				20	15	B	16	30				SURGE PROTECTION DEVICE	-	-
-	-	SPARE				20	17	C	18						-	-
-	-	SPARE				20	19	A	20						-	-
-	-	SPARE				20	21	B	22	100				PANEL 'CMD-RP-1'	-	-
-	-	SPARE				20	23	C	24						-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: CMD-RP-1 (EXISTING) LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	30
BUS AMPS.:	225 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	CKT				CKT	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-	LIGHT CMD				20	1	A	2	40				UPS - CMD	-	-
-	-	OUTLET CMD				20	3	B	4						-	-
-	-	SPARE				20	5	C	6	20				SPARE	-	-
-	-	SPARE				20	7	A	8	20				SPARE	-	-
-	-	SPARE				20	9	B	10	20				SPARE	-	-
-	-	SPARE				20	11	C	12	20				SPARE	-	-
-	-	SPARE				20	13	A	14	20				SPARE	-	-
-	-	SPARE				20	15	B	16	20				SPARE	-	-
-	-	SPARE				20	17	C	18	20				SPARE	-	-
-	-	SPARE				20	19	A	20	20				SPARE	-	-
-	-	AC-1 EVAPORATOR				60	21	B	22	20				SPARE	-	-
-	-						23	C	24	20				SPARE	-	-
-	-	AC-1 CONDENSER				50	25	A	26	20				SPARE	-	-
-	-						27	B	28	20				SPARE	-	-
-	-	SPARE				20	29	C	30	20				SPARE	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

PANELBOARD: STORE EM (EXISTING) LOCATION: SEE DWG.

VOLTAGE:	208Y/120-3PHASE-4W	C/B TYPE	-
MAIN TYPE:	MAIN BREAKER	ENCLOSURE:	NEMA 1
BUS TYPE:	TIN PLATED CU	MAX. CKT. POLES:	24
BUS AMPS.:	100 AMPS.	MOUNTING:	SURFACE
OCPD AMPS:	- AMPS.	CU NEUTRAL BUS RATING:	100%
OCPD OPT:	-	NEUTRAL BONDING	UNBONDED
INT.RATING:	- KA	CU EQ. GND. BUS:	-
BUS OPT:	-	INTEGRAL TVSS	-

MOVE FROM	MOVE TO	SERVES	A	B	C	CKT				CKT	A	B	C	SERVES	MOVE FROM	MOVE TO
-	-	1ST FLOOR EM LIGHTS				20	1	A	2	20				1ST FLOOR EXITS	-	-
-	-	1ST FLOOR EM LIGHTS				20	3	B	4	20				1ST FLOOR EXITS	-	-
-	-	1ST FLOOR EM LIGHTS				20	5	C	6	20				2ND FLOOR EXITS	-	-
-	-	SPACE				-	7	A	8	20				ELECTRIC RM EM LIGHTS	-	-
-	-	2ND FLOOR EM LIGHTS				20	9	B	10	20				ELEVATOR SUMP PUMP	STORE EM	CRP-1-208
-	-	2ND FLOOR EM LIGHTS				20	11	C	12	20				ELEVATOR CAB LIGHT DISCONNEC	-	-
-	-	2ND FLOOR EM LIGHTS				20	13	A	14	20				ELEVATOR PIT LIGHT/RECEPT	-	-
-	-	STORAGE/BATHROOMS EM				20	15	B	16	20				STORAGE/BATHROOMS EXITS	-	-
-	-	SPACE				-	17	C	18	-				SPACE	-	-
-	-	SPACE				-	19	A	20	-				SPACE	-	-
-	-	SPACE				-	21	B	22	-				SPACE	-	-
-	-	SPACE				-	23	C	24	-				SPACE	-	-
			0	0	0						0	0	0			

A	0
B	0
C	0
TOTAL (VA)	0
CONNEC. AMPS	0.0

XX/XX/XXXX ISSUED FOR XXXXXXXX

PRELIMINARY - NOT FOR CONSTRUCTION

ELARA

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Hillside, IL 60162
(708) 236-0300
(708) 236-0330 FAX

ISSUE/REVISION:

REV.	DATE	DESCRIPTION
-	11/12/21	ISSUED FOR BID

PROJECT:
ISFA GRF - EM SYSTEM MODIFICATION

333 W. 35TH ST. CHICAGO, IL 60616

DRAWING TITLE:
ELECTRICAL PANEL SCHEDULES - SPORTS AUTHORITY BUILDING

DESIGNED BY:	TG
CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1:1

SHEET NO.

E4.03

1. GENERAL CONDITIONS AND REQUIREMENTS

1.1. ALL ELECTRICAL WORK INCLUDING BUT NOT LIMITED TO INSTALLATION, GROUNDING, EQUIPMENT, AND DEVICES SHALL CONFORM TO THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION AND APPLICABLE NATIONAL, STATE, CITY, AND MUNICIPAL BUILDING CODES.

1.2. ALL ELECTRICAL WORK INCLUDING SHALL CONFORM TO NATIONAL AND LOCAL STANDARDS AND GUIDELINES INCLUDING BUT NOT LIMITED TO THE LATEST VERSIONS OF THE FOLLOWING

1.2.1. ANSI - AMERICAN NATIONAL STANDARDS INSTITUTE
1.2.2. ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IES)
1.2.3. NATIONAL ELECTRICAL SAFETY CODE (NESC)
1.2.4. NFPA - NATIONAL FIRE PROTECTION ASSOCIATION:
1.2.5. STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE (NFPA 70E)
1.2.6. UNDERWRITERS LABORATORY (OR OTHER RECOGNIZED INSPECTING AGENCY)

1.3. ALL MATERIALS SHALL BE LISTED BY AN APPROVED LABORATORY AND SHALL BE NEW AND THE BEST OF THEIR RESPECTIVE KINDS AND SHALL BE INSTALLED AND APPLIED AS INTENDED AND REQUIRED BY THE MANUFACTURER.

1.4. ELECTRICAL WORK SHALL INCLUDE, BUT NOT BE LIMITED TO:

1.4.1. ALL MATERIALS
1.4.2. EQUIPMENT, TOOLS, AND LABOR REQUIRED FOR A COMPLETE AND CODE COMPLIANT SYSTEM.
1.4.3. ANY OSHA REQUIREMENTS THAT MAY APPLY TO THE WORK UNDER THIS CONTRACT INCLUDING BUT NOT LIMITED TO SAFETY MEETINGS, STRICT LOCK/OUT/TAG/OUT PROCEDURES, AND PROPER PROTECTIVE EQUIPMENT.
1.4.4. LABOR AND SPECIALTY MODELING SOFTWARE REQUIRED FOR INTERDISCIPLINARY COORDINATION AND FAMILIARIZATION WITH SITE CONDITIONS.
1.4.5. TRAINING AND GATHERING OF DOCUMENTATION FOR CLOSEOUT PROCEDURES.

1.5. THE DRAWINGS AND SPECIFICATIONS SHALL BE UNDERSTOOD TO COVER COMPLETE SYSTEMS ACCORDING TO THEIR INTENT AND MEANING AS DESCRIBED HEREIN. THIS SPECIFICATION IS INCLUSIVE FOR EACH ITEM, REQUIRING ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO PROPERLY INSTALL, ALTER, ADJUST AND PUT IN OPERATION THE COMPLETE ELECTRICAL SYSTEM.

1.6. THIS CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING ALL ELECTRICAL COMPONENTS AND SYSTEMS AS REQUIRED FOR A FULLY FUNCTIONAL SYSTEM AND AS DESCRIBED HEREIN. ALL EQUIPMENT AND DEVICES SPECIFIED AND ADDITIONALLY REQUIRED WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. IT WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO PURCHASE ALL EQUIPMENT AND FURNISH LABOR AND EQUIPMENT FOR A COMPLETE CODE COMPLIANT OPERATING ELECTRICAL SYSTEM.

1.7. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER LAYOUT AND CONSTRUCTION OF THE WORK INCLUDED IN THIS CONTRACT, INSTALLED ACCORDING TO THE APPLICABLE BUILDING CODES.

1.8. SPECIFIC VOLTAGE AND CURRENT REQUIREMENTS ON THE ELECTRICAL DRAWINGS SHALL NOT RELIEVE THIS CONTRACTOR OF THE RESPONSIBILITY TO VERIFY THE VOLTAGE PRIOR TO PURCHASING OR ROUGH-IN WORK. THIS CONTRACTOR SHALL REVIEW ALL DEVICES AND EQUIPMENT FURNISHED BY HIS/HER CONTRACT AND THOSE FURNISHED BY OTHER CONTRACTORS ARE IN AGREEMENT WITH THE DATA SHOWN ON THE DRAWINGS. THE E.C. SHALL PROVIDE FEEDERS, CABLE AND DEVICES THAT ARE IN ACCORDANCE WITH CODE.

1.9. ITEMS, ACCESSORIES, AND DEVICES REASONABLY INFERABLE AS NECESSARY FOR THE COMPLETE AND PROPER OPERATION OF ANY SYSTEM SHALL BE PROVIDED BY THE CONTRACTOR FOR SUCH SYSTEM(S), WHETHER THEY ARE SPECIFICALLY CALLED FOR BY THE DRAWINGS AND/OR SPECIFICATIONS OR NOT.

1.10. THE DRAWINGS MAY NOT SHOW COMPLETE OR ACCURATE DETAILS OF THE EXISTING FACILITY IN EVERY RESPECT. EXACT LOCATIONS AND RELATIONS ARE TO BE DETERMINED IN THE FIELD AND SHALL BE TO THE SATISFACTION OF THE OWNER. THIS CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL FIELD MEASUREMENTS AND EXACT EQUIPMENT LOCATIONS.

1.11. DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF CONDUIT AND RACEWAYS ARE SHOWN FOR CONCEPT. BUT DO NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING, NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND BUILDING CONSTRUCTION. ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.

1.12. IT IS INTENDED THAT EQUIPMENT SHALL BE LOCATED SYMMETRICALLY WITH THE ARCHITECTURAL ELEMENTS OF THE BUILDING, NOTWITHSTANDING THE FACT THAT LOCATIONS INDICATED BY THESE DRAWINGS MAY BE DISTORTED FOR CLEARNESS OF PRESENTATION. ENGINEER HAS RIGHT TO MOVE ANY EQUIPMENT OR DEVICE BY 10 FEET WITHOUT ANY ADDITIONAL COST TO OWNER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO ROUGH-IN.

1.13. CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL X-RAY IMAGING, CORING, CUTTING, PATCHING, REPAIRING AND REFINISHING OF BUILDING CONSTRUCTION REQUIRED TO ACCOMMODATE THE INSTALLATION OF THEIR WORK. ALL PATCHING, REPAIRING AND REFINISHING WORK SHALL BE PERFORMED BY THOSE REGULARLY INVOLVED IN THAT TRADE AND SHALL MATCH THE NEW CONSTRUCTION AS CLOSELY AS POSSIBLE. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE ANY EXISTING BUILDING CONSTRUCTION OR ITEMS THAT ARE TO REMAIN. ANY EXISTING FINISHES THAT ARE DAMAGED DURING THE INSTALLATION OF NEW WORK SHALL BE REPAIRED, REPLACED AND PAID FOR BY THE INSTALLING CONTRACTOR, TO THE SATISFACTION OF THE ENGINEER AND OWNER.

1.14. THIS CONTRACTOR IS RESPONSIBLE FOR SCHEDULING DELIVERY, RECEIVING, UNLOADING, UNCRATING, STORING, SETTING IN PLACE, AND PROTECTING FROM DAMAGE, VANDALISM, THEFT OR WEATHER ALL NEW EQUIPMENT FURNISHED BY THIS CONTRACTOR FOR THE ENTIRETY OF CONSTRUCTION. THIS REQUIREMENT ALSO APPLIES TO ITEMS FURNISHED BY THE OWNER TO THE ELECTRICAL CONTRACTOR. THIS CONTRACTOR SHALL COORDINATE THE DELIVERY TO MEET THE PROJECT COMPLETION DATES AS ESTABLISHED BY THE OWNER.

1.15. REFER TO ARCHITECTURAL DRAWINGS FOR EXISTING BUILDING CONSTRUCTION THAT IS TO REMAIN AND, THEREFORE, SUBJECT TO PATCHING, REPAIRING, AND REFINISHING.

1.16. ANY ITEMS AND EQUIPMENT SCHEDULED TO BE REMOVED THAT THE OWNER WANTS TO RETAIN SHALL BE REMOVED CAREFULLY (SO AS NOT TO DAMAGE THEM) AND TURNED OVER TO THE OWNER. ALL OTHER ITEMS TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE SITE.

1.17. CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN CLEANUP DURING CONSTRUCTION. IF CONTRACTOR FAILS TO PROVIDE SUCH CLEANUP, THE ENGINEER WILL DIRECT ANOTHER CONTRACTOR TO PERFORM THE CLEAN-UP AND THE NEGLIGENT CONTRACTOR SHALL PAY THE ASSOCIATED BACK-CHARGES AS DEEMED APPROPRIATE BY THE ENGINEER.

1.18. ACCESS TO WORK AREAS, INCLUDING WORK SCHEDULED THEREIN, MUST HAVE PRIOR APPROVAL OF THE OWNER. ALL WORK AREAS WILL BE KEPT CLEAN BY THIS CONTRACTOR WITH THOROUGH CLEAN UP AT END OF EACH DAY'S WORK. ALL EXISTING ELECTRIC SERVICE EQUIPMENT IS TO REMAIN OPERATIONAL DURING THE CONSTRUCTION PERIOD. ANY TEMPORARY WIRING OR REROUTING OF CIRCUITRY TO ACHIEVE THIS IS BY THE ELECTRICAL CONTRACTOR.

1.19. CONTRACTOR SHALL FURNISH MATERIALS AND USE INSTALLATION METHODS SUITABLE FOR THE ENVIRONMENTAL CONDITIONS OF THE AREA IN WHICH EQUIPMENT, FIXTURES AND DEVICES ARE INSTALLED.

1.20. CONTRACTOR SHALL PROVIDE SLEEVES IN BEAMS, FLOORS, COLUMNS AND WALLS, AS REQUIRED BY JOB SITE CONDITIONS, AND/OR AS SPECIFIED, WHEN INSTALLING THEIR WORK. ALL BEAMS AND COLUMNS WHICH ARE REQUIRED TO BE SLEEVED SHALL BE CUT AND REINFORCED AS REQUIRED BY FIELD CONDITIONS AND LOCATIONS AND SIZES SHALL BE CHECKED AND APPROVED BY ENGINEER BEFORE CONTRACTOR CUTS ANY BUILDING STRUCTURAL MEMBER.

1.21. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND STRUCTURAL CONTRACT DRAWINGS (BEFORE SUBMITTING THEIR BIDS) TO FAMILIARIZE THEMSELVES WITH THE EXTENT OF THE GENERAL CONTRACTORS WORK, CEILING HEIGHTS AND CLEARANCE FOR INSTALLING THEIR WORK.

1.22. CONTRACTOR SHALL STORE ALL MATERIALS AND EQUIPMENT SHIPPED TO THE SITE IN A PROTECTED AREA. IF MATERIAL IS STORED OUTSIDE OF THE BUILDING, IT MUST BE STORED OFF THE GROUND A MINIMUM OF SIX INCHES (6") ON 6' x 6' PLANKS AND/OR WOOD PALLETS. ALL PIPING AND DUCTWORK WILL HAVE THE ENDS CLOSED TO KEEP OUT DIRT AND OTHER DEBRIS. NO EQUIPMENT SHALL BE STORED ON THE SITE UNLESS IT IS SITTING ON WOOD PLANKS AND COMPLETELY PROTECTED WITH WEATHERPROOF COVERS. ALL MATERIALS AND EQUIPMENT MUST BE COMPLETELY COVERED WITH WATERPROOF TARPS OR VISQUIN.

1.23. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL NON-ACCESSIBLE SYSTEM DEVICES, PULL BOXES AND EQUIPMENT, ETC. TO ACCESSIBLE CEILING AREAS. E.C. SHALL INCLUDE ALL COMPLETE COSTS FOR RELOCATION AND VERIFY SUCH CONDITIONS WITH ARCHITECTURAL CEILING PLANS PRIOR TO FINAL BID.

1.24. ELECTRICAL CONTRACTOR SHALL FOLLOW NEMA NO. PB-1.1 1979 PUBLICATION, PART V PROCEDURES PRIOR TO ENERGIZATION OF ANY SWITCHGEAR. THE ELECTRICAL CONTRACTOR SHALL USE ONLY TRAINED AND AUTHORIZED PROFESSIONAL ELECTRICAL CRAFT PERSONS. THE E.C. SHALL FURNISH ANY PERSONNEL SAFETY EQUIPMENT, LADDERS, MAN-LIFTS, AND POWERED HAND TOOLS THAT MAY BE REQUIRED. ALL POWERED TOOLS SHALL BE IN GOOD CONDITION WITH ALL GROUND CONDUCTOR IN PROPER OPERATION.

1.25. VERIFY CODE CLEARANCES FOR ALL NEW ELECTRICAL WORK BEFORE PROCEEDING WITH CONSTRUCTION. PROVIDE ADEQUATE WORKING CLEARANCES, DEDICATED EQUIPMENT SPACE, AND LEAK PROTECTION SYSTEMS AS REQUIRED BY APPLICABLE ELECTRICAL CODES. COORDINATE USAGE OF AVAILABLE SPACE WITH ALL TRADES. IN THE EVENT OF CONFLICTS, NOTIFY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

2. CONFLICT IN DOCUMENTS

2.1. GENERALLY, THE DRAWINGS ESTABLISH THE LOCATION, QUANTITY AND RELATIONSHIP OF THE PARTS OF THE WORK, AND THE SPECIFICATIONS DEFINE THE TYPE AND QUALITY OF MATERIALS AND WORKMANSHIP. WORK SHOWN IN THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, OR REQUIRED BY THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS, SHALL BE PROVIDED AS IF FULLY PROVIDED FOR IN BOTH. IN THE CASE OF CONFLICTS BETWEEN THE DRAWINGS AND SPECIFICATIONS, OR WITHIN EITHER DOCUMENT, THE ENGINEER SHALL DETERMINE THE INTENT. IN SUCH CASES, IN GENERAL, THE MORE STRINGENT REQUIREMENT CONCERNING GREATER QUANTITY, QUALITY AND/OR RESULTING IN A HIGHER COST SHALL GOVERN WITHOUT FURTHER COST TO THE OWNER.

3. SHUT-DOWN OF SYSTEM

3.1. COORDINATE AND SEQUENCE DEMOLITION SO AS NOT TO CAUSE SHUTDOWN OF OPERATION OF SURROUNDING AREAS.

3.2. SHUT-DOWN PERIODS

3.2.1. ARRANGE TIMING OF SHUT-DOWN PERIODS OF SYSTEM, SERVICE WITH OWNER. DO NOT SHUT DOWN ANY SERVICE, WITHOUT PRIOR WRITTEN APPROVAL. PROVIDE NOTICE MINIMUM 15 WORKING DAYS IN ADVANCE
3.2.2. KEEP SHUT-DOWN PERIOD TO MINIMUM OR USE INTERMITTENT PERIOD AS DIRECTED BY THE OWNER.
3.2.3. MAINTAIN LIFE-SAFETY SYSTEM IN FULL OPERATION IN OCCUPIED FACILITIES, OR PROVIDE NOTICE MINIMUM 15 WORKING DAYS IN ADVANCE.
3.2.4. THE SYSTEM SHUT-DOWN SHALL BE DONE DURING OFF-BUSINESS HOURS.

4. VISIT TO SITE

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

4.2. SUBMISSION OF PROPOSALS SHALL BE CONSIDERED EVIDENCE THAT THE CONTRACTOR HAS VISITED AND EXAMINED THE SITE.

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

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

5. LAWS, ORDINANCES AND REGULATIONS

5.1. ALL SYSTEMS SHALL CONFORM IN FULL AND/OR PART SHALL CONFORM TO ALL PERTINENT LAWS, ORDINANCES AND REGULATIONS OF ALL BODIES HAVING JURISDICTION AT ALL GOVERNING LEVELS, NOTWITHSTANDING ANYTHING IN THESE DRAWINGS OR SPECIFICATIONS TO THE CONTRARY. IN CASE OF CONFLICT BETWEEN GOVERNING LEVELS, THE MORE STRINGENT LAWS SHALL APPLY.

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

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

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

6. WORKMANSHIP

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

6.2. ALL WORK MUST BE DONE IN WORKMANLIKE MANNER TO THE COMPLETE SATISFACTION OF THE ENGINEER. ALL MATERIAL SHALL BE NEW, OF THE QUALITY SPECIFIED, FREE FROM DEFECTS AND IN FIRST-CLASS CONDITION. ALL VERTICAL CONDUITS SHALL BE PLUMB.

6.3. THE COMPLETE SYSTEM SHALL MEET THE REQUIREMENTS OF THE LOCAL ELECTRICAL CODE AND AS MAY BE MODIFIED BY LOCAL AMENDMENTS.

6.4. THIS CONTRACTOR SHALL ESTABLISH SAFE WORKING PROCEDURES FOR THE PROTECTION OF THE WORKING CREW AND NON-WORKING OCCUPANTS IN ALL PHASES OF WORK, COMPLYING WITH THE APPLICABLE PROVISIONS OF ALL CITY, STATE AND FEDERAL SAFETY LAWS (OSHA). THIS SHALL INCLUDE "LOCK-OUT/TAG-OUT" AND REQUIRED GROUNDING. WORK UNDER THIS CONTRACT SHALL NOT BE DONE ON ENERGIZED CIRCUITS.

7. MATERIALS AND EQUIPMENT

7.1. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL CONFORM TO THE GRADE, QUALITY AND STANDARD SPECIFIED HEREIN. ALL EQUIPMENT OFFERED UNDER THESE SPECIFICATIONS SHALL BE LIMITED TO PRODUCTS REGULARLY PRODUCED AND RECOMMENDED FOR SERVICE, IN ACCORDANCE WITH ENGINEERING DATA, RATINGS OR OTHER COMPREHENSIVE LITERATURE MADE AVAILABLE TO THE PUBLIC AND IN EFFECT AT THE TIME OF OPENING OF BIDS.

7.2. EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR TYPE AND CAPACITY OF EACH PIECE OF EQUIPMENT USED, UNLESS INDICATED OTHERWISE, THE ENGINEER MAKES NO REPRESENTATION AS TO WHETHER OR NOT ANY HAZARDOUS OR CONTAMINATED MATERIALS (INCLUDING BUT NOT LIMITED TO ASBESTOS, PCB'S, CONTAMINATED SOILS, ETC.) ARE PRESENT WITHIN THE EXISTING BUILDING OR ON THE SITE. WORK SHOWN ON THE DRAWINGS AND/OR INDICATED IN THE SPECIFICATIONS SHALL NOT BE CONSTRUED TO CALL FOR CONTACT WITH ANY OF THESE MATERIALS. IF THESE MATERIALS ARE ENCOUNTERED OR SUSPECTED.

7.3. THE CONTRACTOR SHALL NOT DISTURB THEM AND SHALL CONTACT THE ENGINEER IMMEDIATELY.

7.4. ALL INSTRUMENTS, APPARATUS AND EQUIPMENT SHALL BE TESTED AND PROVED TO BE ELECTRICALLY AND MECHANICALLY WITHOUT DEFECTS. THE ELECTRICAL SYSTEM SHALL BE TESTED FOR GROUNDS OR SHORTS. IF THE TROUBLE IS WITHIN THE CIRCUIT WIRING, ALL SHORTED OR GROUNDED WIRES SHALL BE REPLACED AND THEN RE-TESTED. ALL METERS, CABLES, EQUIPMENT OR APPARATUS NECESSARY FOR MAKING ALL TESTS SHALL BE FURNISHED AND PROVIDED BY THIS CONTRACTOR. ANY TESTING OR EQUIPMENT MUST CONFORM TO OSHA REQUIREMENTS.

8. COORDINATION WITH OTHER TRADES

8.1. THE SEQUENCE FOR THE INSTALLATION OF ALL WORK SHALL BE COORDINATED BETWEEN ALL CONTRACTORS ON THE PROJECT AND IN STRICT ACCORDANCE WITH ENGINEER AND OWNERS STIPULATION AS CALLED FOR IN THE SPECIFICATION AND/OR AS DIRECTED.

8.2. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE LABOR AND SOFT MATERIALS REQUIRED FOR COORDINATING CONSTRUCTION INSTALLATION ELECTRONICALLY WITH OTHER TRADES USING CURRENT SOFTWARE AND MODELING SYSTEMS. THE CONTRACTOR SHALL CONFIRM MODELING REQUIREMENTS PRIOR TO BID.

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

8.4. CONTRACTOR SHALL CHECK DRAWINGS OF OTHER TRADES TO VERIFY THAT SPACES IN WHICH THEIR WORK WILL BE INSTALLED IS CLEAR OF OBSTRUCTIONS. WORK SHALL BE INSTALLED TO MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITION AT ALL POINTS IN THE BUILDING. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, CONTRACTOR SHALL NOTIFY ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION OF THEIR WORK. CONTRACTOR SHALL FURNISH OTHER TRADES ADVANCE INFORMATION AND/OR SHOP DRAWINGS ON LOCATIONS AND SIZES OF CONDUITS, RACEWAYS, EQUIPMENT, FRAMES, BOXES, SLEEVES AND OPENINGS, ETC. NEEDED FOR THEIR WORK TO PERMIT OTHER TRADES AFFECTED TO INSTALL THEIR WORK PROPERLY AND WITHOUT DELAY.

8.5. WHERE THERE IS EVIDENCE THAT WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, ALL TRADES SHALL MEET ON JOB SITE TO WORK OUT SPACE CONDITIONS, AND MAKE SATISFACTORY ADJUSTMENTS TO INSTALLATION OF THE NEW WORK. CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL ELECTRICAL DEVICES AND EQUIPMENT PRIOR TO ROUGH-IN WITH FIELD CONDITIONS, SHOP DRAWINGS AND WORK OF OTHER TRADES. EACH CONTRACTOR SHALL BE RESPONSIBLE, AT THEIR OWN EXPENSE, FOR THE REMOVAL AND REINSTALLATION OF ANY PART OF THEIR WORK IF SAME WAS INSTALLED WITHOUT CONSULTING WITH OTHER TRADES BEFORE INSTALLING THEIR WORK.

8.6. REFER TO THE ARCHITECTURAL, MECHANICAL AND PLUMBING SHEETS AND SPECIFICATIONS FOR EQUIPMENT LOCATIONS, LOADS, AND ADDITIONAL REQUIREMENTS.

8.7. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION OF HVAC EQUIPMENT TO BE WIRED PRIOR TO ROUGH-IN.

8.8. THE EC SHALL REVIEW AND BE FAMILIAR WITH THE MECHANICAL DRAWINGS AND SCHEDULES FOR FINAL EQUIPMENT SELECTION. THE EC SHALL VERIFY HORSEPOWER, VOLTAGE, PHASES, AMPACITY, AND SPECIAL MOUNTING BEFORE SUBMITTING HIS BID. ANY SPECIAL CONDITIONS OR CONFLICTS MUST BE INDICATED IN WRITING TO THE ENGINEER PRIOR TO OR AT THE TIME OF BID.

8.9. BEFORE STARTING ANY DEMOLITION ON HVAC EQUIPMENT WHICH HAS AN ELECTRICAL CONNECTION.THE MECHANICAL CONTRACTOR SHALL MEET WITH THE ELECTRICAL CONTRACTOR TO IDENTIFY ALL SUCH EQUIPMENT. THE ELECTRICAL CONTRACTOR WILL DISCONNECT THE POWER TO EACH UNIT, REMOVE CONDUIT, WIRING, DISCONNECT SWITCHES, AND STARTERS UNDER HIS CONTRACT. MECHANICAL CONTRACTOR WILL REMOVE ALL EQUIPMENT, ELECTRICAL TEMPERATURE CONTROL AND WIRING UNDER HIS CONTRACT. MECHANICAL CONTRACTOR SHALL NOT START DEMOLITION UNTIL ALL ELECTRICAL POWER HAS BEEN SAFELY DISCONNECTED FROM EQUIPMENT TO BE DEMOLISHED.

9. SUBMITTALS

9.1. THE CONTRACTOR SHALL PROVIDE COMPLETE SHOP DRAWINGS INDICATING EQUIPMENT, DEVICE, AND RACEWAY LOCATIONS, INVERTS FOR OUTDOOR DEVICES, AND COMPLETE INSTALLATION DRAWINGS. THE DRAWINGS SHALL BE MAINTAINED AT THE JOB SITE AND SHALL BE UPDATED AND MAINTAINED IN AS NEAR AS POSSIBLE TO THE "AS INSTALLED" STATUS OF THE PROJECT AND SHALL BE KNOWN AS "CONTRACT RECORD DOCUMENTS". THE DRAWINGS SHALL BE REVISED IN AN AUTOCAD FORMAT AND SUBMITTED TO THE ENGINEER FOR REVIEW. THE FINAL ELECTRICAL PAYOUT SHALL NOT BE MADE TO THE EC UNTIL THE CONTRACT RECORD DOCUMENTS HAVE BEEN RECEIVED AND REVIEWED BY THE ENGINEER. THE ENGINEER WILL PROVIDE WRITTEN CONFIRMATION TO THE OWNER AND GENERAL CONTRACTOR FOR FINAL PAYOUT BASED ON THE REVIEW OF THE CONTRACT RECORD DOCUMENTS.

9.2. PROVIDE PRODUCT DATA FOR ALL EQUIPMENT AND DEVICES SUCH AS PANELBOARDS, DISCONNECT SWITCHES, CONDUIT & JUNCTION BOXES, WIRING, GROUNDING MATERIALS, WIRING DEVICES, EMERGENCY GENERATOR, PIPING MATERIALS, VALVES, ETC.

9.3. PROVIDE DIMENSIONAL DRAWINGS, MANUFACTURERS' TECHNICAL DATA, PERFORMANCE, ELECTRICAL CHARACTERISTICS, RATINGS, AND FINISHES. INCLUDE WIRING DIAGRAMS FOR POWER, SIGNAL, AND CONTROL WIRING.

9.4. PROVIDE OPERATION AND MAINTENANCE DATA FOR ALL EQUIPMENT AND DEVICES INCLUDING MANUFACTURER'S WRITTEN INSTRUCTIONS FOR TESTING AND ADJUSTING EQUIPMENT AND DEVICES.

9.5. PROVIDE SHOP DRAWINGS FOR CONDUITS LARGER THAN 1" AND ALL EXPOSED RACEWAYS .

10. IDENTIFICATION

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

10.2. PROVIDE PANELBOARD AND CIRCUIT NUMBER TAG ON EACH RECEPTACLE

11. FIRESTOPPING

11.1. APPLY UL LISTED FIRE STOPPING TO PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES FOR ELECTRICAL INSTALLATIONS TO RESTORE ORIGINAL FIRE-RESISTANCE RATING OF ASSEMBLY.

11.2. PROVIDE FIRE PUTTY TO MEET FIRE RATED ENCLOSURE UL LISTING REQUIREMENTS ON ALL ELECTRICAL BOXES INSTALLED ON THE FIRE RATED WALLS AND CEILINGS.

12. CLOSEOUT PROCEDURES

12.1. TESTING

12.1.1. PERFORM TESTS RECOMMENDED BY MANUFACTURER INCLUDING VISUAL, MECHANICAL, AND ELECTRICAL INSPECTIONS.

12.1.2. PERFORM INSULATION-RESISTANCE TESTS IN ACCORDANCE WITH IEEE 43.

12.1.3. FUNCTIONALLY TEST EQUIPMENT TO ENSURE IT IS INSTALLED PER DESIGN.

12.1.4. PROVIDE OPERATIONAL TEST AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, CONFIRM PROPER OPERATION.

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

12.1.6. PERFORM EMERGENCY SYSTEM (GENERATOR, TRANSFER SWITCH, EMERGENCY LIGHTING, BATTERIES, ETC.) TESTS RECOMMENDED BY MANUFACTURER INCLUDING VISUAL AND MECHANICAL AND ELECTRICAL INSPECTIONS. FUNCTIONALLY TEST EQUIPMENT TO ENSURE IT IS INSTALLED PER DESIGN INCLUDING EMERGENCY LIGHTING BLACKOUT TEST. PROVIDE OPERATIONAL TEST AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, CONFIRM PROPER OPERATION. PROVIDE WRITTEN REPORT OF THE RESULTS OF TESTS AND INSPECTIONS.

12.2. GUARANTEE

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

12.2.2. THE GUARANTEE SHALL INCLUDE RESTORATION TO ITS ORIGINAL CONDITION OF ALL ADJACENT WORK THAT MUST BE DISTURBED IN FULFILLING THIS GUARANTEE.

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

12.3. WARRANTY

12.3.1. INSTALLER AND MANUFACTURERS AGREE TO REPAIR OR REPLACE MATERIALS OR WORKMANSHIP THAT FAIL WITHIN SPECIFIED WARRANTY PERIOD. WARRANTY PERIOD SHALL BE FIVE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

12.4. INSPECTION

12.4.1. ALL ELECTRICAL WORK IS TO BE INSPECTED AND APPROVED BY THE AUTHORIZED REPRESENTATIVE BEFORE THE SYSTEM IS ENERGIZED. DUPLICATE CERTIFICATES OF THIS APPROVAL SHALL BE DELIVERED TO THE ENGINEER.

12.4.2. ALL FEES FOR THIS INSPECTION AND APPROVAL SHALL BE BORNE BY THE CONTRACTOR AND ARE TO BE INCLUDED IN HIS/HER BID. NO EXTRA COMPENSATION SHALL BE ALLOWED FOR THIS SERVICE.

12.5. CLOSEOUT DOCUMENT AND EQUIPMENT TURNOVER

12.5.1. PROVIDE FINAL AS-BUILT DRAWINGS IN ELECTRONIC PDF FORMAT TO OWNER AND ENGINEER SHOWING FINAL INSTALLED CONDITIONS AND BEFORE FINAL PAYMENT WILL BE ISSUED.

12.5.2. THE AS-BUILT DRAWINGS SHALL DIAGRAMMATICALLY INDICATE THE INSTALLED CONDITION, CIRCUIT NUMBERS, AND LOCATION OF THE DEVICES FOR ALL WORK. THESE DRAWINGS SHALL BE CONSIDERED CONTRACT RECORD DOCUMENTS AND SHALL ACCURATELY REFLECT THE ACTUAL INSTALLATION OF THE ELECTRICAL COMPONENTS AND CONDUITS.

12.5.3. PROVIDE ALL EQUIPMENT INSTALLATION, MAINTENANCE, AND INSTRUCTION MANUALS.

12.5.4. TURN OVER ALL KEYS, SPARE MATERIALS, STOCK ITEMS, AND OTHER EQUIPMENT PURCHASED AS PART OF THE CONTRACT AND BELONGING TO THE OWNER.

13. HANGERS AND SUPPORT SYSTEMS

13.1. CONTRACTOR SHALL INSTALL ALL AUXILIARY SUPPORTING STEEL AS REQUIRED FOR THE SUPPORTING OF THEIR CONDUIT, FIXTURES, DEVICES, EQUIPMENT, ETC. ALL SUPPORTING STEEL FOR ITEMS ABOVE A SUSPENDED CEILING SHALL BE FROM BUILDING STRUCTURAL MEMBERS ONLY.

13.2. THIS CONTRACTOR SHALL VERIFY ALL EQUIPMENT AND DEVICE MOUNTING ARRANGEMENTS, HEIGHTS, AND LOCATIONS PRIOR TO ROUGH-IN. ANY MENTION OF A SPECIFIC MOUNTING ARRANGEMENT, HEIGHT, OR LOCATION SHALL NOT RELIEVE THIS CONTRACTOR OF THE RESPONSIBILITY TO COORDINATE LOCATIONS AND SPECIFIC REQUIREMENTS WITH THE EQUIPMENT FURNISHED BY OTHER TRADES IN THE SAME AREA. NO ADDITION TO THE CONTRACT SUM WILL BE PERMITTED FOR WRONG OR CONFLICTING LOCATIONS. THE OWNER RESERVES THE RIGHT TO RELOCATE ANY DEVICE 10' - 0" PRIOR TO ROUGH-IN WITHOUT ANY ADDITIONAL CHARGE BY THIS CONTRACTOR. THIS CONTRACTOR SHALL FULLY COORDINATE ELECTRICAL WORK WITH THE INSTALLATION OF WORK BY ALL OTHER TRADES AND MAKE NECESSARY FIELD ADJUSTMENTS AS REQUIRED TO ACCOMMODATE THE ELECTRICAL INSTALLATION. ALL OF THE ABOVE SHALL BE INCLUDED IN THE SCOPE OF WORK AT NO ADDITIONAL COST TO THE OWNER.

13.3. ALL CONDUITS SHALL BE RIGIDLY SUPPORTED BY MEANS OF APPROVED CONDUIT HANGERS OR CLAMPS FIRMLY ANCHORED IN PLACE AND SPACED AT INTERVALS NOT TO EXCEED 7'-0". ALL EXPOSED CONDUIT SHALL BE RACKED AND PARALLEL OR PERPENDICULAR TO WALLS AND STRUCTURAL MEMBERS, WITH 90° BENDS WHERE REQUIRED. PULL AND JUNCTION BOXES SHALL BE HELD TO A MINIMUM. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL RODS, ANGLES, RAILS, STRUTS, BRACE PLATES, PLATFORMS, ETC.. REQUIRED FOR SUSPENSION OR SUPPORT OF CONDUIT AND EQUIPMENT AND ALL STRAPS, CLAMPS, THREADED RODS, TURNBUCKLES, ANCHORS, FASTENERS, AND MISCELLANEOUS SPECIALTIES FOR THE ATTACHMENT OF HANGERS AND SUPPORTS TO THE STRUCTURE. ALL CONDUIT FASTENERS, STRAPS, SUPPORTS AND ETC., MUST BE "BOLT-ON" GALVANIZED STEEL ON EXPOSED CONSTRUCTION. SINGLE CONDUIT SUPPORTS SHALL BE MINNERALIC OR EQUAL.

13.4. IN SUSPENDED CEILINGS, SUPPORT CONDUIT AND JUNCTION BOXES DIRECT FROM THE STRUCTURAL SLAB, DECK, OR FRAMING PROVIDED FOR THAT PURPOSE. THE CONDUITS SHALL NOT BE CLIPPED TO THE CEILING SUPPORT WIRES OR SPLICE UNLESS THE CEILING SYSTEM HAS BEEN SPECIFICALLY DESIGNED FOR THAT PURPOSE AND APPROVAL GRANTED BY ENGINEER.

14. RACEWAY, JUNCTION BOX, AND PULL BOX SYSTEMS

14.1. THIS CONTRACTOR SHALL INSTALL SIZE OF CONDUIT CALLED FOR ON DRAWINGS AND SHALL NOT REDUCE SIZE OF CONDUITS TO SUIT WIRE FILL CAPACITY. MINIMUM SIZE OF CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED. THIS CONTRACTOR SHALL LEAVE A WIRE PULLING LINE IN ALL CONDUITS WHICH ARE NOT FILLED TO CAPACITY. THE E.C. SHALL VERIFY ALL CONDUIT SIZE PRIOR TO INSTALLATION. NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICT.

14.2. THE RACEWAY SYSTEM SHALL BE METALLIC, ELECTRICAL METALLIC TUBING "EMT" IN TRADE SIZED CONCEALED WHEREVER POSSIBLE. ALL FITTINGS SHALL BE COMPRESSION TYPE ONLY EXCEPT WHERE PVC IS ALLOWED BY CONTRACT DOCUMENTS.

14.3. CONDUIT USED OUTDOORS AND NOT BELOW GRADE OR EXPOSED TO WEATHER SHALL BE TYPE INTERMEDIATE METALLIC CONDUIT "IMC" OR RIGID GALVANIZED METAL CONDUIT "RMC" WITH THREADED COUPLINGS. PROVIDE MEYERS HUBS AT NON/CAST TYPE JUNCTION/PULL BOXES AND SWITCH/RECEPTACLE OUTLETS.

14.4. ALL CONDUITS SHALL BE RUN PARALLEL AND/OR PERPENDICULAR TO CONSTRUCTION LINES OF THE BUILDING AND IN THE CASE OF CEILING AND FLOOR RUNS, CONDUITS SHALL BE GROUPED AND SUPPORTED WITH TRAPEZE/TYPE RACKS OR STANDOFFS WITH INDIVIDUAL CONDUITS SEPARATELY ACCESSIBLE FOR REPLACEMENT AND MAINTENANCE.

14.5. ALL WIRING INCLUDING ALL LOW VOLTAGE CABLING BEHIND THE WALL AND ABOVE THE NON-ACCESSIBLE CEILING SHALL BE INSTALLED IN CONDUIT.

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

14.7. PULL BOXES SHALL BE CODE SIZED AND SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED SHEET STEEL. EACH BOX SHALL BE PROVIDED WITH A SCREW-ON REMOVABLE COVER. PROVIDE FLANGED COVERS ON FLUSH BOXES. BOXES SHALL BE SMOOTH, SQUARE AND SET PARALLEL WITH WALLS AND CEILING.

14.8. ALL BOXES SHALL BE PROVIDED IN LOCATIONS WHERE REASONABLE ACCESS CAN BE OBTAINED IN THE FUTURE WITHOUT REQUIRING REMOVAL OF BUILDING ELEMENTS OR FINISHES. IT SHALL BE THE SOLE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO RELOCATE BOXES TO ACCESSIBLE AREAS WHERE INACCESSIBILITY IS DETERMINED BY THE INSPECTOR OR ENGINEER.

14.9. REMOVE ALL UNUSED AND ABANDONED CONDUIT AND RACEWAY COMPLETELY.

14.10. ANY SURFACE RACEWAY USED ON A FINISHED SURFACE MUST BE METALLIC RACEWAY, WIREMOLD OR EQUAL. IF RACEWAY USED FOR POWER AND DATA, THEN MUST BE DUAL CHANNEL WITH PARTITION. SUBMIT FOR APPROVAL BY ENGINEER PRIOR TO INSTALLATION.

14.11. FINAL CONNECTIONS TO MOVABLE DEVICES, OR DEVICES THAT MAY TRANSMIT VIBRATION SHALL BE MADE THROUGH FLEXIBLE METALLIC CONDUIT OR LIQUID-TIGHT FLEXIBLE CONDUIT. (MOTORS, TRANSFORMERS, DUCT MOUNTED DEVICES, ETC.)

14.12. ENDS OF ALL METALLIC CONDUITS SHALL BE EQUIPPED WITH INSULATED GROUNDING BUSHINGS FOR DEDICATED CONDUITS SERVING GROUNDING CONDUCTORS. ALL METALLIC CONDUIT SERVING FEEDERS AND BRANCH CIRCUITS SHALL BE EQUIPPED WITH INSULATED ANTI-SHORT FITTINGS AT ENDS. ENDS OF ALL CONDUITS SHALL BE TEMPORARILY CAPPED PRIOR TO INSTALLATION AND DURING CONSTRUCTION TO EXCLUDE FOREIGN MATERIAL. UPON THE COMPLETION OF CONSTRUCTION THE OPEN END OF CONDUITS OR SLEEVES SHALL BE SEALED WATERTIGHT.

14.13. EACH LIGHT, RECEPTACLE OR OTHER MISCELLANEOUS DEVICE SHALL BE PROVIDED WITH A GALVANIZED OR SHERARDIZED PRESSED STEEL OUTLET BOX OF THE KNOCKOUT TYPE, OR NOT LESS THAN NO. 14 U.S. GAUGE STEEL. CONDUITS SHALL BE FASTENED WITH LOCK NUTS AND BUSHINGS. ALL UNUSED BOX KNOCKOUTS MUST BE LEFT SEALED. THERE MUST BE SUFFICIENT ROOM FOR WIRES AND BUSHINGS, AND DEEP BOXES SHALL BE INSTALLED WHERE REQUIRED. BOXES SHALL BE SECURELY AND ADEQUATELY SUPPORTED.

14.14. WHERE FLOOR FITTINGS REQUIRE PENETRATION OF THE FLOOR SLAB, THERE SHALL BE A STANDARD DEVICE LISTED BY UL FOR THE PURPOSE AND HAVE A UL FIRE RATING EQUAL TO THE FLOOR RATING. ALL CORE SIZES AND LOCATIONS SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL AND SUBMISSION TO STRUCTURAL ENGINEER PRIOR TO CORING. THE ELECTRICAL CONTRACTOR MUST PROVIDE FLOOR X-RAY SERVICES TO DETECT AND AVOID EXISTING EMBEDDED SYSTEMS PRIOR TO CORING.

14.15. ALL CONDUIT RUNS SHALL BE INSTALLED ABOVE AND OVER TOP OF ALL NEW DUCTWORK, PIPING, CONDUITS, PULL BOXES, ETC. WITH PROVISION FOR ALL NECESSARY ACCESSIBLE PULL BOXES. CONDUIT MAY NOT EXCEED CODE ALLOWED NUMBER OF BENDS.

14.16. CONDUIT RUNS OR PULL BOXES SHALL NOT BLOCK OR PREVENT FULL ACCESS OR OPERATION OF HVAC EQUIPMENT, ACCESS DOORS, PIPING VALVES, JUNCTION BOXES, MAIN RETURN AIR DUCTS, PULL BOXES, CLEAN OUTS, ETC.

14.17. FLEXIBLE METAL CONDUIT SHALL NOT BE LONGER THAN 6'0" LONG.

15. WIRE AND WIRING METHOD

15.1. ALL CONDUCTORS SHALL BE COPPER IN SIZES AS SHOWN OR REQUIRED BY LOADS SERVED. ALL CABLE SHALL BE 600/VOLT INSULATION RATED AT 75 DEGREES C, WITH TERMINATIONS AND LOADS SERVED RATED AT 75 DEGREES C. INDOOR DRY LOCATIONS SHALL BE TYPE "THHN" AND WET LOCATIONS (EXPOSED, BELOW THE SLAB, AND BELOW GRADE) SHALL BE TYPE "XHHW".

15.2. A SEPARATE NEUTRAL CONDUCTOR AND GREEN GROUND WIRE SHALL BE INSTALLED FOR EACH FEEDER AND BRANCH CIRCUIT.

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

15.4. MINIMUM SIZE CONDUCTOR SHALL BE #12 EXCEPT FOR CONTROL, FIRE ALARM AND SIGNAL CABLES. CONDUCTORS AND ASSOCIATED RACEWAYS SHALL BE INCREASED FOR VOLTAGE DROP COMPENSATION AS CALCULATED ACCORDING TO ELECTRICAL CODE REQUIREMENTS.

15.5. THE E.C. SHALL FURNISH AND INSTALL LUG KITS TO MATCH THE CABLE SIZES AS SHOWN ON THE DRAWINGS. TYPICAL FOR ALL ELECTRICAL AND MECHANICAL EQUIPMENT. ANY AND ALL REQUIRED LUG KITS SHALL BE INCLUDED IN THE BASE BID. CABLE SIZE REDUCING PINS SHALL NOT BE AN ACCEPTABLE ALTERNATIVE TO LUG KITS.

15.6. REMOVE ALL UNUSED AND ABANDONED WIRING, INCLUDING LOW VOLTAGE, COMPLETELY BACK TO SOURCE.

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

15.8. ALL PLENUM AIR SPACES AREA SHALL BE IN CONDUIT WITH PLENUM RATED BOX.

15.9. E.C SHALL PROVIDE ALL FEEDER & BRANCH CIRCUITS SIZED BASED ON VOLTAGE DROP REQUIRED PER LOCAL CODE.

15.10. CONDUCTOR SPLICING

15.10.1. SPLICING WIRES SHALL BE DONE ONLY IN ACCESSIBLE OUTLET JUNCTION OR PULL BOXES.
15.10.2. SPLICES SHALL BE MADE STRICTLY IN ACCORDANCE WITH THE INSTRUCTIONS OF THE CABLE MANUFACTURER USING THE METHODS AND MATERIALS RECOMMENDED BY HIM.
15.10.3. FOR #10 AND #12 WIRE SPLICES SHALL BE MADE WITH SCOTCH-LOK CONNECTORS.
15.10.4. WIRE #6 AND LARGER SHALL BE CONNECTED WITH BURNDY OR EQUAL SOLDERLESS MECHANICAL LUG AND PAINTED WITH INSULATING VARNISH.
15.10.5. ALL CONNECTIONS SHALL BE PROPERLY TAPED WITH SCOTCH ELECTRICAL TAPE #22, #33 OR APPROVED EQUAL.
15.10.6. ALL GROUND SPLICES AND GROUND CONNECTIONS TO DEVICES WITHIN METALLIC BOXES SHALL BE BONDED TO BOX USING APPROPRIATELY SIZED PIGTAIL CONNECTIONS OR OTHER UL APPROVED BONDING METHOD.

16. GROUNDING AND BONDING

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

17. DICONNECT SWITHES

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

18. PANELBOARDS

18.1. PROVIDE PANELBOARDS WITH ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, MARKED FOR INTENDED LOCATION AND APPLICATION AND THAT COMPLY WITH NEMA PB 1.

18.2. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PANELBOARDS BY:

18.2.1. SQUARE D
18.2.2. SIEMENS
18.2.3. GENERAL ELECTRIC
18.2.4. EATON
18.2.5. APPROVED EQUAL

18.3. SURFACE MOUNTED (AS SHOWN IN PLAN), DEAD-FRONT CABINETS RATED FOR ENVIRONMENTAL CONDITIONS AT INSTALLED LOCATION.

18.4. PANELBOARD TRIM AND FRONT COVER SHALL BE HINGED DOOR-IN-DOOR SYLE.

18.5. INDOOR DRY AND CLEAN LOCATIONS: NEMA 250, TYPE 1). PROVIDE GALVANIZED STEEL CABINETS TO HOUSE PANELBOARDS FLUSH AND SURFACE-MOUNTED, DEAD-FRONT CABINETS.

18.6. FACTORY FINISHED WITH MANUFACTURER'S STANDARD TWO-COAT, BAKED-ON FINISH.

18.7. PROVIDE DIRECTORY CARD WITH TRANSPARENT COVER PERMANENTLY MOUNT ON INSIDE OF DOORS.

18.8. PHASE, NEUTRAL, AND GROUND BUSES AND BARS SHALL BE TINNED COPPER MATERIAL AND BUS SHALL BE FULLY RATED THE ENTIRE LENGTH OF ENCLOSURE. PROVIDE FULL-SIZED NEUTRAL WITH FULL-CAPACITY BONDING STRAP FOR SERVICE ENTRANCE APPLICATIONS. MAIN AND NEUTRAL LUGS SHALL BE MECHANICAL TYPE, WITH A LUG ON THE NEUTRAL BAR FOR EACH POLE IN THE PANELBOARD AND WITH A LUG ON THE GROUND BAR FOR EACH POLE IN THE PANELBOARD.

18.9. PANELBOARDS SHALL BE STANDARD MANUFACTURED PRODUCTS. ALL COMPONENTS WITHIN ONE ASSEMBLY SHALL BE OF THE SAME MANUFACTURER. ALL PANELBOARDS SHALL BE DEAD FRONT TYPE. ALL PANELBOARDS SHALL BE COMPLETELY FACTORY ASSEMBLED WITH MOLDED CASE CIRCUIT BREAKERS AND ARRANGED SO THAT IT WILL BE POSSIBLE TO SUBSTITUTE A 2_POLE BREAKER FOR TWO SINGLE POLE BREAKERS, AND A 3_POLE BREAKER FOR THREE SINGLE POLE BREAKERS, WHEN TRIP IS 30 AMPS OR LESS AND FRAME SIZE IS 100 AMPERES OR LESS, WITHOUT HAVING TO DRILL AND TAP THE MAIN BUS BARS AT BUS STRAPS.CIRCUIT BREAKERS SHALL BE BOLT-ON CONNECTED TO THE PANELBOARD, MINIMUM INTERRUPTING CAPACITY SHALL BE 14,000 AIC FOR 277/480 VOLT CIRCUIT BREAKERS AND 10,000 AIC FOR 120/208 VOLT CIRCUIT BREAKERS. PLUG-IN CIRCUIT BREAKERS ARE NOT APPROVED.

18.10. PANELBOARD FAULT WITHSTAND RATING SHALL BE INCREASED BY THE ELECTRICAL CONTRACTOR AS A RESULT OF SHORT-CIRCUIT STUDY RESULTS AT NO ADDITIONAL COST TO PROJECT.

18.11. ALL NEW CIRCUIT BREAKERS FOR THE EXISTING PANELBOARDS SHALL BE COMPATIBLE WITH THE EXISTING EQUIPMENT. AIC RATINGS SHALL MATCH THE ORIGINAL EQUIPMENT AIC RATINGS.

18.12. CIRCUIT BREAKERS SERVING HAND DRYERS AND WATER COOLERS SHALL BE GFCI TYPE, WHERE APPLICABLE.

18.13. CIRCUIT BREAKERS SERVING EMERGENCY LIGHTING, FIRE PUMPS, FIRE ALARM, EXIT SIGNS, AND SIMILAR EMERGENCY/LIFE-SAFETY LOADS SHALL BE PROVIDED WITH RED LOCK-ON DEVICES.

18.14. PROVIDE A TYPEWRITTEN DIRECTORY OF ALL CIRCUITS IN THE PANELBOARD.

19. TRANSFORMER

19.1. PROVIDE FACTORY-ASSEMBLED AND -TESTED, AIR-COOLED UNITS FOR 60-HZ SERVICE. FOR TRANSFORMERS RATED 15 KVA AND LARGER COMPLY WITH NEMA TP 1 ENERGY-EFFICIENCY LEVELS AS VERIFIED BY TESTING ACCORDING TO NEMA TP 2. TRANSFORMER CORES ARE TO BE ELECTRICAL GRADE, NON-AGING SILICON STEEL WITH HIGH PERMEABILITY AND LOW HYSTERESIS LOSSES; COILS ARE TO BE CONTINUOUS COPPER WINDINGS WITHOUT SPLICES EXCEPT FOR TAPS WITH BRAZED OR PRESSURE TYPE INTERNAL CONNECTIONS. CORES ARE TO HAVE ONE LEG PER PHASE. FOR TRANSFORMERS SMALLER THAN 30 KVA SHALL HAVE CORE AND COILS COMPLETELY RESIN ENCAPSULATED. TRANSFORMER IMPEDANCE SHALL BE MINIMUM 5%. CORE ASSEMBLIES SHALL BE GROUNDED TO THEIR ENCLOSURES BY ADEQUATE FLEXIBLE GROUND STRAPS.

19.2. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE TRANSFORMERS BY:

19.2.1. SQUARE D
19.2.2. SIEMENS
19.2.3. GENERAL ELECTRIC
19.2.4. EATON
19.2.5. APPROVED EQUAL

19.3. DISTRIBUTION TRANSFORMERS SHALL COMPLY WITH UL 156 AND THEIR KVA RATING (SHOWN ON THE DRAWINGS AND NAMEPLATE) SHALL BE SELF-COOLED BY NATURAL CONVECTION CONTINUOUS-DUTY WITHOUT THE USE OF COOLING FANS. FOR TRANSFORMERS SMALLER THAN 30 KVA PROVIDE INSULATION CLASS: 185 DEG C, UL-COMPONENT-RECOGNIZED INSULATION SYSTEM WITH A MAXIMUM OF 115-DEG C RISE ABOVE 40-DEG C AMBIENT TEMPERATURE; FOR TRANSFORMERS 30 KVA AND LARGER PROVIDE INSULATION CLASS: 220 DEG C, UL-COMPONENT-RECOGNIZED INSULATION SYSTEM WITH A MAXIMUM OF 115-DEG C RISE ABOVE 40-DEG C AMBIENT TEMPERATURE.

19.4. TRANSFORMERS 3 KVA AND SMALLER SHALL HAVE ONE 5 PERCENT TAP ABOVE NORMAL FULL CAPACITY. TRANSFORMERS 7.5 TO 24 KVA SHALL HAVE ONE 5 PERCENT TAP ABOVE AND ONE 5 PERCENT TAP BELOW NORMAL FULL CAPACITY. TRANSFORMERS 25 KVA AND LARGER SHALL HAVE TWO 2.5 PERCENT TAPS ABOVE AND TWO 2.5 PERCENT TAPS BELOW NORMAL FULL CAPACITY.

19.5. PROVIDE LOW-SOUND-LEVEL TRANSFORMERS WITH MAXIMUM SOUND LEVELS WHEN FACTORY TESTED ACCORDING TO IEEE C57.12.91, AS FOLLOWS:

19.5.1. 9 KVA AND LESS: 40 DB.
19.5.2. 30 TO 50 KVA: 45 DB.
19.5.3. 51 TO 150 KVA: 50 DB.
19.5.4. 151 TO 300 KVA: 55 DB.
19.5.5. 301 TO 500 KVA: 60 DB.
19.5.6. 501 TO 750 KVA: 60 DB.
19.5.7. 751 TO 1000 KVA: 60 DB.
19.5.8. 1001 TO 1500 KVA: 60 DB.

20. TRANSFER SWITCH

20.1. AUTOMATIC TRANSFER SWITCHES ARE TO BE ELECTRICALLY OPERATED, MECHANICALLY HELD OPEN CONTACT TYPE, WITHOUT INTEGRAL OVERCURRENT PROTECTION. TRANSFER SWITCHES UTILIZING AUTOMATIC OR NON-AUTOMATIC MOLDED CASE CIRCUIT BREAKERS AS SWITCHING MECHANISMS ARE NOT ACCEPTABLE.

20.2. THE UNIT SHALL BE COMPLETELY FACTORY-ASSEMBLED AND WIRED, SO THAT ONLY EXTERNAL CIRCUIT CONNECTIONS ARE REQUIRED IN THE FIELD. SOURCES SHALL BE MECHANICALLY AND ELECTRICALLY INTERLOCKED TO PREVENT CLOSING BOTH SOURCES ON THE LOAD AT THE SAME TIME. THE UNIT SHALL INCLUDE, BUT NOT BE LIMITED TO, OPERATING MECHANISM, MAIN CONTACTS, AUXILIARY CONTACTS, TIMERS, PILOT LIGHTS, SWITCHES, AND AUXILIARY SENSING DEVICES AND ELECTRONIC MONITORING. COMPLY WITH NEMA ICS 1; NFPA 99; NFPA 110; AND UL 1008.

20.3. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE TRANSFER SWITCH(ES) BY:

20.3.1. ASCO POWER TECHNOLOGIES
20.3.2. CUMMINS POWER SYSTEMS
20.3.3. ZENITH
20.3.4. APPROVED EQUAL

20.4. PHASE, VOLTAGE, AND AMPERE RATING SHALL BE AS SHOWN ON THE NAMEPLATE AND DRAWINGS FOR ALL TRANSFERSWITCHES. THE AMPERE RATING SHALL BE FOR 100 PERCENT CONTINUOUS LOAD CURRENT. ELECTRICAL OPERATION OF TRANSFER SWITCHES SHALL BE ACCOMPLISHED BY A NON-FUSED, MOMENTARILY ENERGIZED SOLENOID OR ELECTRIC-MOTOR-OPERATED MECHANISM. SWITCHES FOR EMERGENCY OR STANDBY PURPOSES SHALL BE MECHANICALLY AND ELECTRICALLY INTERLOCKED IN BOTH DIRECTIONS TO PREVENT SIMULTANEOUS CONNECTION TO BOTH POWER SOURCES UNLESS CLOSED TRANSITION. CONTACT TRANSFER TIME SHALL NOT EXCEED SIX CYCLES.

20.5. PROVIDE VOLTAGE-SENSING RELAYS IN EACH PHASE OF THE NORMAL POWER SUPPLY. PROVIDE ADJUSTABLE VOLTAGE AND FREQUENCY SENSING RELAYS IN ONE PHASE OF THE AUXILIARY POWER SUPPLY. WHERE FOUR-POLE SWITCHES ARE INDICATED, PROVIDE NEUTRAL POLE SWITCHED SIMULTANEOUSLY WITH PHASE POLES. PROVIDE CONNECTION TO GENERATOR ANNUNCIATION INDICATING TRANSFER SWITCH POSITION AND AVAILABLE POWER LOCATION.

20.6. TRANSFER SWITCHES ARE TO HAVE A GENERAL-PURPOSE NEMA TYPE 1 ENCLOSURE. AUTOMATIC TRANSFER SWITCHES ARE TO BE DESIGNED FOR CONTINUOUS-DUTY REPETITIVE TRANSFER OF FULL-RATED CURRENT BETWEEN ACTIVE POWER SOURCES. SWITCH IS TO BE DOUBLE THROW; MECHANICALLY HELD IN BOTH DIRECTIONS. CONTACTS ARE TO BE SILVER COMPOSITION OR SILVER ALLOY FOR LOAD-CURRENT SWITCHING. INTERNAL BUS IS TO BE HARD-DRAWN COPPER, 98 PERCENT CONDUCTIVITY. BUS SHALL BE MARKED FOR CONDUCTOR SIZE AND TYPE ACCORDING TO UL 1008.

20.7. TRANSFER SWITCH SHALL HAVE ELECTRIC NONAUTOMATIC SWITCH OPERATION THAT IS ELECTRICALLY ACTUATED BY PUSH BUTTONS DESIGNATED "NORMAL SOURCE" AND "ALTERNATIVE SOURCE." SWITCH SHALL BE CAPABLE OF TRANSFERRING LOAD IN EITHER DIRECTION WITH EITHER OR BOTH SOURCES ENERGIZED. PROVIDE A SET OF NORMALLY OPEN/NORMALLY CLOSED DRY CONTACTS THAT OPERATE IN ADVANCE OF RETRANSFER TO NORMAL SOURCE. INTERVAL SHALL BE ADJUSTABLE FROM 1 TO 30 SECONDS.

20.8. CONTROLLER IS TO OPERATE THROUGH A PERIOD OF LOSS OF CONTROL POWER. UNDERVOLTAGE SENSING FOR EACH PHASE OF NORMAL SOURCE SHALL SENSE LOW PHASE-TO-GROUND VOLTAGE ON EACH PHASE. PICKUP VOLTAGE SHALL BE ADJUSTABLE FROM 85 TO 100 PERCENT OF NOMINAL, AND DROPOUT VOLTAGE SHALL BE ADJUSTABLE FROM 75 TO 98 PERCENT OF PICKUP VALUE. FACTORY SET FOR PICKUP AT 90 PERCENT AND DROPOUT AT 85 PERCENT. PROVIDE A VOLTAGE/FREQUENCY LOCKOUT RELAY THAT PREVENTS PREMATURE TRANSFER TO GENERATOR. PICKUP VOLTAGE SHALL BE ADJUSTABLE FROM 85 TO 100 PERCENT OF NOMINAL. FACTORY SET FOR PICKUP AT 90 PERCENT. PICKUP FREQUENCY SHALL BE ADJUSTABLE FROM 90 TO 100 PERCENT OF NOMINAL. FACTORY SET FOR PICKUP AT 95 PERCENT. PROVIDE TIME DELAY FOR RETRANSFER TO NORMAL SOURCE THAT IS ADJUSTABLE FROM ZERO TO 30 MINUTES, AND FACTORY SET FOR 10 MINUTES. OVERRIDE SHALL AUTOMATICALLY DEFEAT DELAY ON LOSS OF VOLTAGE OR SUSTAINED UNDERVOLTAGE OF EMERGENCY SOURCE, PROVIDED NORMAL SUPPLY HAS BEEN RESTORED.

20.9. EACH TRANSFER SHALL HAVE SWITCH-POSITION PILOT LIGHTS TO INDICATE SOURCE TO WHICH LOAD IS CONNECTED AND A SOURCE-AVAILABLE INDICATING EMERGENCY SOURCE IS AVAILABLE. TRANSFER SWITCHES SHALL HAVE AN UNASSIGNED AUXILIARY CONTACTS -TWO NORMALLY OPEN, SINGLE-POLE, DOUBLE-THROW CONTACTS FOR EACH SWITCH POSITION, RATED 10 A AT LINE-TO-LINE VOLTAGE AC, 240VAC MINIMUM.

20.10. TRANSFER SWITCH SHALL HAVE AN ENGINE STARTING CONTACTS: ONE ISOLATED AND NORMALLY CLOSED, AND ONE ISOLATED AND NORMALLY OPEN; RATED 10 A AT 32-V DC MINIMUM AND INSTANTANEOUS ENGINE SHUTDOWN CONTACT THAT INITIATE SHUTDOWN SEQUENCE AT REMOTE ENGINE-GENERATOR CONTROLS AFTER RETRANSFER OF LOAD TO NORMAL SOURCE. ENGINE SHUTDOWN CONTACTS SHALL BE TIME DELAY ADJUSTABLE FROM ZERO TO FIVE MINUTES, AND FACTORY SET FOR FIVE MINUTES. CONTACTS SHALL INITIATE SHUTDOWN AT REMOTE ENGINE-GENERATOR CONTROLS AFTER RETRANSFER OF LOAD TO NORMAL SOURCE.

20.11. PROVIDE ENGINE-GENERATOR EXERCISER, A SOLID-STATE, PROGRAMMABLE-TIME SWITCH THAT STARTS ENGINE GENERATOR AND TRANSFERS LOAD TO IT FROM NORMAL SOURCE FOR A PRESET TIME, THEN RETRANSFERS AND SHUTS DOWN ENGINE AFTER A PRESET COOL-DOWN PERIOD. INITIATES EXERCISE CYCLE AT PRESET INTERVALS ADJUSTABLE FROM 7 TO 30 DAYS. RUNNING PERIODS SHALL BE ADJUSTABLE FROM 10 TO 30 MINUTES. FACTORY SETTINGS SHALL BE FOR 7-DAY EXERCISE CYCLE, 20-MINUTE RUNNING PERIOD, AND 5-MINUTE COOL-DOWN PERIOD. EXERCISER FEATURES INCLUDE AN EXERCISER TRANSFER SELECTOR SWITCH THAT PERMITS SELECTION OF EXERCISE WITH AND WITHOUT LOAD TRANSFER AND INTEGRAL BATTERY OPERATION OF TIME SWITCH WHEN NORMAL CONTROL POWER IS UNAVAILABLE.

20.12. TRANSFER SWITCH OPERATION SHALL ENCOMPASS THE FOLLOWING OPERATING SEQUENCE.

20.12.1. A VOLTAGE DECREASE IN ONE OR MORE PHASES OF THE NORMAL POWER SOURCE TO LESS THAN 85 PERCENT OF NORMAL SHALL INITIATE THE TRANSFER SEQUENCE.

20.12.2. THE TRANSFER SWITCH SHALL START THE ENGINE-GENERATOR UNIT AFTER A TIME DELAY OF TWO OR THREE SECONDS TO PERMIT OVERRIDE OF MOMENTARY DIPS IN THE NORMAL POWER SOURCE.

20.12.3. THE TRANSFER SWITCH SHALL TRANSFER THE LOAD FROM NORMAL TO EMERGENCY SOURCE WHEN THE FREQUENCY AND VOLTAGE OF THE ENGINE GENERATOR UNIT HAVE ATTAINED 95 PERCENT OF RATED VALUE. THE TIME-DELAY SHALL BE FIELD ADJUSTABLE FROM ZERO TO FIFTEEN SECONDS.

20.12.4. THE TRANSFER SWITCH SHALL RETRANSFER THE LOAD FROM EMERGENCY TO NORMAL SOURCE UPON RESTORATION OF NORMAL SUPPLY IN ALL PHASES TO 97 PERCENT OR MORE OF NORMAL VOLTAGE, AFTER A TIME DELAY AND WHEN THE NORMAL AND GENERATOR ARE PHASE ANGLE MATCHED. THE TIME DELAY SHALL BE FIELD ADJUSTABLE FROM FIVE TO TWENTY-FIVE MINUTES (PRESET FOR TWENTY-FIVE MINUTES).

20.12.5. SHOULD THE EMERGENCY SOURCE FAIL DURING THIS TIME, THE TRANSFER SWITCH SHALL IMMEDIATELY TRANSFER TO THE NORMAL SOURCE WHENEVER IT BECOMES AVAILABLE. AFTER RESTORING TO NORMAL SOURCE, THE GENERATOR SHALL CONTINUE TO RUN FOR FIVE MINUTES UNLOADED BEFORE SHUT DOWN. TIME DELAY SHALL BE ADJUSTABLE FROM ZERO TO FIFTEEN MINUTES.

20.12.6. A VOLTAGE DECREASE, AT ANY TRANSFER SWITCH, IN ONE OR MORE PHASES OF THE NORMAL POWER SOURCE TO LESS THAN 85 PERCENT OF NORMAL SHALL START THE ENGINE-GENERATOR UNIT AFTER A TIME DELAY OF TWO TO THREE SECONDS. THE TIME DELAY SHALL BE FIELD ADJUSTABLE FROM ZERO TO FIFTEEN SECONDS.

20.12.7. TRANSFER SWITCHES FOR EMERGENCY SYSTEM LOADS SHALL TRANSFER THEIR LOADS FROM NORMAL TO EMERGENCY SOURCE WHEN FREQUENCY AND VOLTAGE OF THE ENGINE-GENERATOR UNIT HAVE ATTAINED 95 PERCENT OF RATED VALUE. ONLY THOSE SWITCHES WITH DEFICIENT NORMAL SOURCE VOLTAGE SHALL TRANSFER.

20.12.8. TRANSFER SWITCHES FOR EQUIPMENT SYSTEM LOADS SHALL TRANSFER THEIR LOADS TO THE GENERATOR ON A TIME DELAYED STAGGERED BASIS, AFTER THE EMERGENCY SYSTEM SWITCHES HAVE TRANSFERRED.

20.12.9. TOTAL DELAYED TRANSFER TIME OF AN EQUIPMENT SYSTEM SWITCHES SHALL NOT EXCEED TWO MINUTES AND IN NO CASE SHALL INDIVIDUAL LOAD TRANSFER TIMES EXCEED NFPA 110, AND APPLICABLE BUILDING CODE REQUIREMENTS. TIME-DELAY RELAYS SHALL BE FIELD ADJUSTABLE ZERO TO TWO MINUTES.

20.12.10. TRANSFER SWITCH SHALL RETRANSFER THE LOAD FROM EMERGENCY TO NORMAL SOURCE UPON RESTORATION OF NORMAL SUPPLY IN ALL PHASES TO 97 PERCENT OR MORE OF NORMAL VOLTAGE, AND AFTER A TIME DELAY UPON IN-SYNC PHASE ANGLE OF THE NORMAL AND GENERATOR INPUTS. THE TIME DELAY SHALL BE FIELD ADJUSTABLE FROM FIVE TO TWENTY-FIVE MINUTES (PRESET FOR TWENTY-FIVE MINUTES).

20.12.11. SHOULD THE EMERGENCY SOURCE FAIL DURING THIS TIME, THE TRANSFER SWITCH SHALL IMMEDIATELY TRANSFER TO THE NORMAL SOURCE WHENEVER IT BE-COMES AVAILABLE. AFTER RESTORING TO NORMAL SOURCE, THE GENERATOR SHALL CONTINUE TO RUN FOR FIVE MINUTES UNLOADED BEFORE SHUT DOWN. TIME DELAY SHALL BE ADJUSTABLE FROM ZERO TO FIF-TEEN MINUTES.

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PRELIMINARY - NOT FOR CONSTRUCTION

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ISSUE/REVISION:

REV.	DATE	DESCRIPTION
-	11/12/21	ISSUED FOR BID

PROJECT:
ISFA GRF - EM SYSTEM MODIFICATION
333 W. 35TH ST. CHICAGO, IL 60616

DRAWING TITLE:
ELECTRICAL SPECIFICATIONS

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CHECKED BY:	BT
PROJECT NO:	20336
SCALE:	1:1

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