

ELECTRICAL LEGEND:

	FURNISH AND INSTALL CONDUIT AND EQUIPMENT, QUANTITY AND SIZE OF CABLES SHALL BE AS INDICATED ON THE CONTRACT DRAWINGS.
	EXISTING CONDUIT AND EQUIPMENT TO REMAIN AS INDICATED ON THE CONTRACT DRAWINGS.
	FURNISH AND INSTALL UNDERGROUND CONDUIT AS INDICATED ON THE CONTRACT DRAWINGS.
	REVENUE GRADE UTILITY METER.
	FUSIBLE SAFETY SWITCH. X - INDICATES SWITCH AMPERE RATING Y - INDICATES FUSE AMPERE RATING
	DELTA PRIMARY / WYE SECONDARY TRANSFORMER.
	NON-FUSIBLE TYPE SAFETY SWITCH. X - INDICATES SWITCH AMPERE RATING
	CIRCUIT BREAKER. X - INDICATES AMPERE TRIP SETTING Y - INDICATES AMPERE FRAME SIZE
	AUTOMATIC TRANSFER SWITCH.
	GENERATOR.
	KEY-INTERLOCKING MECHANISM.
	MOTOR. X - INDICATES HORSEPOWER RATING
	480/277V PANELBOARD.
	208/120V PANELBOARD.
	CONTINUATION.
	HOMERUN CIRCUIT XXX#XX CIRCUIT DESIGNATION CIRCUIT NUMBER PANELBOARD NAME
	HOMERUN WITH FOUR (4) CIRCUITS XXX#XX CIRCUIT DESIGNATION CIRCUIT NUMBERS PANELBOARD NAME
	WALL MOUNTED 125V, 20A NON-LOCKING TYPE DUPLEX RECEPTACLE. GFI - DENOTES SELF-TEST GFCI TYPE RECEPTACLE WP - DENOTES LISTED WEATHER-RESISTANT RECEPTACLE IN WEATHERPROOF ENCLOSURE
	WALL MOUNTED 125V, 20A QUADRUPLEX RECEPTACLE.
	DRAWING CALLOUT X - DENOTES PART PLAN NUMBER Y - DENOTES DRAWING SHEET NUMBER
	POKE-THRU DEVICE. REFER TO DETAIL 6 ON DRAWING E-502 FOR CONDUIT INSTALLATION REQUIREMENTS.
	FINAL MECHANICAL EQUIPMENT CONNECTION. COORDINATE WITH EQUIPMENT MANUFACTURER FOR EXACT REQUIREMENTS.
	NON-FUSIBLE TYPE DISCONNECT SWITCH; SIZE AS NOTED ON PLANS.
	FUSIBLE TYPE DISCONNECT SWITCH; SIZE AS NOTED ON PLANS.
	MOTORIZED DAMPER.
	VARIABLE FREQUENCY DRIVE. REFER TO MECHANICAL CONTRACT DRAWINGS FOR SPECIFICATIONS.
	MOTOR CONTROL PANEL.
	PULL BOX; SIZE AS NOTED ON PLANS.
	HARDWIRED CONNECTION. REFER TO POWER PLANS FOR EQUIPMENT/CONNECTION INFORMATION.
	HORSEPOWER RATED SWITCH.
	DATA OUTLET; FURNISH AND INSTALL 3/4" EMPTY CONDUIT STUB-UP FROM DEVICE TO ABOVE DROPPED CEILING WITH PULL STRING. REFER TO TELECOMMUNICATION CONTRACT DRAWINGS FOR EXACT REQUIREMENTS.
	FLOOR MOUNTED DRY TYPE TRANSFORMER.
	CEILING MOUNTED JUNCTION BOX.
	EQUIPMENT GROUND TERMINAL BAR WITHIN SWITCHBOARD/PANELBOARD.
	SOLENOID VALVE.
	LEAK DETECTION.

ELECTRICAL GENERAL NOTES:

- THE CONTRACT DRAWINGS ARE DIAGRAMMATIC IN NATURE AND NOT EVERY DETAIL OR EXACT LOCATION OF EQUIPMENT AND/OR CONDUIT IS SHOWN. VERIFY ALL CONDITIONS AND DIMENSIONS IN THE FIELD BEFORE COMMENCING ANY FABRICATION, ORDERING ANY MATERIAL OR PERFORMING ANY WORK. NOTIFY THE ENGINEER OF ANY CONDITIONS OR DIMENSIONS, WHICH WOULD AFFECT THE PERFORMANCE OF WORK IN ACCORDANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS.
- UON, USE THE FOLLOWING RACEWAYS FOR INDOOR INSTALLATIONS:
 - EXPOSED: IMC / RMC
 - CONCEALED: EMT (MC CABLE WHERE PERMISSIBLE ACCORDING TO SPEC SECTION 3.06B)
 - CONNECTION TO VIBRATING EQUIPMENT: FMC; EXCEPT IN WET OR DAMP LOCATIONS, USE LFMC DAMP OR WET LOCATIONS: IMC / RMC
- UON, USE THE FOLLOWING RACEWAYS FOR OUTDOOR INSTALLATIONS, UON:
 - EXPOSED: IMC / RMC
 - CONCEALED: IMC / RMC
 - UNDERGROUND, BELOW SLAB: RNC - SCHEDULE 40 PVC
 - UNDERGROUND, ALL OTHER LOCATIONS: RNC - SCHEDULE 80 PVC
 - CONNECTION TO VIBRATING EQUIPMENT: LFMC
- UON, ALL INDOOR AND OUTDOOR WIRING SHALL BE 600V, 1/C ALUMINUM TYPE "THHN/THWN" WIRES.
- ALL PULL BOXES, JUNCTION BOXES AND ENCLOSURES FOR ELECTRICAL EQUIPMENT FOR ALL OUTDOOR AND NON-CLIMATE CONTROLLED INDOOR ENVIRONMENT SHALL BE NEMA TYPE 3R.
- LIGHT LINE WORK INDICATES EXISTING ELECTRICAL MATERIALS AND EQUIPMENT TO REMAIN. MATERIALS AND EQUIPMENT, EXISTING OR TO BE FURNISHED AND/OR INSTALLED UNDER THIS CONTRACT, BY OTHER DISCIPLINES ARE ALSO SHOWN IN LIGHT LINES. HEAVY LINE WORK INDICATES ELECTRICAL MATERIALS AND EQUIPMENT TO BE FURNISHED AND/OR INSTALLED OR EXISTING ELECTRICAL INSTALLATION TO BE MODIFIED, ADJUSTED AND OR REINSTALLED AS SHOWN ON THE CONTRACT DRAWINGS.
- MAINTAIN THE INTEGRITY OF ALL CIRCUITS IN SERVICE THAT MAY BE AFFECTED BY THIS WORK.
- IDENTIFY ALL SOURCES OF POWER AND DE-ENERGIZE REQUIRED CIRCUITS BEFORE COMMENCEMENT OF WORK.
- FOR EACH RACEWAY, PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE WITH A GREEN COLOR OUTER JACKET/INSULATION.
- UON, ALL WIRING SHALL BE INSTALLED IN APPROVED RACEWAYS.
- FURNISH AND INSTALL ALL NECESSARY MATERIAL IN ORDER TO PROVIDE A COMPLETE SYSTEM READY FOR OPERATION, ACCORDING TO CONTRACT DOCUMENTS AND APPLICABLE CODES.
- UON, ALL ITEMS TO BE SECURED SHALL BE FASTENED TO STEEL BY THREADED BEAM CLAMPS WITH LOCKING NUTS. ALL FASTENING HARDWARE SHALL BE STAINLESS STEEL AND SHALL INCLUDE SHAKE PROOF (EXTERNAL STAR) LOCK WASHERS. ALL BOLTS SHALL HAVE LOCK WASHERS ELASTIC STOP NUTS IN ADDITION TO REGULAR NUTS. SCREWS SHALL BE TAMPERPROOF AND BOLT ENDS SHALL BE PEENED.
- FURNISH AND INSTALL A PERMANENTLY AFFIXED LABEL ON ELECTRICAL EQUIPMENT. SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED WITH THE MAXIMUM AVAILABLE FAULT CURRENT. PROVIDE TYPED CIRCUIT DIRECTORIES FOR PANELBOARDS. ALL LABELS ON ELECTRICAL EQUIPMENT SHALL INDICATE THE SOURCE OF SUPPLY.
- FOR ALL JUNCTION BOXES AND ENCLOSURES INSTALLED IN DAMP OR WET LOCATIONS, CONDUITS SHALL ENTER ONLY THROUGH THE BOTTOM OR SIDES OF THE JUNCTION BOX OR ENCLOSURE. TOP CONDUIT ENTRIES SHALL NOT BE PERMITTED. ALL CONDUIT CONNECTIONS SHALL BE MOISTURE TIGHT. USE MOISTURE TIGHT HUBS FOR ALL CONDUIT ENTRANCES INTO EQUIPMENT ENCLOSURES.
- COORDINATE ALL ELECTRICAL WORK WITH OTHER TRADES.
- UON, ALL EXISTING ELECTRICAL INSTALLATIONS SHALL REMAIN.
- GROUND ALL METALLIC ENCLOSURES PER CONTRACT SPECIFICATIONS.
- ALL CONDUITS SHALL CONTAIN AN INSULATED GROUND WIRE BONDED IN ALL ENCLOSURES AND SIZED IN ACCORDANCE WITH NEC REQUIREMENTS.
- UON, FURNISH AND INSTALL WIRING, CONDUIT, AND NECESSARY EQUIPMENT/DEVICES AS REQUIRED TO ENSURE A COMPLETE AND FULLY OPERATIONAL HVAC SYSTEM. COMPLY WITH THE REQUIREMENTS DESCRIBED AND SHOWN ON THE MECHANICAL DRAWINGS AND SPECIFICATIONS.
- AFTER COMPLETION OF WORK, SUBMIT REPRODUCIBLE AS-BUILT DRAWINGS TO THE ENGINEER.
- ALL 15KV RATED CABLE TERMINATIONS AT UTILITY RISER POLE OR AT LIVE FRONT EQUIPMENT SHALL BE OUTDOOR TYPE STRESS CONES. ALL 15KV RATED CABLE TERMINATIONS AT DEAD FRONT EQUIPMENT SHALL BE LOAD BREAK TYPE.
- ALL CONDUIT TERMINATIONS INTO NON-THREADED BOXES/ENCLOSURES SHALL BE BONDED TO THE GROUND WIRE/CONDUCTOR INSTALLED IN THAT CONDUIT/RACEWAY WITH A PROPERLY SIZED BONDING JUMPERWIRE. USE BONDING BUSHINGS WITH LAY-IN LUGS FOR ALL CONDUIT TERMINATIONS.
- ALL OUTDOOR CONDUIT TERMINATIONS INTO NON-THREADED BOXES/ENCLOSURES SHALL BE MADE USING NEMA 4X CONDUIT HUBS WITH GROUNDING BUSHINGS/LAY-IN LUGS.
- EACH WIRE/CABLE SHALL BE LABELED WITHIN 6 INCHES OF ALL TERMINATION POINTS. LABELS SHALL LIST PANEL NAME, CIRCUIT & PHASE.
- ALL 3 PHASE CIRCUITS SHALL BE COLOR CODED BROWN/ORANGE/YELLOW/GRAY (480/277V), BLACK/RED/BLUE/WHITE (208/120V).
- FURNISH AND INSTALL TELEPHONE, NETWORK, SECURITY AND OTHER LOW-VOLTAGE EQUIPMENT BACK-BOXES & EMPTY CONDUIT SYSTEMS FOR LOW-VOLTAGE WIRING AND CABLING. (UON, WIRING & CABLING IS UNDER A SEPARATE CONTRACT.) LOCATION AND SIZE OF CONDUIT SHALL BE AS SPECIFIED ON THE DRAWINGS OR AS REQUIRED. THE MANNER OF INSTALLING CONDUIT SHALL BE THE SAME AS SPECIFIED HEREIN FOR LIGHT AND POWER WIRING SYSTEMS AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE IT CONSULTANT AND OTHER TELECOMMUNICATION SYSTEMS VENDORS.

ABBREVIATIONS:

'	FEET
"	INCHES
&	AND
°	DEGREES CELSIUS
# / NO.	NUMBER
1/C	ONE CONDUCTOR
3/C	THREE CONDUCTOR
4/C	FOUR CONDUCTOR
A, AMP	AMPERES
AAP	AISLE ACCESS PANEL
ACUR	AIR CURTAIN
AF	AMPERE FRAME SIZE
AL	ALUMINUM
AS/SRS	AUTOMATIC SUPPLY / RETRIEVAL SYSTEM
AT	AMPERE TRIP SETTING
ATS	AUTOMATIC TRANSFER SWITCH
BIL	BASIC INSULATION LEVEL
BMS	BUILDING MANAGEMENT SYSTEM
C	CONDUIT
CU	COPPER
DSF	DESTRATIFICATION FAN
DWG	DRAWING
EM	EMERGENCY
EQ	EQUIPMENT
ERFH	ELECTRIC RADIANT FLOOR HEATING
G, GND	GROUND
GEC	GROUNDING ELECTRODE CONDUCTOR
HP	HORSEPOWER
HV	HEATING & VENTILATION
HVAC	HEATING, VENTILATION, AIR-CONDITIONING
HWAT	HOT WATER TEMPERATURE MAINTENANCE SYSTEM
HWHU	HOT WATER UNIT HEATER
HZ	HERTZ
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
LS	LIFE SAFETY
LSJ	LONG-TIME, SHORT-TIME, & INSTANTANEOUS PICKUP
LSIG	LONG-TIME, SHORT-TIME, INSTANTANEOUS PICKUP, & GROUND FAULT
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CONTROL PANEL
MLO	MAIN LUGS ONLY
MH	MOUNTING HEIGHT
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NICET	NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES
NRTL	NATIONAL RECOGNIZED TESTING LABORATORY
NTS	NOT TO SCALE
O&R	ORANGE AND ROCKLAND UTILITY
P	POLE
PH	PHASE
RTAC	ROOFTOP AIR CONDITIONING UNIT
SRM	STORAGE RETRIEVAL MACHINE
SWBD	SWITCHBOARD
TF	TRANSFER FAN
TXF	TOILET EXHAUST FAN
TYP	TYPICAL
UL	UNDERWRITERS LABORATORY
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VAV	VARIABLE AIR VOLUME
VRC	VERTICAL RECIPROCATING CONVEYOR
W	WIRE
XFMR	TRANSFORMER

ELECTRICAL DRAWING LIST

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ARCHITECT

di Domenico + Partners LLP
 Architecture
 Landscape Architecture
 Planning
 3743 Cresscent Street, 3rd Floor
 Long Island City, New York 11101
 Tel 212-337-0400
 Fax 212-337-3567

CIVIL PLANNING ENGINEER

JMC
 JMC Planning Engineering Landscape
 Architecture & Land Surveying, PLLC
 120 Bedford Road
 Armonk, New York 10504
 Tel 914-273-5225
 Fax 914-273-2102

MEP ENGINEER

Burns BURNS ENGINEERING, PC.
 1261 Broadway, Suite 708
 New York, New York 10001
 Tel 212-962-3503

STRUCTURAL ENGINEER

GEI GEI50
 1385 Broadway, 20th FL
 New York, New York 10018
 Tel 212-687-8282
 Consultants



MANHATTAN BEER DISTRIBUTORS
 20 DUNNIGAN DRIVE
 SUFFERN, NEW YORK

KEY PLAN

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ELECTRICAL LEGEND, GENERAL NOTES, ABBREVIATIONS, & DRAWING LIST

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TO THE BEST KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE.