ELECTRICAL DRAWING INDEX

INTERIOR LIGHTING FIXTURE SCHEDULE

SYM	TYPE	DESCRIPTION	MANUFACTURER	MODEL #	LAMP	VOLTAGE	REMARKS
	A	4" DIA. RECESSED DOWNLIGHT	INTENSE LIGHTING	LC4-L2/LCT4DRT-W-SF-309	8W LED 3000K	120	
	B	4" DIA. RECESSED DOWNLIGHT, WET LABEL	INTENSE LIGHTING	LC4-L2/LCT4DRT-W-SF-309	8W LED 3000K	120	
	C	4" DIA. SURFACE MOUNT DOWNLIGHT	HALO	SMD4R-6-9S-WH	9W LED 3000K	120	FIELD SET TO 3000K
	D	23" X 30" X 5" ILLUMINATED MIRROR MEDICINE CABINET	ELECTRICMIRROR.COM	AMB1-23.25X30.00-D1-DF-LT-05-30K	78W LED 3000K	120	COORDINATE HINGE SIDE
	E	1.5" X 2" X 44" LINEAR PENDANT	SONNEMAN	KEEL 3826.25	22W LED 3000K	120	18" CABLE LENGTH
	F	3" X 3' X 8' LINEAR SURFACE MOUNT	PEERLESS	OPMS-S-8FT-80-CRI-30K-810LMF-DARK-ZT-120-SCT-CO41	40W LED 3000K	120	
	G	7" X 11" X 3" WALL SCONCE	SONNEMAN	7230.74-WL	16W LED 3000K	120	MOUNT 60" AFF TO CENTERLINE
	H	1" X 3/4" X 48" LINEAR WALL MOUNT	SONNEMAN	2810.24-4.25 BLACK	22W LED 3000K	12	ORIENT VERTICALLY; PROVIDE REMOTE DRIVER
	J	1 1/8" X 1 1/8" X 50" SURFACE MOUNT LINEAR	BARTCO	GRM10-50-30-ND-R-A-S1-SN-BL	17.2W LED 3000K	120	MOUNT TO WOOD SLAT GRID W/ DRIVER ABOVE CLG.
	K	4" X 6" X 4" SURFACE STRIP W/ MOTION SENSOR & BATTERY PACK	MERCURY	L455-4-3800-30K-HTA20-1%-50-UNI-EM7	30W LED 3000K	120	DIM 50% UNLESS MOTION IS DETETED
	L	3" X 3.5" X 8' UTILITY STRIP W/ WIRE GUARD	MERCURY	LSA-8-8000-30K-HTA-1%-UNV/WG-LSA-8	66W LED 3000K	UNI	
	M	3" X 3.5" X 4' UTILITY STRIP W/ WIRE GUARD	MERCURY	LSA-4-4000-30K-HTA-1%-UNV/WG-LSA-4	33W LED 3000K	UNI	
	N	16 X 16" X 4.5" SURFACE MTD. GARAGE LIGHT	GARDCO	SFC-5W-400-WW-G2-120-MGY	60W LED 3000K	120	(5) FIXTURES IN THE SUSPENDED CLG. SHALL BE RECESSED SFCR TYPE
	P	2' X 2' LAY-IN FLAT PANEL	METALUX	22FPSL2SLT3	16W LED 3000K	120	
	R	6" DIA. RECESSED DOWNLIGHT	INTENSE LIGHTING	6D6DRL8309-DIM-FL/IRDHZ-SFW	43W LED 3000K	120	
	S	18" X 10" PENDANT	OVL LIGHTING	NOVA NO1-P1FA-18-MW-8KP/BMP-LED230K-UNV-100-DM1	25W LED 3000K	120	ADJUST CABLE LENGTH TO 60" AFF
	T	36" DIA. X 38" H DECORATIVE PENDANT-GOLD FINISH	TECH LIGHTING	SYRMA 700-TD-SYRGP-G-LED930	17W LED 3000K	120	ADJUST HEIGHT AS DIRECTED BY ARCHITECT
	U	12" X 6" SEMI RECESSED WALL WASH	ELLIPTIPAR	S205-M028	16W LED 3000K	120	
	V	17" DIA. X 6" SURFACE MOUNT BRASS	TECH LIGHTING	JONI 700FMJNI-R-LED930	12.7W LED 3000K	120	
	W	1-CKT SUSPENDED TRACK AND TRACK SPOT	HALO	L-815SQ-10-FL-930-MB	14.2W/HEAD LED 3000K	120	PROVIDE HALO POWER TRACK CABLE MTD. 2' BELOW CLG. PROVIDE 90 DEG. CORNERS
	EX	WALL MTD. EXIT SIGN W/ BATTERY PACK	EVENLITE	RZR-EM-G-X-BB-W		120	SEE PLANS FOR FACES & ARROWS
	EX-2	EXTERIOR EXIT SIGN W/ BATTERY PACK	ATLITE	UXN-G-D-G-U-X-SDL		120	SEE PLANS FOR FACES & ARROWS
	EX-3	WALL MTD. EXIT SIGN W/ BATTERY PACK	LITHONIA	EXG-LED-EL-M6		120	SEE PLANS FOR FACES & ARROWS

EXTERIOR LIGHTING FIXTURE SCHEDULE

	LP-1	12' HIGH CITY OF WHITE PLAINS DOWNTOWN STREET LIGHT	LUMEC LIGHTING	L82-CWP-STD-LED-347Z1-49-90W-4000K-BLACK	90W LED 4000K	UNI	MATCH CITY OF WHITE PLAINS STANDARD, SEE DETAIL 2 ON DWG. SD-102
	LP-2	15" X 29" X 6" LUMINAIRE ON 14' ROUND POLE	GARDCO LIGHTING	ECF-5-48L-900-WW-G2-AR-3-UNV-BK/14' POLE	48W LED 3000K	UNV	PROVIDE BACK TO BACK LUMINAIRES WHERE INDICATED ON PLAN; SEE DETAIL 3 ON DWG. SD-102
	B-1	3" X 5" X 24" BOLLARD	LUMIERE	1800-24-12LED-3025-UNV-BK	12 W LED 3000K	120	BOLT INTO ROOF PAVERS
	DL-1	4" DIA. RECESSED DOWNLIGHT	USAI	B4RD-12C3-30KS-50-S-BL-BL-FTIC-UNV-D6E-CB27	12W LED 3000K	120	
	DL-2	4" DIA. RECESSED DOWNLIGHT	USAI	B4RD-09C3-30KS-50-S-BL-BL-FTIC-UNV-D6E-CB27	9W LED 3000K	120	
	DL-3	1 1/2" X 3" SURFACE LOW-VOLTAGE SURFACE DOWNLIGHT	HEVI	HL-315-LED-BK	3 W LED 3000K	12	PROVIDE (1) 60W REMOTE XFMR HLT-60M PER 12 FIXTURES
	WL-1	4" X 5" X 1" WALL MOUNT	LUMIERE	303-WI-LEDB1-3000K-UNV-T2-DIMELV-BK	8.5W LED 3000K	120	MOUNT 6'-8" ABOVE GRADE/PAVER DECK
	WL-2	12" X 9" X 5" WALL MOUNT	STONCO	LPW32-50-WW-G3-4-120-BK	50W LED 3000K	120	MOUNT 15'-0" ABOVE GRADE
	WL-3	LED VAPORTITE JELLY JAR	RAB LIGHTING	VXBR LEDBYDG	13W LED 2700K	120	MOUNT 6'-8" ABOVE PAVER DECK
	WL-4	5" X 12" X 5" WALL SCONCE	TECH LIGHTING	700OWLYT-830-12-C-B-UNV-S	9.9W LED 3000K	120	MOUNT 72" ABOVE PAVER DECK
	WL-5	24" SIGN GOOSENECK, LOW-VOLTAGE	LUMIERE	920-8LED-30-36-12-BK-HA24	8W LED 3000K	12	PROVIDE (1) 60W REMOTE XFMR FOR (5) FIXTURES
	WL-6	3"x5"x2 1/2" WALL LIGHT	HEVI	HL-1181-BK-3LED-12	3W LED 3000K	120	PROVIDE 15W REMOTE TRANSFORMER FOR (2) FIXTURES, MOUNT UNDER PAVERS: HLT-15E-LED

NOTES:

1. FIXTURES COLORS AND FINISHES SHALL BE VERIFIED WITH ARCHITECT PRIOR TO RELEASE OF MATERIAL FOR MANUFACTURE. ALL SELECTIONS SHALL BE REVIEWED AND APPROVED BY OWNER PRIOR TO PURCHASE.
2. ALL RECESSED LIGHT FIXTURES MUST FOLLOW THE FIRE RESISTANCE RATING OUTLINED IN THE G531 UL SYSTEM. A MAXIMUM OF 4 FIXTURES PER 100 SQ. FT. OF CEILING AREA ARE ALLOWED. IF THESE GUIDELINES CAN'T BE FOLLOWED, CONTRACTOR SHALL PROVIDE FIRE RATED ENCLOSURE ABOVE ALL RECESSED LIGHTS. ALL RECESSED LIGHT FIXTURES SHALL BE FITTED WITH LED LAMPS, 75% OF ALL APARTMENT LIGHTING MUST USE HIGH EFFICACY LAMPS SUCH AS LED OR CFL.
3. THE BATTERY PACK FOR ALL EXIT AND EMERGENCY LIGHT FIXTURES SHALL BE CAPABLE OF PROVIDING EMERGENCY POWER TO THE FIXTURES FOR A MINIMUM OF 90 MINUTES
4. ALL RECESSED FIXTURES INSTALLED IN CLINGS INDICATED BY ARCHITECT AS HAVING INSULATION INSTALLED OVER CLING AND FIXTURES SHALL BE RATED FOR DIRECT CONTACT WITH INSULATION OR INSTALLED INSIDE AN APPROPRIATE AIR-TIGHT ASSEMBLY WITH A .5 INCH CLEARANCE FROM COMBUSTIBLE MATERIALS AND WITH 3 INCHES CLEARANCE FROM INSULATION MATERIAL. VERIFY WITH ARCHITECTURAL PLANS
5. ALL RECESSED FIXTURES RECESSED IN FIRE RATED CLINGS, SHALL BE INSTALLED WITH AN APPROVED TENT ENCLOSURE BY G.C OR BE U.L RATED FOR USE IN FIRE RATED CLINGS. VERIFY WITH ARCHITECTURAL PLANS
6. VERIFY ALL FIXTURE VOLTAGES PRIOR TO ORDERING.
7. REGARDLESS OF MODEL NUMBER, THE ELECTRICAL CONTRACTOR SHALL PROVIDE DIMMING BALLASTS FOR ALL FLUORESCENT LIGHT FIXTURES CONTROLLED DIMMING SWITCHES.
8. LUMINAIRES SHALL BE FULLY SHIELDED, EMITTING NO LIGHT ABOVE 90 DEGREES. THE LUMINAIRE'S MOUNTING HARDWARE SHALL NOT PERMIT MOUNTING IN ANY CONFIGURATION OTHER THAN THOSE MAINTAINING FULL SHIELDING.
9. NON-RESIDENTIAL LUMINAIRES SHALL HAVE AN UPLIGHT RATING OF U0.
10. FIXTURES SHALL HAVE NO SAG OR DROP LENSES, SIDELIGHT PANELS, OR UPLIGHT PANELS.
11. FIXTURES SHALL EMPLOY WARM-TONED (3000K AND LOWER) WHITE LIGHT SOURCES OR EMPLOY AMBER LIGHT SOURCES OR FILTERED LED LIGHT SOURCES

ELECTRICAL SYMBOLS LEGEND

(J)	JUNCTION BOX
$a	SINGLE POLE, 120/277V LIGHT SWITCH: COMMERCIAL GRADE 'a' REPRESENTS CONTROL DESIGNATION.
$a 3	SINGLE POLE, 120/277V 3-WAY LIGHT SWITCH: COMMERCIAL GRADE 'a' REPRESENTS CONTROL DESIGNATION.
$a 4	SINGLE POLE, 120/277V 4-WAY LIGHT SWITCH: COMMERCIAL GRADE 'a' REPRESENTS CONTROL DESIGNATION.
$OS MS	OCCUPANCY/VACANCY SENSOR SWITCH. WATTSTOPPER #DW-100.
$O/V	OVER/RIDE SWITCH FOR LIGHTING VIA CONTACTORS
D	SINGLE POLE, 120/277V DIMMER SWITCH: COMMERCIAL GRADE 'a' REPRESENTS CONTROL DESIGNATION.
D OS/VS	OCCUPANCY/VACANCY SENSOR 0-10V DIMMER SWITCH. WATTSTOPPER #PW-311
OS a	CEILING MTD. OCCUPANCY SENSOR. WATTSTOPPER #DT-300 W/ BZ-150 POWERPACK. 'a' REPRESENTS CONTROL DESIGN.
OS L	CEILING MOUNTED LINE VOLTAGE OCCUPANCY SENSOR. WATTSTOPPER #DT-355
OD a	CEILING MTD. OCCUPANCY SENSOR FOR CORRIDOR APPLICATION. WATTSTOPPER #WT-2250 W/ BZ-150 POWERPACK. 'a' REPRESENTS CONTROL DESIGN.
OS DLM a	WATTSTOPPER DLM OCCUPANCY SENSOR LMDC-100. 'a' REPRESENTS CONTROL DESIGNATION.
OS S	WATTSTOPPER DLM SINGLE ZONE DAYLIGHT SENSOR LMLS-400
OS M	WATTSTOPPER DLM MULTI ZONE DAYLIGHT SENSOR LMLS-500
RC2 a,b,c	WATTSTOPPER DLM 3 RELAY DIMMING ROOM CONTROL LMRC-213. 'a','b','c' REPRESENTS CONTROL DESIGNATION.
RC2 a,b	WATTSTOPPER DLM 2 RELAY ROOM CONTROL LMRC-102. 'a','b' REPRESENTS CONTROL DESIGNATION.
RC1 a	WATTSTOPPER DLM SINGLE RELAY ROOM CONTROL LMRC-101. 'a' REPRESENTS CONTROL DESIGNATION.
S 3	WATTSTOPPER DLM 3 BUTTON DIGITAL SWITCH LMSW-103. (1) ON/OFF, (2) DIMMER BUTTONS
S a,b 4	WATTSTOPPER DLM 4 BUTTON DIGITAL SWITCH LMSW-104. 'a','b' REPRESENTS CONTROL DESIGNATION U.O.N.
	208V-2P-50A RECEPTACLE FOR ELECTRIC RANGE COMMERCIAL GRADE. VERIFY EQUIPMENT REQ. PRIOR TO INSTALLATION.
	208V-2P-30A SIMPLEX RECEPTACLE FOR ELECTRIC DRYER COMMERCIAL GRADE
	120V 20A GFI DUPLEX RECEPTACLE COMMERCIAL GRADE. MOUNTED @ 42" A.F.F. (U.O.N.)
	120V 20A DUPLEX RECEPTACLE COMMERCIAL SPECIFICATION GRADE.
	120V 20A QUAD RECEPTACLE COMMERCIAL SPECIFICATION GRADE.
	120V 20A DEDICATED QUAD RECEPTACLE COMMERCIAL SPECIFICATION GRADE.
	120V 20A DUPLEX RECEPTACLE TAMPER-RESISTANT W/ YOKE BROKEN TO PROVIDE ½ SWITCHED AND ½ HOT
	DEDICATED RECEPTACLE - REFER TO PLAN FOR RATING AND TYPE (COMMERCIAL GRADE)
	EMERGENCY LIGHTING UNIT DUAL-LITE LZ-2-I-03L 2 3W LED DUAL 6W/ 10W MAX SURFACE MOUNTED
CRA	GENERATOR REMOTE ANNUCIATOR
	120V 20A CEILING MTD. DUPLEX RECEPTACLE COMMERCIAL SPECIFICATION GRADE.
$TH	THERMAL DISCONNECT SWITCH. SIZE AS REQUIRED.
A B C	UNFUSED DISCONNECT SWITCH. 'A'=NEMA RATING, 'B'=SWITCH RATING, 'C'=NUMBER OF POLES.
A B/C	FUSED DISCONNECT SWITCH. 'A'=NEMA RATING, 'B'=SWITCH RATING, 'C'=FUSE SIZE, 'D'= NUMBER OF POLES.
▼	APTS: SINGLE JACK TELEPHONE WITH CAT5E 4-PAIR HR TO TELEPHONE BOX
▽	DATA JACK W/ BACKBOX & 3/4" CDT STUB-UP & (1) CAT5E 4 PAIR RUN TO TELEPHONE CLOSET
▼	APTS: COMBINATION VOICE DATA JACK WITH (1) CAT3 2 PAIR & (1) CAT5E 4 PAIR TO TELEPHONE BOX
	FLUSH MOUNTED ELECTRICAL PANELBOARD. IN APT. UNITS TOP MOST BREAKER IN PANEL SHALL NOT BE MORE THAN 48" HIGH.
	APTS: TEL/CABLE BOX (FBO): EC TO INSTALL AND INSTALL INNERDUCT (FBO) TO LOW VOLTAGE UTILITY ROOM
C	APTS: (1) CABLE JACK WITH RG60 COAX RUN TO CABLE BOX & (1) DATA JACK WITH CAT5E HR TO CABLE BOX
CR	CARD READER. PROVIDE BACKBOX & 1" EC STUBBED AND BUSHED ABOVE ACCESSIBLE CEILING. COORDINATE WITH SECURITY VENDOR DRAWING EXACT LOCATION AND WIRE TYPE.
	ONE-2 GANG BOX SHALL CONTAIN & (1) QUAD RECEPTACLE & (1) DATA JACK E.C TO PROVIDE ADEQUATE FLOOR BOX.
	120V 20A FLOOR MTD. DUPLEX RECEPTACLE COMMERCIAL SPECIFICATION GRADE E.C TO PROVIDE ADEQUATE FLOOR BOX.
	CAMERA. PROVIDE 3/4" CONDUIT TO SERVER ROOM WHERE WIRING IS EXPOSED.

FIRE ALARM DEVICE LEGEND

	FIRE ALARM 75 CD VISUAL NOTIFICATION DEVICE
F	MANUAL FIRE ALARM PULL STATION
F	FIRE ALARM 75 CD AUDIO/VISUAL NOTIFICATION DEVICE **
F xxcd	FIRE ALARM XX CD AUDIO/VISUAL NOTIFICATION DEVICE
R	RELAY
FJ	FIRE PHONE JACK
IAM	INTERFACEABLE ADDRESSABLE MODULE
IAM	IAM WITH RELAY
R	TEST/RESET KEY SWITCH W/ LED
120V SD	RESIDENTIAL 120V SMOKE DETECTOR
120V SD/CO	RESIDENTIAL 120V COMBO CO & SMOKE DETECTOR
SD	SMOKE DETECTOR
SD/CO	COMBO CO & SMOKE DETECTOR
HD	HEAT DETECTOR
DSD	DUCT SMOKE DETECTOR
FSD	FIRE SMOKE DAMPER IAM W/ RELAY
WF	MONITOR MODULE FOR WATER FLOW
TS	MONITOR MODULE FOR TAMPER SWITCH
PF	MONITOR MODULE FOR FIRE PUMP PUMP FAILURE
PR	MONITOR MODULE FOR FIRE PUMP PHASE REVERSAL
BF	MONITOR MODULE FOR FIRE PUMP BLOWN FUSE
DR	MONITOR MODULE WITH 120V RATED RELAY FOR DOOR RELEASE.
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM REMOTE ANNUNCIATOR PANEL
DGP	FIRE ALARM DATA GATHERING PANEL
EC-AN	TWO WAY COMMUNICATION ANNUNCIATOR - CORNELL SERIES A-4800M WITH 25 ZONES
CS	TWO WAY COMMUNICATION CALL STATION - CORNELL SERIES 4201B/V VANDAL RESISTANT CALL STATION WITH FLUSH SWITCH

**(LOW FREQUENCY FOR DWELLING UNITS)

ABBREVIATIONS

A	AMPERE
A/C	AIR CONDITIONING
A.F.F.	ABOVE FINISH FLOOR
A.R.	AS REQUIRED
ARCH	ARCHITECT
B.B.	BASE BUILDING
BLDG	BUILDING
C, CDT	CONDUIT
C/B	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CLG	CEILING
CRAC	COMPUTER ROOM AIR CONDITIONER
D	DEMOLISH
DEPT.	DEPARTMENT
DJ	DOOR JAM
DN	DOWN
DP	DISTRIBUTION PANEL
DWG	DRAWING
E, EX	EXISTING
EC	EMPTY CONDUIT
EM	EMERGENCY
EQUIP	EQUIPMENT
ER	EXISTING TO BE RELOCATED
FIXT	FIXTURE
FL	FLOOR
FLUOR	FLUORESCENT
G, GND	GROUND
GALV	GALVANIZED
GFI	GROUND FAULT INTERRUPTER
HVAC	HEATING, VENTILATING & AIR CONDITIONING
IG	ISOLATED GROUND
LP	LIGHTING PANEL
KW	KILOWATT
LS	LIFE SAFETY
MANF	MANUFACTURER
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
M.O.A.	MULTI-OUTLET ASSEMBLY
MTD	MOUNTED
N	NEW
NL	NIGHT LIGHT
N.I.C	NOT IN CONTRACT
No., #	NUMBER
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
POTS	PLAIN OLD TELEPHONE SERVICE
R, RE	RELOCATED EXISTING EQUIPMENT
REQ'D	REQUIRED
RGS	RIGID GALVANIZED STEEL
SPEC	SPECIFICATION
SW	SWITCH
TC	TIME CLOCK
TEL	TELEPHONE
TRAC	TECHNOLOGY ROOM AIR CONDITIONER
T/F, XFMR	TRANSFORMER
TYP.	TYPICAL
U.O.N	UNLESS OTHERWISE NOTED
UP	UTILITY PANEL
V	VOLT
W/	WITH
WP	WEATHER PROOF WHILE IN USE

GENERAL ELECTRICAL NOTES

1. ALL WORK IS TO BE PERFORMED IN STRICT COMPLIANCE WITH THE NATIONAL ELECTRIC CODE, STATE LAWS, AND ALL OTHER REGULATIONS GOVERNING WORK OF THIS NATURE.
2. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIAL, AND LABOR TO SATISFY A COMPLETE AND WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.
3. THE CONTRACTOR SHALL SECURE ALL PERMITS OR APPLICATIONS AND PAY ANY AND ALL FEES AS REQUIRED.
4. CONTRACTOR TO CONFIRM EXACT LOCATION OF EXISTING AND NEW EQUIPMENT WITH OWNERS AGENTS.
5. CONDUIT RUNS ARE DIAGRAMMATICALLY SHOWN ON THE DRAWINGS. FINAL ROUTING OF THE CONDUITS SHALL BE DETERMINED BY THE ELECTRICAL CONTRACTOR.
6. FIELD MOUNTED DEVICES SUCH AS SWITCHES, MOTOR STARTERS, RECEPTACLES, ETC., ARE SHOWN IN THEIR APPROXIMATE LOCATION. SWITCH MOUNTING HEIGHT SHALL BE 48" ABOVE FINISHED FLOOR AND RECEPTACLE MOUNTING HEIGHT SHALL BE 18" ABOVE FINISHED FLOOR.
7. POWER WIRING SHALL BE COPPER STRANDED CONDUCTOR WITH "THW" INSULATION RATED 600 VOLTS. MINIMUM WIRE SIZE OF POWER WIRING SHALL BE #12 AWG. LIGHTING AND RECEPTACLE BRANCH CIRCUIT WIRING SHALL BE #12 AWG UNLESS OTHERWISE NOTED ON DRAWINGS OR SCHEDULES.
8. 20 AMP HOME RUN CIRCUITS MORE THAN 75 FEET FROM THE PANEL- BOARD SHALL BE MADE WITH #10 AWG OR LARGER AS REQUIRED TO LIMIT VOLTAGE DROP TO 2% MAXIMUM.
9. THE TYPE OF CONDUIT SHALL BE AS FOLLOWS FOR ALL FEEDERS AND DISTRIBUTION CIRCUITS, UNLESS OTHERWISE SPECIFIED.

APPLICATION	TYPE OF CONDUIT
BURIED IN CONCRETE OR MASONRY, OR OUTDOORS	GALV. RIGID STEEL
SERVICE ENTRANCE	GALV RIGID STEEL
SUPPLY TO DISTRIBUTION PANELS AND HVAC EQUIPMENT	EMT
BRANCH CIRCUITS	EMT OR MC

10. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING SYSTEMS (AS REQUIRED) IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
11. ALL RECEPTACLES SHALL BE GROUNDING TYPE.
12. ALL RECEPTACLES INSTALLED IN BATHROOMS AND KITCHENS SHALL HAVE GROUND-FAULT CIRCUIT INTERRUPTER PROTECTION AS REQUIRED BY THE NATIONAL ELECTRIC CODE.
13. ALL ELECTRIC MATERIALS AND EQUIPMENT FOR THE PROJECT SHALL BE NEW AND U.L. OR EQUALLY APPROVED.
14. CONTRACTOR TO CONFIRM EXACT LOCATION OF METERS WITH ELECTRIC UTILITY.
15. SUBMIT TO THE OWNER CERTIFICATES OF INSPECTIONS IN DUPLICATE FROM AN APPROVED INSPECTION AGENCY UPON COMPLETION.
16. PERFORMANCE AND WITNESSING OF TESTS
    A. THE CONTRACTOR SHALL FURNISH ALL INSTRUMENTS AND QUALIFIED PERSONNEL OR FIRM TO PERFORM ALL REQUIRED TESTS.
    B. ALL NEW AND RECONNECTED ELECTRICAL CIRCUIT SHALL BE TESTED TO INSURE CIRCUIT CONTINUITY, INSULATION RESISTANCE, PROPER SPLICING AND GROUNDING IN ACCORDANCE WITH THE LATEST STANDARDS AS STATED ABOVE. BEFORE CONNECTING POWER CABLES TO MOTORS, THE INSULATION RESISTANCE OF ALL MOTOR WINDINGS SHALL BE TESTED IN ACCORDANCE WITH THE ABOVE STANDARDS.
    C. ANY CONTRACTOR FURNISHED AND/OR INSTALLED SPLICE, RECOMMENDED VOLTAGE AND INSULATION RESISTANCE TESTS, SHALL BE CONNECTED OR REPLACED BY THE CONTRACTOR AT HIS EXPENSE.
    D. NO EQUIPMENT SHALL BE ENERGIZED UNTIL ALL TESTS AND ADJUSTMENTS HAVE BEEN MADE.
    E. THREE COPIES OF ALL TEST RESULTS SHALL BE DELIVERED TO THE OWNER.
17. ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE MECHANICAL WORK AS CALLED FOR IN MECHANICAL SPECIFICATIONS.

TYPICAL DEVICE MOUNTING HEIGHTS (U.O.N.)

RECEPTACLES (UON)	18" AFF
RECEPTACLES (COUNTER)	44" AFF
LIGHT SWITCHES	48" AFF TO TOP OF DEVICE
DISCONNECT SWITCHES	NEC 404.8(A)
TELEPHONE OUTLETS	18" AFF
TELEPHONE OUTLET(WALL MTD)	48" AFF TO TOP OF DEVICE
COMPUTER OUTLETS	18" AFF
CLOCK OUTLETS	84" AFF
FIRE ALARM PULL STATION	42" AFF MIN./44" AFF MAX.
FIRE ALARM AUDIO/VISUAL ALARM	80" AFF MIN./96" AFF MAX.
EXIT LIGHTS (WALL MTD)	1' ABOVE DOOR
EMERGENCY LIGHTS(WALL MTD)	7'-6" AFF
TV OUTLETS	18" AFF
AUDIO/VIDEO OUTLETS	18" AFF
MICROPHONE OUTLETS	18" AFF
PA ANNUNCIATOR PANEL	48" AFF TO TOP OF DEVICE
WELDING OUTLETS	36" AFF

NOTE: DIMENSIONS ARE TO DEVICE CENTERLINE UNLESS OTHERWISE NOTED

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Rev. #	Revision Description	Date:
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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:

136-158 WESTMORELAND, LLC
1485 5TH AVENUE, 24F
NEW YORK, NY 10035

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212 324-6300

Khachaturian Engineering Associates
Mechanical/Electrical/Plumbing Engineers
186 Wood Avenue South, First Floor
Iselin, NJ 08830
732 635-0044

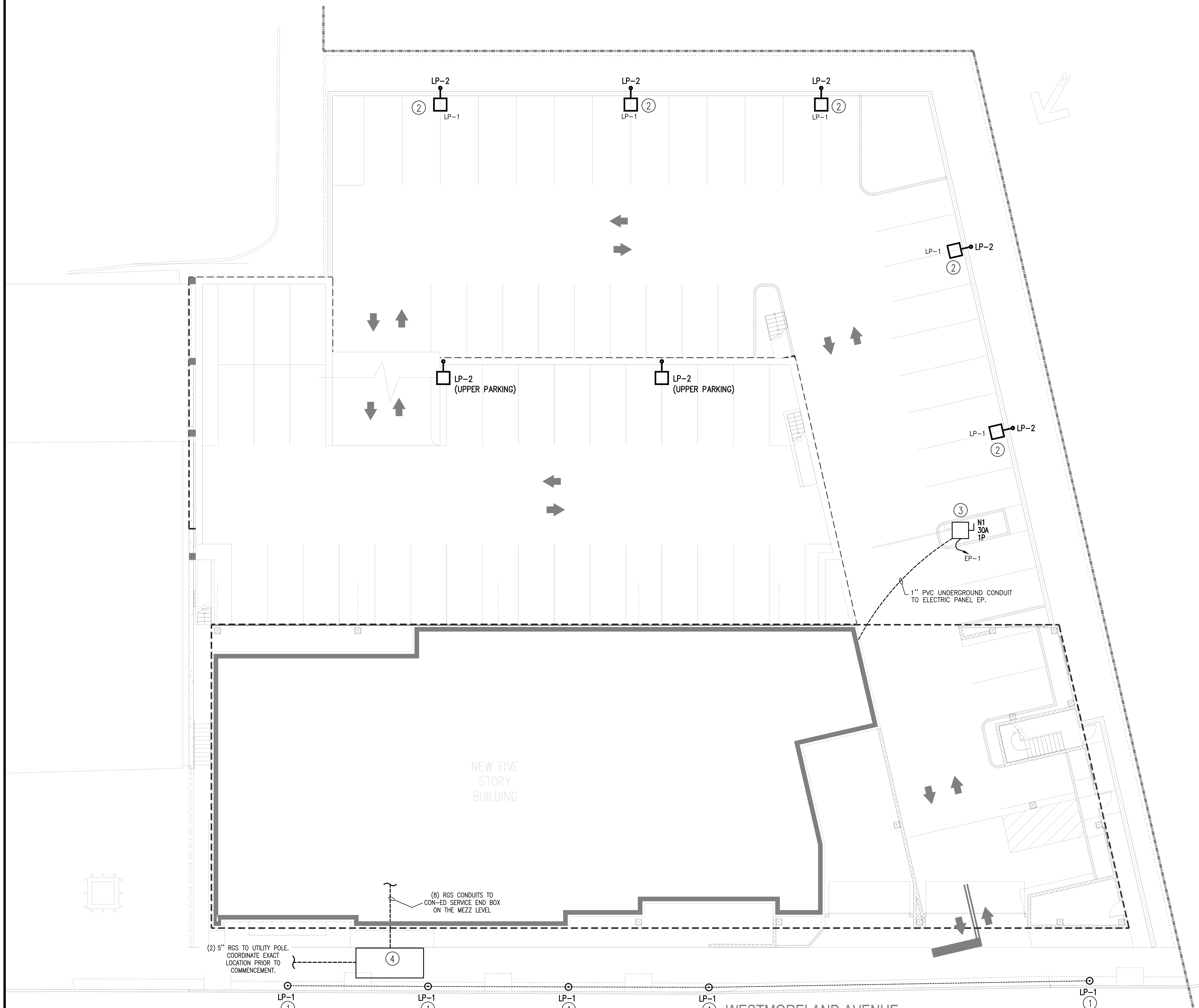
Sheet Title:

ELECTRICAL COVER SHEET

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #082281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-0.01
Sheet:	of



ELECTRICAL-SITE PLAN

3/32" =1'-0"

ELECTRICAL GENERAL NOTES:

1. THESE DRAWINGS SHOW THE INTENT OF THE NEW DESIGN. THE CONDUITS ROUTING SHOWN ARE DIAGRAMMATIC, IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO FOLLOW THIS INTENT WHILE ADAPTING TO THE CONDITIONS FOUND IN THE FIELD.
2. COORDINATE ALL WORK WITH OTHER CONTRACTORS AND SUBCONTRACTORS PRIOR TO START OF WORK.
3. ALL ELECTRIC SERVICE CONDUITS, PRIMARY VOLTAGE & SECONDARY VOLTAGE CABLES, TRANSFORMERS, TRANSFORMER PADS SHALL BE PROVIDED & INSTALLED BY THE ELECTRICAL CONTRACTOR.
4. ALL CONDUIT RUNS SHALL BE SCHEDULE 40 U.O.N & ENCASED IN CONCRETE, REFER TO DETAIL ON SHEET E301 AND E501 FOR CONDUCTORS SIZE.
5. ALL CONDUIT TURNS AND BENDS SHALL BE A MINIMUM OF 48" SWEEP ELBOW.
6. ALL ON-SITE TERMINATIONS ARE BY THE ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL WORK WITH MADISON ELECTRIC REPRESENTATIVE BEFORE PROCEEDING WITH TERMINATIONS.
7. ALL UNDERGROUND CONDUIT INSTALLATION SHALL BE INSPECTED AND APPROVED BY ELECTRIC UTILITY COMPANY AND TOWNSHIP ELECTRICAL SUB-CODE OFFICIAL BEFORE TRENCHES ARE COVERED.
8. THE RISERS AND SWEEPS UP THE POLES SHALL BE SCHEDULE 80.
9. ALL LIGHTING ON THIS PLAN SHALL BE CONTROLLED VIA TIMECLOCK AND PHOTOCELL.

KEYED NOTES:

1. CITY LIGHT – E.C. SHALL RUN UNDERGROUND 2#8, 1#8G IN 1-1/4" PVC CONDUIT TO PROVIDE POWER TO THE LIGHTING FIXTURES. COORDINATE CIRCUITING WITH CITY MUNICIPALITY.
2. PARKING LIGHTS TO BE CONTROLLED VIA 7 DAYS PROGRAMMABLE TIME CLOCK. TIME SCHEDULE AND LOCATION TO BE COORDINATED WITH OWNER/ARCHITECT PRIOR TO INSTALLATION.
3. PARKING DOOR CARD READER/MOTOR STAND. CONFIRM ELECTRICAL REQUIREMENT WITH MODEL IN FIELD.
4. CON-ED UNDER GROUND TRANSFORMER VAULT, E.C. SHALL PROVIDE VAULT AS PER CON-ED STANDARDS, COORDINATE EXACT LOCATION IN FIELD WITH CON-ED PRIOR TO COMMENCEMENT.

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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021
Rev. #	Revision Description	Date:

Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS

136-158 WESTMORELAND AVE.

WHITE PLAINS, NY 10606

Owner/Developer:

136-158 WESTMORELAND, LLC

1485 5TH AVENUE, 24F

NEW YORK, NY 10035

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732 635-0044

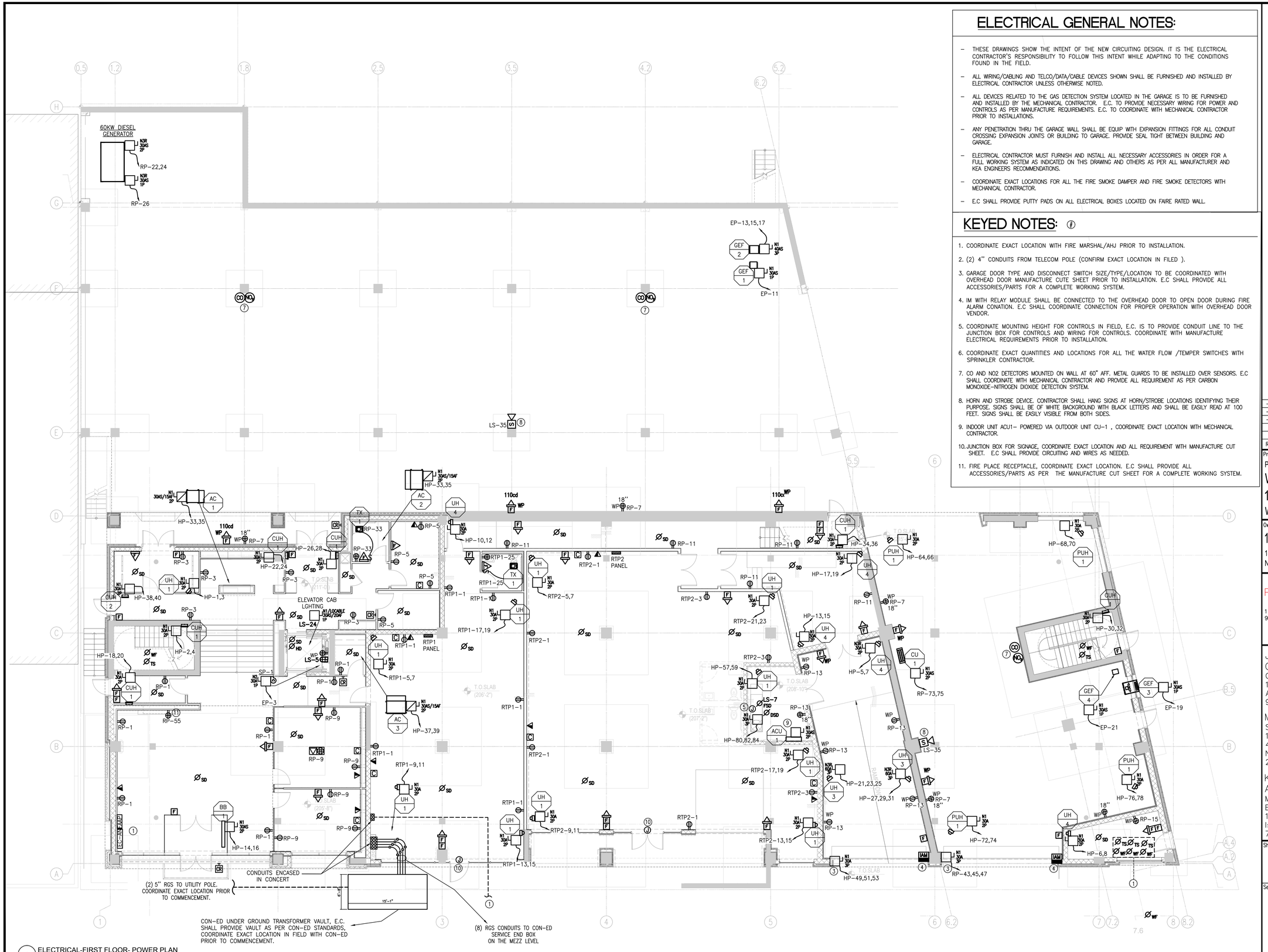
Sheet Title:

ELECTRICAL SITE PLAN

Seal & Signature

ARMEN KHACHATURIAN, P.E. – NY LICENSE #062261-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	EL-0.02
Sheet:	of



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

ELECTRICAL GENERAL NOTES:

- THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO FOLLOW THIS INTENT WHILE ADAPTING TO THE CONDITIONS FOUND IN THE FIELD.
- ALL WIRING/CABLING AND TELCO/DATA/CABLE DEVICES SHOWN SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
- ALL DEVICES RELATED TO THE GAS DETECTION SYSTEM LOCATED IN THE GARAGE IS TO BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. E.C. TO PROVIDE NECESSARY WIRING FOR POWER AND CONTROLS AS PER MANUFACTURE REQUIREMENTS. E.C. TO COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATIONS.
- ANY PENETRATION THRU THE GARAGE WALL SHALL BE EQUIP WITH EXPANSION FITTINGS FOR ALL CONDUIT CROSSING EXPANSION JOINTS OR BUILDING TO GARAGE. PROVIDE SEAL TIGHT BETWEEN BUILDING AND GARAGE.
- ELECTRICAL CONTRACTOR MUST FURNISH AND INSTALL ALL NECESSARY ACCESSORIES IN ORDER FOR A FULL WORKING SYSTEM AS INDICATED ON THIS DRAWING AND OTHERS AS PER ALL MANUFACTURER AND KEA ENGINEERS RECOMMENDATIONS.
- COORDINATE EXACT LOCATIONS FOR ALL THE FIRE SMOKE DAMPER AND FIRE SMOKE DETECTORS WITH MECHANICAL CONTRACTOR.
- E.C SHALL PROVIDE PUTTY PADS ON ALL ELECTRICAL BOXES LOCATED ON FAIRE RATED WALL.

KEYED NOTES:

1. COORDINATE EXACT LOCATION WITH FIRE MARSHAL/AHJ PRIOR TO INSTALLATION.
2. (2) 4" CONDUITS FROM TELECOM POLE (CONFIRM EXACT LOCATION IN FILED).
3. GARAGE DOOR TYPE AND DISCONNECT SWITCH SIZE/TYPE/LOCATION TO BE COORDINATED WITH OVERHEAD DOOR MANUFACTURE CUTE SHEET PRIOR TO INSTALLATION. E.C SHALL PROVIDE ALL ACCESSORIES/PARTS FOR A COMPLETE WORKING SYSTEM.
4. IM WITH RELAY MODULE SHALL BE CONNECTED TO THE OVERHEAD DOOR TO OPEN DOOR DURING FIRE ALARM CONATION. E.C SHALL COORDINATE CONNECTION FOR PROPER OPERATION WITH OVERHEAD DOOR VENDOR.
5. COORDINATE MOUNTING HEIGHT FOR CONTROLS IN FIELD, E.C. IS TO PROVIDE CONDUIT LINE TO THE JUNCTION BOX FOR CONTROLS AND WIRING FOR CONTROLS. COORDINATE WITH MANUFACTURE ELECTRICAL REQUIREMENTS PRIOR TO INSTALLATION.
6. COORDINATE EXACT QUANTITIES AND LOCATIONS FOR ALL THE WATER FLOW /TEMPER SWITCHES WITH SPRINKLER CONTRACTOR.
7. CO AND NO2 DETECTORS MOUNTED ON WALL AT 60" AFF. METAL GUARDS TO BE INSTALLED OVER SENSORS. E.C SHALL COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIREMENT AS PER CARBON MONOXIDE-NITROGEN DIOXIDE DETECTION SYSTEM.
8. HORN AND STROBE DEVICE. CONTRACTOR SHALL HANG SIGNS AT HORN/STROBE LOCATIONS IDENTIFYING THEIR PURPOSE. SIGNS SHALL BE OF WHITE BACKGROUND WITH BLACK LETTERS AND SHALL BE EASILY READ AT 100 FEET. SIGNS SHALL BE EASILY VISIBLE FROM BOTH SIDES.
9. INDOOR UNIT ACU1- POWERED VIA OUTDOOR UNIT CU-1 , COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
10. JUNCTION BOX FOR SIGNAGE, COORDINATE EXACT LOCATION AND ALL REQUIREMENT WITH MANUFACTURE CUT SHEET. E.C SHALL PROVIDE CIRCUITING AND WIRES AS NEEDED.
11. FIRE PLACE RECEPTACLE, COORDINATE EXACT LOCATION. E.C SHALL PROVIDE ALL ACCESSORIES/PARTS AS PER THE MANUFACTURE CUT SHEET FOR A COMPLETE WORKING SYSTEM.

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2	Issued For Bid	04-12-2021
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Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS

136-158 WESTMORELAND AVE.

WHITE PLAINS, NY 10606

Owner/Developer:

136-158 WESTMORELAND, LLC

1485 5TH AVENUE, 24F

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732 635-0044

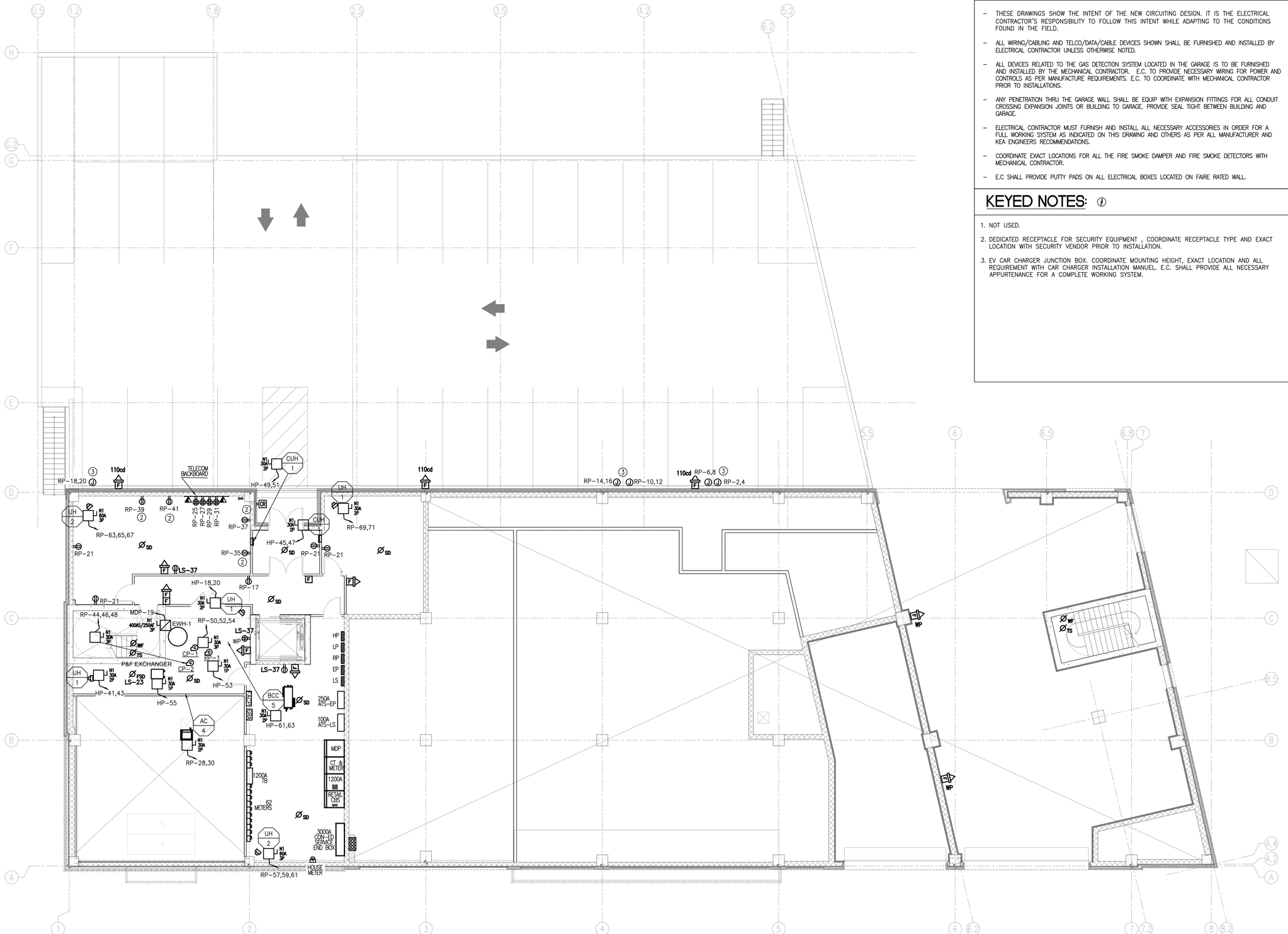
Sheet Title:

ELECTRICAL FIRST FLOOR POWER PLAN

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #082281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-1.01
Sheet:	of



2 ELECTRICAL-MEZZANINE FLOOR -POWER PLAN
1/8" =1'-0"

ELECTRICAL GENERAL NOTES:

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- COORDINATE EXACT LOCATIONS FOR ALL THE FIRE SMOKE DAMPER AND FIRE SMOKE DETECTORS WITH MECHANICAL CONTRACTOR.
- E.C SHALL PROVIDE PUTTY PADS ON ALL ELECTRICAL BOXES LOCATED ON FAIRE RATED WALL.

KEYED NOTES:

1. NOT USED.
2. DEDICATED RECEPTACLE FOR SECURITY EQUIPMENT , COORDINATE RECEPTACLE TYPE AND EXACT LOCATION WITH SECURITY VENDOR PRIOR TO INSTALLATION.
3. EV CAR CHARGER JUNCTION BOX. COORDINATE MOUNTING HEIGHT, EXACT LOCATION AND ALL REQUIREMENT WITH CAR CHARGER INSTALLATION MANUEL. E.C. SHALL PROVIDE ALL NECESSARY APPURTENANCE FOR A COMPLETE WORKING SYSTEM.

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2	Issued For Bid	04-12-2021
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Project Description:
PROPOSED MIXED USE BUILDING:
WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:
136-158 WESTMORELAND, LLC
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Sheet Title:
ELECTRICAL MEZZANINE FLOOR POWER PLAN

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #062281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-1.02
Sheet:	of

ELECTRICAL GENERAL NOTES:

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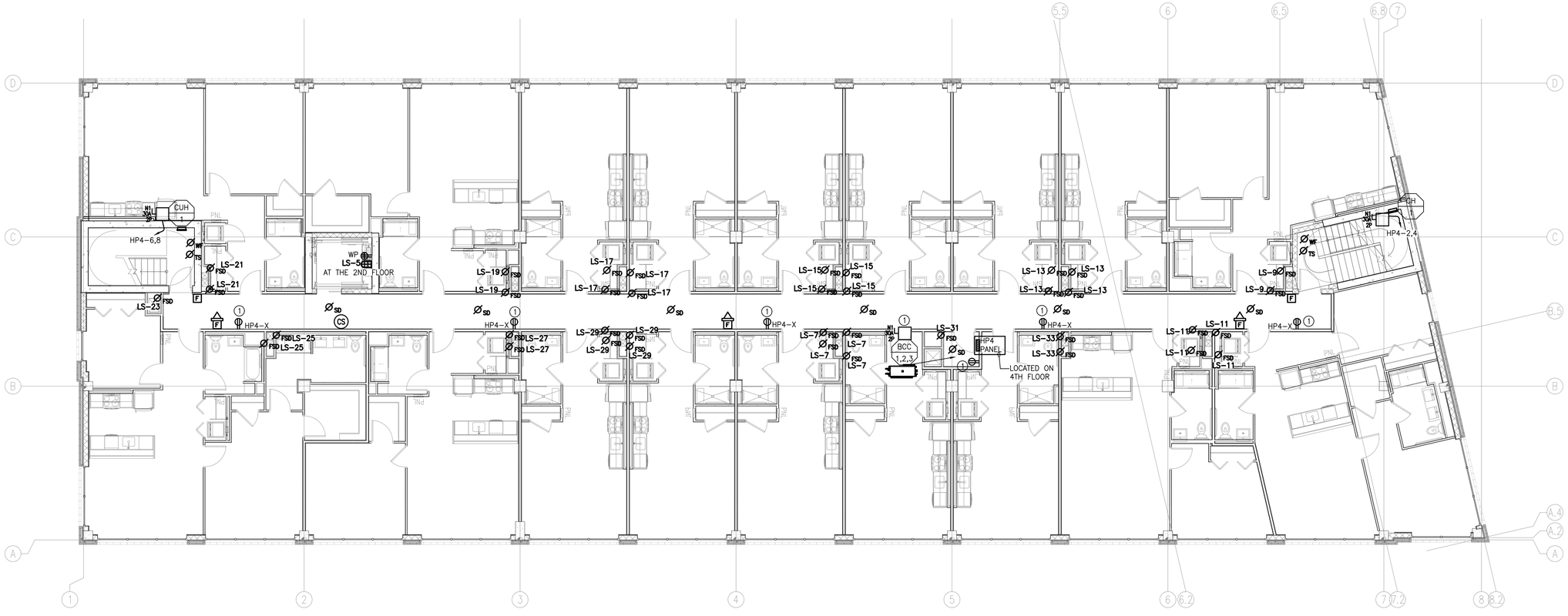
- E.C SHALL PROVIDE PUTTY PADS ON ALL ELECTRICAL BOXES LOCATED ON FAIRE RATED WALL.

KEYED NOTES:

1. REFER TO PANEL HP4 SCHEDULE ON SHEET E6.02 FOR RECEPTACLE CIRCUIT DESIGNATION.



3 ELECTRICAL-2ND-4TH FLOOR -POWER PLAN
1/8" =1'-0"

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2	Issued For Bid	04-12-2021
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Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:

136-158 WESTMORELAND, LLC
1485 5TH AVENUE, 24F
NEW YORK, NY 10035

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Sheet Title:

ELECTRICAL 2ND, 3RD & 4TH FLOOR POWER PLAN

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #062281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-1.03
Sheet:	of

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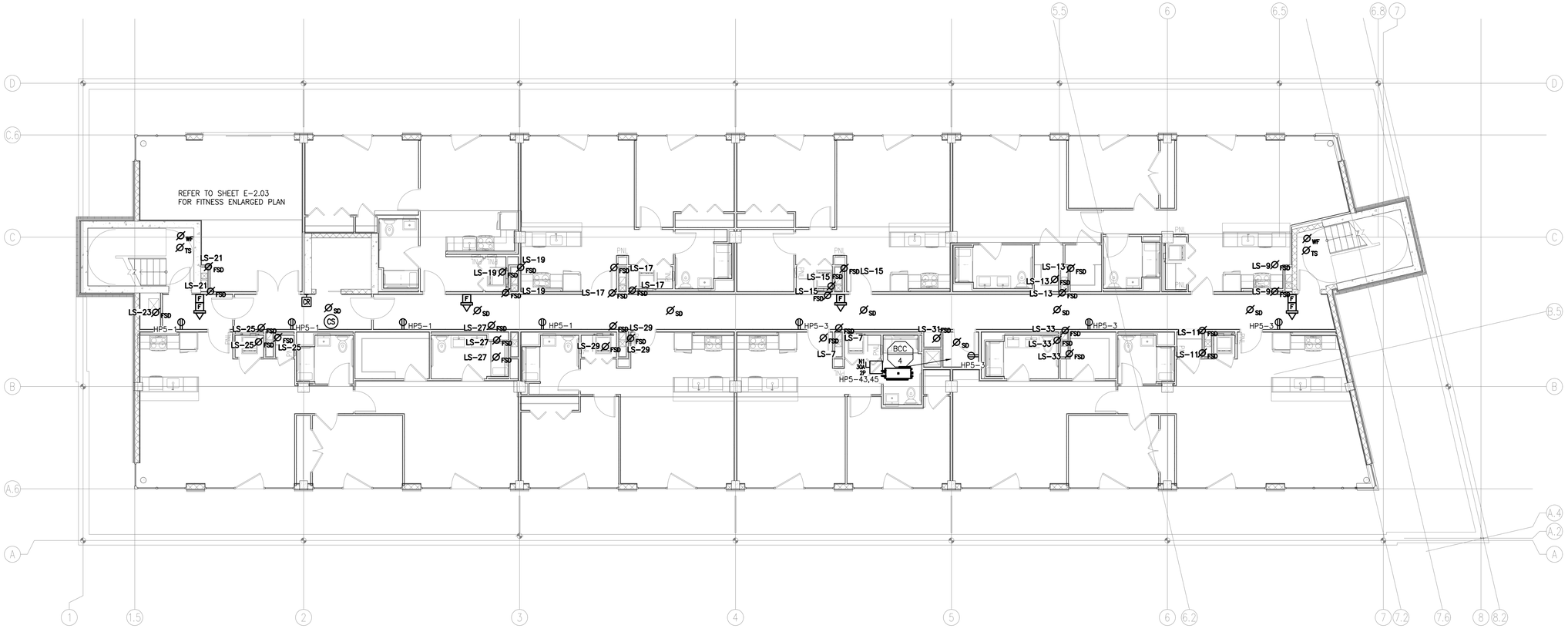
KEYED NOTES:

1.



4 ELECTRICAL-5TH FLOOR -POWER PLAN
1/8" =1'-0"

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2	Issued For Bid	04-12-2021
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Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:

136-158 WESTMORELAND, LLC
1485 5TH AVENUE, 24F
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Sheet Title:

ELECTRICAL FIFTH FLOOR POWER PLAN

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #082281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-1.04
Sheet:	of

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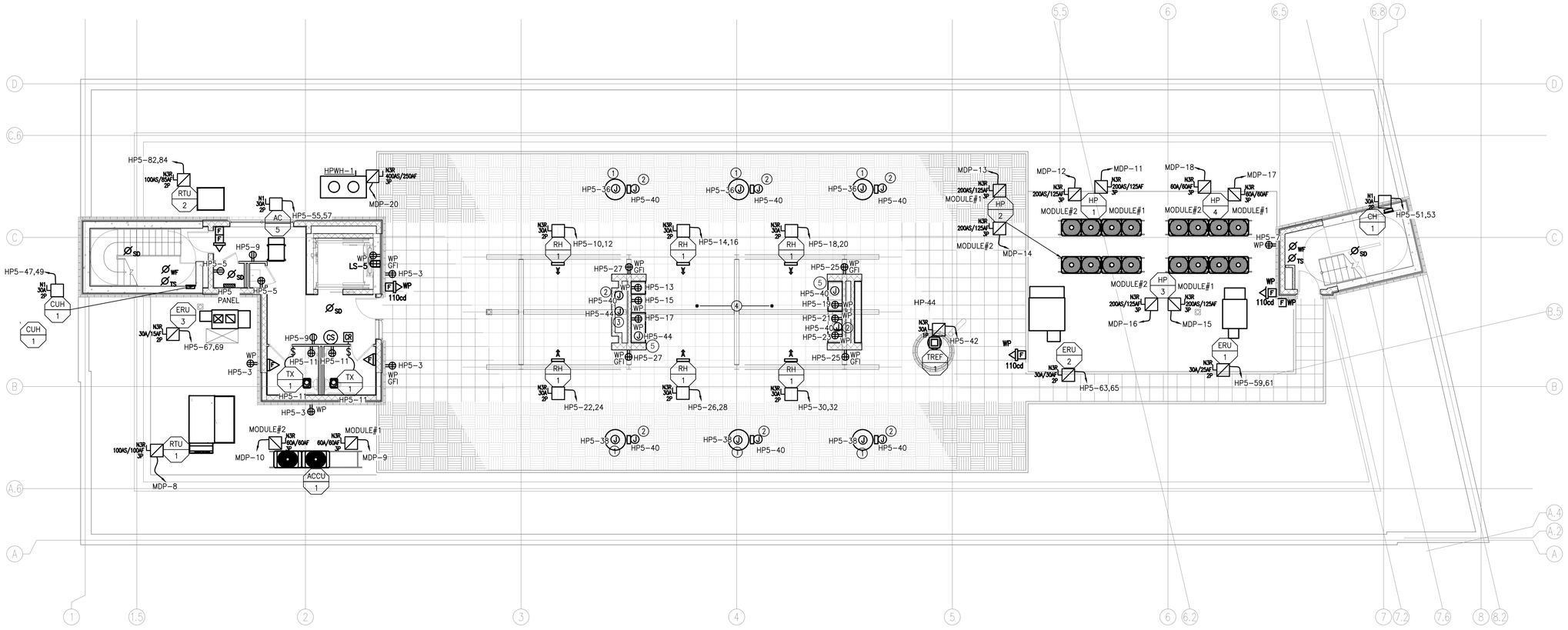
- E.C SHALL PROVIDE PUTTY PADS ON ALL ELECTRICAL BOXES LOCATED ON FAIRE RATED WALL.

KEYED NOTES:

1. FIRE PIT JUNCTION BOX, COORDINATE EXACT LOCATION. E.C SHALL PROVIDE ALL ACCESSORIES/PARTS AS PER THE MANUFACTURE CUT SHEET FOR A COMPLETE WORKING SYSTEM.
2. EMERGENCY SHUT OFF JUNCTION BOX, COORDINATE EXACT LOCATION AND MOUNTING HEIGHT PRIOR TO INSTALLATION.
3. FIRE PLACE JUNCTION BOX, COORDINATE EXACT LOCATION. E.C SHALL PROVIDE ALL ACCESSORIES/PARTS AS PER THE MANUFACTURE CUT SHEET FOR A COMPLETE WORKING SYSTEM.
4. COORDINATE EXACT LOCATION FOR ALL THE APPLIANCE RECEPTACLES PRIOR TO INSTALLATION.
5. EXHAUST HOOD JUNCTION BOX, COORDINATE EXACT LOCATION. PROVIDE ALL REQUIRED CONTROLS.



5 ELECTRICAL-ROOF DECK PLAN-POWER PLAN
1/8" =1'-0"

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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS

136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:

136-158 WESTMORELAND, LLC
1485 5TH AVENUE, 24F
NEW YORK, NY 10035

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Sheet Title:

ELECTRICAL ROOF DECK POWER PLAN

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #082281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-1.05
Sheet:	of

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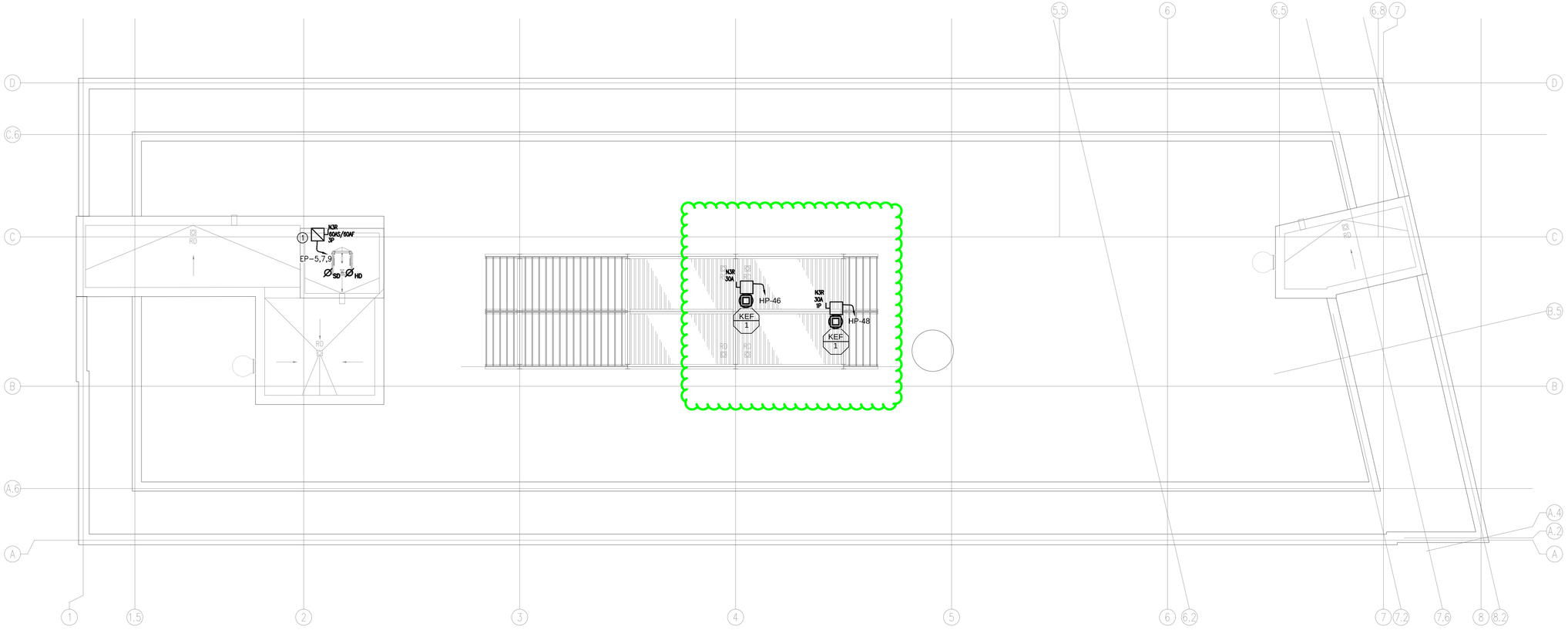
KEYED NOTES:

1. COORDINATE FUSE TYPE FOR ELEVATOR DISCONNECT SWITCH WITH CUT SHEET PRIOR TO INSTALLATION.



6 ELECTRICAL-UPPER ROOF-POWER PLAN
1/8" = 1'-0"

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Project Description:

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WHITE PLAINS, NY 10606

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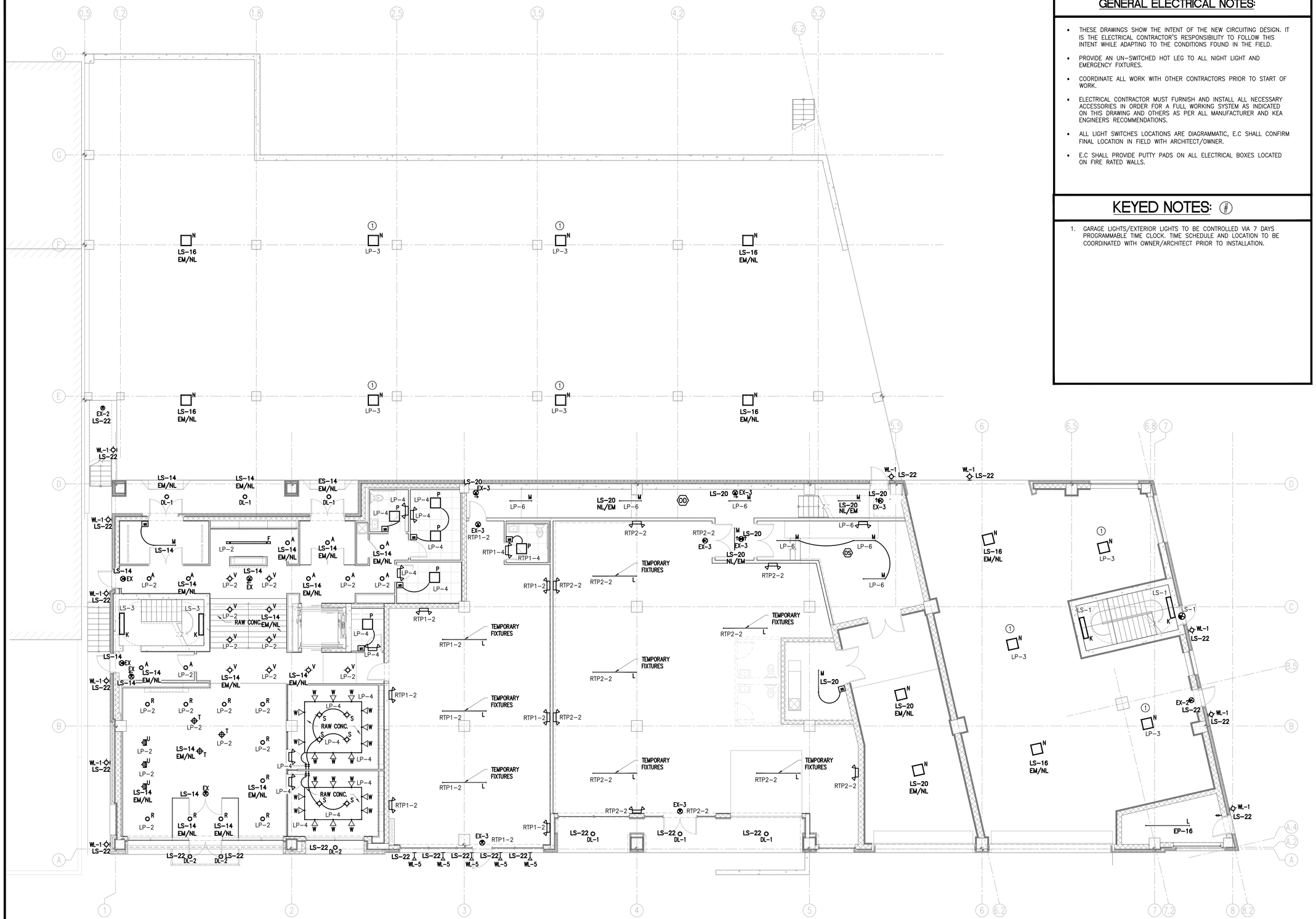
Sheet Title:

ELECTRICAL UPPER ROOF POWER PLAN

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #062281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date: 07-18-2016
Scale: AS NOTED
Job#: 2011
Sheet Title: E-1.06
Sheet: of



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

GENERAL ELECTRICAL NOTES:

- THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO FOLLOW THIS INTENT WHILE ADAPTING TO THE CONDITIONS FOUND IN THE FIELD.
- PROVIDE AN UN-SWITCHED HOT LEG TO ALL NIGHT LIGHT AND EMERGENCY FIXTURES.
- COORDINATE ALL WORK WITH OTHER CONTRACTORS PRIOR TO START OF WORK.
- ELECTRICAL CONTRACTOR MUST FURNISH AND INSTALL ALL NECESSARY ACCESSORIES IN ORDER FOR A FULL WORKING SYSTEM AS INDICATED ON THIS DRAWING AND OTHERS AS PER ALL MANUFACTURER AND KEA ENGINEERS RECOMMENDATIONS.
- ALL LIGHT SWITCHES LOCATIONS ARE DIAGRAMMATIC, E.C SHALL CONFIRM FINAL LOCATION IN FIELD WITH ARCHITECT/OWNER.
- E.C SHALL PROVIDE PUTTY PADS ON ALL ELECTRICAL BOXES LOCATED ON FIRE RATED WALLS.

KEYED NOTES: (#)

1. GARAGE LIGHTS/EXTERIOR LIGHTS TO BE CONTROLLED VIA 7 DAYS PROGRAMMABLE TIME CLOCK. TIME SCHEDULE AND LOCATION TO BE COORDINATED WITH OWNER/ARCHITECT PRIOR TO INSTALLATION.

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Rev. #	Revision Description	Date:
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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:
PROPOSED MIXED USE BUILDING:
WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:
136-158 WESTMORELAND, LLC
1485 5TH AVENUE, 24F
NEW YORK, NY 10035

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212 324-6300

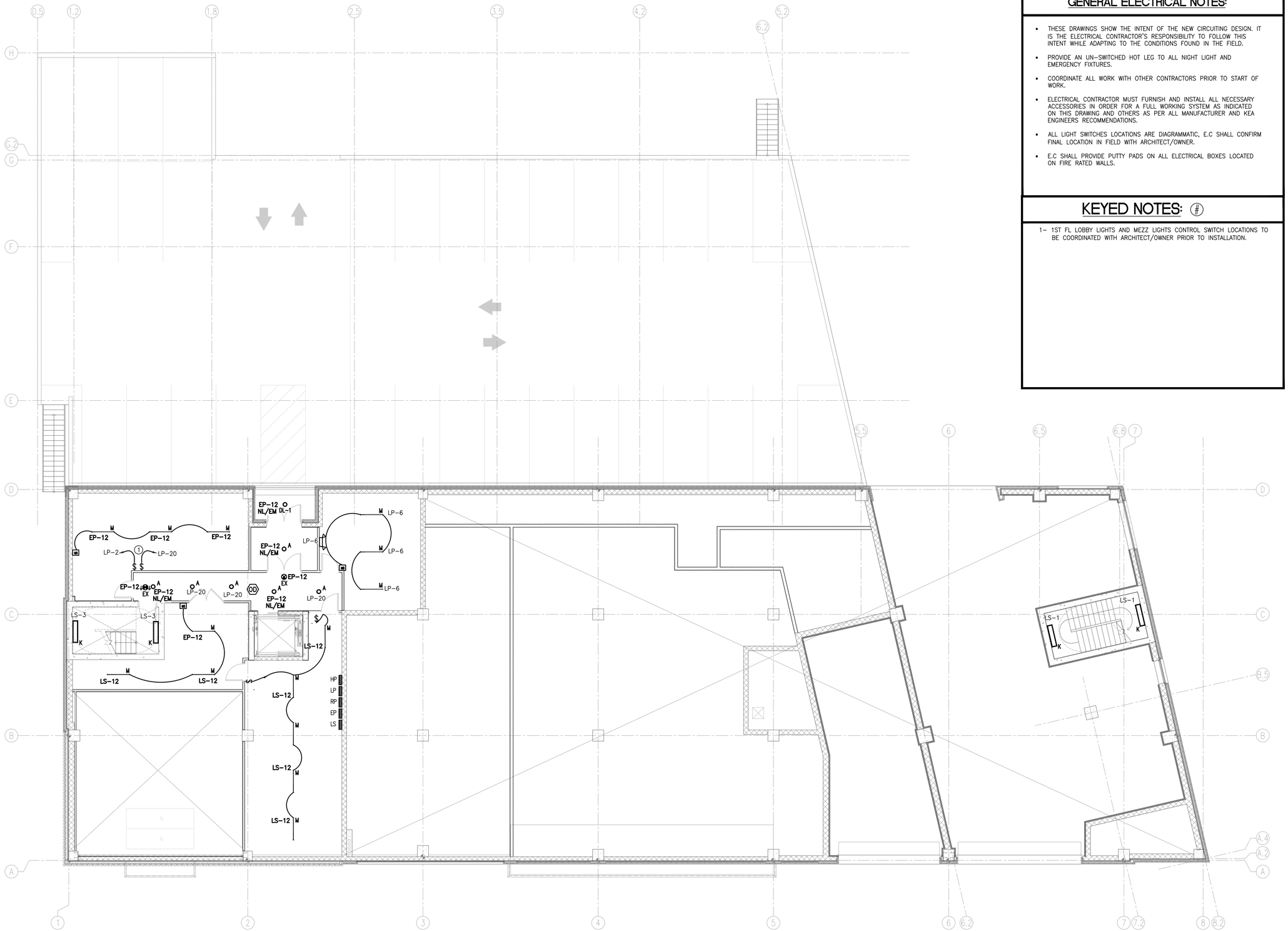
Khachaturian Engineering Associates
Mechanical/Electrical/Plumbing Engineers
186 Wood Avenue South, First Floor
Iselin, NJ 08830
732 635-0044

Sheet Title:
ELECTRICAL FIRST FLOOR LIGHTING PLAN

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #062281-1
NY CERTIFICATE OF AUTHORIZATION #0071724

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-1.01L
Sheet:	of



GENERAL ELECTRICAL NOTES:

- THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO FOLLOW THIS INTENT WHILE ADAPTING TO THE CONDITIONS FOUND IN THE FIELD.
- PROVIDE AN UN-SWITCHED HOT LEG TO ALL NIGHT LIGHT AND EMERGENCY FIXTURES.
- COORDINATE ALL WORK WITH OTHER CONTRACTORS PRIOR TO START OF WORK.
- ELECTRICAL CONTRACTOR MUST FURNISH AND INSTALL ALL NECESSARY ACCESSORIES IN ORDER FOR A FULL WORKING SYSTEM AS INDICATED ON THIS DRAWING AND OTHERS AS PER ALL MANUFACTURER AND KEA ENGINEERS RECOMMENDATIONS.
- ALL LIGHT SWITCHES LOCATIONS ARE DIAGRAMMATIC, E.C SHALL CONFIRM FINAL LOCATION IN FIELD WITH ARCHITECT/OWNER.
- E.C SHALL PROVIDE PUTTY PADS ON ALL ELECTRICAL BOXES LOCATED ON FIRE RATED WALLS.

KEYED NOTES: (#)

1- 1ST FL LOBBY LIGHTS AND MEZZ LIGHTS CONTROL SWITCH LOCATIONS TO BE COORDINATED WITH ARCHITECT/OWNER PRIOR TO INSTALLATION.

2 ELECTRICAL-MEZZANINE FLOOR -LIGHTING PLAN
1/8" =1'-0"

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Rev. #	Revision Description	Date:
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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:

136-158 WESTMORELAND, LLC
1485 5TH AVENUE, 24F
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Sheet Title:

ELECTRICAL MEZZANINE FLOOR LIGHTING PLAN

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #062281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date: 07-18-2016
Scale: AS NOTED
Job#: 2011
Sheet Title: E-1.02L
Sheet: of

GENERAL ELECTRICAL NOTES:

- THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO FOLLOW THIS INTENT WHILE ADAPTING TO THE CONDITIONS FOUND IN THE FIELD.
- PROVIDE AN UN-SWITCHED HOT LEG TO ALL NIGHT LIGHT AND EMERGENCY FIXTURES.
- COORDINATE ALL WORK WITH OTHER CONTRACTORS PRIOR TO START OF WORK.
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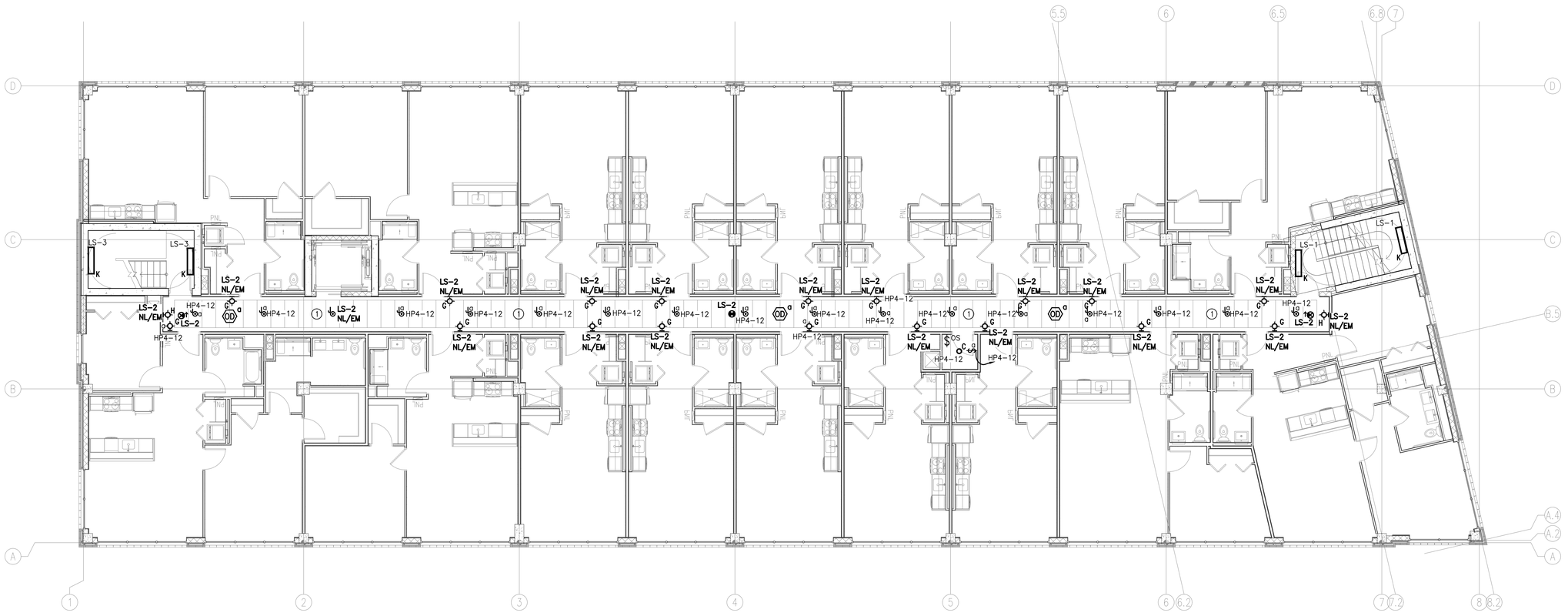
- E.C SHALL PROVIDE PUTTY PADS ON ALL ELECTRICAL BOXES LOCATED ON FIRE RATED WALLS.

KEYED NOTES: (#)

1. REFER TO THE TABLE BELOW FOR THE 3RD AND 4TH FL CIRCUITING.

FLOOR	CIRCUIT	OCCUPANCY SENSOR	EMERGENCY CIRCUIT	CONTROL SWITCH
2ND FL	HP4-12	OD[a]	LS-2 NL/EM	$ HP4-12
3RD FL	HP4-14	OD[b]	LS-4 NL/EM	$ HP4-14
4TH FL	HP4-16	OD[c]	LS-6 NL/EM	$ HP4-16



3 ELECTRICAL-2ND-4TH FLOOR -LIGHTING PLAN
1/8" =1'-0"

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Rev. #	Revision Description	Date:
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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:

136-158 WESTMORELAND, LLC
1485 5TH AVENUE, 24F
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Sheet Title:

ELECTRICAL 2ND, 3RD & 4TH FLOOR LIGHTING PLAN

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #062281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-1.03L
Sheet:	of

GENERAL ELECTRICAL NOTES:

- THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO FOLLOW THIS INTENT WHILE ADAPTING TO THE CONDITIONS FOUND IN THE FIELD.
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- ELECTRICAL CONTRACTOR MUST FURNISH AND INSTALL ALL NECESSARY ACCESSORIES IN ORDER FOR A FULL WORKING SYSTEM AS INDICATED ON THIS DRAWING AND OTHERS AS PER ALL MANUFACTURER AND KEA ENGINEERS RECOMMENDATIONS.
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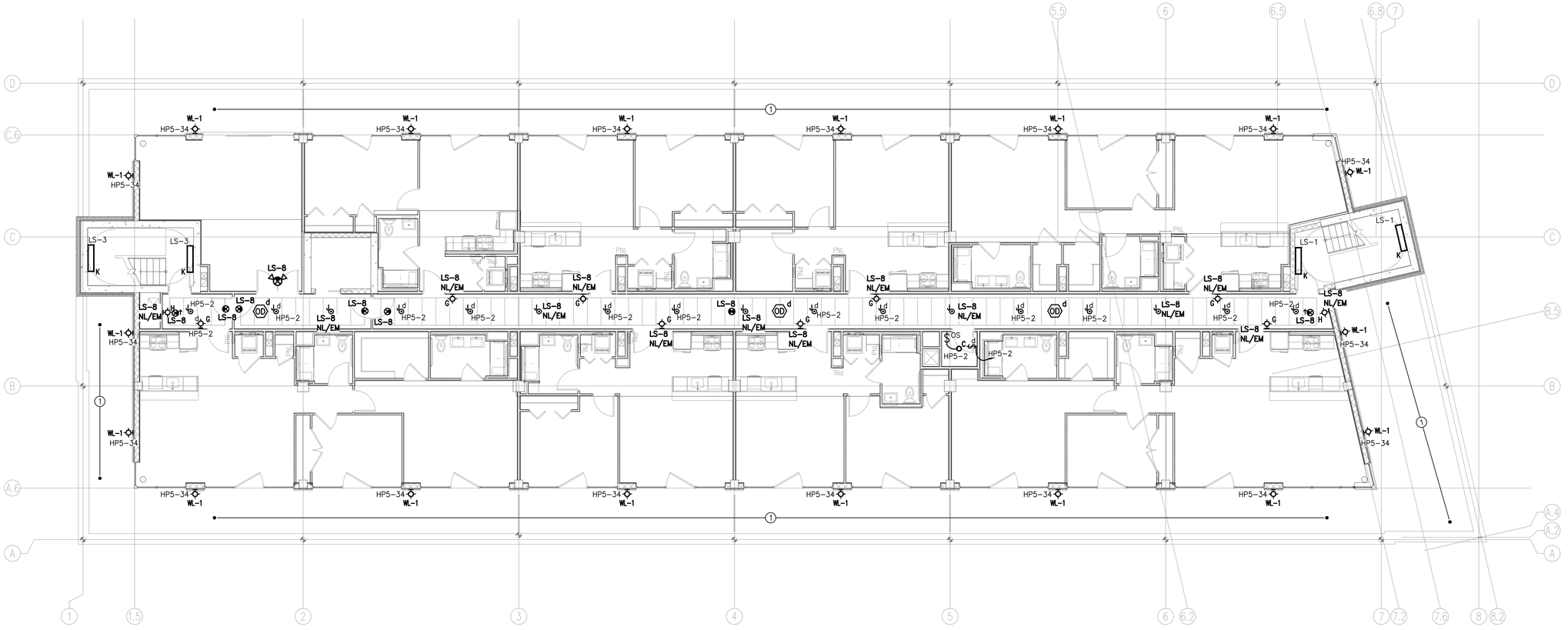
- E.C SHALL PROVIDE PUTTY PADS ON ALL ELECTRICAL BOXES LOCATED ON FIRE RATED WALLS.

KEYED NOTES: (#)

1. TERRACE LIGHTS TO BE CONTROLLED VIA 7 DAYS PROGRAMMABLE TIME CLOCK. TIME SCHEDULE AND LOCATION TO BE COORDINATED WITH OWNER/ARCHITECT PRIOR TO INSTALLATION.



4 ELECTRICAL-5TH FLOOR -LIGHTING PLAN
1/8" =1'-0"

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Rev. #	Revision Description	Date:
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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:

136-158 WESTMORELAND, LLC
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Sheet Title:

ELECTRICAL FIFTH FLOOR LIGHTING PLAN

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #062281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-1.04L
Sheet:	of

GENERAL ELECTRICAL NOTES:

- THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO FOLLOW THIS INTENT WHILE ADAPTING TO THE CONDITIONS FOUND IN THE FIELD.
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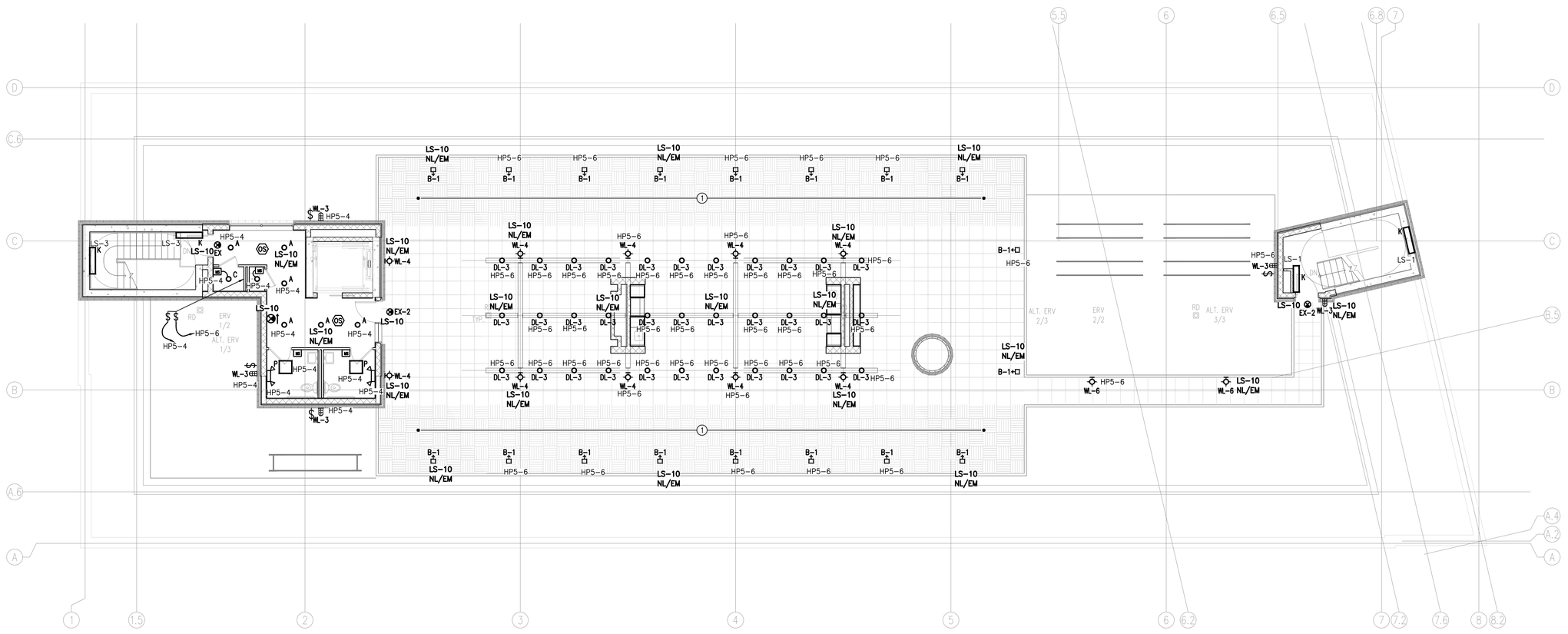
- E.C SHALL PROVIDE PUTTY PADS ON ALL ELECTRICAL BOXES LOCATED ON FIRE RATED WALLS.

KEYED NOTES: (#)

1. ROOF DECK LIGHTS CIRCUITED TO HP5-6 TO BE CONTROLLED VIA 7 DAYS PROGRAMMABLE TIME CLOCK. TIME SCHEDULE AND LOCATION TO BE COORDINATED WITH OWNER/ARCHITECT PRIOR TO INSTALLATION.



5 ELECTRICAL-ROOF DECK PLAN-LIGHTING PLAN
1/8" =1'-0"

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Rev. #	Revision Description	Date:
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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:

136-158 WESTMORELAND, LLC
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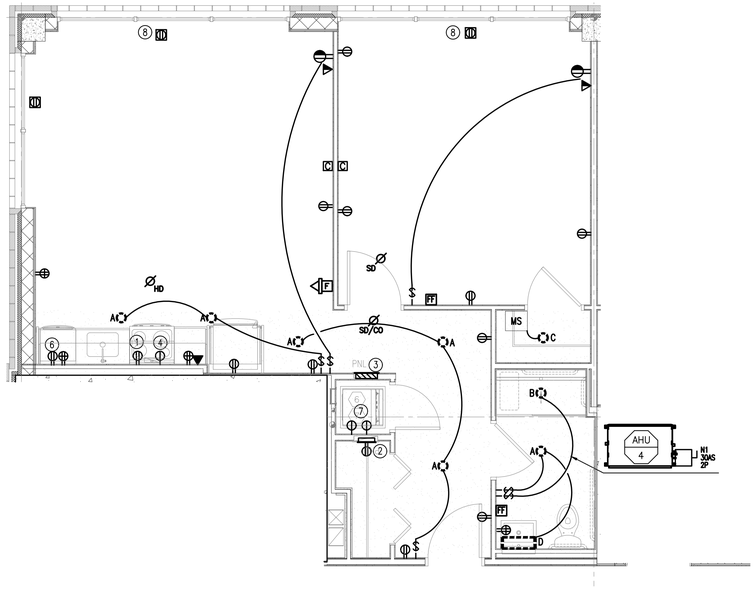
Sheet Title:

ELECTRICAL ROOF DECK LIGHTING PLAN

Seal & Signature

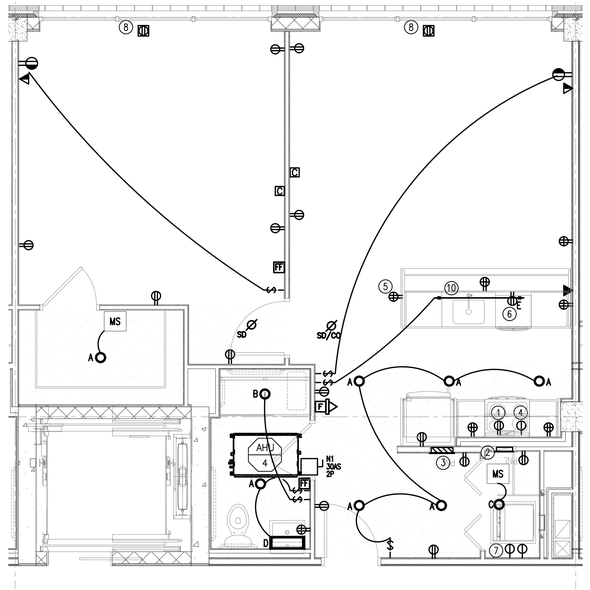
ARMEN KHACHATURIAN, P.E. - NY LICENSE #065281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-1.05L
Sheet:	of



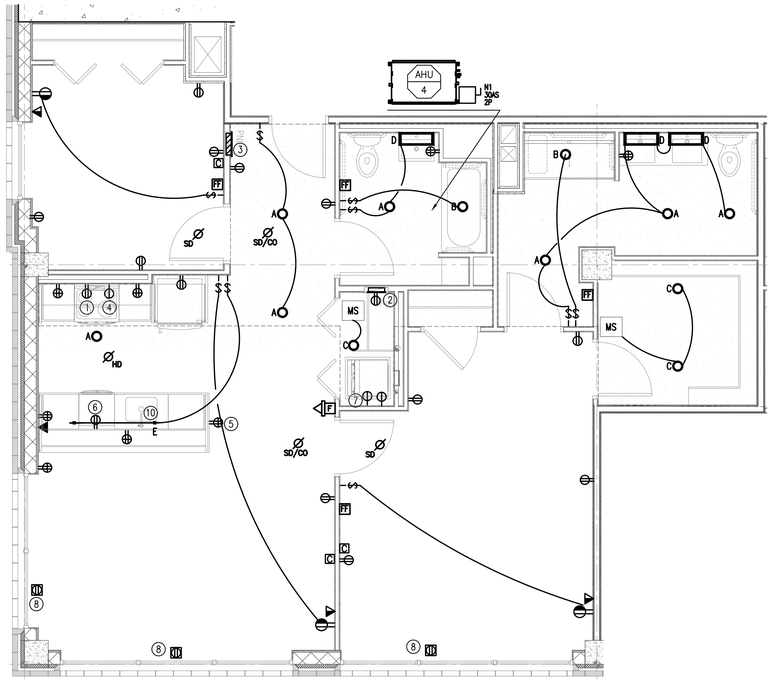
UNIT 201 TYPICAL ELECTRICAL FLOOR PLAN

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



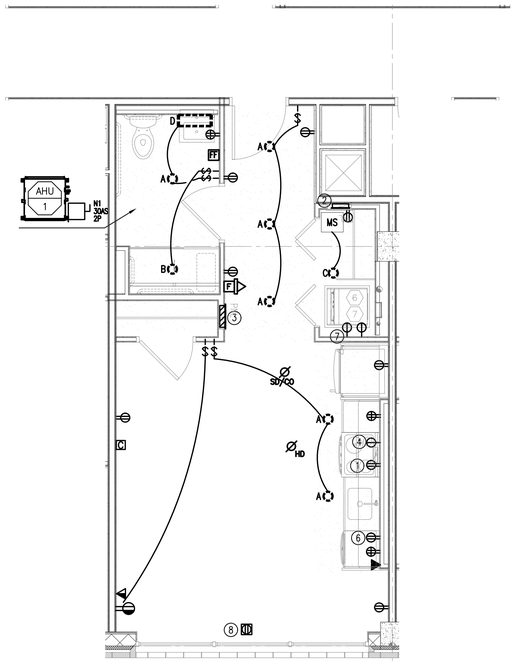
UNIT 203 TYPICAL ELECTRICAL FLOOR PLAN

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



UNIT 202 TYPICAL ELECTRICAL FLOOR PLAN

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



UNIT 212 TYPICAL ELECTRICAL FLOOR PLAN

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

GENERAL NOTES:

1. THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO FOLLOW THIS INTENT WHILE ADAPTING TO THE EXISTING CONDITIONS FOUND IN THE FIELD.
2. ALL WIRING/CABLING AND TELCO/DATA/CABLE DEVICES SHOWN SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
3. FOR ALL SWITCHED RECEPTACLES, ONLY HALF OF THE RECEPTACLE SHALL BE SWITCHED.
4. ALL DEVICES SHALL BE CIRCUITED TO THE LOCAL TENANT PANEL (U.O.N.).
5. ALL RECEPTACLES IN DWELLING UNITS SHALL BE TAMPER PROOF.
6. ALL OUTLETS LOCATIONS SHOWN ARE DIAGRAMMATIC. ALL WALL PENETRATIONS BETWEEN DEMISING/FIRE RATED WALLS INCLUDING (BUT NOT LIMITED TO) ELECTRICAL AND TEL/DATA OUTLETS SHALL BE STAGGERED SO THAT A MINIMUM OF 24" IS BETWEEN TWO OUTLETS. OFFSET BOXES MINIMUM (1) STUD SPACE AND SEAL OPENINGS THRU THE PARTITIONS AND FLOORS.
7. ALL SWITCHES CONTROLLING LIGHTING LOADS MUST ADHERE TO 2014 NATIONAL CODE ARTICLE 404.2.
8. EC TO COORDINATE ALL RECEPTACLE AND SWITCH/DIMMER COLOR/LOCATIONS WITH ARCHITECT PRIOR TO BID AND INSTALLATION.
9. SMOKE/CO ALARMS SHOWN IN DWELLING UNITS SHALL NOT BE TIED-IN TO BASE BUILDING FIRE ALARM SYSTEM.
10. HEAT DETECTORS SHOWN IN DWELLING UNITS SHALL BE TIED-IN TO BASE BUILDING FIRE ALARM SYSTEM.

KEYED NOTES: (1)

1. MICROWAVE RECEPTACLE ABOVE RANGE. COORDINATE FINAL LOCATION WITH KITCHEN CABINET SUPPLIER. RECEPTACLE SHALL BE CONTROLLED VIA SWITCH FOR UNITS THAT ARE REQUIRED TO MEET ADA STANDARDS.
2. TEL/CABLE BACK BOX #MODEL HUBBELL NSOBXP28B.
3. PROPOSED LOCATION OF APARTMENT UNIT PANEL MOUNTED PER ADA GUIDELINES. COORDINATE FINAL LOCATION WITH OWNER PRIOR TO INSTALLATION. REFER TO 'TYPICAL STUDIO UNIT' PANEL SCHEDULE ON E2.06 FOR FURTHER DETAIL.
4. STOVE/RANGE – COORDINATE RECEPTACLE TYPE AND HEIGHT WITH APPLIANCE CUT SHEETS PRIOR TO INSTALLATION.
5. INSTALL GFIC RECEPTACLE NOT MORE THAN 12" BELOW COUNTER TOP.
6. DISHWASHER RECEPTACLE. VERIFY EXACT MOUNTING HEIGHT PRIOR TO INSTALLATION.
7. WASHER/DRYER – COORDINATE RECEPTACLE TYPE WITH APPLIANCE CUT SHEETS PRIOR TO INSTALLATION.
8. RECEPTACLES SHOULD BE WALL-MOUNTED WHEREVER POSSIBLE, AND ONLY USE FLOOR BOXES WHERE WALL-MOUNT INSTALLATION IS NOT POSSIBLE DUE TO WALL CONSTRUCTION.
9. COORDINATE FITNESS EQUIPMENT RECEPTACLE TYPE WITH CUT SHEET PRIOR TO INSTALLATION.
10. PENDANT FIXTURE (E) JB & CONDUITS POURED WITHIN CONCERT SLAB.

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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:

136-158 WESTMORELAND, LLC
1485 5TH AVENUE, 24F
NEW YORK, NY 10035

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Mechanical/Electrical/Plumbing Engineers
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732 635-0044

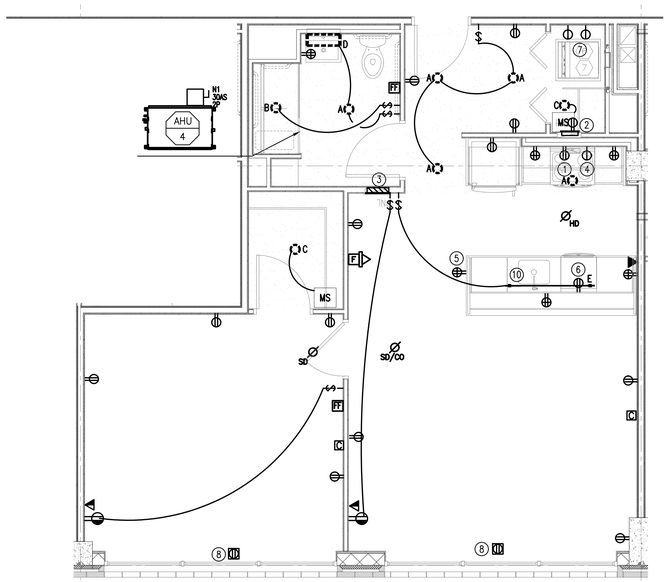
Sheet Title:

ELECTRICAL TYPICAL UNIT PLANS 1

Seal & Signature

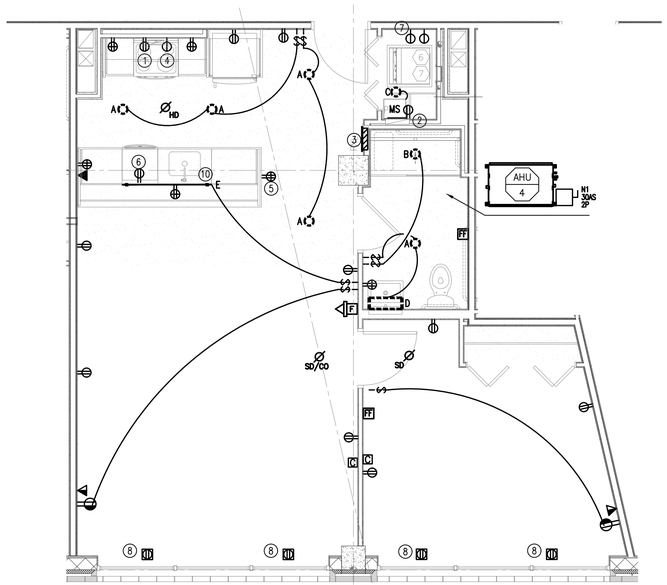
ARMEN KHACHATURIAN, P.E. - NY LICENSE #082261-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-2.01
Sheet:	of



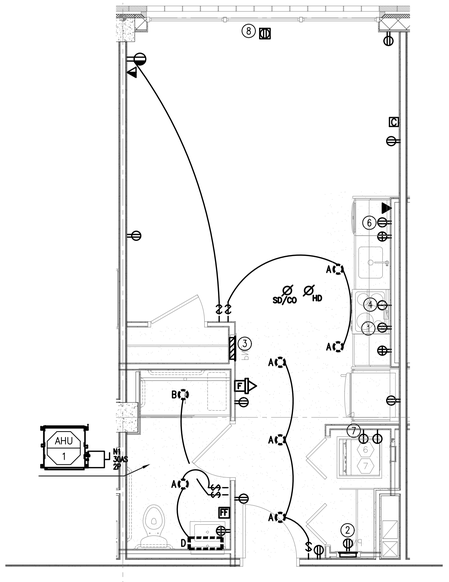
UNIT 204 TYPICAL ELECTRICAL FLOOR PLAN

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



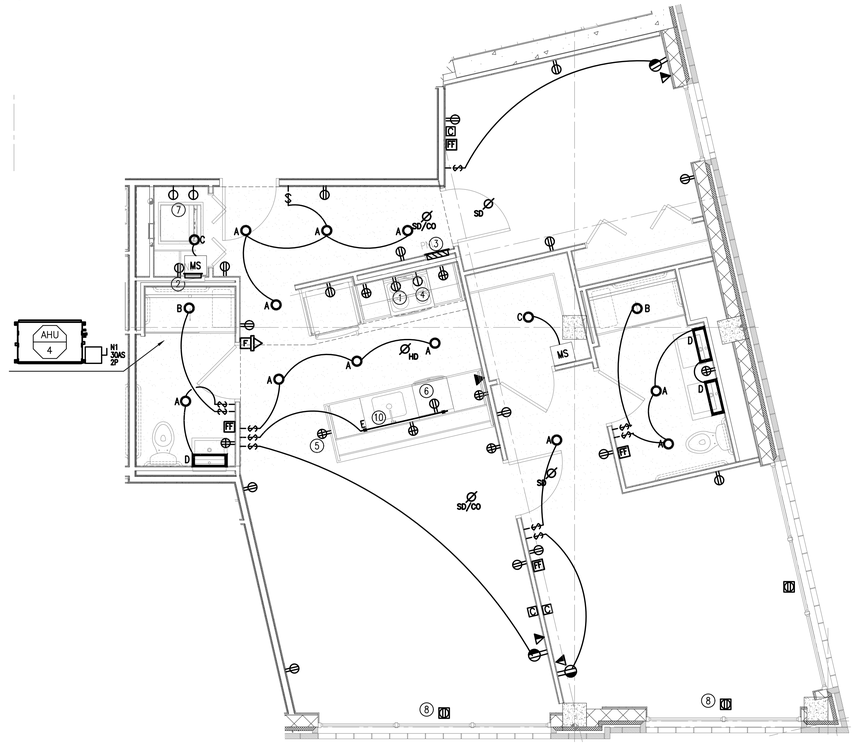
UNIT 216 TYPICAL ELECTRICAL FLOOR PLAN

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



UNIT 205 TYPICAL ELECTRICAL FLOOR PLAN

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



UNIT 218 TYPICAL ELECTRICAL FLOOR PLAN

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

GENERAL NOTES:

1. THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO FOLLOW THIS INTENT WHILE ADAPTING TO THE EXISTING CONDITIONS FOUND IN THE FIELD.
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5. ALL RECEPTACLES IN DWELLING UNITS SHALL BE TAMPER PROOF.
6. ALL OUTLETS LOCATIONS SHOWN ARE DIAGRAMMATIC. ALL WALL PENETRATIONS BETWEEN DEMISING/FIRE RATED WALLS INCLUDING (BUT NOT LIMITED TO) ELECTRICAL AND TEL/DATA OUTLETS SHALL BE STAGGERED SO THAT A MINIMUM OF 24" IS BETWEEN TWO OUTLETS. OFFSET BOXES MINIMUM (1) STUD SPACE AND SEAL OPENINGS THRU THE PARTITIONS AND FLOORS.
7. ALL SWITCHES CONTROLLING LIGHTING LOADS MUST ADHERE TO 2014 NATIONAL CODE ARTICLE 404.2.
8. EC TO COORDINATE ALL RECEPTACLE AND SWITCH/DIMMER COLOR/LOCATIONS WITH ARCHITECT PRIOR TO BID AND INSTALLATION.
9. SMOKE/CO ALARMS SHOWN IN DWELLING UNITS SHALL NOT BE TIED-IN TO BASE BUILDING FIRE ALARM SYSTEM.
10. HEAT DETECTORS SHOWN IN DWELLING UNITS SHALL BE TIED-IN TO BASE BUILDING FIRE ALARM SYSTEM.

KEYED NOTES:

1. MICROWAVE RECEPTACLE ABOVE RANGE. COORDINATE FINAL LOCATION WITH KITCHEN CABINET SUPPLIER. RECEPTACLE SHALL BE CONTROLLED VIA SWITCH FOR UNITS THAT ARE REQUIRED TO MEET ADA STANDARDS.
2. TEL/CABLE BACK BOX #MODEL HUBBELL NSOBXP28B.
3. PROPOSED LOCATION OF APARTMENT UNIT PANEL MOUNTED PER ADA GUIDELINES. COORDINATE FINAL LOCATION WITH OWNER PRIOR TO INSTALLATION. REFER TO 'TYPICAL STUDIO UNIT' PANEL SCHEDULE ON E2.06 FOR FURTHER DETAIL.
4. STOVE/RANGE – COORDINATE RECEPTACLE TYPE AND HEIGHT WITH APPLIANCE CUT SHEETS PRIOR TO INSTALLATION.
5. INSTALL GFIC RECEPTACLE NOT MORE THAN 12" BELOW COUNTER TOP.
6. DISHWASHER RECEPTACLE. VERIFY EXACT MOUNTING HEIGHT PRIOR TO INSTALLATION.
7. WASHER/DRYER – COORDINATE RECEPTACLE TYPE WITH APPLIANCE CUT SHEETS PRIOR TO INSTALLATION.
8. RECEPTACLES SHOULD BE WALL-MOUNTED WHEREVER POSSIBLE, AND ONLY USE FLOOR BOXES WHERE WALL-MOUNT INSTALLATION IS NOT POSSIBLE DUE TO WALL CONSTRUCTION.
9. COORDINATE FITNESS EQUIPMENT RECEPTACLE TYPE WITH CUT SHEET PRIOR TO INSTALLATION.
10. PENDANT FIXTURE (E) JB & CONDUITS POURED WITHIN CONCERT SLAB.

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Rev. #	Revision Description	Date:
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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS

136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:

136-158 WESTMORELAND, LLC
1485 5TH AVENUE, 24F
NEW YORK, NY 10035

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Mechanical/Electrical/Plumbing Engineers
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732 635-0044

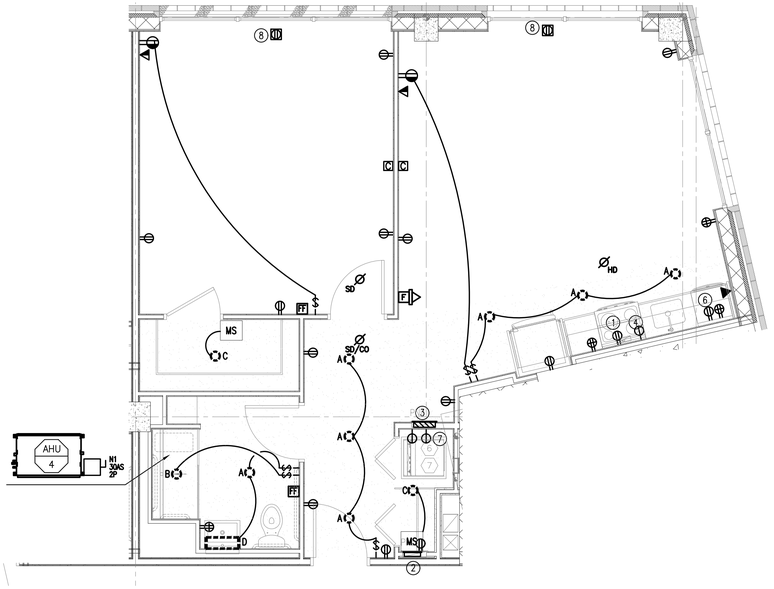
Sheet Title:

ELECTRICAL TYPICAL UNIT PLANS 2

Seal & Signature

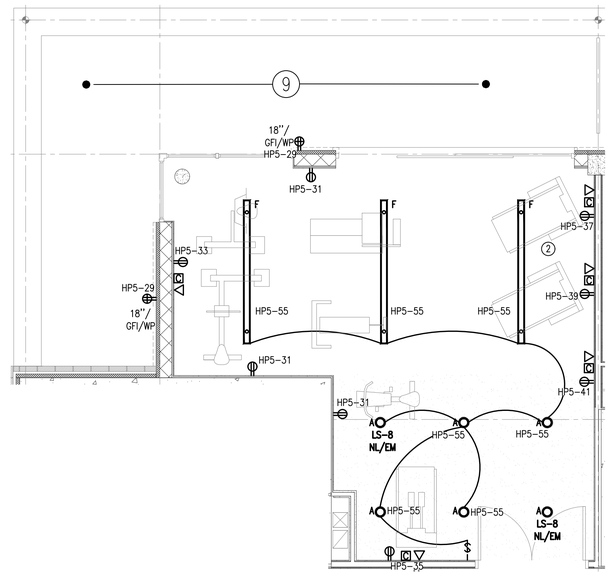
ARMEN KHACHATURIAN, P.E. - NY LICENSE #062281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-2.02
Sheet:	of



UNIT 217 TYPICAL ELECTRICAL FLOOR PLAN

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



FITNESS ELECTRICAL FLOOR PLAN

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

GENERAL NOTES:

1. THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO FOLLOW THIS INTENT WHILE ADAPTING TO THE EXISTING CONDITIONS FOUND IN THE FIELD.
2. ALL WIRING/CABLING AND TELCO/DATA/CABLE DEVICES SHOWN SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
3. FOR ALL SWITCHED RECEPTACLES, ONLY HALF OF THE RECEPTACLE SHALL BE SWITCHED.
4. ALL DEVICES SHALL BE CIRCUITED TO THE LOCAL TENANT PANEL (U.O.N.).
5. ALL RECEPTACLES IN DWELLING UNITS SHALL BE TAMPER PROOF.
6. ALL OUTLETS LOCATIONS SHOWN ARE DIAGRAMMATIC. ALL WALL PENETRATIONS BETWEEN DEMISING/FIRE RATED WALLS INCLUDING (BUT NOT LIMITED TO) ELECTRICAL AND TEL/DATA OUTLETS SHALL BE STAGGERED SO THAT A MINIMUM OF 24" IS BETWEEN TWO OUTLETS. OFFSET BOXES MINIMUM (1) STUD SPACE AND SEAL OPENINGS THRU THE PARTITIONS AND FLOORS.
7. ALL SWITCHES CONTROLLING LIGHTING LOADS MUST ADHERE TO 2014 NATIONAL CODE ARTICLE 404.2.
8. EC TO COORDINATE ALL RECEPTACLE AND SWITCH/DIMMER COLOR/LOCATIONS WITH ARCHITECT PRIOR TO BID AND INSTALLATION.
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KEYED NOTES: (f)

1. MICROWAVE RECEPTACLE ABOVE RANGE. COORDINATE FINAL LOCATION WITH KITCHEN CABINET SUPPLIER. RECEPTACLE SHALL BE CONTROLLED VIA SWITCH FOR UNITS THAT ARE REQUIRED TO MEET ADA STANDARDS.
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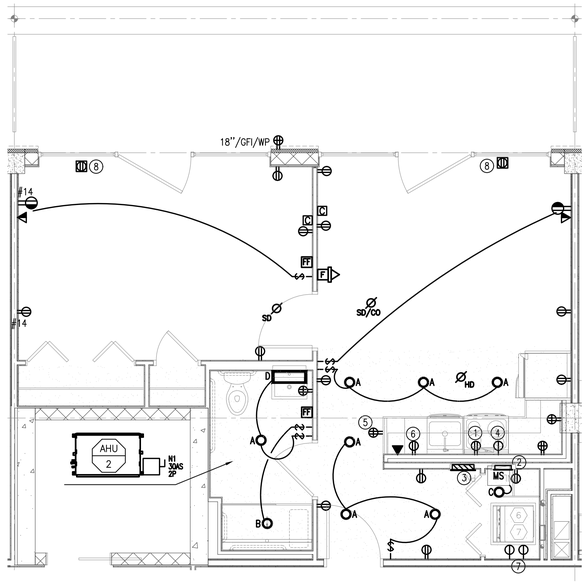
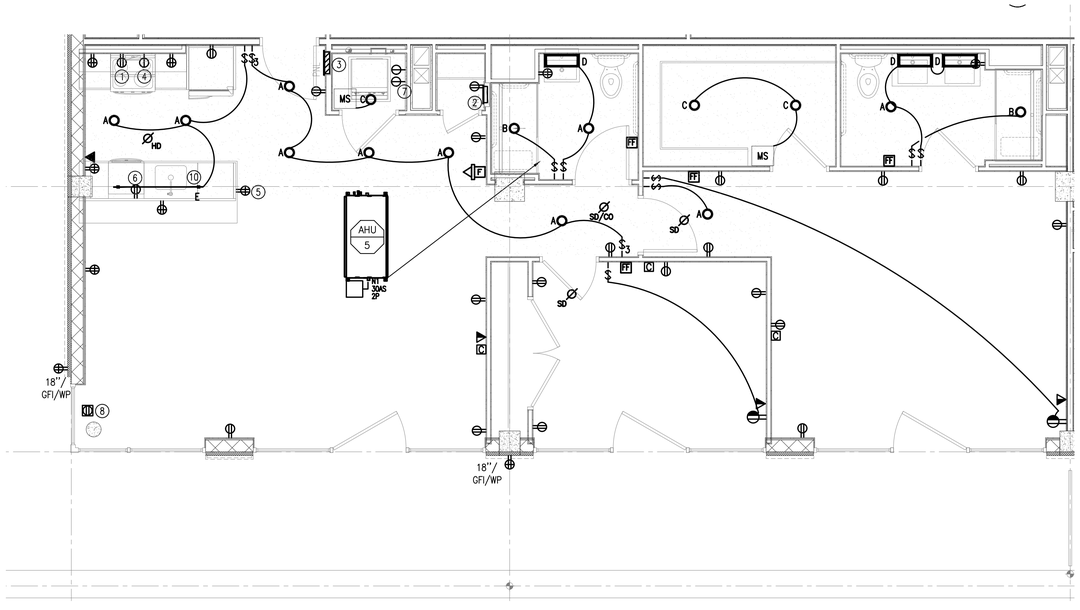
10. PENDANT FIXTURE (E) JB & CONDUITS POURED WITHIN CONCERT SLAB.



UNIT 503 TYPICAL ELECTRICAL FLOOR PLAN

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



UNIT 502 TYPICAL ELECTRICAL FLOOR PLAN

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

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Rev. #	Revision Description	Date:
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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:

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1485 5TH AVENUE, 24F
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Khachaturian Engineering Associates
Mechanical/Electrical/Plumbing Engineers
186 Wood Avenue South, First Floor
Iselin, NJ 08830
732 635-0044

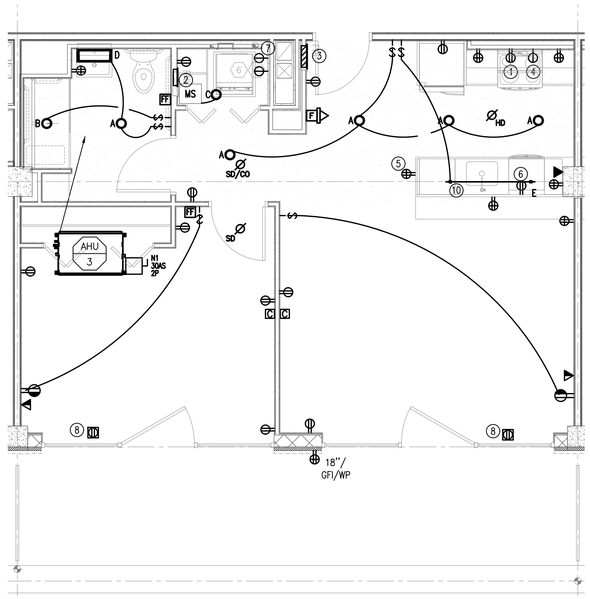
Sheet Title:

ELECTRICAL TYPICAL UNIT PLANS 3

Seal & Signature

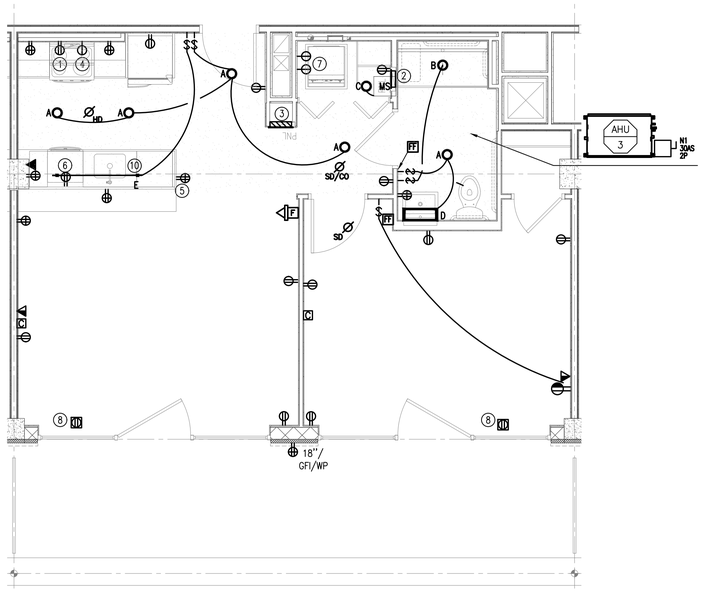
ARMEN KHACHATURIAN, P.E. - NY LICENSE #062261-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-2.03
Sheet:	of



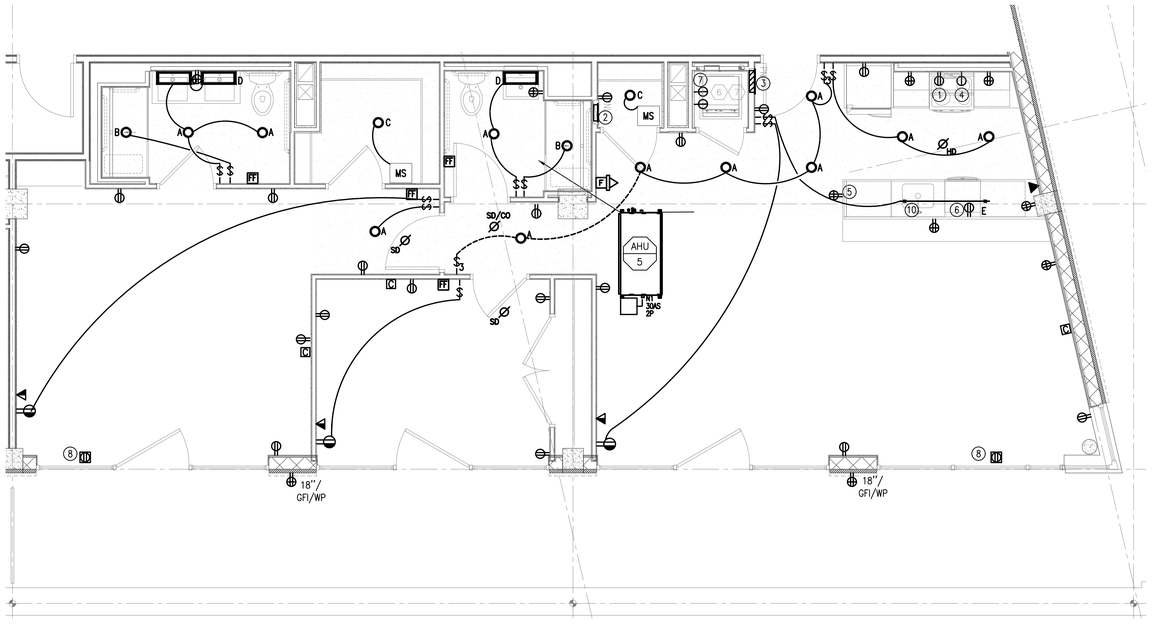
UNIT 504 ELECTRICAL FLOOR PLAN

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



UNIT 506 ELECTRICAL FLOOR PLAN

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



UNIT 508 ELECTRICAL FLOOR PLAN

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

GENERAL NOTES:

1. THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO FOLLOW THIS INTENT WHILE ADAPTING TO THE EXISTING CONDITIONS FOUND IN THE FIELD.
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KEYED NOTES:

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Rev. #	Revision Description	Date:
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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:

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Khachaturian Engineering Associates
Mechanical/Electrical/Plumbing Engineers
186 Wood Avenue South, First Floor
Iselin, NJ 08830
732 635-0044

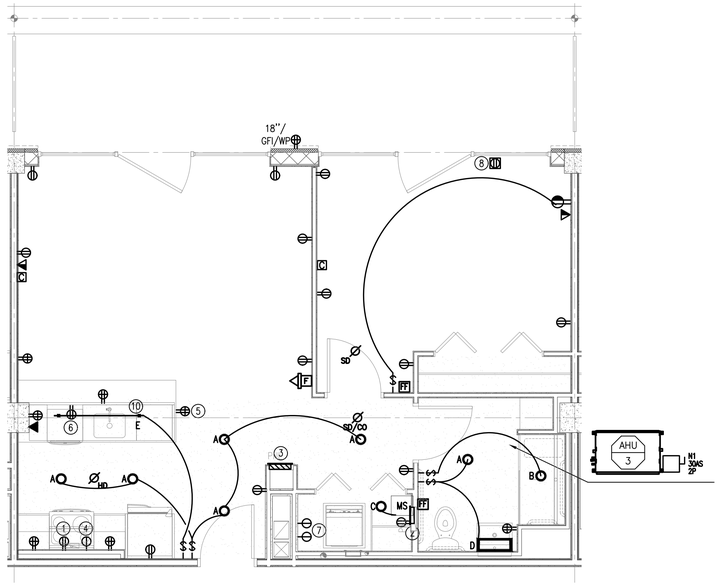
Sheet Title:

ELECTRICAL TYPICAL UNIT PLANS 4

Seal & Signature

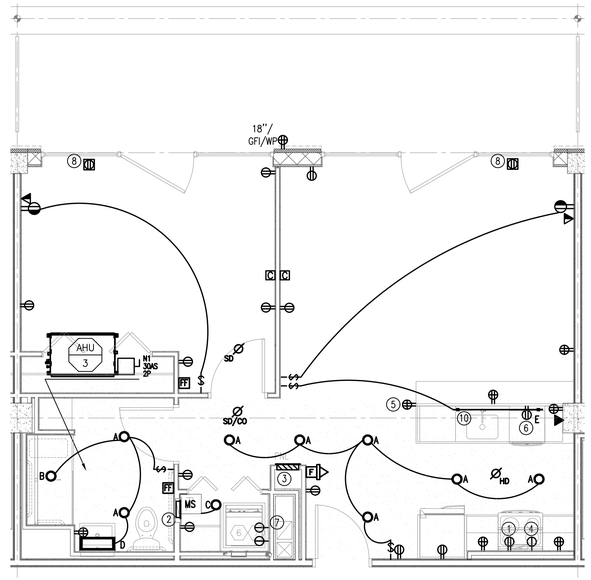
ARMEN KHACHATURIAN, P.E. - NY LICENSE #062281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date: 07-18-2016
Scale: AS NOTED
Job#: 2011
Sheet Title: E-2.04
Sheet: of



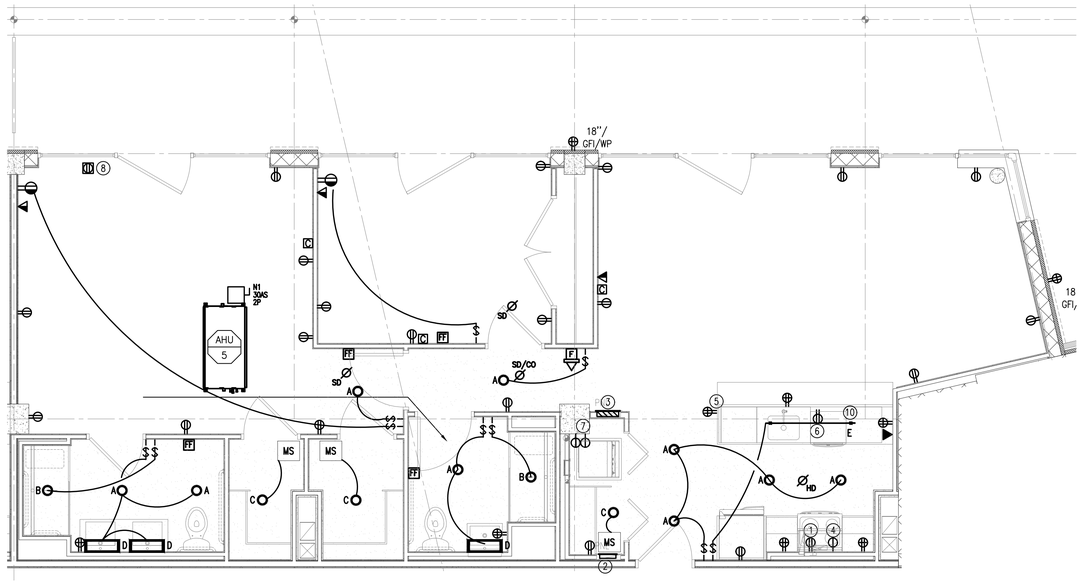
UNIT 505 ELECTRICAL FLOOR PLAN

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



UNIT 507 ELECTRICAL FLOOR PLAN

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



UNIT 509 ELECTRICAL FLOOR PLAN

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

GENERAL NOTES:

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2	Issued For Bid	04-12-2021
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Project Description:

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732 635-0044

Sheet Title:

ELECTRICAL TYPICAL UNIT PLANS 5

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #062261-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-2.05
Sheet:	of

PANEL DESIGNATION (STUDIO TYPICAL)

VOLTAGE	PHASE	POLES	WIRES	AIC
208V/120V	1	30	3	22K

	G WIRE SIZE	Ø WIRE SIZE	CKT No.	DESCRIPTION	CB AMPS	CB POLES	PH. A VA	PH. B VA	CB POLES	CB AMPS	DESCRIPTION	CKT No.	Ø WIRE SIZE	G WIRE SIZE	
(GFI)	1#12	2#12	1	REFRIGERATOR RECEPTACLE	20	1	1200		1	20	SPARE	2	2#12	1#12	
	1#12	2#12	3	KITCHEN GFI RECEPTACLES	20	1		720 2500	2	30	DRYER	4	2#10	1#10	(GFI)
	1#12	2#12	5	KITCHEN GFI RECEPTACLES	20	1	540 2500					6			
(GFI)	1#12	2#12	7	MICROWAVE RECEPTACLE	20	1		1200 1080	1	15	GENERAL LTG/SMOKE DETECTORS	8	2#14	1#14	
(GFI)	1#12	2#12	9	DISHWASHER	20	1	1200 1080		1	15	GENERAL PURPOSE OUTLETS	10	2#14	1#14	
			11	SPARE	20	1		500 1080	1	15	GENERAL PURPOSE OUTLETS	12	2#14	1#14	
			13	SPARE	20	1	500		1	15	GENERAL PURPOSE OUTLETS	14	2#14	1#14	
(HVAC)	1#12	2#12	15	AUH- (X)	15	2			1	20	BATHROOM RECEPTACLES/LIGHTS	16	2#12	1#12	
			17				180		1	20	TELECOM/CABLE RECEPTACLE	18	2#12	1#12	
(GFI)	1#8	2#8	19	STOVE	50	2			1	20	DEDICATED OUTDOOR RECEP IF APPLICABLE	20	2#12	1#12	
			21						2	30	WASHER	22	2#10	1#10	(GFI)
			23	SPARE	20	1						24			
			25	SPARE	20	1			1	20	SPARE	26			
			27	SPARE					1	20	SPARE	28			
			29	SPARE					1	20	SPARE	30			
						VA:	7,200	7,080							

CONNECTED LOAD
KVA: 14.3
AMPS: 68.7

REMARKS
(X) DENOTES AHU-1 OR 2 OR 3 OR 4 OR 5
(GFI) DENOTES GFI CIRCUIT BREAKER
(HVAC) CIRCUIT BREAKER SHALL BE HVAC RATED TYPE

MAIN
BUS 100 AMPS
BRKR - AMPS
☒ NEW PANEL
☐ EXISTING PANEL
☐ MAIN CIRCUIT BREAKER
☒ MAIN LUGS ONLY
☒ FLUSH MOUNTED
☐ SURFACE MOUNTED
☐ BOTTOM FEED
☐ TOP FEED

OPTIONS
☐ 200% NEUTRAL
☒ GROUND BUS
☐ ISOLATED GROUND BUS
☐ DOOR-IN-DOOR CONSTRUCTION
☐ STAINLESS STEEL COVER
☐ NEMA 3R PANEL
☐ SUB-FEED MAIN C.B. (3P) QTY: _____ AMPS: _____
☐ CONTACTOR AMPS: _____ CKT'S CONTROLLED: _____
☐ OTHER: _____
☐ OTHER: _____

NOTE:
1- PROVIDE ARC-FAULT CIRCUIT BREAKERS FOR CIRCUITS SERVING FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUN ROOMS, REC ROOMS, HALLWAYS CLOSET, SMOKE DETECTORS, AND SIMILAR AREAS.

2- PANEL SHALL BE INSTALLED SO THAT THE NO BREAKER IS HIGHER THAN 48" A.F.F.

PANEL DESIGNATION (ONE-BEDROOM TYPICAL)

VOLTAGE	PHASE	POLES	WIRES	AIC
208V/120V	1	30	3	22K

	G WIRE SIZE	Ø WIRE SIZE	CKT No.	DESCRIPTION	CB AMPS	CB POLES	PH. A VA	PH. B VA	CB POLES	CB AMPS	DESCRIPTION	CKT No.	Ø WIRE SIZE	G WIRE SIZE	
(GFI)	1#12	2#12	1	REFRIGERATOR RECEPTACLE	20	1	1200		1	20	SPARE	2			
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	1#12	2#12	5	KITCHEN GFI RECEPTACLES	20	1	540 2500					6			
(GFI)	1#12	2#12	7	MICROWAVE RECEPTACLE	20	1		1200 1080	1	15	GENERAL LTG/SMOKE DETECTORS	8	2#14	1#14	
(GFI)	1#12	2#12	9	DISHWASHER	20	1	1200 1080		1	15	GENERAL PURPOSE OUTLETS	10	2#14	1#14	
			11	SPARE	20	1		500 1080	1	15	GENERAL PURPOSE OUTLETS	12	2#14	1#14	
			13	SPARE	20	1	500		1	15	GENERAL PURPOSE OUTLETS	14	2#14	1#14	
(HVAC)	1#12	2#12	15	AUH- (X)	15	2			1	20	BATHROOM RECEPTACLES/LIGHTS	16	2#12	1#12	
			17				180		1	20	TELECOM/CABLE RECEPTACLE	18	2#12	1#12	
(GFI)	1#8	2#8	19	STOVE	50	2			1	20	DEDICATED OUTDOOR RECEP IF APPLICABLE	20	2#12	1#12	
			21						2	30	WASHER	22	2#10	1#10	(GFI)
			23	SPARE	20	1						24			
			25	SPARE	20	1			1	20	SPARE	26			
			27	SPARE					1	20	SPARE	28			
			29	SPARE					1	20	SPARE	30			
						VA:	7,200	7,080							

CONNECTED LOAD
KVA: 14.3
AMPS: 68.7

REMARKS
(X) DENOTES AHU-1 OR 2 OR 3 OR 4 OR 5
(GFI) DENOTES GFI CIRCUIT BREAKER
(HVAC) CIRCUIT BREAKER SHALL BE HVAC RATED TYPE

MAIN
BUS 100 AMPS
BRKR - AMPS
☒ NEW PANEL
☐ EXISTING PANEL
☐ MAIN CIRCUIT BREAKER
☒ MAIN LUGS ONLY
☒ FLUSH MOUNTED
☐ SURFACE MOUNTED
☐ BOTTOM FEED
☐ TOP FEED

OPTIONS
☐ 200% NEUTRAL
☒ GROUND BUS
☐ ISOLATED GROUND BUS
☐ DOOR-IN-DOOR CONSTRUCTION
☐ STAINLESS STEEL COVER
☐ NEMA 3R PANEL
☐ SUB-FEED MAIN C.B. (3P) QTY: _____ AMPS: _____
☐ CONTACTOR AMPS: _____ CKT'S CONTROLLED: _____
☐ OTHER: _____
☐ OTHER: _____

NOTE:
1- PROVIDE ARC-FAULT CIRCUIT BREAKERS FOR CIRCUITS SERVING FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUN ROOMS, REC ROOMS, HALLWAYS CLOSET, SMOKE DETECTORS, AND SIMILAR AREAS.

2- PANEL SHALL BE INSTALLED SO THAT THE NO BREAKER IS HIGHER THAN 48" A.F.F.

PANEL DESIGNATION (2-BEDROOM TYPICAL)

VOLTAGE	PHASE	POLES	WIRES	AIC
208V/120V	1	30	3	22K

	G WIRE SIZE	Ø WIRE SIZE	CKT No.	DESCRIPTION	CB AMPS	CB POLES	PH. A VA	PH. B VA	CB POLES	CB AMPS	DESCRIPTION	CKT No.	Ø WIRE SIZE	G WIRE SIZE	
(GFI)	1#12	2#12	1	REFRIGERATOR RECEPTACLE	20	1	1200		1	20	SPARE	2			
	1#12	2#12	3	KITCHEN GFI RECEPTACLES	20	1		720 2500	2	30	DRYER	4	2#10	1#10	(GFI)
	1#12	2#12	5	KITCHEN GFI RECEPTACLES	20	1	540 2500					6			
(GFI)	1#12	2#12	7	MICROWAVE RECEPTACLE	20	1		1200 1080	1	15	GENERAL LTG/SMOKE DETECTORS	8	2#14	1#14	
(GFI)	1#12	2#12	9	DISHWASHER	20	1	1200 1080		1	15	GENERAL PURPOSE OUTLETS	10	2#14	1#14	
			11	SPARE	20	1		500 1080	1	15	GENERAL PURPOSE OUTLETS	12	2#14	1#14	
			13	SPARE	20	1	500		1	15	GENERAL PURPOSE OUTLETS	14	2#14	1#14	
(HVAC)	1#12	2#12	15	AUH- (X)	15	2			1	20	BATHROOM RECEPTACLES/LIGHTS	16	2#12	1#12	
			17				180		1	20	2ND BATHROOM RECEPTACLES/LIGHTS (IF APPLICABLE)	18	2#12	1#12	
(GFI)	1#8	2#8	19	STOVE	50	2			1	20	TELECOM/CABLE RECEPTACLE	20	2#12	1#12	
			21						1	20	DEDICATED OUTDOOR RECEP IF APPLICABLE	22	2#12	1#12	
			23	SPARE	20	1			2	30	WASHER	24	2#10	1#10	(GFI)
			25	SPARE	20	1						26			
			27	SPARE					1	20	SPARE	28			
			29	SPARE					1	20	SPARE	30			
						VA:	7,200	7,080							

CONNECTED LOAD
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REMARKS
(X) DENOTES AHU-1 OR 2 OR 3 OR 4 OR 5
(GFI) DENOTES GFI CIRCUIT BREAKER
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BRKR - AMPS
☒ NEW PANEL
☐ EXISTING PANEL
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☒ MAIN LUGS ONLY
☒ FLUSH MOUNTED
☐ SURFACE MOUNTED
☐ BOTTOM FEED
☐ TOP FEED

OPTIONS
☐ 200% NEUTRAL
☒ GROUND BUS
☐ ISOLATED GROUND BUS
☐ DOOR-IN-DOOR CONSTRUCTION
☐ STAINLESS STEEL COVER
☐ NEMA 3R PANEL
☐ SUB-FEED MAIN C.B. (3P) QTY: _____ AMPS: _____
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2- PANEL SHALL BE INSTALLED SO THAT THE NO BREAKER IS HIGHER THAN 48" A.F.F.

KEA ENGINEERS
Engineering Excellence since 1984
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Rev. #	Revision Description	Date:
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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:
PROPOSED MIXED USE BUILDING:
WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:
136-158 WESTMORELAND, LLC
1485 5TH AVENUE, 24F
NEW YORK, NY 10035

Papp Architects
architecture | planning | interiors
188 East Post Road, White Plains, NY 10601
914 949-1851 | www.papparchitects.com

JMC Site Development Consultants
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120 Bedford Road
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New York, NY 10001
212 324-6300

Khachaturian Engineering Associates
Mechanical/Electrical/Plumbing Engineers
186 Wood Avenue South, First Floor
Iselin, NJ 08830
732 635-0044

Sheet Title:
ELECTRICAL TYPICAL UNIT PANEL SCHEDULES

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #062281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date: 07-18-2016
Scale: AS NOTED
Job#: 2011
Sheet Title: E-2.06
Sheet: of

A. CONTRACT PERFORMANCE

1. EXECUTE THE WORK IN THE BEST AND MOST THOROUGH MANNER & TO THE SATISFACTION OF THE CONSULTING ENGINEER, WHO WILL JOINTLY INTERPRET THE MEANING OF THE DRAWINGS AND SPECIFICATIONS AND SHALL HAVE THE POWER TO REJECT ANY WORK AND MATERIALS WHICH, IN THEIR JUDGMENT, ARE NOT IN FULL ACCORDANCE THEREWITH.

2. EXCEPT FOR CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE CONSULTING ENGINEERS, IN ACCORDANCE WITH ALTERNATES OF OPTIONS STATED HEREINAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS, COMPLETE IN EVERY WAY AND READY FOR SATISFACTORY AND EFFICIENT OPERATION WHEN DELIVERED TO THE OWNER.

3. WHERE DISAGREEMENTS OCCUR BETWEEN THE PLANS AND THE SPECIFICATIONS, OR WITHIN EITHER DOCUMENT ITSELF, THE ITEM OR ARRANGEMENT OF BETTER QUALITY, GREATER QUANTITY OR HIGHER COST SHALL BE INCLUDED IN THE BASE BID.

4. THE DRAWINGS SHOW THE VARIOUS CONDUIT AND PIPING SYSTEMS SCHEMATICALLY. CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY JUNCTION BOXES, PULL BOXES, SUPPORT AND ACCESSORIES TO MEET APPLICABLE CODES, BUILDING STANDARDS AND FULFILL CONTRACT DOCUMENTS. NO ADDED COMPENSATION WILL BE PERMITTED FOR VARIATIONS DUE TO FIELD CONDITIONS.

5. THE CONTRACTOR COVENANTS AND AGREES THAT HE AND HIS SUBCONTRACTORS AND HIS AND THEIR AGENTS, SERVANTS AND EMPLOYEES WILL PROVIDE AND MAINTAIN A SAFE PLACE TO WORK AND THAT HE AND THEY WILL COMPLY WITH ALL LAWS AND REGULATIONS OF ANY GOVERNMENTAL AUTHORITY HAVING JURISDICTION THEREOF AND THE CONTRACTOR AGREES TO INDEMNIFY, DEFEND AND HOLD HARMLESS THE CONSULTING ENGINEER, ARCHITECT AND OWNER FROM AND AGAINST ANY LIABILITY, LOSS, DAMAGE OR EXPENSE, INCLUDING ATTORNEY'S FEES ARISING FROM FAILURE OR ALLEGED FAILURE ON THE PART OF THE CONTRACTOR, HIS SUBCONTRACTORS AND HIS AND THEIR AGENTS, SERVANTS AND EMPLOYEES TO PROVIDE AND MAINTAIN A SAFE PLACE TO WORK OR TO COMPLY WITH ALL LAWS AND REGULATIONS OF ANY GOVERNMENTAL AUTHORITY HAVING JURISDICTION THEREOF.

6. THE CONTRACTOR AND EACH SUBCONTRACTOR COVENANTS AND AGREES TO INDEMNIFY, DEFEND AND HOLD HARMLESS THE CONSULTING ENGINEER, ARCHITECT AND OWNER FROM AND AGAINST ANY LIABILITY, LOSS, DAMAGE OR EXPENSE, INCLUDING ATTORNEY'S FEES ARISING FROM A FAILURE OR ALLEGED FAILURE ON THE PART OF THE CONTRACTOR, HIS SUBCONTRACTORS AND HIS AND THEIR AGENTS, SERVANTS AND EMPLOYEES PROPERLY TO DISCHARGE THE OBLIGATIONS ASSUMED BY HIM OR THEM IN THE PERFORMANCE OF THE WORK, INCLUDING ANY ACT OR OMISSION ALLEGEDLY RESULTING IN DEATH OR PERSONAL INJURY OR PROPERTY DAMAGE OR IMPROPER CONSTRUCTION, CONSTRUCTION TECHNIQUES OR THE USE OF IMPROPER OR INAPPROPRIATE MATERIAL OR TOOLS.

7. THE CONTRACTOR AGREES THAT ANY CONTROVERSY OR DISPUTE TO WHICH THE CONTRACTOR, THE ARCHITECT, AND THE CONSULTING ENGINEERS ARE PARTIES SHALL BE SUBMITTED TO ARBITRATION FOR DECISION IN ACCORDANCE WITH THE RULES OF SUCH ASSOCIATION FOR CONSTRUCTION INDUSTRY DISPUTES. ALL SUBCONTRACTORS LIKEWISE AGREE TO SUBMIT TO SUCH ARBITRATION ANY DISPUTE BETWEEN OR AMONG THEM, THE CONTRACTOR, THE ARCHITECT AND THE CONSULTING ENGINEERS, AND THE CONTRACTOR AGREES TO MAKE AVAILABLE TO THE CONSULTING ENGINEERS ON DEMAND SIGNED COPIES OF THE CONTRACT BETWEEN THE OWNER AND THE CONTRACTOR AND BETWEEN THE CONTRACTOR AND HIS SUBCONTRACTORS. THE CONTRACTOR AND EACH SUBCONTRACTOR AGREE THAT BY SUBMITTING A BID WHICH IS ACCEPTED, THIS PARAGRAPH SHALL BE DEEMED A WRITTEN AGREEMENT TO SUBMIT ANY CONTROVERSY THEREAFTER ARISING ARBITRATION.

8. ALL WORK SHALL BE DONE IN CONFORMANCE WITH ALL GOVERNING CODES, INCLUDING AMENDMENTS, BULLETINS, ETC., AS WELL AS STANDARDS OF INSTALLATION AND EQUIPMENT ESTABLISHED FOR THE BUILDINGS, AND REQUIREMENTS OF THE OWNER.

9. OBTAIN ALL NECESSARY PERMITS AND APPROVAL FROM GOVERNING AUTHORITIES AND FILE ALL NECESSARY FORMS. PAY ALL INSPECTION FEES.

10. COORDINATE SCHEDULING OF ALL WORK TO BE PERFORMED WITH OWNER AND/OR HIS AGENT AND INCLUDE ALL NECESSARY PREMIUM TIME REQUIRED FOR SHUTDOWNS, WORK IN OCCUPIED AREAS, ETC.

11. ALL AREAS ASSOCIATED WITH WORK TO BE PERFORMED SHALL BE EXAMINED PRIOR TO BID SUBMISSION. NO ADDITIONAL COMPENSATION SHALL BE MADE FOR CONDITIONS FOUND DURING INSTALLATION.

12. BEFORE COMMENCING WORK, EXAMINE ALL ADJOINING WORK ON WHICH THIS WORK IS IN ANY WAY DEPENDENT FOR PERFECT WORKMANSHIP ACCORDING TO THE INTENT OF THIS SPECIFICATION, AND REPORT TO THE CONSTRUCTION MANAGER ANY CONDITION WHICH PREVENTS PERFORMANCE OF FIRST-CLASS WORK. NO "WAIVER OF RESPONSIBILITY" FOR INCOMPLETE, INADEQUATE OR DEFECTIVE ADJOINING WORK WILL BE CONSIDERED UNLESS NOTICE HAS BEEN FILED BEFORE SUBMITTAL OF A PROPOSAL.

13. COORDINATE ALL WORK WITH OTHER TRADES TO INSURE INSTALLATION IS MADE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

14. FURNISH ADEQUATE LIABILITY INSURANCE AND BONDING AS REQUIRED BY OWNER.

15. INCLUDE ALL LABOR, MATERIALS, AND APPURTENANCES REQUIRED FOR THE FURNISHING, INSTALLING AND TESTING OF ALL WORK. COMPLETE AND MAKE READY FOR OPERATION IN A MANNER SATISFACTORY TO THE ARCHITECT AND CONSULTING ENGINEER, ALL WORK SHOWN ON DRAWINGS AND SPECIFIED HEREIN.

16. ALL WORK SHALL BE GUARANTEED FOR TWO (2) FULL YEARS FROM THE DATE WHEN THE OWNER HAS ISSUED A "CERTIFICATE OF SUBSTANTIAL COMPLETION".

B. INSTALLATION PROCEDURE

1. THIS CONTRACTOR'S WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING: FURNISHING AND INSTALLATION OF ALL ELECTRICAL WORK, INCLUDING ELECTRICAL AND COMMUNICATIONS OUTLETS IN WALLS AND FLOOR, LIGHTING FIXTURES WITH LAMPS, SWITCHES, DIMMERS, EMERGENCY BATTERY UNITS, ETC., AND ASSOCIATED BRANCH CIRCUIT WIRING, DISCONNECT SWITCHES, SPECIAL RECEPTACLES, ETC. ALL SPECIAL EQUIPMENT, SUCH AS FANS, AIR CONDITIONING UNITS, COPIERS, ETC. WILL BE FURNISHED BY OTHERS (U.O.N.). WHERE EQUIPMENT REQUIRES PERMANENT CONNECTIONS, THESE CONNECTIONS SHALL BE PROVIDED WITH APPROPRIATE DISCONNECTING MEANS.

2. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL WORK SHOWN ON DRAWINGS WITH OTHER TRADES TO ASSURE THAT ALL SYSTEMS ARE COMPLETE AND OPERATIONAL. THIS CONTRACTOR SHALL COORDINATE ALL EQUIPMENT LOCATIONS AND CONDUIT RUNS SUPPLIED AND/OR INSTALLED UNDER THIS SECTION TO AVOID CONFLICTS OR OBSTRUCTIONS TO OTHER TRADES. THIS CONTRACTOR SHALL PROVIDE ALL NECESSARY PULL BOXES, VERTICAL SUPPORT BOXES, AND CONDUIT OFFSETS REQUIRED TO ACCOMPLISH THE ABOVE NOTED COORDINATION AT NO ADDITIONAL COST TO THE OWNER, WHETHER OR NOT INDICATED ON PLANS. ALL VERTICAL SUPPORT BOXES, PULL BOXES, ETC. SHALL BE INSTALLED WHERE REQUIRED TO FACILITATE PULLS AND AT CODE REQUIRED INTERVALS, AT A MINIMUM.

3. CONDUIT RUNS INDICATED ON PLAN ARE FOR REFERENCE ONLY. EXACT LOCATIONS AND ELEVATION SHALL BE DETERMINED AFTER COORDINATION WITH OTHER TRADES. THIS CONTRACTOR SHALL SUPPLY, AS PART OF THEIR SHOP DRAWING SUBMISSION, THE EXACT LOCATION OF ALL CEILING MOUNTED EQUIPMENT AND CONDUIT RUNS INCLUDING PROPOSED LOCATIONS AND MEANS OF SUPPORT AS WELL AS THE EXPECTED LOAD CONCENTRATION AT THE POINTS OF ATTACHMENT. THE ABOVE NOTED INFORMATION SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER BEFORE ANY WORK IS TO COMMENCE.

4. FURNISH AND INSTALL ALL NECESSARY CABLE SUPPORT BOXES, PULL BOXES AND CONDUIT SUPPORTS, WHERE NOTED AND AS REQUIRED BY APPLICABLE CODES. ALL LOW TENSION (COMMUNICATIONS, SECURITY, A/V, ETC.) CONDUIT, FIRE ALARM CONDUIT, ETC., WHICH HAVE RUNS IN EXCESS OF 100 FEET IN LENGTH AND/OR CONTAINING BENDS IN EXCESS OF 180 DEGREES SHALL BE PROVIDED WITH A PULLBOX. ALL PULLBOXES SHALL BE LABELED FOR THEIR INTENDED USE. DECALS SHALL BE PROVIDED TO INDICATE VOLTAGE LEVEL. FIRE ALARM SYSTEM BOXES SHALL BE PAINTED RED, AND ALL WIRE AND CABLE PROVIDED UNDER THIS SECTION SHALL BE TAGGED (WITH FEEDER OR BRANCH CIRCUIT DESIGNATION) AT ALL BOXES. WHERE CONDUIT BENDS ARE REQUIRED IN COMMUNICATIONS RACEWAY SYSTEMS, THE RADIUS OF THE RACEWAY BEND SHALL NOT BE LESS THAN TEN TIMES THE DIAMETER OF THE RACEWAY. PULL BOXES FOR COMMUNICATION RACEWAYS WILL BE PROVIDED IN STRAIGHT PULLS ONLY. LABEL EACH RACEWAY (PER TECHNOLOGY DEPT. REQUIREMENTS) EVERY 50 FEET HORIZONTALLY AND ON EACH FLOOR VERTICALLY. SUBMIT LABELING SYSTEM FOR REVIEW.

5. UNLESS SPECIFICALLY APPROVED, NO WIRES SHALL BE PULLED IN UNTIL THE CONDUIT SYSTEM IS COMPLETED. NO GREASE OR OIL SHALL BE USED TO FACILITATE THE PULLING OF WIRES; ONLY APPROVED PULLING COMPOUND SHALL BE USED. ALL WIRES SHALL BE CONTINUOUS BETWEEN OUTLET AND OUTLET, OR FROM PANELBOARD TO THE FIRST OUTLET. JOINTS THAT BECOME NECESSARY IN CIRCUIT WORK AT THE OUTLETS SHALL BE MADE WITH APPROVED PRESSURE CONNECTORS. ALL JOINTS SHALL BE COVERED WITH AN INSULATION EQUAL TO THAT ON THE CONDUCTORS. APPROVED PRESSURE CONNECTORS, IDEAL WINGNUTS, SCOTCH-LOCK, BUCHANAN, OR AS APPROVED, SHALL BE USED.

6. EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES, SWITCHES, WALL OUTLETS, ETC., SHALL BE IN ACCORDANCE WITH ARCHITECTURAL DRAWINGS.

7. NO ELECTRICAL CONNECTIONS SHALL BE MADE TO, OR WORK PERFORMED ON, ENERGIZED EQUIPMENT.

8. FINAL CONNECTIONS TO EQUIPMENT SHALL BE MADE ACCORDING TO VENDOR APPROVED SHOP DRAWINGS.

9. VERIFY ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT TO BE USED. ALL SPECIAL PURPOSE OUTLETS INDICATED ON PLAN SHALL BE VERIFIED WITH EQUIPMENT MANUFACTURER PRIOR TO INSTALLATION, TO ENSURE PROPER WIRING AND COMPATIBILITY WITH ATTACHMENT PLUGS OR JUNCTION BOXES THAT MAY BE FURNISHED AS AN INTEGRAL PART OF THE EQUIPMENT.

10. COORDINATE ALL LOCATIONS AND HEIGHTS OF STUB-UPS AND OUTLETS IN FIELD WITH VENDORS AND/OR FURNITURE MANUFACTURERS' APPROVED SHOP DRAWINGS. ALL RECEPTACLES ARE TO BE ACCESSIBLE.

11. ELECTRICAL CONTRACTOR SHALL ENSURE THAT CODE REQUIRED QUANTITY OF OUTLETS IN RESIDENTIAL UNITS HAVE BEEN FURNISHED AND INSTALLED. PROVIDE DEDICATED CIRCUITS FOR OUTLETS AS REQUIRED BY CODE.

12. ALL RECEPTACLES SHALL BE ACCESSIBLE BELOW COUNTERS OR BEHIND EQUIPMENT. CONTRACTOR SHALL COORDINATE EXACT LOCATION OF EQUIPMENT RECEPTACLES WITH EQUIPMENT MANUFACTURER'S REQUIREMENTS AND THE LOCAL INSPECTOR.

13. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECTS FOR ALL EQUIPMENT PER CODE AND SHALL COORDINATE ALL DISCONNECT SWITCH REQUIREMENTS AND LOCATIONS WITH THE ELECTRICAL INSPECTOR, VENDORS APPROVED SHOP DRAWING AND FINAL EQUIPMENT LOCATIONS.

14. ELECTRICAL CONTRACTOR SHALL VERIFY PHASE LOAD BALANCING ON ALL PANELS UPON COMPLETION OF THE ELECTRICAL INSTALLATION. INCLUDE RE-DISTRIBUTION OF CIRCUITS WITHIN PANELS TO BALANCE WITHIN A 10% WINDOW (±5%).

15. ALL CONDUIT AND CABLE "HOMERUNS" SHALL CONSIST OF A SINGLE CIRCUIT PER CONDUIT FOR FEEDERS SERVED BY AN OVERCURRENT PROTECTIVE (OCP) DEVICE IN EXCESS OF 20 AMPERES, SINGLE POLE. WHERE WIRE AND CONDUIT BRANCH CIRCUITS SHARE A CONDUIT HOMERUN, (OCP LESS THAN OR EQUAL TO 20 AMPERES SINGLE POLE) THERE SHALL BE A MAXIMUM OF SIX CIRCUITS COMBINED IN A RACEWAY TO THE PANELBOARD, UNLESS OTHERWISE NOTED. ALL CONDUCTORS SHALL BE DERATED PER NATIONAL ELECTRICAL CODE (LATEST VERSION). COMBINING OF MULTIPLE HOMERUNS (MORE THAN SIX) IN A SINGLE CONDUIT SHALL NOT BE PERMITTED.

16. ALL CONDUIT SHOWN FOR INDOOR WORK AS WELL AS FOR WEATHER PROTECTED GARAGE AREAS SHALL BE EMT (3/4" MINIMUM) WITH MALLEABLE SET-SCREW TYPE CONNECTORS AND COUPLINGS. DIE-CAST FITTINGS ARE NOT ACCEPTABLE.

16A. ALL CONDUIT SHOWN FOR OUTDOOR WORK SHALL BE SCHEDULE 40 PVC (3/4" MINIMUM). ALL JOINTS SHALL BE CLEANED WITH AN APPROVED SOLVENT PRIOR TO GLUING TO ENSURE WATERTIGHT CONNECTION. ANY CONDUITS FOUND WITH WATER IN THE THEM SHALL BE REPLACED AT THE SOLE EXPENSE OF THE CONTRACTOR.

17. PROVIDE IMC CONDUIT WITH THREADED COUPLINGS WHERE REQUIRED BY CODE.

18. TYPE MC CABLE SHALL BE UTILIZED FOR BRANCH LIGHTING AND RECEPTACLE CIRCUITRY,

19. INCLUDE ALL LABOR, MATERIALS, AND APPLICATIONS REQUIRED FOR THE FURNISHING, INSTALLING AND TESTING OF ALL WORK SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN, IN A MANNER SATISFACTORY TO THE ARCHITECT.

20. ALL WORK AND/OR EQUIPMENT INSTALLED OUTDOORS SHALL BE APPROVED FOR USE IN WET LOCATIONS.

21. ALL WORK AND/OR EQUIPMENT IN PROTECTED GARAGE AREAS SHALL BE SUITABLE FOR DAMP LOCATIONS.

22. WHERE CONDUITS, CABLE TRAY OR OTHER ELECTRICAL EQUIPMENT PENETRATE FIRE OR SMOKE RATED WALLS, PARTITIONS, FLOOR SLABS, ETC., THE SPACE BETWEEN THE SLEEVE OR CUTOUT AND THE ELECTRICAL EQUIPMENT SHALL BE CAULKED WITH A UL LISTED, INTUMESCENT TYPE, APPROVED FIRESTOP SYSTEM. SPACE BETWEEN THE SLEEVE OR CUTOUT AND THE ELECTRICAL EQUIPMENT SHALL BE SIZED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS FOR CONDUIT SIZE AND DAMMING MATERIAL THICKNESS FOR THE TYPE OF RATED CONSTRUCTION FOR WHICH THE SYSTEM IS TO BE USED. THE FIRESTOP SYSTEM SHALL BE AS MANUFACTURED BY 3M FIRE PROTECTION PRODUCTS OR AS APPROVED. SEE ARCHITECTURAL DRAWINGS FOR FIRE RATING OF WALLS AND FLOORS.

23. WHERE WORK IS ONGOING IN ELECTRICAL PANELS THE COVERS ARE NOT TO BE LEFT OFF UNLESS WORK IS CURRENTLY BEING PERFORMED ON THE PANEL. COVERS SHALL BE REPLACED EACH NIGHT AT THE END OF SHIFT.

24. TEMPORARY POWER AND LIGHTING SHALL BE PROVIDED THROUGHOUT CONSTRUCTION AREAS FROM TEMPORARY SERVICE(S) AND WEATHERPROOF PANEL(S). ALL RECEPTACLES SHALL BE GFCI TYPE AND HAVE PROTECTIVE COVERS. ALL TEMPORARY LIGHTS SHALL BE UL APPROVED WITH ONE 100 WATT ROUGH SERVICE INCANDESCENT LAMP EVERY 100 SQUARE FEET.

C. ARCHITECT'S AND/OR ENGINEER'S REVIEW

1. SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO PURCHASE OF ANY EQUIPMENT. ANY WORK OR EQUIPMENT INSTALLED PRIOR TO REVIEW OF SHOP DRAWINGS AND FOUND TO BE UNACCEPTABLE SHALL BE REMOVED AND MODIFIED AT THE CONTRACTOR'S SOLE EXPENSE INCLUDING ANY RESULTANT SCHEDULING DELAYS EXPERIENCED BY ANY TRADE.

2. THE ARCHITECT AND/OR ENGINEER WILL REVIEW SHOP DRAWINGS AND SAMPLES FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND THE INFORMATION CONTAINED IN THE CONTRACT DOCUMENTS. THE ARCHITECT'S AND/OR ENGINEER'S REVIEW OF SHOP DRAWINGS AND SAMPLES IS ONLY FOR THE CONVENIENCE OF THE OWNER IN FOLLOWING THE WORK AND DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR DEVIATIONS FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS OR COMPLIANCE WITH CODE. THE ARCHITECT'S AND/OR ENGINEER'S REVIEW SHALL NOT BE CONSTRUED AS A COMPLETE OR DETAILED CHECK OF THE WORK SUBMITTED, NOR SHALL IT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR ERRORS OF ANY SORT IN THE SHOP DRAWINGS AND SAMPLES, OR FROM THE NECESSITY OF FURNISHING ANY WORK REQUIRED BY THE CONTRACT DOCUMENTS WHICH MAY HAVE BEEN OMITTED FROM SHOP DRAWING SUBMITTALS.

3. THE REVIEW OF A SEPARATE ITEM SHALL NOT INDICATE REVIEW OF THE COMPLETE ASSEMBLY IN WHICH IT FUNCTIONS. NOTHING IN THE ARCHITECT'S AND/OR ENGINEER'S REVIEW OF SHOP DRAWINGS AND SAMPLES SHALL BE CONSIDERED AS AUTHORIZING:

   a. A DEPARTURE FROM CONTRACT DOCUMENTS OR SPECIFICATIONS, OR,

   b. ADDITIONAL COST TO THE OWNER, OR,

   c. INCREASED TIME FOR COMPLETION OF THE WORK.

4. NO PART OF THE WORK SHALL BE STARTED IN THE SHOP OR IN THE FIELD UNTIL THE ARCHITECT AND/OR ENGINEER HAS REVIEWED THE SHOP DRAWINGS AND SAMPLES FOR THAT PORTION OF THE WORK. THEREAFTER, THE WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND THE INDICATED STATUS OF THE REVIEWED SHOP DRAWING.

5. SAMPLES SHALL BE SUBMITTED FOR REVIEW WHEN REQUESTED BY THE ARCHITECT AND/OR ENGINEER.

6. TWO WEEKS AFTER AWARD OF CONTRACT SUBMIT A SHOP DRAWING LOG FOR REVIEW WITH SUBMITTAL DATES AND SUBMITTAL TYPE.

7. PROVIDE OPERATIONS AND MAINTENANCE MANUALS FOR ALL EQUIPMENT AND MATERIALS.

D. RECORD DRAWINGS

1. PREPARE AND FURNISH TO OWNER "AS BUILT" PLANS FOR ALL WORK INSTALLED. PROVIDE CAD DRAWINGS AND CAD FILES ON A COMPACT DISC COMPLETED IN THE LATEST VERSION OF AUTOCAD. ALL DRAWINGS SHALL BE IN A STYLE COMMENSURATE WITH THE ENGINEERING DESIGN. THE ENGINEERING DESIGN CAD DRAWINGS OR BACKGROUNDS WILL BE FURNISHED FOR USE TO THIS CONTRACTOR FOR THE PURPOSE OF THIS SUBMISSION (SUBMIT A CAD INDEMNIFICATION AGREEMENT).

2. DURING CONSTRUCTION, KEEP AN ACCURATE RECORD OF ALL DEVIATIONS BETWEEN THE WORK AS SHOWN ON DRAWINGS AND THAT WHICH IS ACTUALLY INSTALLED. THIS RECORD SET OF PRINTS SHALL BE KEPT AT JOB SITE FOR INSPECTION.

3. UPON COMPLETION OF THE INSTALLATION. SUBMIT ONE SET OF BLACK AND WHITE PRINTS OF THESE "AS-BUILT" RECORD DRAWINGS TO THE CONSULTING ENGINEER FOR REVIEW. AFTER REVIEW BY THE CONSULTING ENGINEER, MAKE NECESSARY CHANGES TO THESE PRINTS AND THEN DELIVER THEM TO THE OWNER FOR RECORD. FINAL PAYMENT WILL BE WITHHELD UNTIL COMPLETION OF "AS-BUILT" DRAWINGS.

4. AS-BUILT DRAWINGS SHALL CONTAIN EXACT ROUTING AND ELEVATIONS OF ALL CONDUIT BANKS, ACTUAL PANELBOARD CIRCUIT BREAKER POLE POSITIONS USED FOR EACH CIRCUIT, AND EXACT LOCATION OF ALL EQUIPMENT. ALL DIMENSIONS SHALL BE REFERENCED TO BUILDING STRUCTURE CENTERLINES.

E. EQUIPMENT SPECIFICATIONS

1. ALL EQUIPMENT AND MATERIALS SHALL BE NEW, UL LISTED AND SHALL CONFORM TO ANY ADDITIONAL LABELING, TESTING AND CONSTRUCTION REQUIREMENTS ESTABLISHED BY THE GOVERNING AUTHORITIES. SAME SHALL BE GUARANTEED FOR 1 YEAR SUBSEQUENT TO FINAL ACCEPTANCE.

2. ALL EQUIPMENT (ELECTRICAL AND MECHANICAL) SHALL BE SPECIFIED TO HAVE VOLTAGE RATINGS COMPATIBLE WITH THE PROVISIONS OF ANSI C84.

3. ALL LOW TENSION CONDUIT FOR DATA, TELEPHONE, SECURITY, A/V, TELEVISION, ETC., SHALL BE WIRED TO A COMMON POINT IN EACH DWELLING UNIT. TWO ¾" EMT CONDUITS SHALL BE RUN FROM EACH DWELLING UNIT TO THE BUILDING TELEPHONE AND CABLE CLOSET. ALL WIRING WITHIN THE UNIT SHALL BE RUN CONCEALED IN WALLS AND ABOVE CEILINGS. PROTECT CABLES THAT ARE RUN IN METAL STUDS WITH APPROVED GROMMETS.

4. ALL WALL MOUNTED TELEPHONE AND CABLE JACKS SHALL BE AT 18" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. IN KITCHENS ALL OUTLETS SHALL BE COUNTER HEIGHT. COORDINATE HEIGHT WITH BACKSPLASH AT COUNTER. IN THE EVENT THAT OUTLETS ARE SHOWN AT THE SAME LOCATION, UTILIZE ONE BOX AND ONE SINGLE GANG COVER FOR BOTH.

5. ALL 15A OR 20A, SINGLE POLE, 120 VOLT OR 208 VOLT BRANCH CIRCUIT RUNS IN EXCESS OF 100 FEET FROM THE PANEL TO THE DEVICE SHALL BE PROVIDED WITH #10 MINIMUM AWG WIRE FOR ITS ENTIRE LENGTH.

6. JUNCTION OR PULL BOXES SHALL BE FURNISHED AND INSTALLED WHERE INDICATED ON PLANS AND WHEREVER ELSE SUCH A BOX MAY BE NECESSARY TO FACILITATE INSTALLATION OR CONFORM TO CODE REQUIREMENTS. COORDINATE LOCATIONS OF SAME WITH ARCHITECT FOR ACCESSIBILITY AND AESTHETIC CONSIDERATIONS. GENERALLY, JUNCTION BOXES AND PULL BOXES SHALL BE INSTALLED EVERY 100 FEET IN CONDUIT HORIZONTAL RUNS AND SHALL NOT BE EXPOSED IN FINISHED SPACES. ALL CABLES WITHIN PULL BOXES SHALL BE PROPERLY TAGGED FOR IDENTIFICATION. LABEL ALL CONDUITS WITH FEEDER DESIGNATION, AT ENTRY AND EXIT TO THE BOX.

7. INSULATING BUSHINGS OR INSULATING THROATS SHALL BE INSTALLED ON ALL FITTINGS.

F. LIGHTING FIXTURES

1. ALL FLUORESCENT LIGHT FIXTURES SHALL BE PROVIDED WITH HIGH POWER FACTOR, HIGH FREQUENCY ELECTRONIC BALLASTS. BALLASTS SHALL BE UL LISTED, CLASS P, SOUND RATED A.

2. ALL LIGHTING FIXTURES SHALL BE CONNECTED USING MAXIMUM 6 FOOT LENGTH OF FLEXIBLE METAL CONDUIT FROM ACCESSIBLE CEILING OUTLET BOX USING LOCK NUT TYPE FITTINGS WITH GROUNDING AS REQUIRED BY GOVERNING CODES. PROVIDE #12 GROUND WIRE.

3. ALL SELF CONTAINED EMERGENCY LIGHTING FIXTURES SHALL CONTAIN AN INTEGRAL EMERGENCY BATTERY UNIT, CONSISTING OF NICKEL-CADIUM BATTERY AND AN AUTOMATIC SOLID STATE CHARGER WITH VISIBLE CHARGING LED. UNIT SHALL PROVIDE 87.5 PERCENT RATED VOLTAGE OUTPUT FOR MINIMUM OF 90 MINUTES. EMERGENCY BATTERY UNIT SHALL BE AS MANUFACTURED BY LIGHT ALARMS ELECTRONICS CORP., EMERGI-LITE OR DUAL-LITE.

4. ALL EXIT SIGNS SHALL BE PROVIDED WITH AN EMERGENCY BATTERY WITH 90 MINUTES (MIN.) OF BATTERY LIFE. BATTERY SHALL BE SPECIFIC TO EXIT SIGN MANUFACTURER.

6. BRANCH CIRCUITS SHALL IN ALL CASES CONTAIN THE NECESSARY NUMBER OF WIRES TO AFFORD THE SWITCH CONTROL INDICATED. ALL LIGHTING CIRCUITS WHICH ARE CONTROLLED BY DIMMERS SHALL NOT SHARE A NEUTRAL WITH ANOTHER CIRCUIT, BUT SHALL HAVE A SEPARATE NEUTRAL CONDUCTOR TO THE PANEL, WHETHER OR NOT INDICATED ON PLAN. EACH DIMMER SHALL BE SEPARATELY GANGED (FULLY ENCLOSED).

8. ALL LIGHT FIXTURES SHALL BE SPECIFIED ON THE ELECTRICAL AND/OR ARCHITECTURAL DOCUMENTS. IT SHALL BE THIS CONTRACTORS RESPONSIBILITY TO OBTAIN THE EXACT FIXTURE SPECIFICATIONS FOR THE PROJECT PRIOR TO THE SUBMISSION OF BID. REGARDLESS OF WHERE THE FIXTURE, LAMPS AND BALLASTS ARE SPECIFIED, THIS CONTRACTOR SHALL INCLUDE HIGH POWER FACTOR/ENERGY EFFICIENT BALLASTS AND HIGH EFFICIENCY LAMPS WHICH MEET OR EXCEED THE REQUIREMENTS OF THE INTERNATIONAL ENERGY CONSERVATION CODE.

G. SLEEVES

1. PROVIDE SLEEVES FOR ALL CONDUIT PASSING THROUGH FLOORS, WALLS, PARTITIONS AND ROOFS. SLEEVED ASSEMBLIES SHALL BE APPROVED FOR INTENDED USE FOR ALL WATERPROOF INSTALLATIONS (ROOF, FOUNDATION WALL, ETC.). PROVIDE OZ GEDNEY ASSEMBLIES, OR AS REVIEWED.

2. PROVIDE SLEEVES WITH AN I.D. AT LEAST 1/2 INCH GREATER THAN OUTSIDE OF CONDUIT SERVED.

H. PANELBOARDS

1. ALL PANELBOARDS SHALL BE OF THE ENCLOSED TYPE, FLUSH OR SURFACE MOUNTED, AS REQUIRED, IN CODE GAUGE STEEL CABINETS, WITH STEEL TRIM, CONCEALED HINGES, DOORS AND FLUSH TYPE LOCKS, ALL KEYED ALIKE. PROVIDE FLUSH DOORS WHERE INDICATED ON DOCUMENTS.

2. ALL BUSES, INCLUDING NEUTRAL, SHALL BE ELECTRICAL GRADE HARD- DRAWN COPPER AND SIZED IN CONFORMANCE WITH NEMA STANDARDS. BUSES SHALL BE ARRANGED FOR SEQUENCE PHASING AND LOADS SHALL BE BALANCED AS EQUALLY AS POSSIBLE AMONGST THE THREE PHASES.

3. PANELBOARDS FOR COMMON AREAS AND SERVICE EQUIPMENT SHALL BE EQUIPPED WITH QUICK-MAKE, QUICK-BREAK FUSED SWITCHES OR BOLT-ON MOLDED CASE CIRCUIT BREAKERS, OF VOLTAGE REQUIRED, AND OF SIZE AND NUMBER OF POLES INDICATED ON THE SCHEDULES.

4. A TYPE WRITTEN DIRECTORY SHALL BE PROVIDED ON THE INSIDE OF THE DOOR OF EACH PANEL, INDICATING THE LOAD SERVED BY EACH CIRCUIT. UTILIZE ARCHITECTURAL DRAWINGS TO INDICATE ROOM NAMES AND NUMBERS OF ALL EQUIPMENT SERVED.

5. PANELS FOR INDIVIDUAL DWELLING UNITS SHALL BE RESIDENTIAL QUALITY LOAD CENTERS WITH PLUG-IN BREAKERS. LOAD CENTERS SHALL BE SINGLE PHASE, THREE WIRE RECESSED TYPE WITH CAPACITY AS SHOWN ON THE DRAWINGS.

6. POWER, LIGHTING AND UTILITY PANELS FOR 120/208 VOLT SHALL BE BOLT-ON CIRCUIT BREAKER TYPE UNLESS OTHERWISE NOTED. SINGLE POLE BRANCHES SHALL BE BOLT-ON TYPE OF AT LEAST 10,000 AMPERES RMS SYMMETRICAL INTERRUPTING CAPACITY (OR AS INDICATED ON THE DRAWINGS). MULTIPLE POLE BREAKERS SHALL BE COMMON TRIP, OF THE CAPACITY AND NUMBER OF POLES AS INDICATED IN SCHEDULES. PANELBOARDS SHALL BE EQUIPPED WITH SOLID NEUTRAL AND GROUND BARS AND CONTAIN THE NUMBER OF POLES, OVERCURRENT DEVICES AND BUSED SPACES AS SPECIFIED IN SCHEDULE.

I. FUSES

1. ALL FUSES SHALL BE OF THE SAME MANUFACTURER, BUSSMANN, OR AS APPROVED, AND SHALL BE INSTALLED, AS REQUIRED, IN ALL CUTOUTS, PANELS AND SAFETY SWITCHES.

2. UNLESS OTHERWISE NOTED, FUSES SHALL BE BUSSMAN TYPE LPN, LPS OR KRP-C.

J. CARBON MONOXIDE DETECTION & FAN CONTROL

1. A SPECIFIC CARBON MONOXIDE (CO) DETECTION AND EXHAUST FAN CONTROL SYSTEM SHALL BE PROVIDED. THE PURPOSE OF THE SYSTEM IS TO CONTROL VENTILATION FANS BASED UPON THE CONCENTRATION OF CO.

2. SENSING ELEMENT SHALL BE OF SOLID STATE TYPE. ESTIMATED LIFE OF THE SENSING ELEMENT SHALL BE 7-10 YEARS. ELEMENT SHALL BE OF THE METAL OXIDE SEMI-CONDUCTOR TYPE TO MEASURE THE CONCENTRATION OF CO AS IT BUILDS UP ON THE SENSING ELEMENT. UNIT SHALL BE SUPERVISED AND HAVE A TEST CYCLE OF 2.5 MINUTES. UNIT SHALL HAVE INTERNAL CONTINUOUS SUPERVISION AND UPON DETECTING A MALFUNCTION, THE OUTPUT SHALL GO TO THE MAXIMUM LEVEL.

3. THE SYSTEM SHALL INCORPORATE CO TO VOLTAGE TRANSDUCER(S) AND SHALL MOUNT IN STANDARD ELECTRICAL BOXES (4S) AND OPERATE ON LOW VOLTAGE. THE TRANSDUCER SHALL PROVIDE AN OUTPUT OF 1-2.5V OVER 0-250PPM (SS102HC-1) BACK TO THE CONTROL PANEL.

4. ALL POWER FOR THE TRANSDUCERS SHALL BE PROVIDED, VIA UNSHIELDED FOUR CONDUCTOR CABLE, FROM THE CONTROL PANEL (SS103-3A OR SS103-10A). THE CONTROL PANEL SHALL PROVIDE THREE LEVELS OF FAN OR ALARM CONTROL RELAYS. THESE RELAYS (N.O.) SHALL BE FOR PILOT DUTY ONLY AND CAPABLE OF SWITCHING 10 AMP LOADS UP TO 240 VAC.

5. SYSTEM SHALL BE MANUFACTURED BY MANUFACTURED BY MACURCO, 6555 S. KENTON STREET, # 304, CENTENNIAL, COLORADO 80111. PH: (303) 781-4062

L. GENERAL

1. OUTLET BOXES SHALL BE CODE GAUGE GALVANIZED STAMPED STEEL, 4 INCH SQUARE BY 1-1/2 INCHES DEEP FOR POWER AND 4 INCHES SQUARE BY 2-1/2 INCHES DEEP FOR COMMUNICATION, FIRMLY ANCHORED IN PLACE. BOX VOLUME SHALL BE AS REQUIRED BY GOVERNING CODES WITH BLANK COVERS PROVIDED FOR ALL BOXES USED FOR JUNCTION PURPOSES. GEM BOXES SHALL ONLY BE USED WHERE DIMENSIONAL RESTRAINTS EXIST AND WHERE THE CONTRACTOR HAS OBTAINED PERMISSION FROM THE ENGINEER. MULTI-GANG BOXES SHALL BE PROVIDED WITH EXTENSION COLLARS MOUNTED WITHIN 1/8 INCH OF OUTER SURFACE. WHERE OUTLET BOXES ARE SHOWN FOR FLUSH MOUNTED DEVICES, A SINGLE GANG PLASTER RING SHALL BE PROVIDED, AND MOUNTED WITHIN 1/8 INCH OF OUTER SURFACE.

2. DISCONNECT SWITCHES SHALL BE QMQB FUSIBLE OR NONFUSIBLE WITH CURRENT AND VOLTAGE RATING AS INDICATED ON PLANS. SWITCHES SHALL BE HORSEPOWER RATED, ENCLOSED TYPE, SUITABLE FOR PADLOCKING IN OPEN POSITION.

3. HORSEPOWER RATED THERMAL SWITCHES (BRYANT OR AS APPROVED) SHALL BE USED FOR ALL MOTOR CIRCUITS. ELECTRICAL CONTRACTOR SHALL INSTALL WHERE APPLICABLE TOGGLE SWITCHES FOR USE AS DISCONNECT. THESE SWITCHES SHALL BE "T" RATED FOR RESISTANCE LOADS AND "M" RATED FOR MOTOR LOADS.

4. STANDARD DUPLEX CONVENIENCE RECEPTACLES SHALL BE COMMERCIAL SPECIFICATION GRADE NEMA 5-15R, 5-20R, 2 POLE, 3 WIRE, GROUNDED, 15 OR 20 AMPERE RATED FOR DEVICES SHOWN ON A 15 OR 20 AMPERE CIRCUIT (RESPECTIVELY). PROVIDE DEVICES RATED TO THE EQUIVALENT CIRCUIT BREAKER SIZE UNLESS OTHERWISE NOTED. GROUND FAULT TYPE SHALL BE USED WHERE REQUIRED BY GOVERNING CODES INCLUDING ALL DEVICES SHOWN TO BE WITHIN SIX FEET OF A SINK/WATER.

5. SWITCHES SHALL BE FLUSH, COMMERCIAL SPECIFICATION GRADE, QUIET TUMBLER TYPE, GROUNDED, BEHIND COMMON PLATE PLATE WITH BARRIERED BACK BOX WHERE REQUIRED BY CODE FOR MULTIPLE CIRCUITS GREATER THAN 250 VOLTS. SINGLE POLE SWITCHES SHALL BE 20 AMPERES, 120 VOLT.

6. DEVICE TYPES, MANUFACTURERS AND COLORS SHALL BE SPECIFIED BY THE ARCHITECT. IF NO SPECIFICATION HAS BEEN PROVIDED, THIS CONTRACTOR SHALL OBTAIN ALL INFORMATION REGARDING THE ABOVE FROM THE ARCHITECT PRIOR TO THE SUBMISSION OF BID, OR SHALL INCLUDE THE ABILITY TO FURNISH ANY MANUFACTURER SELECTED BY THE ARCHITECT DURING THE SHOP DRAWING SUBMISSION PHASE.

7. DEVICE PLATES SHALL BE AS INDICATED ON THE ARCHITECTURAL DRAWINGS. COORDINATE EXACT COLOR WITH ARCHITECT.

8. ALL CABLE SHALL BE COPPER WITH THWN OR THHN INSULATION, EMPLOYED AT THE 75°C CODE RATED AMPACITY. NO SMALLER THAN No.12 AWG SHALL BE USED UNLESS SPECIFICALLY NOTED ON PLANS. COLOR CODING SHALL CONFORM TO CODE REQUIREMENTS. DERATE ALL CABLES PER LATEST VERSION OF THE NATIONAL ELECTRICAL CODE.

9. ALL CONDUCTORS #10 AND SMALLER SHALL BE SOLID CU CONDUCTORS. ALL CONDUCTORS #8 AND LARGER SHALL BE STRANDED COPPER.

10. ALL SUPPLIED LUGS FOR EQUIPMENT REQUIRING HARD-WIRED CONNECTIONS, ETC. SHALL BE DOUBLE INDENT, 2 BOLT HOLE, LONG BARREL AND COMPRESSION TYPE. PROVIDE DOUBLE INDENT "HEXAGONAL" COMPRESSION DIES AND TOOL (T & B OR BURNDY OR AS REVIEWED). MECHANICAL LUGS, SINGLE INDENT COMPRESSION TOOLS AND UNIVERSAL DIES SHALL NOT BE PERMITTED. ALL COMPRESSION TOOLS AND DIES SHALL BE MANUFACTURED BY THE LUG VENDOR.

11. ALL SUPPLIED IN-LINE SPLICE CONNECTORS, "T" CONNECTORS, ETC,. SHALL BE DOUBLE INDENT (PER CONDUCTOR), LONG BARREL AND COMPRESSION TYPE. PROVIDE DOUBLE INDENT "HEXAGONAL" COMPRESSION DIES AND TOOL (T & B, BURNDY OR AS REVIEWED). MECHANICAL CONNECTORS, SINGLE INDENT COMPRESSION TOOLS AND UNIVERSAL DIES SHALL NOT BE PERMITTED. ALL COMPRESSION TOOLS AND DIES SHALL BE MANUFACTURED BY THE CONNECTOR VENDOR.

12. PROVIDE LOCAL DISCONNECTS FOR ALL MOTORS AND HARD-WIRED ELECTRICAL EQUIPMENT, WHETHER OR NOT SHOWN ON PLAN. DISCONNECTS SHALL BE SIZED PER THE OVERCURRENT PROTECTION AND LOCATED PER THE ENGINEER AND ARCHITECT.

13. PROVIDE A 120 VOLT DEDICATED CIRCUIT FOR EACH CONDENSATE PUMP FOR ALL AC UNITS. COORDINATE WITH THE ENGINEER, THE PANEL AND BREAKER POSITION, PRIOR TO INSTALLATION.

14. ALL EQUIPMENT MATERIALS SHALL BE NEW, UL LISTED AND SHALL CONFORM TO ANY ADDITIONAL LABELING, TESTING AND CONSTRUCTION REQUIREMENTS ESTABLISHED BY THE GOVERNING AUTHORITIES. SAME SHALL BE GUARANTEED FOR 1 YEAR SUBSEQUENT TO FINAL ACCEPTANCE.

15. ALL EQUIPMENT (ELECTRICAL AND MECHANICAL) SHALL BE SPECIFIED TO HAVE VOLTAGE RATINGS COMPATIBLE WITH THE PROVISIONS OF ANSI C84.

16. ALL WORK SHALL BE IN CONDUIT.

17. DISCONNECTS FOR INCOMING SERVICE SHALL BE SERVICE RATED.

KEA ENGINEERS
Engineering Excellence since 1984
186 WOOD AVE. SOUTH, 1ST FLOOR
ISELIN, NJ 08830
TEL (732) 635 0044 • FAX (732) 635 1777

Rev. #	Revision Description	Date:
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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:
PROPOSED MIXED USE BUILDING:
WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:
136-158 WESTMORELAND, LLC
1485 5TH AVENUE, 24F
NEW YORK, NY 10035

Papp Architects
architecture | planning | interiors
188 East Post Road, White Plains, NY 10601
914 949-1851 | www.papparchitects.com

JMC Site Development Consultants
Civil Engineer
120 Bedford Road
Armonk, NY 10504
914 273-5225

McLaren Engineering Group
Structural Engineer
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4th Floor
New York, NY 10001
212 324-6300

Khachaturian Engineering Associates
Mechanical/Electrical/Plumbing Engineers
186 Wood Avenue South, First Floor
Iselin, NJ 08830
732 635-0044

Sheet Title:
ELECTRICAL SPECIFICATION SHEET 1

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #062261-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date: 07-18-2016
Scale: AS NOTED
Job#: 2011
Sheet Title: E-3.01
Sheet: of

GENERATOR SET SPECIFICATIONI.
1. GENERAL

A. Intent:
It is the intent of these specifications to procure for the owner a generator set, new and to the best industry standard of construction and design. The generator shall be of certified output by the manufacturer. Any major exception to this specification will be sufficient cause for rejection of bids.
B. Rating:
Standby: The generator set shall deliver its rating continuously for the duration for any normal power failure. This rating is applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. The generator set shall be capable of being operated at rated power until the normal power is restored. This rating will be applied where reliable normal power is available. The standby rated engine shall be sized for amaximum of 80% average load factor and 200 hours of operation per year.The standby generator set shall be started and accelerated to rated speed immediately upon loss of normal power when equipped with cold starting aids such as a jacket water heater. The generator set shall accept load inone step up to the engine capability to recover to rated speed. Where load conditions are sensitive to voltage and frequency variations, the generator set must be sized accordingly.
C. Environment:
Altitude: 500 feet / 152.4 Meters
Minimum Temperature: 60 °F / 15.56 °C
Maximum Temperature: 100 °F / 37.78 °C
The engine generator set shall be capable of producing rated kW and kVA when operating at the above stated altitude and temperature range. The generator manufacturer shall provide data to verify the generator set will operate as required in the specified ambient conditions.
D. Submittal Information:
1. Current applicable literature completely describing the engine generator set.
2. Current applicable literature describing all accessories.
3. Complete dimensional and electrical drawings locating accessories, anchor bolt and mounting dimensions, fuel, exhaust and cooling piping connections. All information will be coordinated with the installing contractor.
4. Furnish the following information with the bid:
Engine manufacturer.
Number of cylinders/inline or vee.
Bore and stroke/piston speed @ rated rpm.
Displacement in cubic inches.
Brake Mean Effective Pressure (BMEP) @ rated capacity (kW).
Generator Capacity in kW, kVA and power factor.
NEMA MG1–22.40 temperature rise rating of insulation of generator.
Type of generator exciter.
Certified engine horsepower at the ambient temperature and elevation specified.

2. ENGINE AND COMPONENTS

A. Starting System:
The engine will be equipped with an electric, DC starting motor, positive engagement, of sufficient capacity to crank the engine at starting speed for one minute without overheating.
Fuel System: Diesel Fuel Oil with 24Hr Integral Belly Tank
Cooling System: Unit Mounted Radiator
A unit mounted radiator will be furnished complete with a blower fan and glycol coolant. The maximum radiator airflow restriction of 0.5 inches. WC must be taken in account when sizing the cooling system. The cooling system will be sized to maintain a safe engine temperature at the appropriate ambient conditions. Proper ducting must be used to prevent overheating.
B. Exhaust System: Critical
The silencer shall attenuate exhaust noise to an Critical level. An Exhaust silencer shall be furnished of industrial standard construction, all welded, for stationary engine application. A seamless, stainless, convoluted flexible exhaust connector shall be provided. The entire exhaust system and silencer shall be supported independently of the generator set to prevent transmission of vibration and allow for thermal expansion. Long radius, low restriction fittings will be used throughout, and pipe size will be sufficiently large to handle the engine exhaust flow at full load without causing back pressure in excess of that allowed by the engine manufacturer.
Enclosure: Enclosure shall be critical sound and weather enclosure.
C. Engine Lubrication System:
The engine shall be furnished with a gear type lube pump that will furnish oil under pressure to moving parts. Full flow lube oil filters shall be provided in addition to a by pass valve that will allow lube oil circulation in the event of a failure of the filtering system.
D. Governing System: ISOCHRONOUS ZERO SPEED DROOP GOVERNING SYSTEM:
The engine generator set shall be provided with a precision electronic governor of the constant speed type. The governor shall be capable of maintaining a steady state bandwidth of not more than ±0.25%, at any constant load, from no load to full load. The governor shall maintain governed speed at 60 Hertz at any load, from no load to full.
E. Battery: Lead Acid
A lead–acid, heavy duty battery shall be furnished of sufficient capacity to provide a minimum of five full cycle starts for ten seconds crank with ten second rest periods between cranks. The lead acid battery will be 12 volt or 24 volt as required by the engine specification. The commercial type lead acid battery will include a manifold vent which eliminates corrosion gases away from the terminals and cables. The cells of the battery will be bonded and the partition inter–cell connectors will create a shorter current path todeliver more power to the terminals.
F. Battery Charger: FC Series
Battery Charger Design Guidelines:
Charger shall be designed for heavy–duty industrial service and capable of full–rated output indefinitely attemperatures between –10° C and +50° C. Charger shall be capable of recharging a fully discharged battery ofthe maintenance–free lead acid, conventional (wet) lead acid or nickel–cadmium type. Charger shall maintain the battery automatically and minimize the need for battery electrolyte replenishment. Conservatively rated SCRs and diodes in full–wave bridge shall be used. A crank disconnect relay shall not be required to protect the charger from overload. Charger shall be unit mounted and natural convection cooled. The housing shall beconstructed of rustproof metal (e.g. aluminum) and treated with a protective coating.
Battery Charger Standards:
Where required, the charger shall be listed by UL, ETL or another recognized testing authority to the mostrecent revision of UL specification 1236. The manufacturer shall maintain a comprehensive quality control system and shall be ISO 9001 or ISO 9002 registered.
Battery Charger Input
Charger shall operate from: 50 Hz (48 to 53 range) or 60 Hz (57 to 63 range). Nominal input voltage shall be:(120V). Charger shall incorporate a soft–start feature in which theoutput is gradually increased from zero to full, required output within 5 to 10 seconds. Input protection shallconsist of fuses or circuit breakers. Proven surge suppression devices shall be fitted.
Battery Charger Output
General Characteristics: Output voltage shall be (12 or 24) volts nominal. Float voltage shall be adjustable from 100% to 120% of nominal. Equalize voltage shall be adjustable up to 15% above float voltage. Output voltage adjustments shall be on separate potentiometers in the charger. Charger shall incorporate automatic current limiting with a rectangular current limit characteristic, and shall be capable of operating into a short circuit ordead battery indefinitely without damage or overheating. Charger shall be equipped with output fuses or circuit breakers. Regulation and Temperature Compensation: Voltage regulation shall be within +1 of the correct temperature–compensated value from no load to full load with simultaneous variations of +10% input voltage and +5% inputfrequency. The DC output shall be constant voltage and current limited. The charger's current limit shall befixed between 100% and 110%. Input transient protection shall be provided. The charger shall be protected against damage by reverse connection of the battery. The charger shall be equipped with an automatic high rate (equalize) charge facility operating in response to the battery's state of charge. Charger shall operate at the high rate until the battery is fully charged, then revert to float voltage to prevent overcharging. High rate operation shall be governed by the requirement of the battery. Mechanical or electronic timers shall not be used.
Charger shall incorporate automatic ambient temperature compensation to maximize battery performance and life. Temperature coefficient shall be (–0.18%) per degree C to assure correct charging in all temperatures. Charger shall automatically compensate for voltage drop in the charging leads to prevent charging errors due tolong cable runs.
Float/Equalize Control:
Charger shall include an automatic equalize feature that is activated when the battery's state of charge is reduced. Individual adjustment potentiometers shall be provided for float voltage, boost voltageand alarm voltages.
Indicators and Optional Alarms:
Meters for output amperes and voltage shall be provided. The battery charger shall be Stored Energy Systems type FC or approved equivalent. Battery chargers with optional alarms shall be Stored Energy Systems type FCA or approved equivalent.

I. Engine Block Heater: Extreme ColdA jacket water heater shall be provided which will be thermostatically controlled to maintain the engine block ata suitable temperature to assure rapid starting under the specified ambient temperature. The heater will be of theindustrial tank type with thermo–syphon circulation.

3. GENERATOR AND COMPONENTS

A. Generator Performance: Rating

60 kW
120/208 Volts
3 Phase 4 Wire

B. Approved Manufacturers: Detroit Diesel, Caterpillar, Mitsubishi, Cummins/Onan

C. Mainline Circuit Breaker: UL2200
All molded case circuit breakers shall have an over–center, toggle handle–operated, trip–free mechanism with quick–make, quick–break action independent of the speed of the toggle handle operation. The designs shall provide common tripping of all poles. The escutcheon area of the breaker cover shall have molded–in ON and OFF markings and corresponding I and O; for ON and OFF respectively, international markings. All molded case circuit breakers shall have digital solid–state, ambient insensitive tripping. All frames from 30A to 1200A shall use field–installed, UL listed rating plugs to establish or change the ampere rating. The digital microprocessor trip system shall be applicable for 50 hertz through 400 hertz systems. It shall accurately sense sinusoidal and non–sinsoidal current waveforms; fundamental through the thirteenth harmonic order on a 60 hertzbase, by continuously sampling each phase throughout every cycle.
Circuit breaker shall have a single, customer–adjustable, instantaneous pickup knob to set the instantaneous response for all poles. In addition, there shall be a short time pickup setting at approximately 50 to 80 percentof the instantaneous pickup.
The circuit breaker frames shall employ high–strength, molded–polyester, glass–reinforced cases and covers. The breaker frame shall have legible, tamper–proof nameplates containing catalog number; maximum frame ampere rating; maximum voltage ratings and interrupting ratings in accordance with UL Standard 489, International Electrotechnical Commission IEC Standard 947.2 and Japanese Industrial Standard JIS No. C8370;terminal lug catalog number , torque requirements and cable insulation rating and wire ranges; the rating plugtype; and Underwriters Laboratories, Inc. Listing mark; or Component Recognition symbol in the case of MagBreak Instantaneous–only breakers. The IEC short–circuit ratings shall contain both service – Ics and ultimate– Icu values.
Breaker shall provide an external means for manually tripping the breaker and exercising the mechanism and triplatch member.
Internal accessories shall be UL Listed for field installation and shall not require circuit breaker cover removal.
Circuit Breaker shall be sized to comply with UL2200.
D. PMG Construction and Voltage Regulator: Digital Microprocessor
The alternator shall be salient–pole, brushless, 12–lead reconnectable, self–ventilated of drip–proof constructionwith amortisseur rotor windings and skewed stator for smooth voltage waveform. The insulation shall meet the NEMA standard – MG1–22.40 and 16.40 – for Class H and be insulated with epoxy varnish to be fungus resistant per MIL 1–24092. Temperature rise of the rotor and stator shall be limited to NEMA Class F ratings. The excitation system shall be of brushless construction controlled by a solid– state voltage regulator capable of maintaining voltage within +/– 2% at any constant load from 0% to 100% of rating. The regulator must be isolated to prevent tracking when connected to SCR loads, and provide individual adjustments for voltage range, stability and volts–per–hertz operations; and be protected from the environment by conformal coating. The generator set shall meet the transient performance requirements of ISO 8528–5, level G–2. The generator, having a single maintenance–free bearing, shall be directly connected to the flywheel housing witha semi–flexible coupling between the rotor and the flywheel. The generator shall be inherently capable of sustaining at least 250% of rated current for at least 10 secondsunder a 3–phase symmetrical short circuit without the addition of separate current support devices.

PMG EXCITATION SYSTEM
The generator shall be equipped with a 300/250 Hz permanent magnet generator excitation system. Both the PMG and the rotating brushless exciter shall be mounted outboard of the bearing. The system shall supply a minimum short circuit support current of 300% of the rating for 10 seconds; or 250% for 50 hertz operation for 10 seconds. The rotating exciter shall use a three phase full wave rectifier assembly with hermetically sealed silicon diodes protected against abnormal transient conditions by a multi–plateselenium surge protector. The diodes shall be designed for safety factors of 5 times voltage and 3 times current.
VOLTAGE REGULATOR
The DVR2000 voltage regulator shall be a digital, microprocessor design with solid state voltage build–up. No voltage build–up relay or other relays are acceptable. The unit shall be encapsulated forhumidity and abrasion protection. The regulator shall include 1/4% regulation, true volts per hertz operation with adjustable cut in, loss of sensing continuity shutdown, over excitation shutdown, three phase RMS sensing, over voltage protection, and provisions for parallel operation.
PERFORMANCE
The voltage regulation shall be 1/4% from no load to full load and 5% frequency variation. Regulator drift shall be less than 1/2% per 72F /40C ambient temperature change. The voltage regulator shall be astatic–type using non–aging silicon controlled rectifiers, with electromagnetic interference suppression to MIL–STD–461 C, part 9, when mounted in the generator conduit box. The waveform harmonic distortion shall not exceed 5% total RMS measured line to line at full–rated load. The TIF factor shall not exceed 50. Construction will allow connection to the load through the top, bottom or eitherside of the conduit box. The conduit box shall be constructed of heavy gauge sheet steel, capable of supporting up to 240 pounds of accessory control equipment. The conduit box shall contain two compartments; one housing the rotating rectifier and PMG; and the other the connection area andregulator. This is to separate the rotating elements from the load connection and voltage regulatoradjustments. The regulator shall be mounted on the inside of the conduit box panel allowing access to adjust the regulator through a swinging dust cover from the outside of the conduit box, therefore avoidingthe higher voltage generator terminals on the inside of the conduit box.
VERIFICATION OF PERFORMANCE
All certified performance and temperature rise test data submitted by the generator manufacturer are to be the result of the actual test of the same or duplicate generators. Temperature rise data shall be the result of loaded, rated power factor heat runs at the rated voltage and hertz. All performance testing shall be done in accordance with MIL–STD–705 and/or IEEE Standard–115.

E. Control Panel: KDGC 2001
Generator engine crank control implements a starting sequence. Three separate start signal inputs available: Manual run button
Closing a contact across the automatic transfer switch input on the back of controller
Remote start command through the software
Password protected
Customized start up sequence
Available with continuous crank, can be set from 5 to 60 seconds, or cycle crank can be set from 5 to 15 seconds; cycles are adjustable from 1 to 7
Crank cycle delay can be enabled to control pre–heaters or operate a pre–lube system
Pre–crank delay is adjustable from 0 to 30 seconds
7 shutdown conditions: high coolant temperature
over speed
low oil pressure
sender failure
over crank
low fuel level
low coolant level

10 Pre–Alarm conditions can be enabled:
Low coolant temperature
High coolant temperature
Low oil pressure
Weak battery voltage
Battery over – voltage
Low battery voltage
Battery charger failure
kW overload
Maintenance

A complete metering package displays 28 system parameters to help ensure trouble–free operation and can be displayed on the front of the KDGC–2001 or remotely on a personal computer Protection levels for both prime mover and generator RS232 or RS485 port or modem connection allows communication to one KDGC–2001 OUTPUTS:
Two 10A @ 28Vdc make, break, and carry: fuel solenoid and crank
Four 2A @ 28Vdc make, break, and carry: EPS, pre–alarm, alarm, pre–start
Enhanced Outputs: 8 form C contacts outputs 2A @ 28Vdc make, break, and carry ; 4
Aux inputs Additional Control Panel Accessories:
Emergency Stop Button
Engine Fail Relay Engine Run Relay

F. Remote Annunciator: Provide a remote annunciator panel to display all critical alarms and engine status.
G. Base Design
The base shall be constructed of steel. The base shall be designed to rigidly support the engine–generator set, ensure permanent alignment of rotating parts, be arranged to provide easy access to allow changing of lube–oil, and ensure that alignment is maintained during shipping and normal operation. The base shall permit skidding in any direction during installation and shall withstand and mitigate the effects of synchronous vibration of the engine and generator. The base shall be provided with suitable holes for anchor bolts.
H. Vibration Isolation: Pad VibrationPad vibration between engine generator set and sub base fuel tank.
I.4. OPERATION AND MAINTENANCE

A. Factory Testing
The generator set shall be tested and Performance Assurance Certification shall be
completed at the factory on the unit. The test metering shall have an accuracy of 1% or
better, and the metering used in testing shall be regularly calibrated and traceable to the
National Bureau of Standards. The certified test of the engine–generator performance shall
be provided. All tests shall be performed in accordance with the following test methods:
IEEE 115 or MIL STD 705.

Factory tests shall include but not be limited to the following:

Full load at rated power factor will be applied;
Full load at unity, 1.0 PF;
Recordings of the maximum load carrying capabilities of the engine generator set;
Maximum single block load pickup capability;
Kilowatts;
Amperes;
Voltage;
Kilovolt amperes;
Resistance of exciter field and stator;Insulation test, generator field, exciter armature,
exciter field, generator armature;
Dielectric test, generator armature, generator field, exciter armature, exciter field;
Lube oil pressure, if applicable;
Time;
Water temperature, if applicable;
Battery charge rate, if applicable;
Heaters, jacket water and/or lube oil;
Safety shutdowns and automatic controls;
Accessories – annunciator panel, charger, pumps as supplied;
Phase sequence on three phase;Full load and .4PF to verify the motor starting
capability of the engine generator set – optional;
Frequency;
Full rated load at rated PF and maximum load, to verify engine power, overload and
maximumcapability;
kVA, kilowatts, amperes, voltage, frequency and voltage transients at ½ and rated
load frequency at: noload, full load rated and maximum output;
Regulator range – adjust, phase sequence, phase voltage balance;
Stator and exciter field resistance;
Insulation test, generator field, exciter armature, exciter field, generator armature or
stator;
Dielectric test, generator field, exciter armature, exciter field, generator armature or
stator;
All safety shutdown and automatic controls.

Standard testing includes portions of MIL–STD–705:
301.1b: Insulation Resistance Test;
302.1a: High Potential Test;
401.1a: Winding Resistance Test;
410.1a: Open Circuit Saturation Curve Test;
503.1b: Start and Stop Test;
505.2a: Overspeed Protective Device Test;
507.1c: Phase Sequence Test – Rotation;
508.1c: Phase Balance Test – Voltage;
510.1c: Rheostat Range Test;
511.1c: Regulator Range Test;
511.2b: Frequency Adjustment Range Test;
515.1a: Low Oil Pressure Protective Device Test;
515.2a: Overtemperature Protective Device Test;
516.1: Controls, Direction of Rotation;
640.1c: Maximum Power Test.

B. Startup and Warranty Validation
The start–up of engine generator set and automatic transfer switch (if applicable) will be performed by an authorized service station of the manufacturer. The test will include instruction to personnel of normal maintenance and operation under existing load available.
C. Manufacturer's Product Period of Warranty: 2 year, 1500 hours
The standby electric generating system components, complete engine–generator and instrumentation panelshall be warranted by the manufacturer against defective materials and factory workmanship. Such defectiveparts shall be repaired or replaced at the manufacturer's option, free of charge. The warranty period shall commence when the standby system is invoiced by the factory. Multiple warranties for individual components(engine, alternator, controls, etc.) will not be acceptable. Satisfactory warranty documents must be provided.

5. TRANSFER SWITCHES
A. Transfer Switch:
Automatic transfer switches will be supplied with UL No. 1008 approval. The switch will be of double throw designmechanically and electrically interlocked, mechanically held and mounted in a NEMA 1 Enclosure.
PART 1 GENERAL
1.01 Scope
Furnish and install automatic transfer switches (ATS) with number of poles, amperage, voltage, andwithstand current ratings as shown on the plans. Each automatic transfer shall consist of an inherently double throw power transfer switch unit and a microprocessor controller, interconnected to provide complete automatic operation. All transfer switches and control panels shall be the product of the same manufacturer.
1.02 Acceptable Manufactures
Automatic transfer switches shall be ASCO Series 4000
Any alternate shall be submitted to the consulting engineer in writing at least 10 days prior to bid. Each alternate bid must list any deviations from this specification.
1.03 Codes and Standards
The automatic transfer switches and accessories shall conform to the requirements of:
A. UL 1008 – Standard for Automatic Transfer Switches
B. NFPA 70 – National Electrical Code
C. NFPA 110 – Emergency and Standby Power Systems
D. IEEE Standard 446 – IEEE Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications
E. NEMA Standard ICS10–1993; formerly ICS2–447 – AC Automatic Transfer Switches
F. NEC Articles 700, 701, 702
G. International Standards Organization ISO 9001

PART 2 PRODUCTS
2.01 Mechanically Held Transfer Switch
A. The transfer switch unit shall be electrically operated and mechanically held. The electrical operatorshall be a single–solenoid mechanism, momentarily energized. Main operators which include overcurrent disconnect devices will not be accepted. The switch shall be mechanically interlocked to ensure only one of two possible positions, normal or emergency.
B. The switch shall be positively locked and unaffected by momentary outages so that contact pressure is maintained at a constant value and temperature rise at the contacts is minimized for maximum reliability and operating life.
C. All main contacts shall be silver composition. Switches rated 600 amperes and above shall havesegmented, blow–on construction for high withstand current capability and be protected by separatearcing contacts.
D. Inspection of all contacts shall be possible from the front of the switch without disassembly ofoperating linkages and without disconnection of power conductors. A manual operating handle shall beprovided for maintenance purposes. The handle shall permit the operator to manually stop the contacts at any point throughout their entire travel to inspect and service the contacts when required.
E. Designs utilizing components of molded–case circuit breakers, contactors, or parts thereof which are not intended for continuous duty, repetitive switching or transfer between two active power sources are not acceptable.
F. Where neutral conductors must be switched, the ATS shall be provided with fully–rated neutral transfer contacts.
G. Where neutral conductors are to be solidly connected, a neutral terminal plate with fully–rated AL–CU pressure connectors shall be provided.

2.02 Microprocessor Controller with Membrane Interface Panel
A. The controller shall direct the operation of the transfer switch. The controller's sensing and logicshall be controlled by a built–in microprocessor for maximum reliability, minimum maintenance, andinherent serial communications capability. The controller shall be connected to the transfer switch by aninterconnecting wiring harness. The harness shall include a keyed disconnect plug to enable thecontroller to be disconnected from the transfer switch for routine maintenance.
B. The controller shall be enclosed with a protective cover and be mounted separate from the transferswitch unit for safety and ease of maintenance. Sensing and control logic shall be provided on printedcircuit boards. Interfacing relays shall be industrial grade plug–in type with dust covers.
C. The controller shall meet or exceed the requirements for Electromagnetic Compatibility as follows:
1. ANSI C37.90A/IEEE 472 Voltage Surge Test
2. NEMA ICS – 109.21 Impulse Withstand Test
3. IEC801–2 Electrostatic discharge – ESD – immunity
4. ENV50140 and IEC 801 – 3 Radiated electromagnetic field immunity
5. IEC 801 – 4 Electrical fast transient – EFT – immunity
6. ENV50142 Surge transient immunity
7. ENV50141: Conducted radio–frequency field immunity
8. EN55011: Group 1, Class A conducted and radiated emissions
9. EN61000 –4 – 11 Voltage dips and interruptions immunity

2.03 Enclosure
A. The ATS shall be furnished in a NEMA type 1 enclosure unless otherwise shown on the plans.
B. Provide strip heater with thermostat for Type 3R enclosure requirements.
C. Controller shall be flush–mounted display with LED indicators for switch position and source availability. It shall also include test and time delay bypass switches.

PART 3 OPERATION
3.01 Voltage and Frequency Sensing
A. The voltage of each phase of the normal source shall be monitored, with pickup adjustable to 95%of nominal and dropout adjustable from 70% to 90% of pickup setting.
B. Single–phase voltage and frequency sensing of the emergency source shall be provided.

3.02 Time Delays
A. An adjustable time delay shall be provided to override momentary normal source outages and delay all transfer and engine starting signals.
B. An adjustable time delay shall be provided on transfer to emergency, adjustable from 0 to 5 minutesfor controlled timing of transfer of loads to emergency.
C. An adjustable time delay shall be provided on retransfer to normal, adjustable to 30 minutes. Time delay shall be automatically bypassed if emergency source fails and normal source is acceptable.
D. A 5–minute cooldown time delay shall be provided on shutdown of engine generator.
E. All adjustable time delays shall be field adjustable without the use of tools.

3.03 Additional Features
A. A set of gold–flashed contacts rated 10 amps, 32 VDC shall be provided for a low–voltage engine start signal. The start signal shall prevent dry cranking of the engine by requiring the generator set to reach proper output, and run for the duration of the cool down setting, regardless of whether the normal source restores before the load is transferred.
B. A push–button type test switch shall be provided to simulate a normal source failure.
C. A push–button type switch to bypass the time delay on transfer to emergency, the engine exerciser period on the retransfer to normal time delay whichever delay is active at the time the push–button is activated.
D. Terminals shall be provided for a remote contact which opens to signal the ATS to transfer to emergency and for remote contacts which open to inhibit transfer to emergency and/or retransfer to normal.
E. Auxiliary contacts, rated 10 amps, 250 VAC shall be provided consisting of one contact, closed when the ATS is connected to the normal source and one contact, closed, when the ATS is connected to the emergency source.
E. Auxiliary contacts, rated 10 amps, 250 VAC shall be provided consisting of one contact, closed when the ATS is connected to the normal source and one contact, closed, when the ATS is connected to the emergency source.
F. Indicating lights shall be provided, one to indicate when the ATS is connected to the normal source(green) and one to indicate when the ATS is connected to the emergency source (red). Also provide indicating lights for both normal and emergency source availability.
G. Terminals shall be provided to indicate actual availability of the normal and emergency sources, as determined by the voltage sensing pickup and dropout settings for each source.
H. Engine Exerciser – An engine generator exercising timer shall be provided, including a selector switch to select exercise with or without load transfer.
I. Inphase Monitor – An In phase monitor shall be inherently built into the controls. The monitor shall control transfer so that motor load inrush currents do not exceed normal starting currents, and shall not require external control of power sources. The inphase monitor shall be specifically designed for and be the product of the ATS manufacturer.
J. Selective Load Disconnect – A double throw contact shall be provided to operate after a time delay,adjustable to 20 seconds prior to transfer and reset 0 to 20 seconds after transfer. This contact can beused to selectively disconnect specific load(s) when the transfer switch is transferred. Output contacts shall be rated 6 amps at 28 VDC or 120 VAC.
PART 4 ADDITIONAL REQUIREMENTS
4.01 Withstand and Closing Ratings
A. The ATS shall be rated to close on and withstand the available rms symmetrical short circuit current atthe ATS terminals with the type of overcurrent protection shown on the plans.WCR ATS ratings shall be as follows when used with specific circuit breakers:
ATS Size–––––Withstand & Closing Rating MCCB–––––With Current Limiting Fuses

30–200–––22,000A–––200,000
225–400–––42,000A–––200,000
600–1200–––65,000A–––200,000
1600–2000–––5,000A–––200,000
2600–3000––100,000A–––200,000

4.02 Tests and Certification
A. The complete ATS shall be factory tested to ensure proper operation of the individual components and correct overall sequence of operation and to ensure that the operating transfer time, voltage, frequency and, time delay settings are in compliance with the specification requirements.

PART 5 WARRANTY: 2 years or 1500 hours
5.01 Manufacturer's Product Period of Warranty:
The automatic transfer switch shall be warranted by the manufacturer against defective materials and factory workmanship. Such defective parts shall be repaired or replaced at the manufacturer's option, free of charge. The warranty period shall commence when the standby system is first placed into service. Multiple warranties for individual components (engine, alternator, controls, etc.) will not be acceptable. Satisfactory warranty documents must be provided.

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Rev. #	Revision Description	Date:
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2	Issued For Bid	04–12–2021
1	Issued For Bid	04–05–2021

Project Description:
PROPOSED MIXED USE BUILDING:
WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:
136-158 WESTMORELAND, LLC
1485 5TH AVENUE, 24F
NEW YORK, NY 10035

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Mechanical/Electrical/Plumbing Engineers
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Sheet Title:
ELECTRICAL SPECIFICATION SHEET 2

Seal & Signature	Date: 07-18-2016
	Scale: AS NOTED
	Job#: 2011
	Sheet Title: E-3.02
ARMEN KHACHATURIAN, P.E. – NY LICENSE #062261–1 NY CERTIFICATE OF AUTHORIZATION #0017124	Sheet: of

1. SCOPE OF WORK

1.1. FURNISH AND INSTALL AN AUTOMATIC TRANSFER SWITCHES SYSTEM(S) WITH 3 POLE [T], **208** VOLT-60HZ [C], AND THREE. EACH AUTOMATIC TRANSFER SHALL CONSIST OF AN INHERENTLY DOUBLE THROW POWER TRANSFER SWITCH MECHANISM AND A MICROPROCESSOR CONTROLLER TO PROVIDE AUTOMATIC OPERATION. ALL TRANSFER SWITCHES AND CONTROLLERS SHALL BE THE PRODUCTS OF THE SAME MANUFACTURER.

2. CODES AND STANDARDS – THE AUTOMATIC TRANSFER SWITCHES AND CONTROLS SHALL CONFORM TO THE REQUIREMENTS OF:

2.1. UL 1008 – STANDARD FOR TRANSFER SWITCH EQUIPMENT

2.2. IEC 947-6-1 LOW-VOLTAGE SWITCHGEAR AND CONTROL GEAR; MULTIFUNCTION EQUIPMENT; AUTOMATIC TRANSFER SWITCHING EQUIPMENT

2.3. NFPA 70 – NATIONAL ELECTRICAL CODE

2.4. NFPA 99 – ESSENTIAL ELECTRICAL SYSTEMS FOR HEALTH CARE FACILITIES

2.5. NFPA 110 – EMERGENCY AND STANDBY POWER SYSTEMS

2.6. IEEE STANDARD 446 – IEEE RECOMMENDED PRACTICE FOR EMERGENCY AND STANDBY POWER SYSTEMS FOR COMMERCIAL AND INDUSTRIAL APPLICATIONS

2.7. NEMA STANDARD ICS10-1993 (FORMERLY ICS2-447) – AC AUTOMATIC TRANSFER SWITCHES

2.8. UL 508 INDUSTRIAL CONTROL EQUIPMENT

2.9. CSA C22.2 NO. 178 CERTIFICATION

3. ACCEPTABLE MANUFACTURERS

3.1. AUTOMATIC TRANSFER SWITCHES SHALL BE KOHLER STANDARD – TRANSITION (KCS)/KCSDCTA0400B. ANY ALTERNATE SHALL BE SUBMITTED FOR APPROVAL TO THE CONSULTING ENGINEER AT LEAST 10 DAYS PRIOR TO BID DATE. ALTERNATE BIDS SHALL INCLUDE A LINE-BY-LINE CLARIFICATION OF THE SPECIFICATION MARKED WITH "D" FOR DEVIATION; "E" FOR EXCEPTION, AND "C" FOR COMPLY.

4. MECHANICALLY HELD TRANSFER SWITCH

4.1. THE TRANSFER SWITCH SHALL BE ELECTRICALLY OPERATED AND MECHANICALLY HELD WITH DOUBLE THROW CONSTRUCTION, AND OPERATED BY A MOMENTARILY ENERGIZED SOLENOID-DRIVEN MECHANISM. MAIN OPERATORS SHALL INCLUDE OVERCURRENT DISCONNECT DEVICES; LINEAR MOTORS OR GEARS SHALL NOT BE ACCEPTABLE.

4.2. ALL TRANSFER SWITCH SIZES SHALL USE ONLY ONE TYPE OF MAIN OPERATOR FOR EASE OF MAINTENANCE AND COMMONALITY OF PARTS.

4.3. THE SWITCH SHALL BE POSITIVELY LOCKED AND UNAFFECTED BY MOMENTARY OUTAGES, SO THAT CONTACT PRESSURE IS MAINTAINED AT A CONSTANT VALUE AND CONTACT TEMPERATURE RISE IS MINIMIZED FOR MAXIMUM RELIABILITY AND OPERATING LIFE.

4.4. ALL MAIN CONTACTS SHALL BE SILVER COMPOSITION. SWITCHES RATED 600 AMPERES AND ABOVE SHALL HAVE SEGMENTED, BLOW-ON CONSTRUCTION FOR HIGH WITHSTAND AND CLOSE-ON CAPABILITY AND BE PROTECTED BY SEPARATE ARCING CONTACTS.

4.5. INSPECTION OF ALL CONTACTS SHALL BE POSSIBLE FROM THE FRONT OF THE SWITCH WITHOUT DISASSEMBLY OF OPERATING LINKAGES AND WITHOUT DISCONNECTION OF POWER CONDUCTORS. SWITCHES RATED 600 AMPS AND HIGHER SHALL HAVE FRONT REMOVABLE AND REPLACEABLE CONTACTS. ALL STATIONARY AND MOVEABLE CONTACTS SHALL BE REPLACEABLE WITHOUT REMOVING POWER CONDUCTORS AND/OR BUS BARS.

4.6. DESIGNS UTILIZING COMPONENTS OF MOLDED-CASE CIRCUIT BREAKERS, CONTACTORS, OR PARTS THEREOF, WHICH ARE NOT INTENDED FOR CONTINUOUS DUTY; REPETITIVE SWITCHING OR TRANSFER BETWEEN TWO ACTIVE POWER SOURCES, ARE NOT ACCEPTABLE.

4.7. WHERE NEUTRAL CONDUCTORS ARE TO BE SOLIDLY CONNECTED AS SHOWN ON THE PLANS, A NEUTRAL CONDUCTOR PLATE WITH FULLY RATED AL-CU PRESSURE CONNECTORS SHALL BE PROVIDED.

5. ENCLOSURE

5.1. THE ATS SHALL BE FURNISHED IN A NEMA 1 (A) ENCLOSURE.

5.2. ALL STANDARD DOOR MOUNTED SWITCHES AND LONG LIFE SUPER BRIGHT TYPE INDICATING LEDS DESCRIBED IN SECTION 3 SHALL BE INTEGRATED INTO A FLUSH-MOUNTED, INTERFACE MEMBRANE OR EQUIVALENT IN THE ENCLOSURE DOOR FOR EASY VIEWING & REPLACEMENT. THE PANEL SHALL BE CAPABLE OF HAVING MANUAL LOCKING FEATURE TO ALLOW THE USER TO LOCKOUT ALL MEMBRANE MOUNTED CONTROL SWITCHES TO PREVENT UNAUTHORIZED TAMPERING. THIS COVER SHALL BE MOUNTED WITH HINGES AND HAVE A LATCH THAT MAY BE PADLOCKED. THE MEMBRANE PANEL SHALL BE SUITABLE FOR MOUNTING BY OTHERS WHEN FURNISHED ON OPEN TYPE UNITS.

6. CONTROLLER DISPLAY AND KEYPAD

6.1. A FOUR LINE, 20 CHARACTER LCD DISPLAY AND DYNAMIC 4 BUTTON KEYPAD SHALL BE AN INTEGRAL PART OF THE CONTROLLER FOR VIEWING ALL AVAILABLE DATA AND SETTING DESIRED OPERATIONAL PARAMETERS. OPERATIONAL PARAMETERS SHALL ALSO BE AVAILABLE FOR VIEWING AND LIMITED CONTROL THROUGH THE COMMUNICATIONS INTERFACE PORT. THE FOLLOWING PARAMETERS SHALL ONLY BE ADJUSTABLE VIA A PASSWORD PROTECTED PROGRAMMING ON THE CONTROLLER (DIP SWITCHES SHALL NOT BE ACCEPTABLE):

NOMINAL LINE VOLTAGE AND FREQUENCY

SINGLE OR THREE PHASE SENSING

OPERATING PARAMETER PROTECTION

TRANSFER OPERATING MODE CONFIGURATION (OPEN TRANSITION, CLOSED TRANSITION, OR DELAYED TRANSITION)

ALL INSTRUCTIONS AND CONTROLLER SETTINGS SHALL BE EASILY ACCESSIBLE, READABLE AND ACCOMPLISHED WITHOUT THE USE OF CODES, CALCULATIONS, OR INSTRUCTION MANUALS.

7. VOLTAGE, FREQUENCY AND PHASE ROTATION SENSING

7.1. VOLTAGE (ALL PHASES) AND FREQUENCY ON BOTH THE NORMAL AND EMERGENCY SOURCES SHALL BE CONTINUOUSLY MONITORED, WITH THE FOLLOWING PICKUP, DROPOUT, AND TRIP SETTING CAPABILITIES (VALUES SHOWN AS % OF NOMINAL UNLESS OTHERWISE SPECIFIED):

PARAMETER DROPOUT/TRIP PICKUP/RESET UNDER VOLTAGE 75 TO 98% 85 TO 100% OVER VOLTAGE 105 TO 135% 95 TO 100% OF TRIP UNDER FREQUENCY 85 TO 99% 95 TO 99% OVER FREQUENCY 105 TO 120% 101 TO 105% VOLTAGE UNBALANCE 5 TO 20% 3% TO 18%7.2. REPETITIVE ACCURACY OF ALL SETTINGS SHALL BE WITHIN ± 0.5% OVER AN OPERATING TEMPERATURE RANGE OF -20°C TO 70°C.

7.3. AN ADJUSTABLE DROPOUT TIME FOR TRANSIENT VOLTAGE AND FREQUENCY EXCURSIONS SHALL BE PROVIDED. THE TIME DELAYS SHALL BE 0.1 TO 9.9 SECONDS FOR VOLTAGE AND .1 TO 15 SECONDS FOR FREQUENCY.

7.4. VOLTAGE AND FREQUENCY SETTINGS SHALL BE FIELD ADJUSTABLE IN 1% INCREMENTS EITHER LOCALLY WITH THE DISPLAY AND KEYPAD OR REMOTELY VIA THE COMMUNICATIONS INTERFACE PORT.

7.5. THE CONTROLLER SHALL BE CAPABLE OF SENSING THE PHASE ROTATION OF BOTH THE NORMAL AND EMERGENCY SOURCES. THE SOURCE SHALL BE CONSIDERED UNACCEPTABLE IF THE PHASE ROTATION IS NOT THE PREFERRED ROTATION SELECTED (ABC OR BAC). UNACCEPTABLE PHASE ROTATION SHALL BE INDICATED ON THE LCD; THE SERVICE REQUIRED LED AND THE ANNUNCIATION THROUGH COMMUNICATION PROTOCOL AND DRY CONTACTS. IN ADDITION, THE PHASE ROTATION SENSING SHALL BE CAPABLE OF BEING DEFEATED, IF REQUIRED.

7.6. THE CONTROLLER SHALL BE CAPABLE OF DETECTING A SINGLE PHASING CONDITION OF A SOURCE, EVEN THOUGH A VOLTAGE MAY BE REGENERATED BY THE LOAD. THIS CONDITION SHALL BE CONSIDERED A FAILED SOURCE.

7.7. SOURCE STATUS SCREENS SHALL BE PROVIDED FOR BOTH NORMAL & EMERGENCY TO PROVIDE DIGITAL READOUT OF VOLTAGE ON ALL 3 PHASES (PHASE TO PHASE AND PHASE TO NEUTRAL), FREQUENCY, AND PHASE ROTATION.

8 TIME DELAYS

8.1. AN ADJUSTABLE TIME DELAY OF 0 TO 10 SECONDS SHALL BE PROVIDED TO OVERRIDE MOMENTARY NORMAL SOURCE OUTAGES AND DELAY ALL TRANSFER AND ENGINE STARTING SIGNALS. CAPABILITY SHALL BE PROVIDED TO EXTEND THIS TIME DELAY TO 60 MINUTES BY PROVIDING AN EXTERNAL 12 OR 24 VDC POWER SUPPLY.

8.2. A TIME DELAY SHALL BE PROVIDED ON TRANSFER TO THE EMERGENCY SOURCE, ADJUSTABLE FROM 0 TO 60 MINUTES, FOR CONTROLLED TIMING OF TRANSFER OF LOADS TO EMERGENCY.

8.3. A TIME DELAY SHALL BE PROVIDED ON RE-TRANSFER TO NORMAL. THE TIME DELAYS SHALL BE ADJUSTABLE FROM 0 TO 60 MINUTES. TIME DELAY SHALL BE AUTOMATICALLY BYPASSED IF THE EMERGENCY SOURCE FAILS AND THE NORMAL SOURCE IS ACCEPTABLE.

8.4. A TIME DELAY SHALL BE PROVIDED ON SHUT DOWN OF ENGINE GENERATOR FOR COOL DOWN, ADJUSTABLE FROM 0 TO 60 MINUTES.

8.5. A TIME DELAY ACTIVATED OUTPUT SIGNAL SHALL ALSO BE PROVIDED TO DRIVE EXTERNAL RELAY(S) FOR SELECTIVE LOAD DISCONNECT CONTROL. THE CONTROLLER SHALL BE CAPABLE OF CONTROLLING A MAXIMUM OF 9 INDIVIDUAL OUTPUT TIME DELAYS TO STEP LOADS ON AFTER A TRANSFER OCCURS. EACH OUTPUT MAY BE INDIVIDUALLY PROGRAMMED FOR THEIR OWN TIME DELAY OF UP TO 60 MINUTES. EACH SEQUENCE SHALL BE INDEPENDENTLY PROGRAMMED FOR TRANSFERRING FROM NORMAL TO EMERGENCY AND TRANSFERRING FROM EMERGENCY TO NORMAL.

THE CONTROLLER SHALL ALSO INCLUDE THE FOLLOWING BUILT-IN TIME DELAYS FOR THE FOLLOWING OPERATIONS:

1.0 TO 60 MINUTE TIME DELAY ON FAILURE TO ACQUIRE THE ACCEPTABLE ELECTRICAL PARAMETERS FROM THE EMERGENCY SOURCE 2.0 TO 60 MINUTE TIME DELAY FOR A FAILURE TO SYNCHRONIZE ON AN IN-PHASE OPERATION. 3. 60 MINUTE TIME DELAY FOR THE LOAD DISCONNECT POSITION FOR DELAYED TRANSITION OPERATION.8.6. ALL TIME DELAYS SHALL BE ADJUSTABLE IN 1 SECOND INCREMENTS.

8.7. ALL TIME DELAYS SHALL BE ADJUSTABLE BY USING THE DISPLAY AND KEYPAD OR WITH A REMOTE DEVICE CONNECTED TO THE COMMUNICATIONS INTERFACE PORT THROUGH A SECURITY-PASSWORD SYSTEM.

8.8. ALL TIME DELAYS SHALL BE ADJUSTABLE BY USING THE DISPLAY AND KEYPAD OR WITH A REMOTE DEVICE CONNECTED TO THE COMMUNICATIONS INTERFACE PORT THROUGH A SECURITY-PASSWORD SYSTEM.

8.9. EACH TIME DELAY SHALL BE IDENTIFIED AND A DYNAMIC COUNTDOWN SHALL BE SHOWN ON THE DISPLAY.

9. ADDITIONAL FEATURES

9.1. THE CONTROLLER SHALL HAVE 3 LEVELS OF SECURITY. LEVEL 1 SHALL ALLOW MONITORING OF SETTINGS AND PARAMETERS ONLY. THE LEVEL 1 SHALL BE CAPABLE OF RESTRICTED WITH THE USE OF A LOCKABLE COVER. LEVEL 2 SHALL ALLOW TEST FUNCTIONS TO BE PERFORMED AND LEVEL 3 SHALL ALLOW SETTING OF ALL PARAMETERS.

9.2. MEMBRANE-TYPE SWITCHES SHALL BE PROVIDED FOR THE TEST FUNCTIONS AND BE MAINTAINED UNTIL THE END TEST FUNCTION IS ACTIVATED. THE TEST FUNCTION SHALL BE ALLOWED THROUGH PASSWORD SECURITY. IT SHALL BE POSSIBLE TO DEFEAT THE PASSWORD REQUIREMENT BY WAY OF A CIRCUIT BOARD MOUNTED DIP SWITCH SETTING. THE TEST FUNCTION SHALL BE LOAD, NO LOAD OR AUTO TEST. THE AUTO TEST FUNCTION SHALL REQUEST AN ELAPSED TIME FOR TEST. AT THE COMPLETION OF THIS TIME DELAY THE TEST SHALL BE AUTOMATICALLY ENDED AND A RETRANSFER SEQUENCE SHALL COMMENCE. ALL LOADED TESTS SHALL BE IMMEDIATELY ENDED AND RETRANSFER SHALL OCCUR IF THE EMERGENCY SOURCE FAILS AND THE NORMAL SOURCE IS ACCEPTABLE.

9.3. A SPDT CONTACT, RATED 5 AMPS AT 30 VDC, SHALL BE PROVIDED FOR A LOW-VOLTAGE ENGINE START SIGNAL. THE START SIGNAL SHALL PREVENT DRY CRANKING OF THE ENGINE BY REQUIRING THE GENERATOR SET TO REACH PROPER OUTPUT, AND RUN FOR THE DURATION OF THE COOL DOWN SETTING, REGARDLESS OF WHETHER THE NORMAL SOURCE RESTORES BEFORE THE LOAD IS TRANSFERRED.

9.4. AUXILIARY CONTACTS, RATED 10 AMPS, 250 VAC SHALL BE PROVIDED CONSISTING OF TWO CONTACTS, CLOSED WHEN THE ATS IS CONNECTED TO THE NORMAL SOURCE AND TWO CONTACTS CLOSED, WHEN THE ATS IS CONNECTED TO THE EMERGENCY SOURCE.

9.5. LED INDICATING LIGHTS SHALL BE PROVIDED; ONE TO INDICATE WHEN THE ATS IS CONNECTED TO THE NORMAL SOURCE (GREEN) AND ONE TO INDICATE WHEN THE ATS IS CONNECTED TO THE EMERGENCY SOURCE (RED).

9.6. LED INDICATING LIGHTS SHALL BE PROVIDED AND ENERGIZED BY CONTROLLER OUTPUTS. THE LIGHTS SHALL PROVIDE TRUE SOURCE AVAILABILITY OF THE NORMAL (GREEN) AND EMERGENCY SOURCES (RED), AS DETERMINED BY THE VOLTAGE, FREQUENCY AND PHASE ROTATION SENSING TRIP AND RESET SETTINGS FOR EACH SOURCE.

9.7. A MEMBRANE SWITCH SHALL BE PROVIDED ON THE MEMBRANE PANEL TO TEST ALL INDICATING LIGHTS AND DISPLAY WHEN PRESSED.

9.8. PROVIDE THE ABILITY TO SELECT 'COMMIT/NO COMMIT TO TRANSFER" TO DETERMINE WHETHER THE LOAD SHOULD BE TRANSFERRED TO THE EMERGENCY GENERATOR IF THE NORMAL SOURCE RESTORES BEFORE THE GENERATOR IS READY TO ACCEPT THE LOAD.

9.9. TERMINALS SHALL BE PROVIDED FOR A REMOTE CONTACT WHICH OPENS TO SIGNAL THE ATS TO TRANSFER TO EMERGENCY AND FOR REMOTE CONTACTS WHICH CLOSES TO INHIBIT TRANSFER TO EMERGENCY AND/OR RETRANSFER TO NORMAL. BOTH OF THESE INHIBIT SIGNALS CAN BE ACTIVATED THROUGH THE KEYPAD OR THE COMMUNICATIONS INTERFACE PORT. A "NOT-IN-AUTO" LED SHALL INDICATE ANYTIME THE CONTROLLER IS INHIBITING TRANSFER FROM OCCURRING.

9.10. AN IN-PHASE MONITOR SHALL BE A STANDARD FEATURE IN THE CONTROLLER. THE MONITOR SHALL CONTROL TRANSFER SO THAT MOTOR LOAD INRUSH CURRENTS DO NOT EXCEED NORMAL STARTING CURRENTS, AND SHALL NOT REQUIRE EXTERNAL CONTROL OF POWER SOURCES. THE IN-PHASE MONITOR SHALL BE SPECIFICALLY DESIGNED FOR AND BE THE PRODUCT OF THE ATS MANUFACTURER. THE IN-PHASE MONITOR SHALL BE CAPABLE OF BEING ENABLED OR DISABLED FOR THE USER INTERFACE.

9.11. ENGINE EXERCISER – THE CONTROLLER SHALL PROVIDE AN INTERNAL ENGINE EXERCISER. THE ENGINE EXERCISER SHALL ALLOW THE USER TO PROGRAM UP TO 21 DIFFERENT EXERCISE ROUTINES BASED ON A CALENDAR MODE. FOR EACH ROUTINE, THE USER SHALL BE ABLE TO:

1. ENABLE OR DISABLE THE ROUTINE.

2. ENABLE OR DISABLE TRANSFER OF THE LOAD DURING ROUTINE.

3. SET THE START TIME, TIME OF DAY DAY OF WEEK WEEK OF MONTH (1ST, 2ND, 3RD, 4TH, ALTERNATE OR EVERY)

4. SET THE DURATION OF THE RUN.

5. AT THE END OF THE SPECIFIED LOADED EXERCISE DURATION THE SWITCH SHALL TRANSFER THE LOAD BACK TO NORMAL AND RUN THE GENERATOR FOR THE SPECIFIED COOL DOWN PERIOD. ALL LOADED EXERCISES SHALL BE IMMEDIATELY ENDED AND RETRANSFER SHALL OCCUR IF THE STANDBY SOURCE FAILS. THE NEXT EXERCISE PERIOD SHALL BE DISPLAYED ON THE MAIN SCREEN WITH THE TYPE OF EXERCISE, TIME AND DATE. THE TYPE OF EXERCISE AND THE TIME REMAINING SHALL BE DISPLAY WHEN THE EXERCISE IS ACTIVE. IT SHALL BE POSSIBLE OF ENDING THE EXERCISE EVENT WITH A SINGLE BUTTON PUSH

9.12. DATE AND TIME – THE DATE SHALL AUTOMATICALLY ADJUST FOR LEAP YEAR AND THE TIME SHALL HAVE THE CAPABILITY OF AUTOMATICALLY ADJUSTING FOR DAYLIGHT SAVING AND STANDARD TIMES.

9.13. SYSTEM STATUS – THE CONTROLLER SHALL HAVE A DEFAULT DISPLAY THE FOLLOWING ON:

1. SYSTEM STATUS
2. DATE, TIME AND TYPE OF THE NEXT EXERCISE EVENT
3. AVERAGE VOLTAGE OF THE PREFERRED AND STANDBY SOURCESSCROLLING THROUGH THE DISPLAYS SHALL INDICATE THE FOLLOWING:

1. LINE TO LINE AND LINE TO NEUTRAL VOLTAGES FOR BOTH SOURCES

2. FREQUENCY OF EACH SOURCE

3. LOAD CURRENT FOR EACH PHASE

4. SINGLE OR THREE PHASE OPERATION

5. TYPE OF TRANSITION

6. PREFERRED SOURCE

7. COMMIT OR NO COMMIT MODES OF OPERATION

8. SOURCE/SOURCE MODE (UTILITY/GEN; GEN/GEN; UTILITY/UTILITY)

9. IN PHASE MONITOR ENABLE/DISABLE 10. PHASE ROTATION 11.DATE AND TIME

9.14. CONTROLLERS THAT REQUIRE MULTIPLE SCREENS TO DETERMINE SYSTEM STATUS OR DISPLAY "CODED" SYSTEM STATUS MESSAGES, WHICH MUST BE EXPLAINED BY REFERENCES IN THE OPERATOR'S MANUAL, ARE NOT PERMISSIBLE.

9.15. SELF DIAGNOSTICS – THE CONTROLLER SHALL CONTAIN A DIAGNOSTIC SCREEN FOR THE PURPOSE OF DETECTING SYSTEM ERRORS. THIS SCREEN SHALL PROVIDE INFORMATION ON THE STATUS INPUT SIGNALS TO THE CONTROLLER WHICH MAY BE PREVENTING LOAD TRANSFER COMMANDS FROM BEING COMPLETED.

9.16. COMMUNICATIONS INTERFACE – THE CONTROLLER SHALL BE CAPABLE OF INTERFACING, THROUGH A STANDARD COMMUNICATIONS WITH A NETWORK OF TRANSFER SWITCHES AND GENERATORS. IT SHALL BE ABLE TO BE CONNECTED VIA AN RS-485 SERIAL COMMUNICATION (UP TO 4000 FT. DIRECT CONNECT OR MULTI-DROP CONFIGURATION), AN ETHERNET CONNECTIVITY (OVER STANDARD 10BASET ETHERNET NETWORKS UTILIZING A RJ-45 PORT OR REMOTELY UTILIZING A DIAL-UP MODEM). THIS MODULE SHALL ALLOW FOR SEAMLESS INTEGRATION OF EXISTING OR NEW COMMUNICATION TRANSFER DEVICES AND GENERATORS. MONITORING SOFTWARE SHALL ALLOW FOR THE VIEWING, CONTROL AND SETUP OF PARAMETERS OF THE GENSET AND TRANSFER SWITCH NETWORK THROUGH A STANDARD PERSONAL COMPUTER UTILIZING CURRENT MICROSOFT OPERATING SYSTEMS. SEPARATE AND SPECIFIC TRANSFER SWITCH SOFTWARE INTERFACES SHALL NOT BE ACCEPTABLE.

9.17. THE TRANSFER SWITCH SHALL ALSO BE ABLE TO INTERFACE TO 3RD PARTY APPLICATIONS USING MODBUS RTU AND MODBUS TCP/IP OPEN STANDARD PROTOCOLS UTILIZING MODBUS REGISTER MAPS. PROPRIETARY PROTOCOLS SHALL NOT BE ACCEPTABLE.

9.18. THE CONTROLLER SHALL CONTAIN A USB PORT FOR DOWNLOADING THE CONTROLLER'S PARAMETERS AND SETTINGS; EXERCISE EVENT SCHEDULES; MAINTENANCE RECORDS AND EVENT HISTORY. THE FILE DESIGNATOR SHALL BE THE UNIQUE SERIAL NUMBER OF THE TRANSFER SWITCH.

9.19. DATA LOGGING – THE CONTROLLER SHALL HAVE THE ABILITY TO LOG DATA AND TO MAINTAIN THE LAST 2000 EVENTS, EVEN IN THE EVENT OF TOTAL POWER LOSS. THE FOLLOWING EVENTS SHALL BE TIME AND DATE STAMPED AND MAINTAINED IN A NON-VOLATILE MEMORY. THE CONTROLLER SHALL BE ABLE TO DISPLAY UP TO THE LAST 99 EVENTS. THE REMAINING EVENTS SHALL BE DOWNLOADABLE TO BE DISPLAYED ON A COMPUTER.

1. EVENT LOGGING DATA, DATE AND TIME INDICATION OF ANY EVENT. 2.STATISTICAL DATA TOTAL NUMBER OF TRANSFERS.* TOTAL NUMBER OF FAIL TO TRANSFERS.* TOTAL NUMBER OF TRANSFERS DUE TO PREFERRED SOURCE FAILURE.* TOTAL NUMBER OF MINUTES OF OPERATION.* TOTAL NUMBER OF MINUTES IN THE STANDBY SOURCE.* TOTAL NUMBER OF MINUTES NOT IN THE PREFERRED SOURCE* NORMAL TO EMERGENCY TRANSFER TIME EMERGENCY TO NORMAL TRANSFER TIME SYSTEM START DATE LAST MAINTENANCE DATE *THE STATISTICAL DATA SHALL BE HELD IN TWO REGISTERS. ONE REGISTER SHALL CONTAIN DATA SINCE START UP AND THE SECOND REGISTER SHALL CONTAIN DATA FROM THE LAST MAINTENANCE RESET.9.20. EXTERNAL DC POWER SUPPLY – AN OPTIONAL PROVISION SHALL BE AVAILABLE TO CONNECT UP TO TWO EXTERNAL 12/24 VDC POWER SUPPLY TO ALLOW THE LCD AND THE DOOR MOUNTED CONTROL INDICATORS TO REMAIN FUNCTIONAL WHEN BOTH POWER SOURCES ARE DEAD FOR EXTENDED PERIODS OF TIME. THIS MODULE SHALL CONTAIN REVERSE BATTERY CONNECTION INDICATION AND CIRCUIT PROTECTION.

10 TESTS AND CERTIFICATION

10.1. UPON REQUEST, THE MANUFACTURER SHALL PROVIDE A NOTARIZED LETTER CERTIFYING COMPLIANCE WITH ALL OF THE REQUIREMENTS OF THIS SPECIFICATION INCLUDING COMPLIANCE WITH THE ABOVE CODES AND STANDARDS. THE CERTIFICATION SHALL IDENTIFY, BY SERIAL NUMBER(S), THE EQUIPMENT INVOLVED. NO EXCEPTIONS TO THE SPECIFICATIONS, OTHER THAN THOSE STIPULATED AT THE TIME OF THE SUBMITTAL, SHALL BE INCLUDED IN THE CERTIFICATION.

10.2. THE ATS MANUFACTURER SHALL BE CERTIFIED TO ISO 9001 INTERNATIONAL QUALITY STANDARD AND THE MANUFACTURER SHALL HAVE THIRD PARTY CERTIFICATION VERIFYING QUALITY ASSURANCE IN DESIGN/DEVELOPMENT, PRODUCTION, AND INSTALLATION AND SERVICING IN ACCORDANCE WITH ISO 9001.

11. SERVICE REPRESENTATION

11.1. THE MANUFACTURER SHALL MAINTAIN A NATIONAL SERVICE ORGANIZATION OF EMPLOYING PERSONNEL LOCATED THROUGHOUT THE CONTIGUOUS UNITED STATES. THE SERVICE CENTER'S PERSONNEL MUST BE FACTORY TRAINED AND MUST BE ON CALL 24 HOURS A DAY, 365 DAYS A YEAR.

11.2. THE MANUFACTURER SHALL MAINTAIN RECORDS OF EACH SWITCH, BY SERIAL NUMBER, FOR A MINIMUM OF 20 YEARS.

12. ACCESSORIES

12.1. ALARM MODULE. THE ALARM MODULE SHALL BE 90DB AUDIBLE ALARM; ANY ALARM FUNCTION CAN BE PROGRAMMED TO TRIGGER THE AUDIBLE ALARM, WITH EXTERNAL ALARM CONNECTION. THE AUDIBLE ALARM CAN BE SET TO SOUND UNDER SELECTED FAULT CONDITIONS THROUGH SETUP ON THE USER INTERFACE. THE OTHER OPTIONS THAT CAN BE ACTIVATED WITH THE ALARM BOARD ARE THE CHICAGO ALARM OPTION, PREFERRED SOURCE SELECTION AND THE SUPERVISED TRANSFER CONTROL SWITCH.

12.2. STANDARD I/O MODULE. THE STANDARD I/O MODULE HAS TWO PROGRAMMABLE INPUTS AND SIX PROGRAMMABLE OUTPUTS.

INPUTS AVAILABLE 2 CONTACT CLOSURE CONTACT CLOSURE CURRENT 5MA MAX. CONNECTION TYPE TERMINAL STRIP WIRE SIZE #14-24 AWG MAX DISTANCE 700 FEET OUTPUTS AVAILABLE 6 CONTACT TYPE FORM C (SPDT) CONTACT RATING 2A @ 30VDC

500MA @ 125VAC

CONNECTION TYPE TERMINAL STRIP WIRE SIZE #14-24 AWG12.3 HIGH POWER I/O MODULE. THE HIGH POWER I/O MODULE HAS TWO PROGRAMMABLE INPUTS AND THREE PROGRAMMABLE OUTPUTS.

INPUTS AVAILABLE 2 CONTACT CLOSURE CONTACT CLOSURE CURRENT 5MA MAX. CONNECTION TYPE TERMINAL STRIP WIRE SIZE #14-24 AWG MAX DISTANCE 700 FEET OUTPUTS AVAILABLE 3 CONTACT TYPE FORM C (SPDT) CONTACT RATING 12A @ 24VDC

12A @ 250VAC

10A @ 277VAC

2A @ 480VAC

CONNECTION TYPE TERMINAL STRIP WIRE SIZE #14-24 AWG12.4 PADLOCKABLE USER INTERFACE COVER. THE USER INTERFACE COVER SHALL PROTECT THE CONTROLLER USER INTERFACE FROM THE ENVIRONMENT. THIS SHALL BE AVAILABLE WITH AND WITHOUT A VIEWING WINDOW. A TYPE 3R ENCLOSURE SHALL REQUIRE THE NON-VIEWABLE OPTION.

THE ANALYSIS PROVIDED FROM QUICKSPEC AND QUICKSIZE ARE FOR REFERENCE ONLY. THE INSTALLER MUST WORK WITH THE LOCAL DISTRIBUTOR AND TECHNICIAN TO CONFIRM ACTUAL REQUIREMENTS WHEN PLANNING THE INSTALLATION. KOHLER CO. RESERVES THE RIGHT TO CHANGE DESIGN OR SPECIFICATIONS WITHOUT NOTICE AND WITHOUT ANY OBLIGATION OR LIABILITY WHATSOEVER. KOHLER CO. EXPRESSLY DISCLAIMS ANY RESPONSIBILITY FOR CONSEQUENTIAL DAMAGES.

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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021
Rev. #	Revision Description	Date:

Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:

136-158 WESTMORELAND, LLC
1485 5TH AVENUE, 24F
NEW YORK, NY 10035

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McLaren Engineering Group
Structural Engineer
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212 324-6300

Khachaturian Engineering Associates
Mechanical/Electrical/Plumbing Engineers
186 Wood Avenue South, First Floor
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732 635-0044

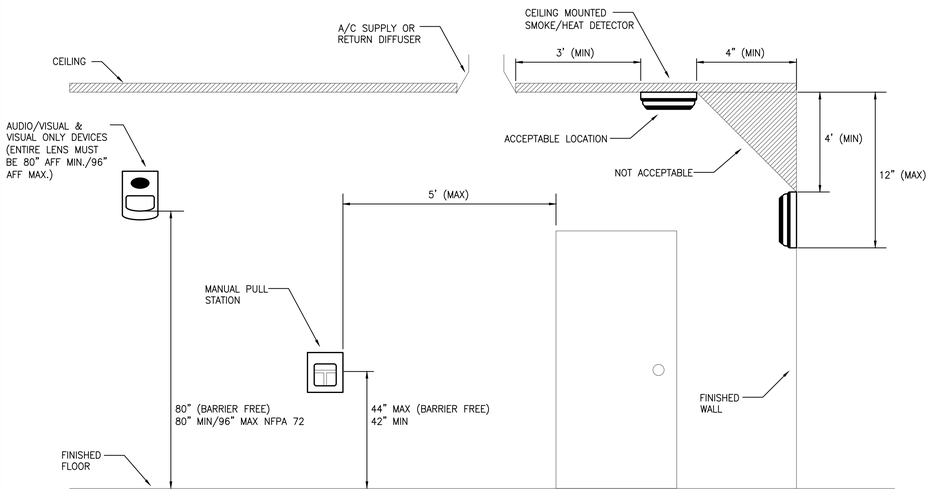
Sheet Title:

ELECTRICAL SPECIFICATION SHEET 3

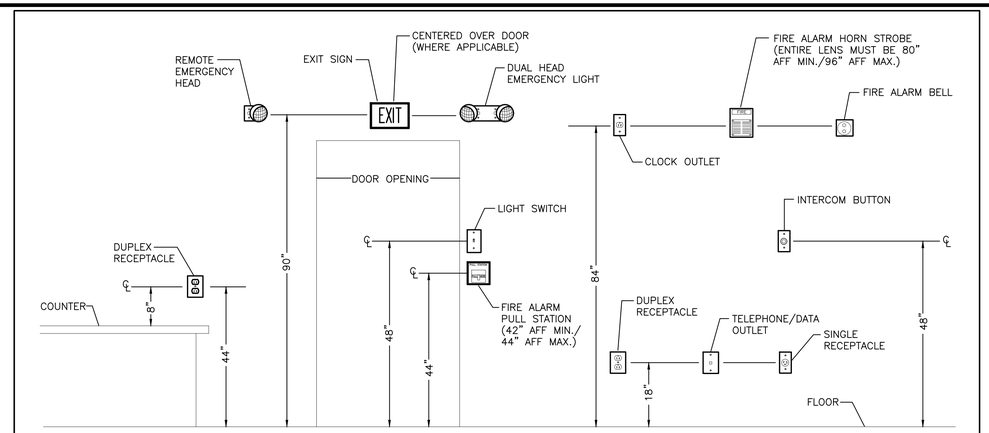
Seal & Signature

ARMEN KHACHATURIAN, P.E. – NY LICENSE #082281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-3.03
Sheet:	of



FIRE ALARM DEVICE TYPICAL MOUNTING HEIGHT
(N.T.S.)



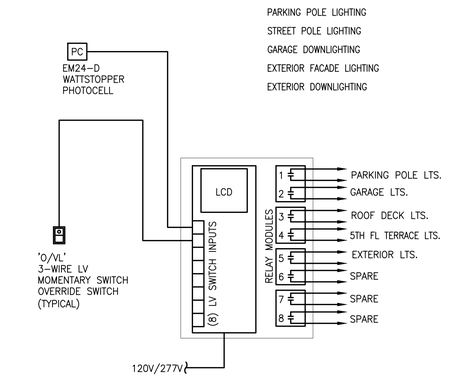
TYPICAL MOUNTING HEIGHT DETAIL
(N.T.S.)

RELAY CONTROL SCHEDULE

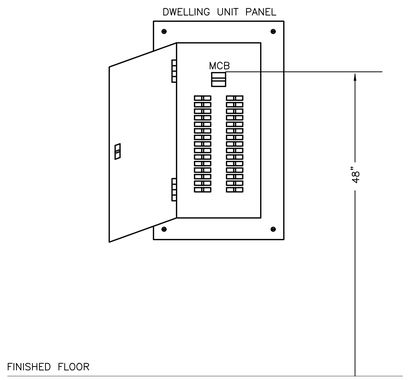
CONTROL PANEL CONTACTOR	RELAY DESIGN.	CIRCUIT CONTROLLED	CONTROL DESIGNATION	OVERRIDE DESIGNATION
LCP	1	LP-1	PARKING POLE LTS.	PC
	2	LP-3	GARAGE LTS.	PC
	3	HP5-6	ROOF DECK LTS.	PC
	4	HP5-34	5TH FL TERRACE LTS.	PC
	5	LS-22	EXTERIOR LTS.	PC
	6			
	7			–
	8	–	–	–

NOTES:

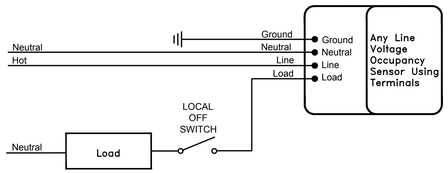
1. PROVIDE WATTSTOPPER LC-8 LIGHTING CONTROL PANEL.
2. PROVIDE 3 WIRE LOW VOLTAGE MOMENTARY OVERRIDE SWITCH.
3. TIME SCHEDULE/LOCATION TO BE COORDINATED WITH OWNER.
4. PROVIDE (4) DUAL SINGLE POLE RELAYS MODULES.



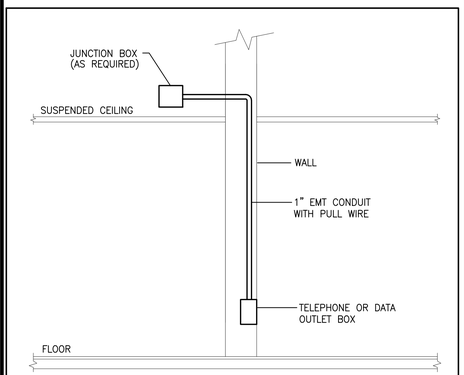
AUTOMATIC LIGHTING CONTROL DETAIL
(N.T.S.)



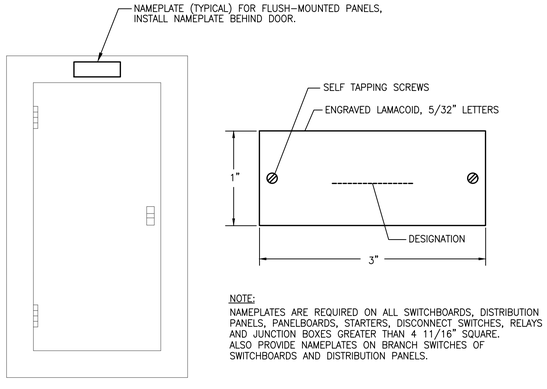
DWELLING UNIT ELECTRIC PANEL MOUNTING HEIGHT
(N.T.S.)



LINE VOLTAGE CEILING MOUNTED OCCUPANCY SENSOR DETAIL
(N.T.S.)



TYPICAL EMPTY CONDUIT FOR TELEPHONE/DATA RACEWAY
(N.T.S.)

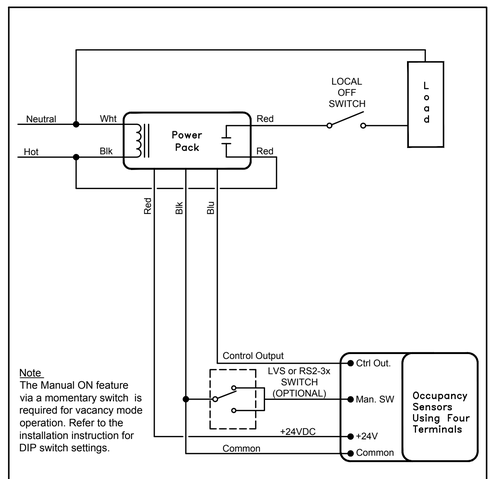


NOTE:
NAMEPLATES ARE REQUIRED ON ALL SWITCHBOARDS, DISTRIBUTION PANELS, PANELBOARDS, STARTERS, DISCONNECT SWITCHES, RELAYS AND JUNCTION BOXES GREATER THAN 4 11/16" SQUARE. ALSO PROVIDE NAMEPLATES ON BRANCH SWITCHES OF SWITCHBOARDS AND DISTRIBUTION PANELS.

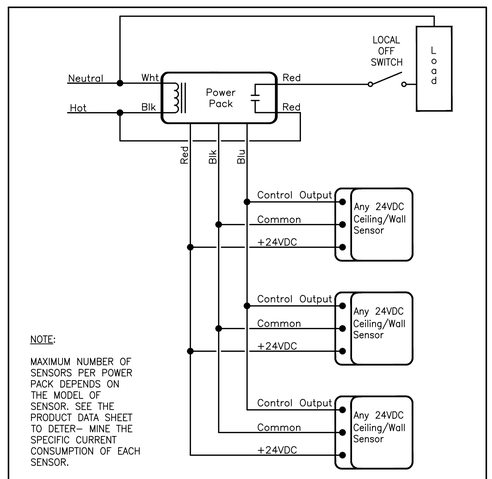
STANDARD COLORS:

1. NORMAL POWER – BLACK BACKGROUND, WHITE LETTERS
2. EMERGENCY POWER – RED BACKGROUND, WHITE LETTERING
3. IN ADDITION TO THE FUNCTION NAMEPLATE, PROVIDE NAMEPLATES IDENTIFING ALL "MAIN SERVICE NAMEPLATE DISCONNECTS" – RED BACKGROUND – WHITE LETTERING

NAMEPLATE DETAIL
(N.T.S.)



LOW VOLTAGE OCCUPANCY SENSOR DETAIL
(N.T.S.)



NOTE:

MAXIMUM NUMBER OF SENSORS PER POWER PACK DEPENDS ON THE MODEL OF SENSOR. SEE THE PRODUCT DATA SHEET TO DETER- MINE THE SPECIFIC CURRENT CONSUMPTION OF EACH SENSOR.

MULTIPLE LOW VOLTAGE OCCUPANCY SENSORS USING ONE POWER PACK DETAIL
(N.T.S.)

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Rev. #	Revision Description	Date:
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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:
PROPOSED MIXED USE BUILDING:
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136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:
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1485 5TH AVENUE, 24F
NEW YORK, NY 10035

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Khachaturian Engineering Associates
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186 Wood Avenue South, First Floor
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Sheet Title:
ELECTRICAL DETAILS SHEET 1

Seal & Signature

ARMEN KHACHATURIAN, P.E. – NY LICENSE #062281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-4.01
Sheet:	of

COPPER BRANCH CIRCUIT WIRE SIZING TABLES – 208V – 3% VOLTAGE DROP															
	C/B TRIP	208V, 3P, 3W 120V/208V, 3P, 4W				208V, 2P, 2W 120V/208V, 2P, 3W				120V, 1P, 2W					
DISTANCE IN FEET	15	177	273	429		153	236	371	578	88	136	214	333	500	625
MINIMUM WIRE SIZE		12	10	8		12	10	8	6	12	10	8	6	4	3
DISTANCE IN FEET	20	132	205	322		115	177	279	433	66	102	161	250	375	469
MINIMUM WIRE SIZE		12	10	8		12	10	8	6	12	10	8	6	4	3
DISTANCE IN FEET	30	136	214	334		118	186	289	433	68	107	167	250	313	375
MINIMUM WIRE SIZE		10	8	6		10	8	6	4	10	8	6	4	3	2
DISTANCE IN FEET	40	161	250	375		139	217	325	406	80	125	188	234	281	352
MINIMUM WIRE SIZE		8	6	4		8	6	4	3	8	6	4	3	2	1
DISTANCE IN FEET	50	129	200	300		111	173	260	325	64	100	150	188	225	281
MINIMUM WIRE SIZE		8	6	4		8	6	4	3	8	6	4	3	2	1
DISTANCE IN FEET	60	167	250	313		144	217	271	325	83	125	156	188	234	
MINIMUM WIRE SIZE		6	4	3		6	4	3	2	6	4	3	2	1	
DISTANCE IN FEET	70	214	268	322		168	232	279	348	107	134	161	201		
MINIMUM WIRE SIZE		4	3	2		4	3	2	1	4	3	2	1		
DISTANCE IN FEET	80	188	235	281		163	203	244	305	94	117	141	176		
MINIMUM WIRE SIZE		4	3	2		4	3	2	1	4	3	2	1		
DISTANCE IN FEET	90	208	250	313		181	217	271		104	125	156			
MINIMUM WIRE SIZE		3	2	1		3	2	1		3	2	1			
DISTANCE IN FEET	100	188	225	281		163	195	244		94	113	141			
MINIMUM WIRE SIZE		3	2	1		3	2	1		3	2	1			

NOTES:

1. READ ACROSS TO THE RIGHT FROM C/B TRIP TO DESIRED VOLTAGE CHARACTERISTICS AND NEXT GREATER DISTANCE THAN CIRCUIT IN QUESTION.
2. READ DOWN TO MINIMUM WIRE SIZE.
3. DISTANCES ARE TO THE CENTER OF CONCENTRATED LOAD SUCH AS CLASSROOM LIGHTING OR THE MIDPOINT OF DISTRIBUTED LOAD SUCH AS CORRIDOR LIGHTING.
4. EQUIPMENT GROUNDING CONDUCTORS SHALL BE INCREASED IN SIZE PROPORTIONATELY PER NEC.

RACEWAY SIZING
ALL RACEWAYS SHALL BE SIZED IN ACCORDANCE WITH THE CURRENT NATIONAL ELECTRICAL CODE IN EFFECT AS A MINIMUM SIZE. THE MORE COMMON SIZES ARE INCLUDED HERE FOR THE CONTRACTOR'S CONVENIENCE.

WIRE SIZE	NO. OF CONDUCTORS	MINIMUM CONDUIT SIZE
12	3	3/4"
12	4	3/4"
12	5	3/4"
12	6	3/4"
12	7	3/4"
12	8	3/4"
10	3	3/4"
10	4	3/4"
10	5	3/4"
10	6	3/4"
10	7	3/4"
10	8	3/4"

WIRE SIZE	NO. OF CONDUCTORS	MINIMUM CONDUIT SIZE
8	3	3/4"
8	4	3/4"
8	5	3/4"
8	6	1"
8	7	1"
8	8	1"
6	3	3/4"
6	4	3/4"
6	5	1"
6	6	1"
6	7	1–1/4"
6	8	1–1/4"

NOTES TO PANELBOAD SCHEDULES AND BRANCH CIRCUIT WIRE SIZING TABLES.

WIRE SIZING
UNLESS OTHERWISE INDICATED, MINIMUM WIRE AMPACITY SHALL BE GREATER THAN OR EQUAL TO THE BRANCH CIRCUIT TRIP BASED ON COPPER CONDUCTOR WITH 90–DEGREE C THHN INSULATION APPLIED AT ITS 75–DEGREE C AMPACITY.

REFER TO THE BRANCH CIRCUIT WIRE SIZING TABLES FOR DISTANCE LIMITATIONS FOR THE MINIMUM WIRE SIZE AND FOR SELECTING THE PROPER WIRE SIZE FOR THE DISTANCE AND VOLTAGE DROP INVOLVED.

NUMBER OF CONDUCTORS
QUANTITIES OF WIRES SHALL BE BASED ON AN INDIVIDUAL HOMERUN FOR EACH CIRCUIT AS FOLLOWS.

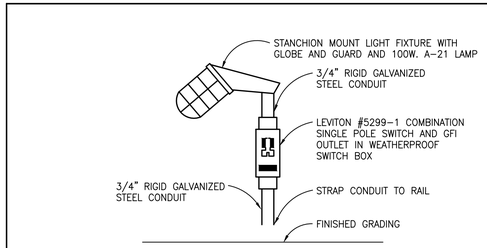
	PHASE CONDUCTOR	FULL CIRCUIT SIZE NEUTRAL CONDUCTOR	FULL CIRCUIT SIZE EQUIPMENT GROUNDING CONDUCTOR	FULL CIRCUIT SIZE ISOLATED GROUND CONDUCTOR
1 POLE CIRCUIT	1	1	1	0
1 POLE DATA / COMPUTER CIRCUIT	1	1	1	1
2 POLE CIRCUIT	2	1	1	0
3 POLE CIRCUIT	3	1	1	0
3 POLE MOTOR CIRCUIT	3	0	1	0

	PHASE CONDUCTOR	FULL CIRCUIT SIZE NEUTRAL CONDUCTOR	FULL CIRCUIT SIZE EQUIPMENT GROUNDING CONDUCTOR	FULL CIRCUIT SIZE ISOLATED GROUND CONDUCTOR
TWO 1 POLE HOMERUNS	2	2	1	0
TWO 1 POLE DATA/COMP. CIRCUIT HOMERUNS	2	2	1	1
THREE 1 POLE HOMERUNS	3	3	1	0
THREE 1 POLE DATA/COMP. CIRCUIT HOMERUNS	3	3	1	1

CONSECUTIVE INDIVIDUAL 20 AMP LINE TO NEUTRAL BRANCH CIRCUITS MAY NOT BE COMBINED INTO MULTI–WIRE BRANCH CIRCUITS HAVING HOMERUNS WITH A COMMON NEUTRAL CONDUCTOR.

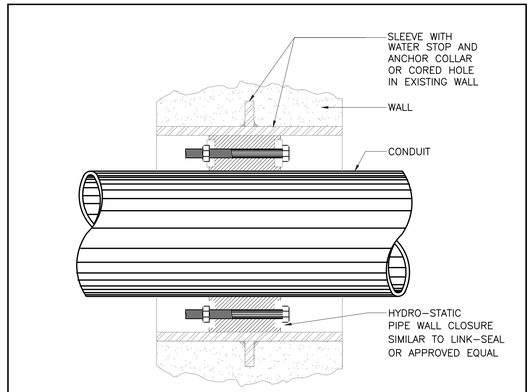
SINGLE PHASE, TWO POLE, TWO WIRE, LINE TO LINE, BRANCH CIRCUITS AND SINGLE PHASE, TWO POLE, THREE WIRE, LINE TO LINE PLUS NEUTRAL, BRANCH CIRCUITS SHALL HAVE INDIVIDUAL UNCOMBINED HOMERUNS.

COMBINED TWO AND THREE CIRCUIT HOMERUNS SHALL HAVE SEPARATE NEUTRALS FOR EACH BUT A COMMON EQUIPMENT GROUNDING CONDUCTOR AND A COMMON ISOLATED GROUNDING CONDUCTOR MAY BE USED.

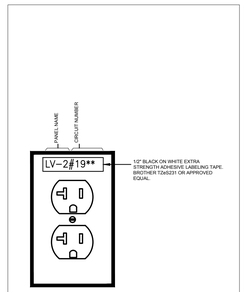


NOTE:
COORDINATE EXACT LOCATION OF RECEPTACLE & LIGHT WITH MECH. CONTR. SO AS NOT TO BLOCK ACCESS PANELS

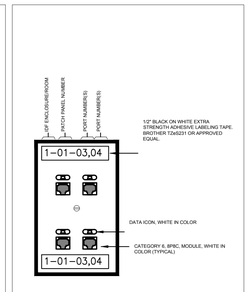
ROOFTOP LIGHT/RECEPTACLE DETAIL
(N.T.S.)



CONDUIT THRU FOUNDATION WALL PENETRATION DETAIL
NOT TO SCALE

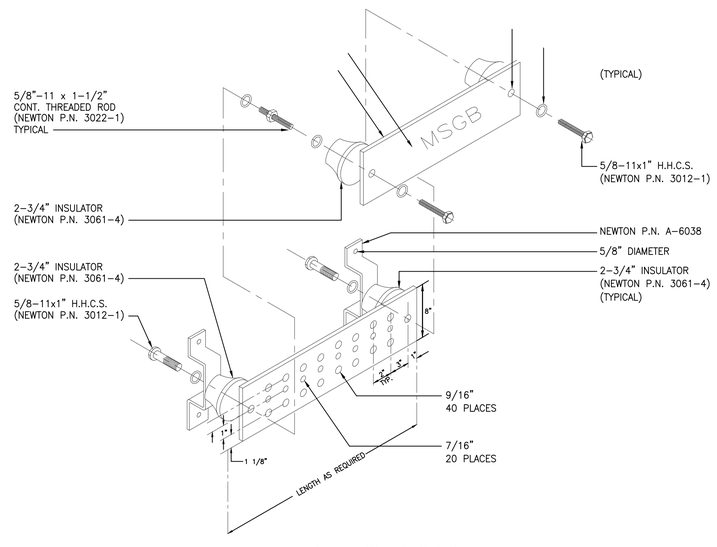


RECEPTACLE LABEL DETAIL
(N.T.S.)



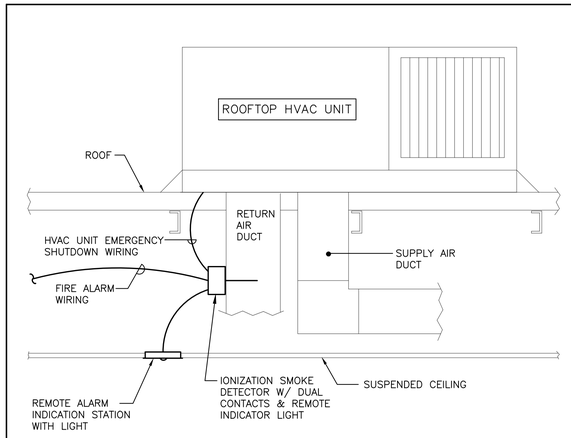
TELECOM LABEL DETAIL
(N.T.S.)

NON–DWELLING UNIT RECEPTACLE/LABEL DETAIL
NOT TO SCALE

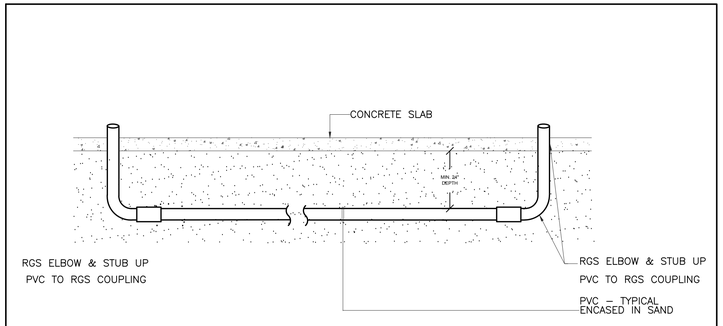


TYPICAL GROUNDING BUS BAR DETAIL
(N.T.S.)

NOTES:
1. ALL CABLE CONNECTIONS TO BUS TO BE MADE WITH 2 BOLT HOLE COMPRESSION LUGS AND TO BE TAGGED AT BUS "DO NOT DISCONNECT".
2. PROVIDE 200% SPARE LUG CONNECTIONS HOLES.



DUCT MOUNTED SMOKE DETECTOR DETAIL
- ROOFTOP HVAC UNIT
(N.T.S.)



TYPICAL CONDUIT STUB UP DETAIL
NOT TO SCALE

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Rev. #	Revision Description	Date:
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2	Issued For Bid	04–12–2021
1	Issued For Bid	04–05–2021

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136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:
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186 Wood Avenue South, First Floor
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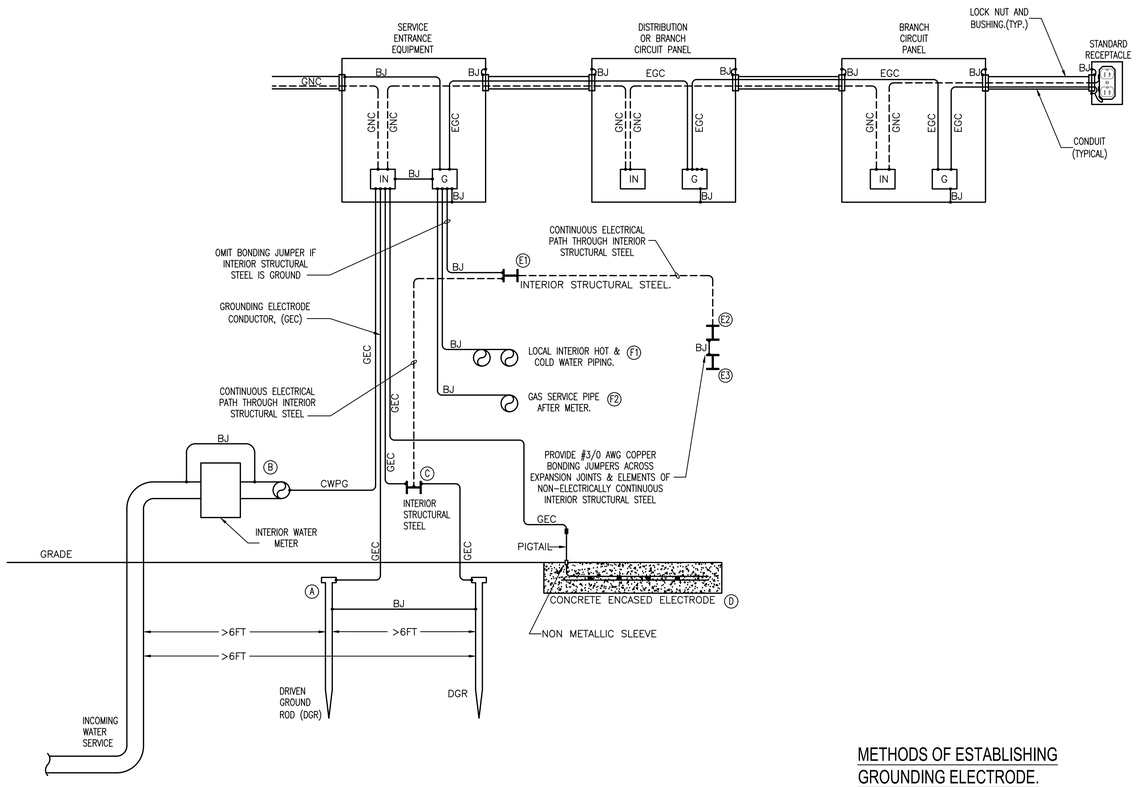
732 635–0044

Sheet Title:
ELECTRICAL DETAILS SHEET 2

Seal & Signature

ARMEN KHACHATURIAN, P.E. – NY LICENSE #062281–1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-4.02
Sheet:	of



TYPICAL ELECTRICAL DISTRIBUTION SYSTEM GROUNDING AND BONDING DETAILS.

1 SCALE : NONE

NOTES:

DETAIL IS TYPICAL AND IS INTENDED TO ILLUSTRATE METHODS OF GROUNDING AND BONDING OF ELECTRICAL DISTRIBUTION SYSTEM COMPONENTS AND BUILDING ELEMENTS. CONTRACTOR SHALL ADAPT DETAILS TO SUIT THE PARTICULAR APPLICATION AND MAY SUBMIT ALTERNATIVE METHODS TO THE ENGINEER FOR CONSIDERATION.

DETAIL IS TYPICAL FOR METALLIC AND NONMETALLIC RACEWAY AND BOX SYSTEMS. FOR METALLIC RACEWAY SYSTEMS WITH U.L. LISTED AND APPROVED BONDING LOCKNUTS OR BUSHINGS AND NONMETALLIC RACEWAYS AND/OR BOXES, ELIMINATE THE BONDING JUMPERS BETWEEN THE RACEWAY AND THE BOX.

INSTALLATION AND CONNECTION OF DRIVEN GROUND RODS MUST BE WITNESSED BY THE AUTHORITY HAVING JURISDICTION AND THE LOCATION(S) DOCUMENTED BY RECORDING THE DEPTH OF COVER AND MEASURED DISTANCES FROM TWO FIXED PERMANENT OBJECTS OR BUILDING APPURTENANCES.

GROUNDED NEUTRAL CONDUCTORS (GNC), EQUIPMENT GROUNDING CONDUCTORS (EGC) AND ISOLATED GROUNDING CONDUCTORS (IGC) SHALL ALL BE INSULATED. GNC SHALL BE WHITE(OR GRAY). EGC SHALL BE GREEN. IGC SHALL BE GREEN WITH YELLOW STRIP(S).

GROUNDING ELECTRODE CONDUCTORS (GEC) SHALL BE INSULATED AND SHALL BE GREEN.

BONDING JUMPERS (BJ) MAY BE BARE WHERE COMPLETELY CONTAINED WITHIN AN ENCLOSURE OR INSTALLED EXPOSED IN LENGTHS OF SIX FEET OR LESS. WHERE INSTALLED IN RACEWAY OR EXPOSED IN LENGTHS GREATER THAN SIX FEET THEY SHALL BE INSULATED AND SHALL BE GREEN.

METHODS OF ESTABLISHING THE GROUNDING ELECTRODE SHALL BE BY MEANS OF ONE OF THE COMBINATIONS OF GROUNDING ELECTRODE CONDUCTORS AND GROUNDING ELECTRODES INDICATED IN THE DETAILS.

REFER TO NATIONAL ELECTRICAL CODE "GROUNDING ELECTRODE CONDUCTORS" TABLE (2014 NEC 250.66) AND "EQUIPMENT GROUNDING CONDUCTORS" TABLE (2014 NEC 250.122) FOR SIZING OF GROUNDING AND BONDING CONDUCTORS THAT ARE NOT INDICATED IN THE SCHEDULES OR DIAGRAMS.

NONE OF THE BUILDING STEEL IS INTENTIONALLY GROUNDED TO THE EXTENT THAT IT MAY BE USED AS THE GROUNDING ELECTRODE. CONTRACTOR SHALL GROUND THE BUILDING STEEL OR BOND IT TO THE SERVICE ENTRANCE EQUIPMENT.

REFER TO PROJECT STRUCTURAL STEEL DRAWINGS TO DETERMINE THE QUANTITY AND LOCATION OF BONDING JUMPERS ACROSS EXPANSION JOINTS IN THE INTERIOR STRUCTURAL STEEL FRAMING SYSTEM. WHERE PORTIONS OF THE BUILDING HAVING INTERIOR STRUCTURAL STEEL FRAMING ARE PHYSICALLY CONNECTED BUT SEPARATED BY CONNECTING CORRIDORS,BREEZEWAYS,ETC. THAT DO NOT CONTAIN INTERIOR STRUCTURAL STEEL, THE CONTRACTOR SHALL PROVIDE BONDING JUMPER(S) BETWEEN ELEMENTS OF THE INTERIOR STEEL FRAMING. NOTE: METAL ROOF DECKS AND METAL ROOF AND FLOOR JOISTS IN MASONRY BUILDINGS DO NOT CONSTITUTE INTERIOR STRUCTURAL STEEL.

ELECTRICALLY CONTINUOUS METAL BAR JOISTS IN MASONRY CONSTRUCTION SHALL BE BONDED TO THE SERVICE ENTRANCE EQUIPMENT ENCLOSURE OR TO INTERIOR,GROUNDED, STRUCTURAL STEEL IN OTHER PORTIONS OF THE BUILDING.

THE EQUIPMENT GROUNDING CONDUCTOR OF CONDUITS SERVING GAS APPLIANCES MAY SERVE AS THE REQUIRED BONDING CONNECTION.

BONDING JUMPER IS NOT REQUIRED FOR RECEPTACLES IF U.L. LISTED AUTO-GROUND WIRING DEVICES ARE USED.

THE CONCRETE SURROUNDING A CONCRETE ENCASED ELECTRODE SHALL BE IN DIRECT CONTACT WITH THE EARTH. VAPOR BARRIERS AND THE LIKE NEGATE ITS USE AS A GROUNDING ELECTRODE. ELECTRODE SHALL BE LOCATED WITHIN AND NEAR THE BOTTOM OF A FOOTING. ELECTRODE SHALL CONSIST OF 20 FT. OF # 3/0 AWG BARE COPPER CONDUCTOR BONDED TO THE REINFORCING STEEL AT FOUR POINTS. COORDINATE INSPECTION OF PIGTAIL. SLEEVE AND CONNECTION TO ELECTRODE WITH AUTHORITY HAVING JURISDICTION.

METHODS OF ESTABLISHING GROUNDING ELECTRODE.

(A)+(B)+(C)+(D)
(A)+(B)+(D)
(A)+(C)+(D)
(A)+(D)

IF (B),(C) OR (D) PRESENT THEY SHALL BE CONNECTED TO SERVICE ENTRANCE INSULATED NEUTRAL BLOCK.

ABBREVIATIONS:
BJ : BONDING JUMPER
GNC : GROUNDED NEUTRAL CONDUCTOR
GEC : GROUNDING ELECTRODE CONDUCTOR
EGC : EQUIPMENT GROUNDING CONDUCTOR
IGC : ISOLATED GROUNDING CONDUCTOR
G : GROUND BLOCK
IG : INSULATED GROUND BLOCK
IN : INSULATED NEUTRAL BLOCK
Xo : TRANSFORMER NEUTRAL BLOCK
DGR : DRIVEN GROUND ROD
CWPG : COLD WATER PIPE GROUND

KEY LEGEND GROUNDING ELECTRODES

SERVICE AND DISTRIBUTION

(A) DRIVEN GROUND ROD(S) 2014 NEC 250.52(A)(5)
(B) METAL UNDERGROUND WATER SERVICE PIPE 2014 NEC 250.52(A)(1)
(C) GROUNDED INTERIOR STRUCTURAL STEEL 2014 NEC 250.52(A)(2)
(D) CONCRETE ENCASED ELECTRODE 2014 NEC 250.52(A)(3)

SEPARATELY DERIVED SYSTEMS

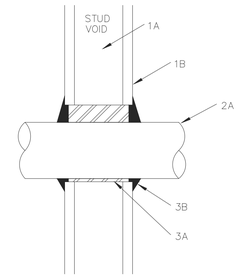
(E4),(E5) INTERIOR STRUCTURAL STEEL 2014 NEC 250.30(A)(7)(2)
(F3) LOCAL INTERIOR HOT & COLD WATER PIPING 2014 NEC 250.30(A)(7)(1)

BONDING OF PIPING SYSTEMS AND EXPOSED STRUCTURAL STEEL SERVICE AND DISTRIBUTION

(E1),(E2),(E3) UNGROUNDED INTERIOR STRUCTURAL STEEL 2014 NEC 250.104(C)
(F1) LOCAL INTERIOR HOT & COLD WATER PIPING 2014 NEC 250.104(A)(1)
(F2) METAL GAS SERVICE PIPING, AFTER THE METER 2014 NEC 250.104(B)

SEPARATELY DERIVED SYSTEMS

(E4),(E5) INTERIOR STRUCTURAL STEEL 2014 NEC 250.104(D)(2)
(F3) LOCAL INTERIOR HOT & COLD WATER PIPING 2014 NEC 250.104(D)(1)



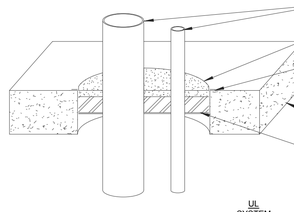
WALL ASSEMBLY
1A 1HR OR 2HR RATED MIN 2x3 STL STUDS @ MAX 24"oc
1B (1) LAYER (1HR) OR (2) LAYER (2HR) 5/8" GWB, TYPE X. MAX DIAMETER OPENING OF 24 SQ IN

PENETRANT
2A ONE OF THE FOLLOWING MAY BE USED:
MAX 24" STL PIPE OR CONDUIT
MAX 24" IRON PIPE
MAX 6" CONDUIT OR EMT
MAX 6" COPPER PIPE OR
ANNULAR SPACE: 1/8" TO MAX 1/2"

FIRESTOPPING
3A MINERAL WOOL BACKING FILLED TO DEPTH OF WALL SPACE
3B 1/4" SEALANT w/ 1/4" CROWN AND OVERLAP GWB 1/4" FOR 2HR OR ½" CROWN AND ½" OVERLAP FOR 1HR.

UL SYSTEM WL 1089

N.T.S.



UL SYSTEM CAJ1088-F N.T.S.

FLOOR ASSEMBLY
1A 2HR RATED MIN 4-1/2" CONC FLOOR MAX OPENING OF 15"

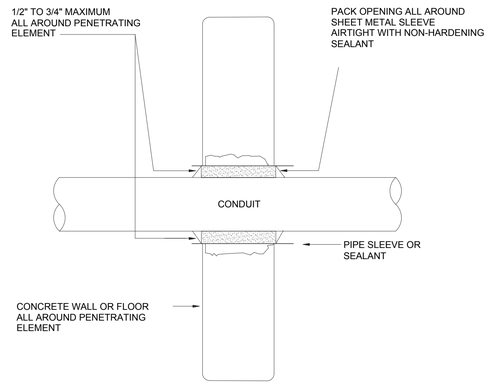
PENETRANT
2A UP TO 4 OF THE FOLLOWING IN ANY COMBINATION. ONLY 2 OF WHICH ARE GREATER THAN 2":
MAX 4" STL PIPE OR CONDUIT
MAX 4" COPPER PIPE OR TUBING
ANNULAR SPACE: 2" - 3"
MAX 4" EMT

FIRESTOPPING
3A MINERAL WOOL COMPRESSED INTO ANNULAR SPACE MIN 2
3B AT FLOOR SURFACE 1" DEEP SEALANT FINISHED FLUSH w/ FLOOR

NOTE:
1. THE ABOVE DETAILS ARE PROVIDED TO AID IN THE INSTALLATION AND SELECTION OF THE UL LISTED DESIGN (FLAMESAFE FS-1900 SERIES SEALANT). THE CONTRACTOR SHALL SUBMIT PRODUCT DATA DETAILS AND SHOP DWGS FOR ALL PENETRATIONS.
2. SYSTEM DESIGN EVALUATED TO THE UL 1479 (ASTM E814) FIRE TESTS OF THROUGH - PENETRATION FIRESTOPS.
3. REFER TO THE UL LIST DESIGN FOR COMPLETE INFORMATION AND THE UL FIRE RESISTANCE DIRECTORY FOR COMPONENTS REQUIRING UL CLASSIFICATION.

TYPICAL DETAILS OF CONDUITS THRU RATED WALLS OR FLOORS

NOT TO SCALE



NON-RATED CONDUIT PENETRATION DETAIL

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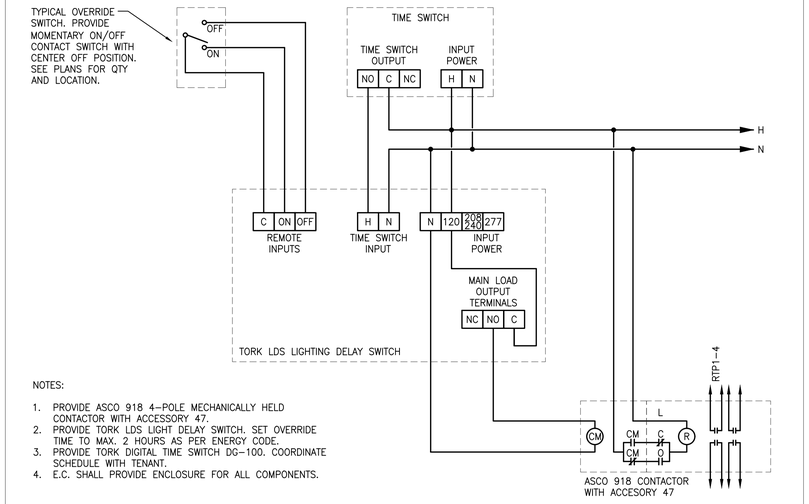
Sheet Title:
ELECTRICAL DETAILS SHEET 3

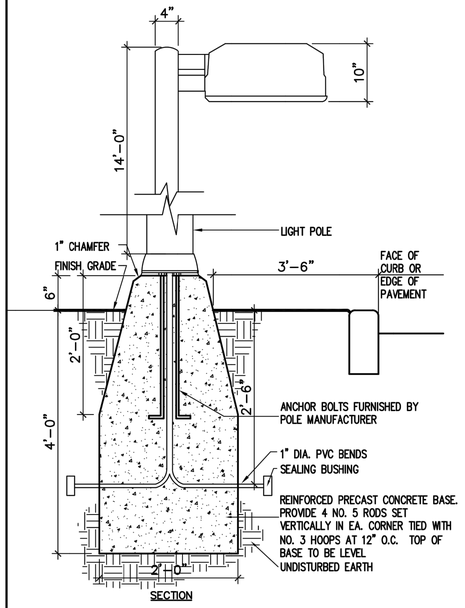
Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #062281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

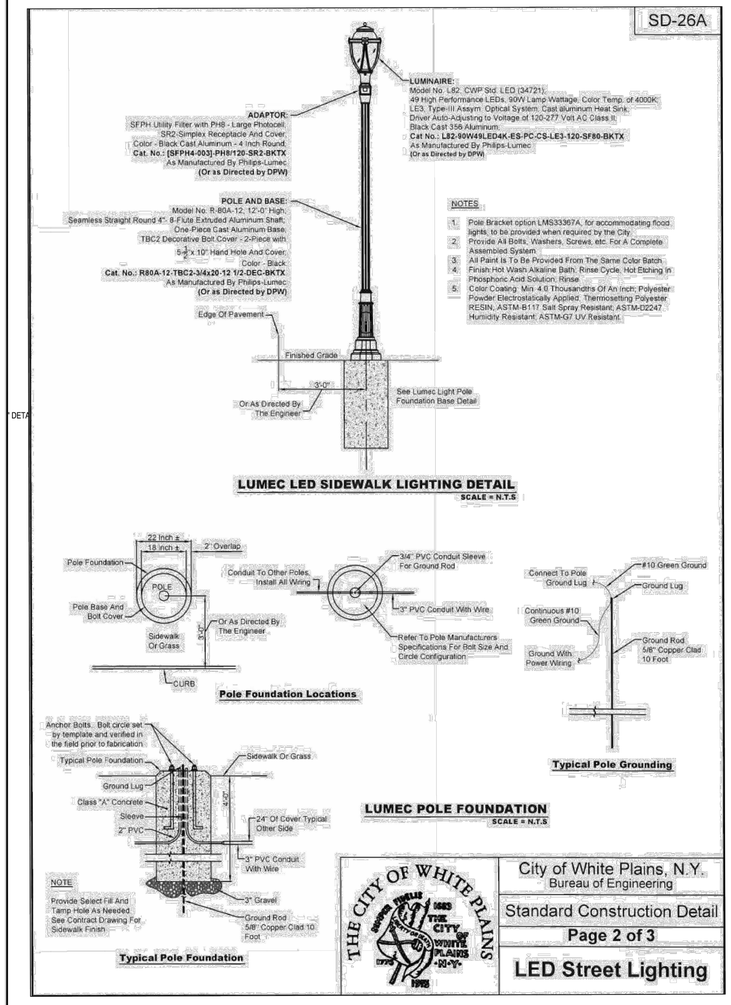
Date: 07-18-2016
Scale: AS NOTED
Job#: 2011
Sheet Title: E-4.03
Sheet: of



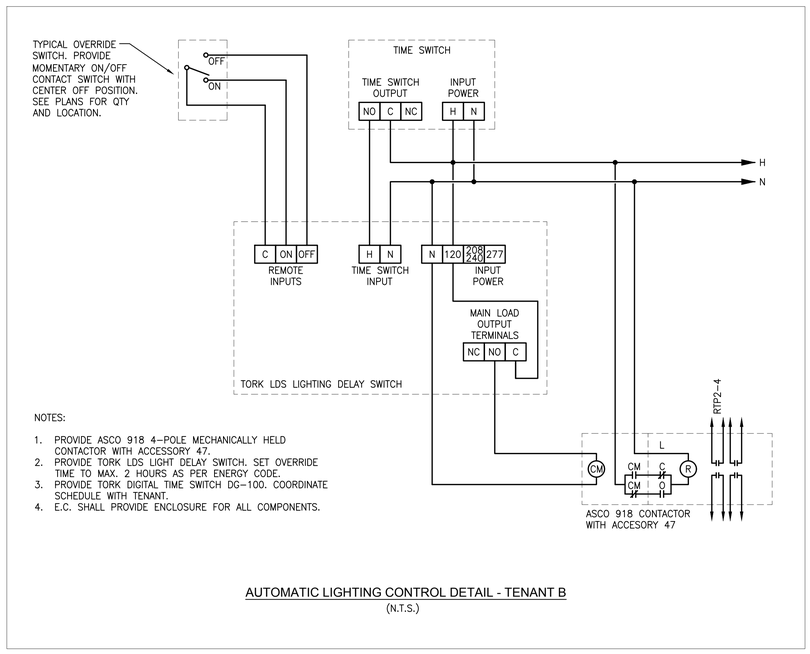
AUTOMATIC LIGHTING CONTROL DETAIL - TENANT A
(N.T.S.)



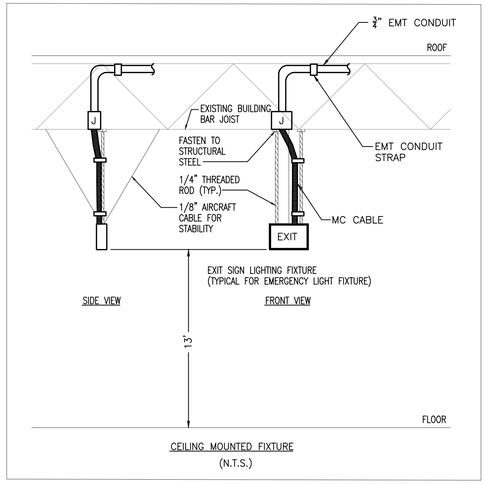
3 ON-SITE LIGHTING DETAIL (LP-2)
3/4" = 1'-0"



2 STREET LIGHTING DETAIL (LP-1)
1/4" = 1'-0"



AUTOMATIC LIGHTING CONTROL DETAIL - TENANT B
(N.T.S.)



CEILING MOUNTED FIXTURE
(N.T.S.)

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NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-4.04
Sheet:	of

DISTRIBUTION PANELBOARD SCHEDULE 1600A 120/208V - 3 PHASE - 4 WIRES - 100k AIC

SWITCHBOARD DESIGNATION	BUS RATING	SWITCHBOARD OPTIONS					CIRCUIT BREAKER						CIRCUIT BREAKER OPTIONS					FEEDER DESIGNATION	LOAD DESCRIPTION	LOAD (KVA)	QUANTITY OF FEEDERS (SETS)	FEEDER (EACH)						INSULATION TYPE	CONDUIT SIZE	LOCAL DISCONNECT SWITCH AT LOAD (AMPS)	REMARKS
		GND. BUS	ISO GND. BUS	3 PHASE VOLT METER	TVSS	POWER METER	No.	FRAME	TRIP	TYPE	AIC	POLES	3 PHASE AMMETER	GROUND FAULT INDICATION (NO TRIP)	GROUND FAULT PROTECTION (WITH TRIP)	SHUNT TRIP	AUX. CONTACTS OPEN/CLOSE TRIP		ATS-LS			PHASE LEGS No.	PHASE LEGS SIZE	NEUTRAL No.	NEUTRAL SIZE	GROUND No.	GROUND SIZE				
MDP	1600A MAIN BUS	YES	NO	NO	YES	YES	1	400A	400A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-1	PANEL HP	103068	1	3	600	1	600	1	3	THHN	4"	NO	COPPER CONDUCTOR
							2	100A	60A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-2	PANEL LP	2455	1	3	6	1	6	1	8	THHN	1 1/2"	NO	COPPER CONDUCTOR
							3	400A	400A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-3	PANEL RP	91218	1	3	600	1	600	1	3	THHN	4"	NO	COPPER CONDUCTOR
							4	225A	225A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-4	PANEL HP5	48411	1	3	4/0	1	4/0	1	4	THHN	2 1/2"	NO	COPPER CONDUCTOR
							5	125A	125A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-5	PANEL HP4	10827	1	3	1	1	1	1	6	THHN	2"	NO	COPPER CONDUCTOR
							6	100A	100A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-6	ATS-LS	4192	1	3	3	1	3	1	8	THHN	1 1/2"	NO	COPPER CONDUCTOR
							7	400A	250A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-7	ATS-EP	27068	1	3	250	1	250	1	4	THHN	3"	NO	COPPER CONDUCTOR
							8	100A	100A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-8	RTU-1	24120	1	3	3	1	3	1	6	THHN	2"	YES	COPPER CONDUCTOR
							9	100A	60A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-9	ACCU1-1 (MODULE #1)	15840	1	3	4	1	4	1	8	THHN	2"	YES	COPPER CONDUCTOR
							10	100A	60A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-10	ACCU1-1 (MODULE #2)	15840	1	3	4	1	4	1	8	THHN	2"	YES	COPPER CONDUCTOR
							11	125A	125A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-11	HP-1 (MODULE #1)	26280	1	3	1	1	1	1	6	THHN	2"	YES	COPPER CONDUCTOR
							12	125A	125A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-12	HP-1 (MODULE #2)	26280	1	3	1	1	1	1	6	THHN	2"	YES	COPPER CONDUCTOR
							13	125A	125A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-13	HP-2 (MODULE #1)	26280	1	3	1	1	1	1	6	THHN	2"	YES	COPPER CONDUCTOR
							14	125A	125A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-14	HP-2 (MODULE #2)	26280	1	3	1	1	1	1	6	THHN	2"	YES	COPPER CONDUCTOR
							15	125A	125A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-15	HP-3 (MODULE #1)	26280	1	3	1	1	1	1	6	THHN	2"	YES	COPPER CONDUCTOR
							16	125A	125A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-16	HP-3 (MODULE #2)	26280	1	3	1	1	1	1	6	THHN	2"	YES	COPPER CONDUCTOR
							17	100A	60A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-17	HP-4 (MODULE #1)	14760.0	1	3	6	1	6	1	8	THHN	2"	YES	COPPER CONDUCTOR
							18	100A	60A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-18	HP-4 (MODULE #2)	14760.0	1	3	6	1	6	1	8	THHN	2"	YES	COPPER CONDUCTOR
							19	400A	250A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-19	EHW-1	72000.0	1	3	250	1	250	1	4	THHN	3"	YES	COPPER CONDUCTOR
							20	400A	250A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-20	HPWH-1	69840.0	1	3	250	1	250	1	4	THHN	3"	YES	COPPER CONDUCTOR
							21	225A	225A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-21	SPARE		–	–	–	–	–	–	–	–	–	–	–	–
							22	225A	225A	MCCB	100K	3	NO	NO	NO	NO	NO	MDP-22	SPARE		–	–	–	–	–	–	–	–	–	–	–	–
																				1320.4	AMPS									

PANEL DESIGNATION EP — VOLTAGE 208Y/120V — PHASE 3 — POLES 42 — WIRES 4 — AIC 100K–

G WIRE SIZE	Ø WIRE SIZE	CKT No.	DESCRIPTION	CB AMPS	CB POLES	PH. A VA	PH. B VA	PH. C VA	CB POLES	CB AMPS	DESCRIPTION	CKT No.	Ø WIRE SIZE	G WIRE SIZE
1#10	2#10	1	PARKING DOOR READER/MOTOR	20	1	1200			1	20	SPACE	2		
1#12	2#12	3	SP-1	20	1		1200		1	20	SPACE	4		
		5						4800	1	20	SPACE	6		
(ST) 1#6	3#6	7	ELEV-1	60	3	4800			1	20	SPARE	8		
		9					4800		1	20	SPARE	10		
1#10	2#10	11	GEF-1	20	1			500	1	20	SPARE	12		
		13				2904			1	20	SPARE	14		
1#8	3#6	15	GEF-2	35	3		2904		1	20	SPARE	16		
		17						2904	1	20	SPARE	18		
1#10	2#10	19	GEF-3	20	1	528			1	20	SPARE	20		
1#10	2#10	21	GEF-4	20	1		528		1	20	SPARE	22		
		23	SPARE	20	1				1	20	SPARE	24		
		25	SPARE	20	1				1	20	SPARE	26		
		27	SPARE	20	1				1	20	SPARE	28		
		29	SPARE	20	1			0	1	20	SPARE	30		
		31	SPARE	20	1				1	20	SPARE	32		
		33	SPARE	20	1				1	20	SPARE	34		
		35	SPARE	20	1				1	20	SPARE	36		
		37	SPARE	20	1				1	20	SPARE	38		
		39	SPARE	20	1				1	20	SPARE	40		
		41	SPARE	20	1				1	20	SPARE	42		
						VA: 9,432	9,432	8,204						

CONNECTED LOAD: KVA: 27.1 — AMPS: 75.2

REMARKS: (ST) PROVIDE SHUNT TRIP BREAKER

MAIN: BUS 250 AMPS — BRKR 250 AMPS
☒ NEW PANEL ☐ EXISTING PANEL ☐ MAIN CIRCUIT BREAKER ☒ MAIN LUGS ONLY ☐ FLUSH MOUNTED ☒ SURFACE MOUNTED ☐ BOTTOM FEED ☐ TOP FEED

OPTIONS:
☐ 200% NEUTRAL
☒ GROUND BUS
☐ ISOLATED GROUND BUS
☐ DOOR-IN-DOOR CONSTRUCTION
☐ STAINLESS STEEL COVER
☐ NEMA 3R PANEL
☐ SUB-FEED MAIN C.B. (3P) QTY: _____ AMPS: _____
☐ CONTACTOR AMPS: _____ CKT'S CONTROLLED: _____
☐ OTHER: _____
☐ OTHER: _____

PANEL DESIGNATION LS — VOLTAGE 208Y/120V — PHASE 3 — POLES 42 — WIRES 4 — AIC 100K

G WIRE SIZE	Ø WIRE SIZE	CKT No.	DESCRIPTION	CB AMPS	CB POLES	PH. A VA	PH. B VA	PH. C VA	CB POLES	CB AMPS	DESCRIPTION	CKT No.	Ø WIRE SIZE	G WIRE SIZE
1#10	2#10	1	STAIR LIGHTS	20	1	300			1	20	2ND FL CORRIDOR LIGHTS	2	2#12	1#12
1#10	2#10	3	STAIR LIGHTS	20	1		402		1	20	3RD FL CORRIDOR LIGHTS	4	2#12	1#12
1#10	2#10	5	ELEVATOR PIT LTG. & RECEPTACLE	20	1			585	1	20	4TH FL CORRIDOR LIGHTS	6	2#12	1#12
1#10	2#10	7	FSD	20	1	700			1	20	5TH FL CORRIDOR LIGHTS	8	2#12	1#12
1#10	2#10	9	FSD	20	1		400		1	20	ROOD DECK PLAN LIGHTS	10	2#12	1#12
1#10	2#10	11	FSD	20	1			700	1	20	MEZZ UTILITY ROOM LIGHTS	12	2#12	1#12
1#10	2#10	13	FSD	20	1	750			1	20	1ST FL LIGHTS	14	2#12	1#12
1#10	2#10	15	FSD	20	1		750		1	20	GARAGE LIGHTS	16	2#10	1#10
1#10	2#10	17	FSD	20	1			750	1	20	SPARE	18	2#10	1#10
1#10	2#10	19	FSD	20	1	450			1	20	1ST FL LIGHTS	20	2#12	1#12
1#10	2#10	21	FSD	20	1		400		1	20	EXTERIOR LIGHTS	22	2#10	1#10
1#10	2#10	23	FSD	20	1			200	1	20	ELEVATOR CAB LIGHTINGS	24	2#12	1#12
1#10	2#10	25	FSD	20	1	450		500	1	20	SPARE	26		
1#10	2#10	27	FSD	20	1		450		1	20	SPARE	28		
1#10	2#10	29	FSD	20	1			750	1	20	SPARE	30		
1#10	2#10	31	FSD	20	1	200			1	20	SPARE	32		
1#10	2#10	33	FSD	20	1		750		1	20	SPARE	34		
1#12	2#12	35	GARAGE HORN STORBES	20	1			100	1	20	SPARE	36		
1#12	2#12	37	ELECTRICAL/HOT WATER ROOM RECEPTACLES	20	1	360			1	20	SPARE	38		
		39	SPARE	20	1				1	20	SPARE	40		
		41	SPARE	20	1				1	20	SPARE	42		
						VA: 4,241	4,268	4,539						

CONNECTED LOAD: KVA: 13.0 — AMPS: 36.2

REMARKS: SPARE

MAIN: BUS 100 AMPS — BRKR 100 AMPS
☒ NEW PANEL ☐ EXISTING PANEL ☐ MAIN CIRCUIT BREAKER ☒ MAIN LUGS ONLY ☐ FLUSH MOUNTED ☒ SURFACE MOUNTED ☐ BOTTOM FEED ☐ TOP FEED

OPTIONS:
☐ 200% NEUTRAL
☒ GROUND BUS
☐ ISOLATED GROUND BUS
☐ DOOR-IN-DOOR CONSTRUCTION
☐ STAINLESS STEEL COVER
☐ NEMA 3R PANEL
☐ SUB-FEED MAIN C.B. (3P) QTY: _____ AMPS: _____
☐ CONTACTOR AMPS: _____ CKT'S CONTROLLED: _____
☐ OTHER: _____
☐ OTHER: _____

PANEL DESIGNATION LP — VOLTAGE 208Y/120V — PHASE 3 — POLES 30 — WIRES 4 — AIC 100K

G WIRE SIZE	Ø WIRE SIZE	CKT No.	DESCRIPTION	CB AMPS	CB POLES	PH. A VA	PH. B VA	PH. C VA	CB POLES	CB AMPS	DESCRIPTION	CKT No.	Ø WIRE SIZE	G WIRE SIZE
1#8	2#8	1	PARKING POLE LIGHTING	20	1	630			1	20	GROUND FLOOR LOBBY LTG.	2	2#10	1#10
1#10	2#10	3	GARAGE LIGHTING	20	1	540	420		1	20	GROUND FLOOR LTG.	4	2#10	1#10
		5	SPARE	20	1		630	235	1	20	MEZZANINE LIGHTING	6	2#12	1#12
		7	SPARE	20	1				1	20	SPARE	8		
		9	SPARE	20	1				1	20	SPARE	10		
		11	SPARE	20	1				1	20	SPARE	12		
		13	SPARE	20	1				1	20	SPARE	14		
		15	SPARE	20	1				1	20	SPARE	16		
		17	SPARE	20	1				1	20	SPARE	18		
		19	SPARE	20	1				1	20	SPARE	20		
		21	SPARE	20	1				1	20	SPARE	22		
		23	SPARE	20	1				1	20	SPARE	24		
		25	SPARE	20	1				1	20	SPARE	26		
		27	SPARE	20	1				1	20	SPARE	28		
		29	SPARE	20	1				1	20	SPARE	30		
						VA: 1,170	1,050	235						

CONNECTED LOAD: KVA: 2.5 — AMPS: 6.8

REMARKS

MAIN: BUS 100 AMPS — BRKR 60 AMPS
☒ NEW PANEL ☐ EXISTING PANEL ☒ MAIN CIRCUIT BREAKER ☐ MAIN LUGS ONLY ☒ FLUSH MOUNTED ☐ SURFACE MOUNTED ☐ BOTTOM FEED ☐ TOP FEED

OPTIONS:
☐ 200% NEUTRAL
☒ GROUND BUS
☐ ISOLATED GROUND BUS
☐ DOOR-IN-DOOR CONSTRUCTION
☐ STAINLESS STEEL COVER
☐ NEMA 3R PANEL
☐ SUB-FEED MAIN C.B. (3P) QTY: _____ AMPS: _____
☐ CONTACTOR AMPS: _____ CKT'S CONTROLLED: _____
☐ OTHER: _____
☐ OTHER: _____

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Rev. #	Revision Description	Date:
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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:
PROPOSED MIXED USE BUILDING:
WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:
136-158 WESTMORELAND, LLC
1485 5TH AVENUE, 24F
NEW YORK, NY 10035

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4th Floor
New York, NY 10001
212 324-6300

Khachaturian Engineering Associates
Mechanical/Electrical/Plumbing Engineers
186 Wood Avenue South, First Floor
Iselin, NJ 08830
732 635-0044

Sheet Title:
ELECTRICAL PANEL SCHEDULES

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #082261-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date: 07-18-2016
Scale: AS NOTED
Job#: 2011
Sheet Title: E-5.01
Sheet: of

PANEL DESIGNATION HP

VOLTAGE	PHASE	POLES	WIRES	AIC
208Y/120V	3	84	4	100K

G WIRE SIZE	Ø WIRE SIZE	CKT No.	DESCRIPTION	CB AMPS	CB POLES	PH. A VA	PH. B VA	PH. C VA	CB POLES	CB AMPS	DESCRIPTION	CKT No.	Ø WIRE SIZE	G WIRE SIZE
1#10	2#10	1	UH-1	20	2	1650 1500			2	20	CUH-1	2	2#10	1#10
		3					1650 1500					4		
1#10	2#10	5	UH-4	25	2			2500 2500	2	25	UH-4	6	2#10	1#10
		7				2500 2500						8		
1#10	2#10	9	CUH-1	20	2		1500 2500		2	25	UH-4	10	2#10	1#10
		11						1500 2500				12		
1#10	2#10	13	UH-4	25	2	2500 750			2	20	BB-1	14	2#10	1#10
		15					2500 750					16		
1#10	2#10	17	UH-4	25	2			1500 1500	2	20	CUH-1	18	2#10	1#10
		19				1500 1500						20		
1#10	3#8	21	UH-3	35	3		3333 1500		2	20	CUH-1	22	2#10	1#10
		23						3333 1500				24		
		25				3333 1500						26		
1#10	3#8	27	UH-3	35	3		3333 1500		2	20	CUH-1	28	2#10	1#10
		29						3333 1500				30		
		31				3333 1500						32		
1#12	2#12	33	AC-1&2	15	2		318 1500		2	20	CUH-1	34	2#10	1#10
		35						318 1500				36		
1#12	2#12	37	AC-3 15	2		240 2000					CUH-2 40	38	2#10	1#10
							240 2000	2	25					
1#12	2#12	41	MEZZ-UH-1	20	2			1650				42		
		43				1650			2	20	SPARE	44		
1#10	2#10	45	MEZZ-CUH-1	20	2		1500		1	20	SPARE	46		
		47						1500	1	20	SPARE	48		
1#10	2#10	49	MEZZ-CUH-1	20	2	1500			1	20	SPARE	50		
		51					1500		1	20	SPARE	52		
1#12	2#12	53	RP-1	20	1			1176	1	20	SPARE	54		
1#12	2#12	55	HX-1	20	1	1176			1	20	SPARE	56		
1#10	2#8	57	UH-1 (TRASH ROOM)	20	2		1653		1	20	SPRE	58		
		59						1653	1	20	SPRE	60		
1#12	2#12	61	BCC-5	15	2	172			1	20	SPRE	62		
		63					172 980		2	20	PUH-1	64	2#8	1#10
		65	SPARE	20	1			980				66		
		67	SPARE	20	1	980			2	20	PUH-1	68	2#8	1#10
		69	SPARE	20	1		980					70		
		71	SPARE	20	1			980	2	20	PUH-1	72	2#8	1#10
		73	SPARE	20	2	980						74		
		75					980		2	20	PUH-1	76	2#8	1#10
		77	SPARE	20	1			980				78		
		79	SPRE	20	1	2004			3	30	TRASH COMPACTOR	80	3#8	1#8
		81	SPARE	20	1		2004					82		
		83	SPARE	20	1			2004				84		
			VA:			34,768	33,893	34,407						

CONNECTED LOAD	MAIN	OPTIONS
KVA: 103.1	BUS 400 AMPS	☐ 200% NEUTRAL
AMPS: 286.3	BRKR 400 AMPS	☒ GROUND BUS
REMARKS	☒ NEW PANEL	☐ ISOLATED GROUND BUS
	☐ EXISTING PANEL	☐ DOOR-IN-DOOR CONSTRUCTION
	☐ MAIN CIRCUIT BREAKER	☐ STAINLESS STEEL COVER
	☒ MAIN LUGS ONLY	☐ NEMA 3R PANEL
	☒ FLUSH MOUNTED	☐ SUB-FEED MAIN C.B. (3P) QTY: _____ AMPS: _____
	☐ SURFACE MOUNTED	☐ CONTACTOR AMPS: _____ CKT'S CONTROLLED: _____
	☐ BOTTOM FEED	☐ OTHER: _____
	☐ TOP FEED	☐ OTHER: _____

PANEL DESIGNATION RP

VOLTAGE	PHASE	POLES	WIRES	AIC
208Y/120V	3	84	4	100K

G WIRE SIZE	Ø WIRE SIZE	CKT No.	DESCRIPTION	CB AMPS	CB POLES	PH. A VA	PH. B VA	PH. C VA	CB POLES	CB AMPS	DESCRIPTION	CKT No.	Ø WIRE SIZE	G WIRE SIZE
1#12	2#12	1	LOWER RES. LOBBY RECEPTACLES	20	1	1080 3328			2	40	EV CAR CHARGER	2	2#8	1#8
1#12	2#12	3	MAIL, PKG. & BIKE RM. RECS.	20	1		900 3328					4		
1#12	2#12	5	MANAGEMENT OFFICE RECEPTACLES	20	1			720 3328	2	40	EV CAR CHARGER	6	2#8	1#8
1#10	2#10	7	PARKING RECEPTACLES	20	1	720 3328						8		
1#12	2#12	9	COMMUNITY ROOM REC.	20	1		1260 3328		2	40	EV CAR CHARGER	10	2#8	1#8
1#10	2#10	11	SERVICE CORRIDOR & STAGING REC.	20	1			900 3328				12		
1#10	2#10	13	LOADING & REFUSE ROOM REC.	20	1	1080 3328			2	40	EV CAR CHARGER	14	2#8	1#8
1#12	2#12	15	WATER METER ROOM REC.	20	1		180 3328					16		
1#12	2#12	17	MEZZANINE CORRIDOR RECEPTACLES	20	1			540 3328	2	40	EV CAR CHARGER	18	2#8	1#8
		19	SPARE	20	1	3328						20		
1#12	2#12	21	MECHANICAL ROOM RECEPTACLES	20	1		360		2	20	GENERATOR WATER HEATER JACKET	22	2#8	1#10
		23	SPARE	20	1			400				24		
1#12	2#12	25	TELECOM RECEPTACLE REC.	20	1	400 800			1	20	GENERATOR BATTERY CHARGER	26	2#8	1#10
1#12	2#12	27	TELECOM RECEPTACLE REC.	20	1		400 475		2	20	AC-4	28	2#12	1#12
1#12	2#12	29	TELECOM RECEPTACLE REC.	20	1			400 475				30		
1#12	2#12	31	TELECOM RECEPTACLE REC.	20	1	400			1	20	SPARE	32		
1#12	2#12	33	BATHROOM/FAN	20	1		200		3	35	SPARE	34		
1#12	2#12	35	MECHANICAL ROOM DEDICATED RECEPTACLE	20	1			500				36		
1#12	2#12	37	MECHANICAL ROOM DEDICATED RECEPTACLE	20	1	500						38		
1#12	2#12	39	MECHANICAL ROOM DEDICATED RECEPTACLE	20	1		500		1	20	SPARE	40		
1#12	2#12	41	MECHANICAL ROOM DEDICATED RECEPTACLE	20	1			500	1	20	SPARE	42		
1#8	3#6	43	OVERHEAD DOOR	20	3	2000 1272			3	20	CP-2	44		
		45					2000 1272					46	3#12	1#12
		47						2000 1272				48		
1#8	3#6	49	OVERHEAD DOOR	20	3	2000 900			3	20	CP-1	50		
		51					2000 900					52	3#12	1#12
		53						2000 900				54		
1#12	2#12	55	FIRST FLOOR FIRE PLACE	20	1	200			1	20	SPARE	56		
1#8	3#8	57	UH-2	35	3		2500		1	20	SPARE	58		
		59						2500	1	20	SPARE	60		
		61				2500			1	20	SPARE	62		
1#8	3#8	63	UH-2	35	3		2500		1	20	SPARE	64		
		65						2500	1	20	SPARE	66		
		67				2500			1	20	SPARE	68		
1#12	2#12	69	UH-1	20	2		1650		1	20	SPARE	70		
		71						1650	1	20	SPARE	72		
1#10	2#8	73	CU-1	25	2	1976			1	20	SPARE	74		
		75					1976		1	20	SPARE	76		
		77	SPARE	20	1			2880	1	20	SPARE	78		
		79	SPARE	20	1				1	20	SPARE	80		
		81	SPARE	20	1				1	20	SPARE	82		
		83	SPARE	20	1				1	20	SPARE	84		
			VA:			31,640	29,457	30,121						

CONNECTED LOAD	MAIN	OPTIONS
KVA: 91.2	BUS 400 AMPS	☐ 200% NEUTRAL
AMPS: 253.4	BRKR 400 AMPS	☒ GROUND BUS
REMARKS	☒ NEW PANEL	☐ ISOLATED GROUND BUS
	☐ EXISTING PANEL	☐ DOOR-IN-DOOR CONSTRUCTION
	☒ MAIN CIRCUIT BREAKER	☐ STAINLESS STEEL COVER
	☐ MAIN LUGS ONLY	☐ NEMA 3R PANEL
	☒ FLUSH MOUNTED	☐ SUB-FEED MAIN C.B. (3P) QTY: _____ AMPS: _____
	☐ SURFACE MOUNTED	☐ CONTACTOR AMPS: _____ CKT'S CONTROLLED: _____
	☐ BOTTOM FEED	☐ OTHER: _____
	☐ TOP FEED	☐ OTHER: _____

PANEL DESIGNATION HP4

VOLTAGE	PHASE	POLES	WIRES	AIC
208Y/120V	3	42	4	42K

G WIRE SIZE	Ø WIRE SIZE	CKT No.	DESCRIPTION	CB AMPS	CB POLES	PH. A VA	PH. B VA	PH. C VA	CB POLES	CB AMPS	DESCRIPTION	CKT No.	Ø WIRE SIZE	G WIRE SIZE
1#12	2#12	1	BBC-1 (2ND FL)	15	2	172 1500			2	20	STAIR CUH-1 (3RD FL)	2	2#10	1#10
		3					172 1500					4		
1#12	2#12	5	BBC-2 (3RD FL)	15	2			172 1500	2	20	STAIR CUH-1 (3RD FL)	6	2#10	1#10
		7				172 1500						8		
1#12	2#12	9	BBC-3 (4TH FL)	15	2		172 185		1	20	2ND FL LIGHTINGS	10	2#12	1#12
		11						172 185	1	20	3RD FL LIGHTINGS	12	2#12	1#12
		13	SPARE	20	1	185			1	20	4TH FL LIGHTINGS	14	2#12	1#12
		15	SPARE	20	1				1	20	SPARE	16		
		17	SPARE	20	1				1	20	SPARE	18		
1#10	2#10	19	2ND FLOOR CORRIDOR RECEPTACLES	20	1	1080			1	20	SPARE	20		
1#10	2#10	21	3RD FLOOR CORRIDOR RECEPTACLES	20	1		1080		1	20	SPARE	22		
1#10	2#10	23	4TH FLOOR CORRIDOR RECEPTACLES	20	1			1080	1	20	SPARE	24		
		25	SPARE	20	1				1	20	SPARE	26		
		27	SPARE	20	1				1	20	SPARE	28		
		29	SPARE	20	1				1	20	SPARE	30		
		31	SPARE	20	1				1	20	SPARE	32		
		33	SPARE	20	1				1	20	SPARE	34		
		35	SPARE	20	1				1	20	SPARE	36		
		37	SPARE	20	1				1	20	SPARE	38		
		39	SPARE	20	1				1	20	SPARE	40		
		41	SPARE	20	1				1	20	SPARE	42		
			VA:			4,609	3,109	3,109						

CONNECTED LOAD	MAIN	OPTIONS
KVA: 10.8	BUS 125 AMPS	☐ 200% NEUTRAL
AMPS: 30.1	BRKR 125 AMPS	☒ GROUND BUS
REMARKS	☒ NEW PANEL	☐ ISOLATED GROUND BUS
	☐ EXISTING PANEL	☐ DOOR-IN-DOOR CONSTRUCTION
	☒ MAIN CIRCUIT BREAKER	☐ STAINLESS STEEL COVER
	☐ MAIN LUGS ONLY	☐ NEMA 3R PANEL
	☐ FLUSH MOUNTED	☐ SUB-FEED MAIN C.B. (3P) QTY: _____ AMPS: _____
	☒ SURFACE MOUNTED	☐ CONTACTOR AMPS: _____ CKT'S CONTROLLED: _____
	☐ BOTTOM FEED	☐ OTHER: _____
	☐ TOP FEED	☐ OTHER: _____

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TEL (732) 635 0044 • FAX (732) 635 1777

Rev. #	Revision Description	Date:
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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:

136-158 WESTMORELAND, LLC
1485 5TH AVENUE, 24F
NEW YORK, NY 10035

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McLaren Engineering Group
Structural Engineer
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4th Floor
New York, NY 10001
212 324-6300

Khachaturian Engineering Associates
Mechanical/Electrical/Plumbing Engineers
186 Wood Avenue South, First Floor
Iselin, NJ 08830
732 635-0044

Sheet Title:

ELECTRICAL PANEL SCHEDULES

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #082281-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-5.02
Sheet:	of

PANEL DESIGNATION: RTP1

VOLTAGE	PHASE	POLES	WIRES	AIC
208Y/120V	3	42	4	42K

G WIRE SIZE	Ø WIRE SIZE	CKT No.	DESCRIPTION	CB AMPS	CB POLES	PH. A VA	PH. B VA	PH. C VA	CB POLES	CB AMPS	DESCRIPTION	CKT No.	Ø WIRE SIZE	G WIRE SIZE
1#12	2#12	1	CONVENIENCE RECEPTACLES	20	1	900			1	20	LIGHTING	2	2#12	1#12
		3	SPARE	20	1	205			1	20	BATHROOM LIGHTS	4	2#12	1#12
1#12	2#12	5	UH-1	20	2		20	1650	1	20	SPARE	6		
		7				1650			1	20	SPARE	8		
1#10	2#10	9	UH-1	20	2		1650		1	20	SPARE	10		
		11						1650	1	20	SPACE	12		
1#10	2#10	13	UH-1	20	2	1650			1	20	SPARE	14		
		15					1650		1	20	SPARE	16		
1#10	2#10	17	UH-1	20	2			1650	1	20	SPARE	18		
		19				1650			1	20	SPARE	20		
1#12	2#12	21	SPARE	20	1				1	20	SPARE	22		
		23	SPARE	20	1				1	20	SPARE	24		
		25	SPARE	20	1				1	20	SPARE	26		
		27	SPARE	20	1				1	20	SPARE	28		
		29	SPARE	20	1				1	20	SPARE	30		
		31	SPARE	20	1				1	20	SPARE	32		
		33	SPARE	20	1				1	20	SPARE	34		
		35	SPARE	20	1				1	20	SPARE	36		
		37	SPARE	20	1				1	20	SPARE	38		
		39	SPARE	20	1				1	20	SPARE	40		
		41	SPARE	20	1				1	20	SPARE	42		
					VA:	6,055	3,320	4,950						

CONNECTED LOAD
KVA: 14.3
AMPS: 39.8

REMARKS

MAIN
BUS 225 AMPS
BRKR 225 AMPS
- ☒ NEW PANEL
- ☐ EXISTING PANEL
- ☒ MAIN CIRCUIT BREAKER
- ☐ MAIN LUGS ONLY
- ☒ FLUSH MOUNTED
- ☐ SURFACE MOUNTED
- ☐ BOTTOM FEED
- ☐ TOP FEED

OPTIONS
- ☐ 200% NEUTRAL
- ☒ GROUND BUS
- ☐ ISOLATED GROUND BUS
- ☐ DOOR-IN-DOOR CONSTRUCTION
- ☐ STAINLESS STEEL COVER
- ☐ NEMA 3R PANEL
- ☐ SUB-FEED MAIN C.B. (3P) QTY: _____ AMPS: _____
- ☐ CONTACTOR AMPS: _____ CKT'S CONTROLLED: _____
- ☐ OTHER: _____
- ☐ OTHER: _____

PANEL DESIGNATION: RTP2

VOLTAGE	PHASE	POLES	WIRES	AIC
208Y/120V	3	42	4	42K

G WIRE SIZE	Ø WIRE SIZE	CKT No.	DESCRIPTION	CB AMPS	CB POLES	PH. A VA	PH. B VA	PH. C VA	CB POLES	CB AMPS	DESCRIPTION	CKT No.	Ø WIRE SIZE	G WIRE SIZE
1#12	2#12	1	CONVENIENCE RECEPTACLES	20	1	720			1	20	LIGHTING	2	2#12	1#12
1#12	2#12	3	CONVENIENCE RECEPTACLES	20	1	340	720		1	20	SPACE	4		
1#10	2#10	5	UH-1	20	2		0	1650	1	20	SPACE	6		
		7				1650			1	20	SPACE	8		
1#10	2#10	9	UH-1	20	2		1650		1	20	SPACE	10		
		11						1650	1	20	SPACE	12		
1#10	2#10	13	UH-1	20	2	1650			1	20	SPARE	14		
		15					1650		1	20	SPARE	16		
1#10	2#10	17	UH-1	20	2			1650	1	20	SPARE	18		
		19				1650			1	20	SPARE	20		
1#10	2#10	21	UH-1	20	2		1650		1	20	SPACE	22		
		23						1650	1	20	SPACE	24		
1#12	2#12	25	BATHROOM RECEPTACLE/FAN	20	1	200			1	20	SPARE	26		
		27	SPACE	20	1				1	20	SPARE	28		
		29	SPACE	20	1				1	20	SPARE	30		
		31	SPACE	20	1				1	20	SPARE	32		
		33	SPACE	20	1				1	20	SPARE	34		
		35	SPACE	20	1				1	20	SPARE	36		
		37	SPACE	20	1				1	20	SPARE	38		
		39	SPACE	20	1				1	20	SPARE	40		
		41	SPACE	20	1				1	20	SPARE	42		
					VA:	6,210	5,670	6,600						

CONNECTED LOAD
KVA: 18.5
AMPS: 51.3

REMARKS

MAIN
BUS 400 AMPS
BRKR 400 AMPS
- ☒ NEW PANEL
- ☐ EXISTING PANEL
- ☒ MAIN CIRCUIT BREAKER
- ☐ MAIN LUGS ONLY
- ☒ FLUSH MOUNTED
- ☐ SURFACE MOUNTED
- ☐ BOTTOM FEED
- ☐ TOP FEED

OPTIONS
- ☐ 200% NEUTRAL
- ☒ GROUND BUS
- ☐ ISOLATED GROUND BUS
- ☐ DOOR-IN-DOOR CONSTRUCTION
- ☐ STAINLESS STEEL COVER
- ☐ NEMA 3R PANEL
- ☐ SUB-FEED MAIN C.B. (3P) QTY: _____ AMPS: _____
- ☐ CONTACTOR AMPS: _____ CKT'S CONTROLLED: _____
- ☐ OTHER: _____
- ☐ OTHER: _____

PANEL DESIGNATION: HP5

VOLTAGE	PHASE	POLES	WIRES	AIC
208Y/120V	3	84	4	42K

G WIRE SIZE	Ø WIRE SIZE	CKT No.	DESCRIPTION	CB AMPS	CB POLES	PH. A VA	PH. B VA	PH. C VA	CB POLES	CB AMPS	DESCRIPTION	CKT No.	Ø WIRE SIZE	G WIRE SIZE
1#10	2#10	1	5TH FLOOR CORRIDOR RECEPTACLES	20	1	1080			1	20	5TH FLOOR CORRIDOR LIGHTS	2	2#12	1#12
1#12	2#12	3	ROOF DECK RECEPTACLE	20	1	160	720		1	20	ROOF DECK LIGHTS	4	2#12	1#12
1#12	2#12	5	ROOF DECK RECEPTACLE	20	1		125	360	1	20	ROOF DECK LIGHTS	6	2#12	1#12
1#12	2#12	7	ROOF DECK RECEPTACLE	20	1	180		270	1	20	SPARE	8		
1#12	2#12	9	ROOF DECK CORRIDOR RECEPTACLE	20	1		360		1	20	SPARE	10		
1#12	2#12	11	ROOF DECK RESTROOM RECEPTACLES	20	1		750	360	2	20	RH-1	12	2#12	1#12
1#12	2#12	13	ROOF DECK AMENITY GFI	20	1	180		750				14		
1#12	2#12	15	ROOF DECK AMENITY GFI	20	1	750	180		2	20	RH-1	16	2#12	1#12
1#12	2#12	17	ROOF DECK AMENITY GFI	20	1		750	180				18		
1#12	2#12	19	ROOF DECK AMENITY GFI	20	1	180		750	2	20	RH-1	20	2#12	1#12
1#12	2#12	21	ROOF DECK AMENITY GFI	20	1	750	180					22		
1#12	2#12	23	ROOF DECK AMENITY GFI	20	1		750	180	2	20	RH-1	24	2#12	1#12
1#12	2#12	25	ROOF DECK AMENITY GFI	20	1	360		750				26		
1#12	2#12	27	ROOF DECK AMENITY GFI	20	1	750	360		2	20	RH-1	28	2#12	1#12
1#12	2#12	29	FITNESS RECEPTACLES				750	360				30		
1#10	2#10	31	FITNESS RECEPTACLES	20	1	1080		750	2	20	RH-1	32	2#12	1#12
1#10	2#10	33	FITNESS EQUIPMENT RECEPTACLE	20	1	750	900					34	2#10	1#10
1#10	2#10	35	FITNESS EQUIPMENT RECEPTACLE	20	1		170	900	1	20	5TH FL EXTERIOR LIGHTS	36	2#12	1#12
1#10	2#10	37	FITNESS EQUIPMENT RECEPTACLE	20	1	900		200	1	20	FIRE PIT JB	38	2#12	1#12
1#10	2#10	39	FITNESS EQUIPMENT RECEPTACLE	20	1	200	900		1	20	FIRE PIT JB	40	2#12	1#12
1#10	2#10	41	FITNESS EQUIPMENT RECEPTACLE	20	1		200	900	1	20	GAS SHUT OFF VAVLE	42	2#12	1#12
		43				172		528	1	20	TREF-1	44	2#12	1#12
1#12	2#12	45	BBC-4	15	2	200	172		1	20	FIRE PLACE JB	46	2#12	2#12
1#10	2#10	47	ROOF DECK STAIR CUH-1	20	2			1500	1	20	SPARE KEF-1	48	2#12	2#12
		49				1500			1	20	SPARE	50		
1#10	2#10	51	ROOF DECK STAIR CUH-1	20	2		1500		1	20	SPARE	52		
		53						1500	1	20	SPARE	54		
1#12	2#12	55	AC-5	15	2	312			1	20	SPARE	56		
		57					312		1	20	SPARE	58		
1#10	2#10	59	ERU-1	25	2			1528	1	20	SPARE	60		
		61				1528			1	20	SPARE	62		
1#10	2#8	63	ERU-2	30	2		2350		1	20	SPARE	64		
		65						2350	1	20	SPARE	66		
1#12	2#12	67	ERU-3	15	2	1040			1	20	SPARE	68		
		69					1040		1	20	SPARE	70		
		71	SPARE	20	1				1	20	SPARE	72		
		73	SPARE	20	1				1	20	SPARE	74		
		75	SPARE	20	1				1	20	SPARE	76		
		77	SPARE	20	1				1	20	SPARE	78		
		79	SPARE	20	1				1	20	SPARE	80		
		81	SPARE	20	1		4877		2	85	RTU-2	82	2#4	1#6
		83	SPARE	20	1			4877				84		
					VA:	12,072	17,346	18,993						

CONNECTED LOAD
KVA: 48.4
AMPS: 134.5

REMARKS

MAIN
BUS 225 AMPS
BRKR 225 AMPS
- ☒ NEW PANEL
- ☐ EXISTING PANEL
- ☒ MAIN CIRCUIT BREAKER
- ☐ MAIN LUGS ONLY
- ☒ FLUSH MOUNTED
- ☐ SURFACE MOUNTED
- ☐ BOTTOM FEED
- ☐ TOP FEED

OPTIONS
- ☐ 200% NEUTRAL
- ☒ GROUND BUS
- ☐ ISOLATED GROUND BUS
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- ☐ CONTACTOR AMPS: _____ CKT'S CONTROLLED: _____
- ☐ OTHER: _____
- ☐ OTHER: _____

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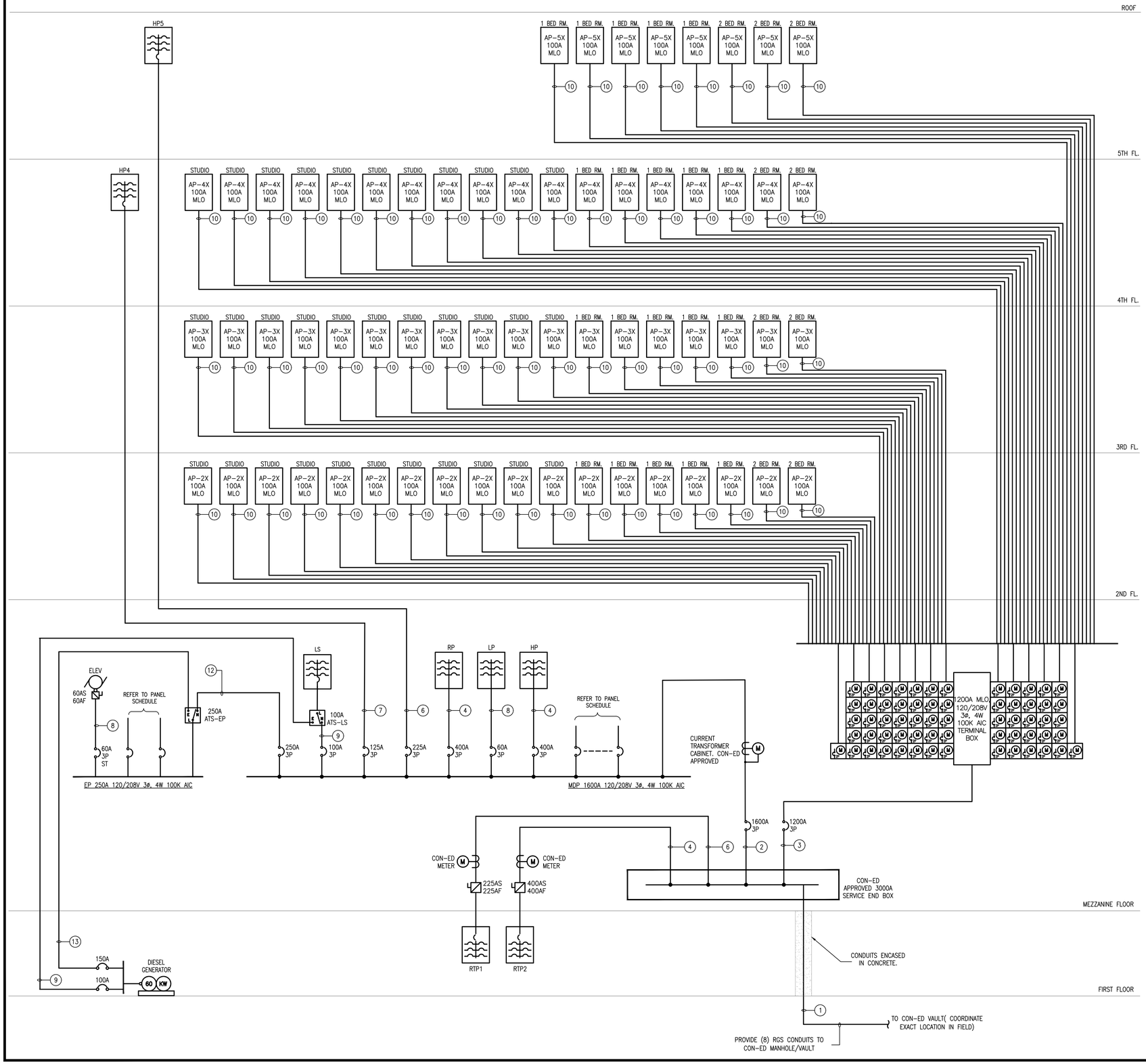
Sheet Title:
ELECTRICAL PANEL SCHEDULES

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #062261-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date: 07-18-2016
Scale: AS NOTED
Job#: 2011
Sheet Title: E-5.03
Sheet: of



ELECTRICAL RISER DIAGRAM
(N.T.S.)

NOTES:

1. GENERATOR SIZING IS BASED ON 15HP ELEVATOR WITH SOFT STARTERS.
2. RUN ALL EMERGENCY FEEDERS IN 2HR RATED ENCLOSURE OR IN SPRINKLERED SPACE. HORIZONTAL RUNS MUST BE RUN IN 2HR RATED CONCEALED SPACE.
3. EC SHALL SUBMIT TO TOWN FULL SHORT CIRCUIT AND COORDINATION STUDY ALONG WITH ARC FLASH ANALYSIS WITH ELECTRICAL GEAR SHOP DRAWINGS.
4. SWITCHGEAR MANUFACTURER SHALL PROVIDE FULL BUILDING SHORT CIRCUIT & SELECTIVE COORDINATION STUDY AS WELL AS ARC FLASH ANALYSIS TO BE REVIEWED BY BUILDING OFFICIAL AND ENGINEER PRIOR TO PURCHASE OF SWITCHGEAR.
5. ELECTRICAL CONTRACTOR SHALL CONFIRM THE AVAILABLE SHORT CIRCUIT CURRENT FROM THE ELECTRICAL UTILITY COMPANY WHEN CONTACT WITH UTILITY HAS BEEN MADE.
6. METER BOXES PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR. METERS PROVIDED AND INSTALLED BY POWER COMPANY. METER CENTER INSTALLED MUST BE ACCEPTABLE TO LOCAL UTILITY COMPANY AND ACCEPT UTILITY COMPANY'S METERS.
7. METER CENTER CROSS BUSSES SHALL BE FULLY RATED.
8. UNPROTECTED (NO OCPD DEVICE) SERVICE ENTRANCE FEEDERS ROUTED WITHIN THE BUILDING, OUTSIDE THE TRANSFORMER VAULT OR MAIN ELECTRIC ROOM SHALL BE CONCRETE ENCASED OR UNDER SLAB AND IN CONDUIT. IF ROUTED ABOVE GROUND, PROVIDE TYPE SE OUTER SHEATHED CABLES WITH XHHW FOR INDIVIDUAL CONDUCTORS. IF UNDERGROUND, PROVIDE TYPE RHH/RHW/USE INSULATION. COORDINATE WITH UTILITY COMPANY AND LOCAL AHJ REQUIREMENTS.
9. OCPD RATINGS FOR SOME EQUIPMENT SHOWN MAY DIFFER FROM ACTUAL RATINGS. COORDINATE ALL CIRCUIT BREAKER AND FUSE SIZES (MOCP) AND WIRE SIZES (MCA) FOR HVAC, PLUMBING AND OTHER EQUIPMENT WITH FINAL APPROVED SHOP DRAWINGS PRIOR TO PURCHASE OF ELECTRICAL DISTRIBUTION EQUIPMENT. EQUIPMENT ORDERED WITH INCORRECT OCPD SIZES DUE TO LACK OF COORDINATION PRIOR TO PURCHASE ARE THE EC'S RESPONSIBILITY.

CONDUIT & WIRE SCHEDULE (#)

No.	VOLTS	AMPS	CONDUIT QUANTITY & TYPE	CONDUIT SIZE	PHASE WIRE SIZE (THREE)	NEUTRAL WIRE SIZE	GROUND WIRE SIZE	PLUS SPARE CONDUIT	WIRE TYPE
1	208Y/120	3000	8 EMT	4"	600 MCM	600 MCM	3/0	4"	CU
2	208Y/120	1600	4 EMT	4"	600 MCM	600 MCM	4/0		CU
3	208Y/120	1200	3 EMT	4"	600 MCM	600 MCM	3/0		CU
4	208Y/120	400	1 EMT	4"	600 MCM	600 MCM	3		CU
5									
6	208Y/120	225	1 EMT	2-1/2"	4/0	4/0	4		CU
7	208Y/120	125	1 EMT	2"	1	1	6		CU
8	208Y/120	60	1 EMT	1-1/2"	6	6	8		CU
9	208Y/120	100	1 EMT	1-1/2"	3	3	8		CU
10	208Y/120	100			(1) 3#3 PLUS 1#8 GND. CU MC *				
11	208Y/120	125			(1) 3#1 PLUS 1#6 GND. CU MC				
12	208Y/120	250	1 EMT	2-1/2"	250	250	4		CU
13	208Y/120	150	1 EMT	1-1/2"	1/0	1/0	6		CU
14									

RGS – RIGID GALVANIZED STEEL
PVC – SCHEDULE 40 PVC CONDUIT
EMT – ELECTRICAL METALLIC TUBING WITH SETSCREW FITTINGS.
GFLD – GREENFIELD FLEXIBLE METAL CONDUIT
WIRE – THHN COPPER U.O.N.
MC – METAL CLAD CABLE
AL – ALUMINUM
CU – COPPER

* ALL RUNS OVER 150' SHALL UTILIZE (1)3#2 PLUS 1#6G CU MC FEEDER
ALL RUNS OVER 190' SHALL UTILIZE (1)3#1 PLUS 1#6G CU MC FEEDER
ALL RUNS OVER 240' SHALL UTILIZE (1)3#1/0 PLUS 1#4G CU MC FEEDER
ALL RUNS OVER 300' SHALL UTILIZE (1)3#2/0 PLUS 1#4G CU MC FEEDER
ALL RUNS OVER 380' SHALL UTILIZE (1)3#3/0 PLUS 1#3G CU MC FEEDER

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Sheet Title:
ELECTRICAL RISER DIAGRAM

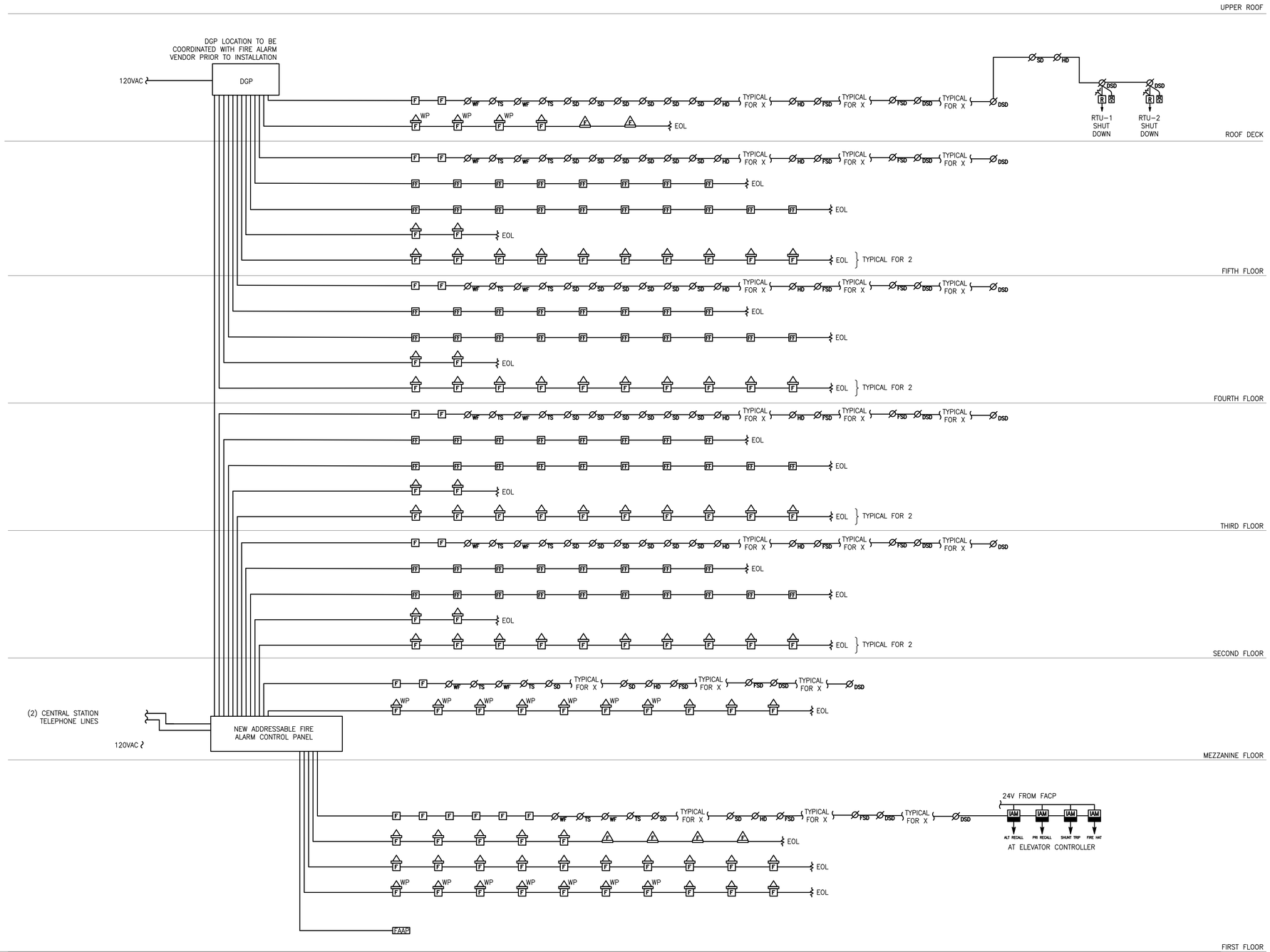
Seal & Signature

ARMEN KHACHATURIAN, P.E. – NY LICENSE #082261-1
NY CERTIFICATE OF AUTHORIZATION #0017124

Date: 07-18-2016
Scale: AS NOTED
Job#: 2011
Sheet Title: E-6.01
Sheet: of

FIRE ALARM SYSTEM REQUIREMENTS + NOTES:

1. THIS RISER DIAGRAM IS SCHEMATIC AND MAY NOT CONTAIN THE CORRECT QUANTITY OF DEVICES. IT SHOULD BE USED AS A WIRING AND DESIGN REFERENCE ONLY.
2. PROVIDE CLASS B WIRING FOR ALL NOTIFICATION AND INITIATION CIRCUITS.
3. THE SMOKE DETECTORS IN EACH UNIT ARE NOT REQUIRED BY CODE TO BE ADDRESSABLE AND CONNECTED TO THE FA SYSTEM. EC SHALL FURNISH AND INSTALL 120V INTERCONNECTED SMOKE DETECTORS
4. ALL DGP'S SHALL HAVE CAPACITY TO FEED 24 ADDITIONAL SPEAKERS AND STROBES.
5. EACH STROBE CIRCUIT SHALL HAVE CAPACITY TO FEED 6 ADDITIONAL DEVICES.
6. THE EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM CONTROL UNIT. CAPABILITY FOR VOICE ANNOUNCEMENTS.
7. STATUS INDICATORS AND CONTROLS FOR AIR DISTRIBUTION SYSTEMS.
8. CONTROL PANEL FOR SMOKE CONTROL SYSTEMS INSTALLED IN THE BUILDING.
9. CONTROLS FOR UNLOCKING STAIRWAY DOORS SIMULTANEOUSLY.
10. SPRINKLER VALVE AND WATERFLOW DETECTOR DISPLAY PANELS.
11. FIRE SMOKE DAMPERS/DUCT SMOKE DETECTORS/WATER FLOW/TEMPER SWITCHES LOCATION TO BE COORDINATED WITH MECHANICAL/SPRINKLER CONTRACTOR.
12. ELEVATOR FIRE RECALL SWITCH IN ACCORDANCE WITH ASME A17.1.
13. EMERGENCY VOICE/ALARM COMMUNICATION.
14. PROVIDE EMERGENCY RADIO RESPONDER COVERAGE IN COMPLIANCE WITH IBC 403.4.6 & IFC 510.
15. INDICATORS AND KEY ACTIVATION FOR POST FIRE SMOKE PURGE SYSTEM.
16. FIRE PUMP STATUS INDICATORS.



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Seal & Signature

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Date: 07-18-2016
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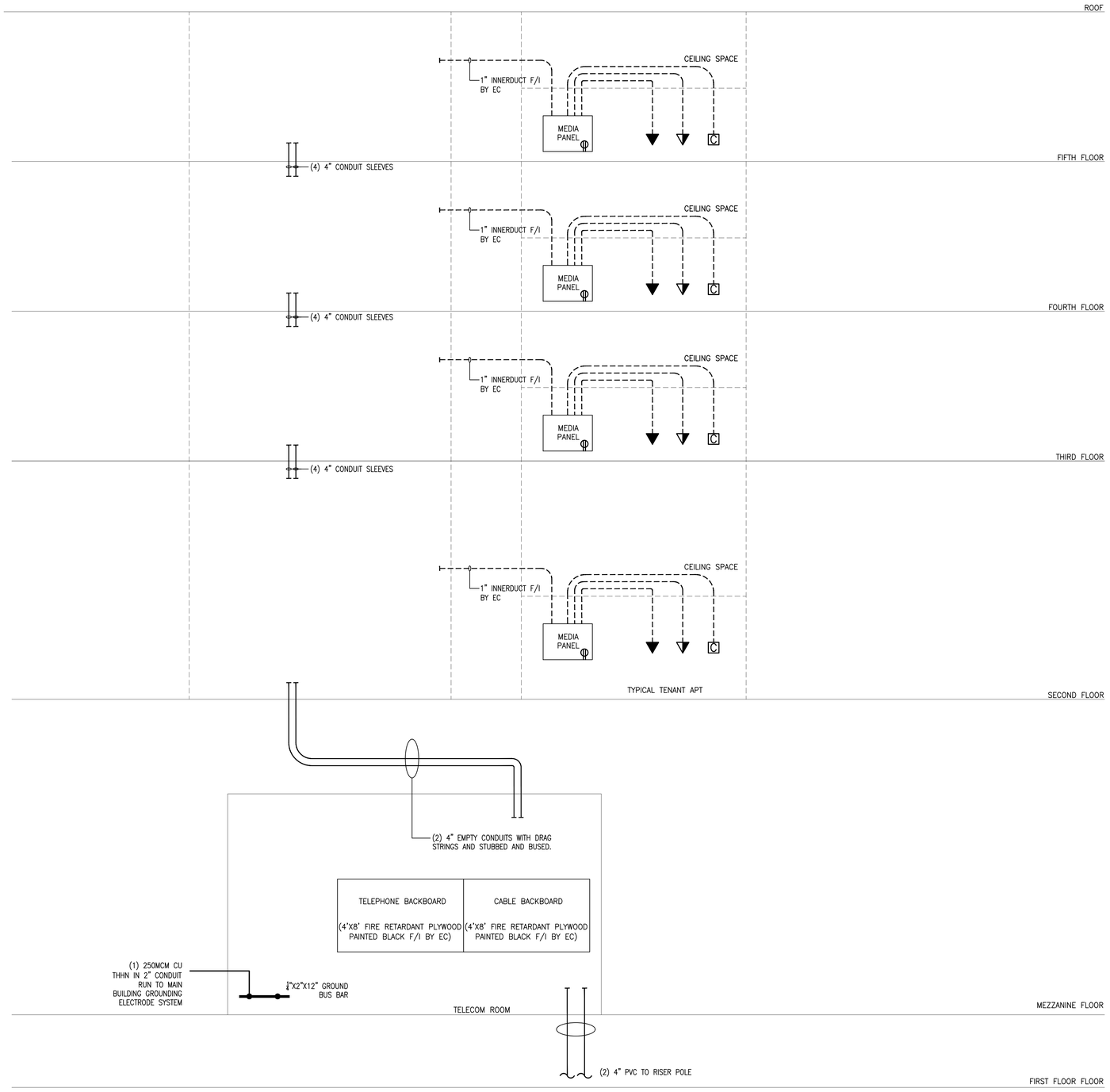
APARTMENT LOW VOLTAGE DEVICE SCHEDULE

▼	COMBINATION VOICE DATA JACK W/ BACKBOX (1) CAT5 4 PAIR & (1) CAT 6 6 PAIR HOME RUN TO MEDIA PANEL
▼	TELEPHONE JACKS EACH WITH CAT 5 4-PAIR HOME RUN TO MEDIA PANEL
C	CABLE JACK WITH RG60 COAX RUN TO CABLE BOX & (1) DATA JACK WITH CAT6 HOMERUN TO MEDIA PANEL
▭	APTS: TEL/CABLE BOX (FBO): EC TO INSTALL AND FURNISH AND INSTALL INNERDUCT TO LOW VOLTAGE UTILITY ROOM

NOTES

1. THIS RISER DIAGRAM IS SCHEMATIC AND DOES NOT CONTAIN THE TOTAL QUANTITY OF EACH DEVICE. IT SHOULD BE USED AS A WIRING AND DESIGN REFERENCE ONLY. REFER TO FLOOR PLANS FOR EXACT QUANTITIES OF EACH DEVICE.
2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED WITH FIRE RETARDANT BETWEEN THE EXTERIOR OF THE CONDUIT AND THE PENETRATION.



TELECOMMUNICATION WIRING RISER DIAGRAM

(N.T.S.)

KEA ENGINEERS
Engineering Excellence since 1984
186 WOOD AVE. SOUTH, 1ST FLOOR
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TEL (732) 635 0044 • FAX (732) 635 1777

Rev. #	Revision Description	Date:
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2	Issued For Bid	04-12-2021
1	Issued For Bid	04-05-2021

Project Description:

PROPOSED MIXED USE BUILDING:

WESTMORELAND LOFTS
136-158 WESTMORELAND AVE.
WHITE PLAINS, NY 10606

Owner/Developer:

136-158 WESTMORELAND, LLC
1485 5TH AVENUE, 24F
NEW YORK, NY 10035

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McLaren Engineering Group
Structural Engineer
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New York, NY 10001
212 324-6300

Khachaturian Engineering Associates
Mechanical/Electrical/Plumbing Engineers
186 Wood Avenue South, First Floor
Iselin, NJ 08830
732 635-0044

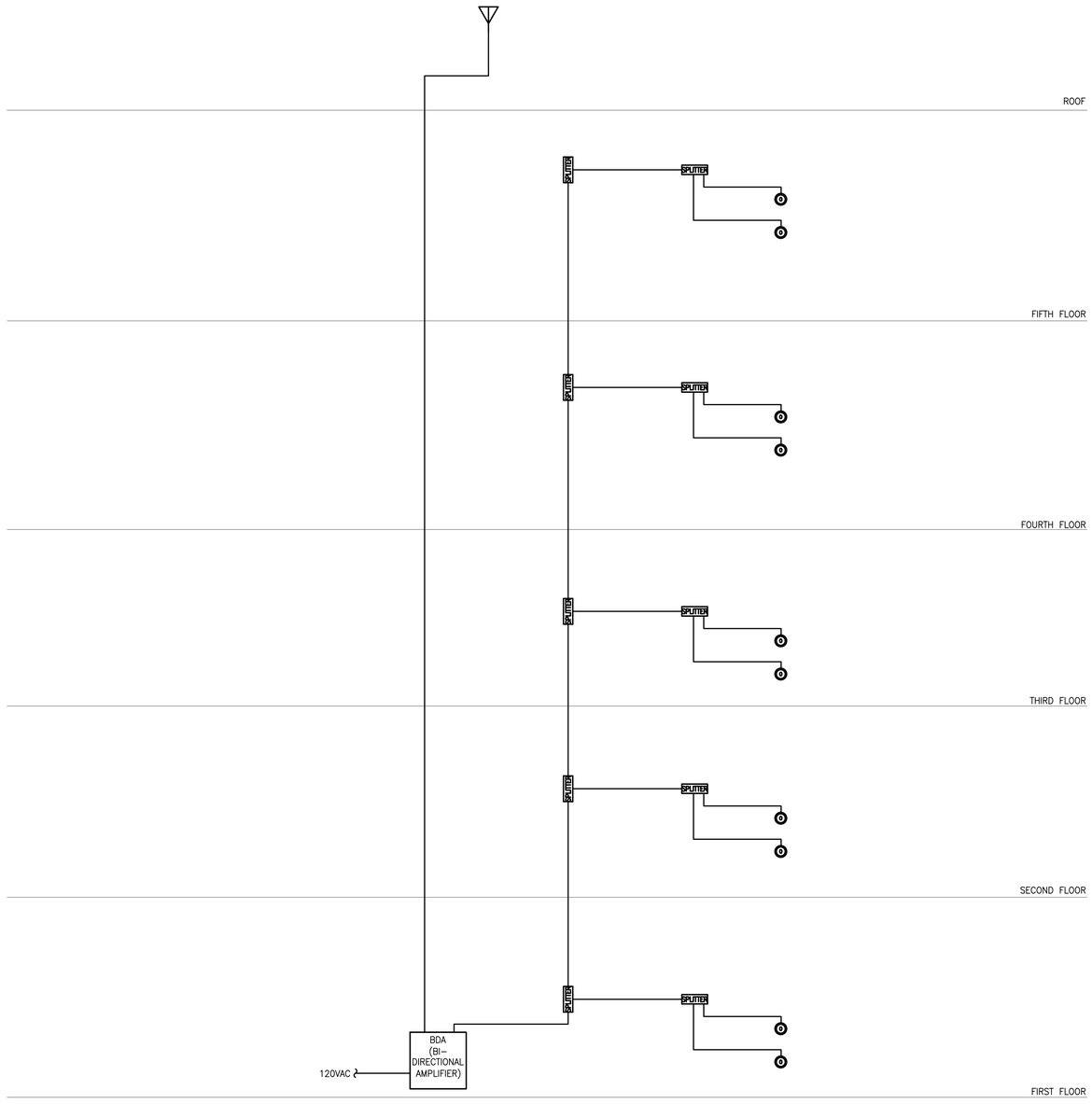
Sheet Title:

ELECTRICAL LOW VOLTAGE RISER DIAGRAM

Seal & Signature

ARMEN KHACHATURIAN, P.E. - NY LICENSE #062261-1
NY CERTIFICATE OF AUTHORIZATION #0071124

Date:	07-18-2016
Scale:	AS NOTED
Job#:	2011
Sheet Title:	E-6.03
Sheet:	of



EMERGENCY RESPONDER RADIO COVERAGE RISER DIAGRAM

(N.T.S.)

EMERGENCY RADIO RESPONDER COVERAGE (ERRC) NOTES.

1. PROVIDE EMERGENCY RADIO RESPONDER COVERAGE (ERRC) IN COMPLIANCE WITH IBC 403.4.6 & IFC 510. DESIGN OF SYSTEM SHALL BE PERFORMED BY A QUALIFIED RF PROFESSIONAL WHO IS EXPERIENCED WITH SUCH SYSTEMS. DESIGN SHALL BE COORDINATED WITH ALL ARCHITECTURAL, STRUCTURAL AND MEPFP DRAWINGS AND LOCAL AHJ REQUIREMENTS.
2. THIS RISER DIAGRAM IS SCHEMATIC AND MAY NOT CONTAIN THE CORRECT QUANTITIES OR LOCATIONS OF DEVICES. IT SHOULD BE USED AS A WIRING AND DESIGN REFERENCE ONLY AND FOR PRELIMINARY PRICING PURPOSES IN THE ABSENCE OF ACTUAL DESIGN DRAWINGS.
3. CONTRACTOR SHALL INCLUDE THE COST OF AN RF EVALUATION OF THE BUILDING IN THE BASE BID BY A QUALIFIED AND CERTIFIED RF CONSULTANT. THE RF EVALUATION OF THE BUILDING SHALL BE PERFORMED AFTER THE STRUCTURE IS NEAR COMPLETION. IF IT IS DETERMINED BY THE EVALUATION THAT THE ERRC SYSTEM IS NOT REQUIRED FOR THE BUILDING TO MEET THE MINIMUM COMMUNICATIONS REQUIREMENTS, NO FURTHER ACTION IS REQUIRED EXCEPT TO SUBMIT THE EVALUATION TO THE BUILDING DEPARTMENT TO SHOW THAT THE BUILDING COMPLIES WITHOUT SUPPLEMENTATION OR AMPLIFICATION.
4. IF IT IS DETERMINED BY THE EVALUATION THAT THE ERRC SYSTEM IS REQUIRED TO MEET THE MINIMUM COMMUNICATIONS REQUIREMENTS FOR THE FACILITY, THE RF CONSULTANT SHALL PROVIDE A COMPLETE DESIGN OF THE SYSTEM, SPECIFIC TO THIS BUILDING IN THE FORM OF SHOP DRAWINGS AS DESCRIBED IN NOTE #5 BELOW. THE CONTRACTOR SHALL RETAIN THE SERVICES OF THE RF CONSULTANT FOR ALL DESIGN WORK. THE CONTRACTOR SHALL PERFORM THE INSTALLATION OR HIRE A QUALIFIED SUB-CONSULTANT TO PERFORM THE INSTALLATION IN ACCORDANCE WITH THE APPROVED SHOP DRAWINGS. COMPLETE TESTING OF THE SYSTEM AND DOCUMENTATION OF ITS COMPLIANCE WITH THE REQUIREMENTS OF THE CODE SHALL BE PERFORMED BY THE RF CONSULTANT AND/OR INSTALLER FOR SUBMISSION TO THE BUILDING DEPARTMENT AS REQUIRED. ALL WORK ASSOCIATED WITH THE DESIGN AND INSTALLATION OF THE ERRC SYSTEM SHALL BE INCLUDED IN THIS CONTRACT AS AN ADD ALTERNATE WITH THE EXCEPTION OF THE RF EVALUATION WHICH SHALL BE INCLUDED IN THE BASE BID.
5. CONTRACTOR SHALL PROVIDE FULL SHOP DRAWINGS DETAILING THE DESIGN, INCLUDING RISER DIAGRAMS, FLOOR PLANS, CUT SHEETS AND EQUIPMENT SPECIFICATIONS. SCOPE OF WORK SHALL ALSO INCLUDE SYSTEM TESTING AND SURVEY OF SIGNAL STRENGTH PRIOR TO INSTALLATION AND POST CONSTRUCTION FOR THE PURPOSES OF SYSTEM DESIGN AND DOCUMENTATION.
6. BDA (BIDIRECTIONAL AMPLIFIER) SHALL BE HOUSED IN (2) NEMA 4 ENCLOSURES LOCATED IN THE MAIN ELECTRIC ROOM.
7. CONTRACTOR MAY HIRE HIS/HER OWN RF SUB-CONSULTANT OR CONTACT STAN MROCZKOWSKI AT PINNACLE WIRELESS, (201)-749-7829, FOR SYSTEM DESIGN.

LEGEND	
SYMBOL	DESCRIPTION
———	COAXIAL CABLE
SPLITTER	CABLE SPLITTER
	OMNIDIRECTIONAL BUILDING ANTENNA
	YAGI ANTENNA

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