PROJECT LOCATION: 777 C A C I A V (C A II | E

UNIT 8 & 11 EDISON, NJ 08820

SCOPE OF WORK:

ELECTRICAL POWER DISTRIBUTION OF NEW ADDITIONAL (3) ELECTRICAL METERS TO MAIN DISTRIBUTION BOARD FOR EXISTING WAREHOUSE.

DRAWING INDEX:

- E1 PROJECT TITLE, SCOPE OF WORK, NOTES AND DRAWING INDEX
- E2 ELECTRICAL EQUIPMENT LAYOUT AND SCHEDULE
- E3 ELEVATION AND INSTALLATION DETAILS
- E4 SINGLE LINE DIAGRAM & TRANSFORMER GROUNDING DETAILS

GENERAL NOTES THIS DESIGN MAY BE USED FOR SECURING PERMITS, BID, PLANING, THE COMPANY'S REVIEW OR SOME OTHER GOAL. THIS DESIGN DOES NOT GUARANTEE THESE APPROVALS, NOR ARE THESE APPROVALS A REQUIREMENT FOR SERVICES OR THE COMPLETION OF THIS WORK 2. THIS DESIGN IS NOT FOR CONSTRUCTION. 3. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST NATIONAL ELECTRICAL CODE, LIFE SAFETY CODE, LOCAL BUILDING CODE, OSHA REGULATIONS, LOCAL, STATE, FEDERAL AND AUTHORITY HAVING 4. GENERAL WORK PRACTICES FOR ELECTRICAL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NECA I STANDARD FOR GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION (ANSI) 5. ALL MATERIALS PROVIDED BY THE CONTRACTOR SHALL BE NEW AND FREE OF DEFECTS, LISTED/LABELED FOR THE INTENDED PURPOSE BY UNDERWRITERS (UL) OR OTHER ORGANIZATION THAT IS ACCEPTABLE TO THE AHJ. 6. THE SYMBOLS AND ABBREVIATIONS LIST ON THIS SHEET IS A COMPREHENSIVE STANDARD GUIDE INTENDED FOR GENERAL USE ON ALL PROJECTS. THEREFORE, NOT ALL THE SYMBOLS AND ABBREVIATIONS CONTAINED IN THIS LIST ARE NECESSARILY USED ON THIS PARTICULAR PROJECT AND SHOULD BE USED FOR CLARIFICATION ONLY. . THESE DRAWINGS AND ACCOMPANYING SPECIFICATIONS ARE INTENDED TO DESCRIBE AND ILLUSTRATE SYSTEMS MHICH MILL NOT INTERFERE MITH THE STRUCTURE OF THE BUILDING AND WHICH WILL FIT INTO THE AVAILABLE SPACES. THE CONTRACTOR IS RESPONSIBLE FOR CAREFULLY LAYING OUT ALL WORK TO CONFORM TO NATIONAL ELECTRICAL CODE CLEARANCES, ARCHITECTURAL, STRUCTURAL, MECHANICAL AND SITE CONDITIONS, TO AVOID OBSTRUCTIONS AND TO ALLOW THE PROPER INSTALLATION OF EACH ITEM 8. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK ONLY. COORDINATE WITH DRAWINGS OF OTHER TRADES TO FIT THE ACTUAL SPACE CONDITIONS, HEADROOM AND SPACE 9. UPON THE COMPLETION OF THE WORK, THE ENTIRE ELECTRICAL SYSTEM SHALL BE TESTED AND SHALL BE SHOWN TO BE IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE INTENT OF THE SPECIFICATIONS AND DRAWINGS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL SYSTEM READY FOR OPERATION AND INSPECTION BY AHJ AND CLIENT. IO. PROVIDE CONDUIT EXPANSION FITTINGS WITH BONDING JUMPERS FOR ALL CONDUITS PASSING THROUGH EXPANSION II. ALL WIRING MUST BE TESTED. ALL WIRING MUST BE FREE OF SHORTS AND BROKEN WIRE. 12. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR CORRECT PHASE SEQUENCE OF ALL 3-PHASE WIRING AND 13. THE USE OF FLEXIBLE CONDUIT FROM LIGHTING FIXTURES TO JUNCTION BOX IS PERMITTED ONLY WHEN A SEPARATE GROUND WIRE IS INSTALLED WITH THE CONDUCTORS INSIDE FLEXIBLE CONDUIT. THE GROUND WIRE MUST BOND THE FIXTURE HOUSING TO THE JUNCTION BOX. MAXIMUM LENGTH SHALL BE 6'-0''. 14. FLEXIBLE CONDUIT INSTALLED OUT OF DOORS, IN ANY MECHANICAL EQUIPMENT ROOMS, OR IN NORMALLY WET AREAS SHALL BE LIQUID TIGHT FLEX WITH SUITABLE FITTINGS. 15. PROVIDE CONDUIT, WIRING, CIRCUITING AND REQUIRED CONNECTIONS TO ALL DEVICES, FIXTURES AND EQUIPMENT. CONNECT TO CIRCUITS AS INDICATED. CIRCUIT NUMBERS ARE FOR INFORMATION PURPOSES ONLY. ACTUAL CIRCUIT NUMBERS SHALL BE DETERMINED IN THE FIELD AND REFLECTED IN THE PANEL SCHEDULE DIRECTORY AND IG. UNLESS SPECIFICALLY DIRECTED OTHERWISE FIRNISH AND INSTALL FACH AND EVERY ITEM CONTAINED IN AND ASSOCIATED WITH, THE WORK INVOLVED AS SHOWN ON THE DRAWINGS AND/OR DESCRIBED IN THE ACCOMPANYING SPECIFICATIONS, TOGETHER WITH ALL APPURTENANCES, COMPONENTS AND INCIDENTALS NECESSARY TO MPLETE THE WORK. CONTRACTOR SHALL PROVIDE CONDUIT, WIRING AND CABLING TO ALL DEVICES, FIXTURES FOR A COMPLETE WORKING SYSTEM BASED ON THE CIRCUITS NOTED. 17. PROVIDE INDEPENDENT SUPPORT FOR DISCONNECT SWITCHES, CONTROL STATIONS, BOXES, PANELS, ETC. WHERE NO WALLS OR OTHER STRUCTURAL SURFACE EXISTS. 18. PROVIDE DISCONNECT SWITCHES FOR ELECTRICAL HEATER, HVAC EQUIPMENT AND EXHAUST FANS WITHIN EYE 19 PROVIDE BRANCH CIRCUIT WIRING TO ALL ITEMS REQUIRING ELECTRICAL CONNECTIONS, WHERE BRANCH CIRCUIT ROUTING OF CONDUITS AND WIRING. UNLESS INDICATED OTHERWISE, ALL BRANCH CIRCUITS SHALL BE MINIMUM #12 20. PROVIDE ARC-FAULT CIRCUIT INTERRUPTER PROTECTION FOR ALL BRANCH CIRCUITS. 21. WHERE EQUIPMENT GROUND CONDUCTOR IS REQUIRED FOR BRANCH CIRCUIT WIRING, INSTALL GROUND WIRE SAME SIZE AS PHASE CONDUCTOR. NOT ALL GROUND WIRES ARE SHOWN ON THE PLAN. 22. ALL GROUNDING SHALL BE IN STRICT COMPLIANCE WITH THE LATEST OSHA AND NEC REQUIREMENTS, GROUND ESISTANCE AT ANY POINT SHALL NOT EXCEED 25 OHMS. 23. ALL CONDUIT CONNECTIONS MUST BE TIGHT TO MAINTAIN A GROUND PATH. 24. ALL CIRCUITS FOR POWER AND LIGHTING SHALL HAVE GROUND CONDUCTOR FOR EQUIPMENT GROUNDING. 25. DESIGN IS BASED ON ALL CONDUCTORS TO BE THAN COPPER AND NO MORE THAN 4 CURRENT CARRYING CONDUCTORS IN THE SAME RACEWAY OR CONDUIT. 26. ALL NEW RECEPTACLES TO BE TAMPER-RESISTANT COMPLY WITH NEC 406.12. 27. PROVIDE SERVICE RECEPTACLE WITHIN 25 FEET OF EACH HVAC EQUIPMENT. 28. BATH, GARAGE, OUTSIDE RECEPTACLES AND RECEPTACLES AT KITCHEN COUNTERTOPS MUST BE GFI. 29. ELECTRICAL CONTRACTOR TO VERIFY ACTUAL INSTALLED EQUIPMENT ELECTRICAL NAME PLATE DATA BEFORE ZING THE CIRCUIT. CONFIRM ELECTRICAL DESIGN VALUES AND ACTUAL EQUIPMENT BEING INSTALLED ARE IN COMPLIANCE WITH ELECTRICAL CODE AND MANUFACTURER INSTALLATION REQUIREMENTS. 30. ALL PANEL BOARDS SHALL BE PROVIDED WITH NAMEPLATES AND SYSTEM IDENTIFICATION NAMEPLATES FOR 31. BREAKERS: THERMAL, MAGNETIC TYPE, QUICK-MAKE, QUICK-BREAK, PLUG-IN TYPE OF SINGLE UNIT CONSTRUCTION. TWO POLE BREAKERS SHALL BE SINGLE UNIT COMMON TRIP TYPE, BREAKERS USED AS SWITCHES FOR 120V LIGHTING CIRCUITS SHALL BE APPROVED FOR THAT USE AND MARKED "SAID", ALL BREAKERS FOR HVAC AND REFRIGERATION EQUIPMENT SHALL BE "HACR" RATED BREAKERS. 32 GRAINDING SYSTEM, PERMANENTIY AND FEFECTIVELY GRAIND ALL METALLIC CANDUIT SUPPORTS CARINETS THE SYSTEM, GROUND CLAMPS SHALL BE APPROVED TYPE, SPECIFICALLY DESIGNED FOR GROUNDING, WHERE GROUNDING CONDUCTOR IS ENCLOSED IN CONDUIT, GROUND CLAMP SHALL BE OF A TYPE WHICH GROUNDS BOTH CONDUCTOR AND CONDUIT, ALL CIRCUITS IN FLEXIBLE METAL OR PLASTIC CONDUIT SHALL INCLUDE A GROUND WIRE SIZED IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE. 33. CONDUIT SHALL BE SIZED TO COMPLY WITH NEC FOR NUMBER AND SIZE OF CONDUCTORS INSTALLED, MINIMUM 24" BELOW GRADE PROVIDE SCHEDULE 40 PVC PLASTIC OR RIGID STEEL CONDUIT BELOW GRADE MINIMUM 3/4" PROVIDE ELECTRICAL METAL TUBING (EMT) MEETING FS W-C563, FLEXIBLE METAL CONDUIT (IN LENGTHS 6' OR LESS) FOR INTERIOR LOCATIONS, EMT CONNECTORS AND COUPLING SHALL BE SET-SCREW TYPE, CLAMP CONDU TO BOXES WITH BUSHING INSIDE AND LOCKNUT OUTSIDE. "MC" & "AC" TYPE CABLES MUST BE INSTALLED IN ACCORDANCE WITH N.E.C. AND CAN NOT BE SUPPORTED FROM CEILING SUPPORT WIRES. 34. ALL CONDUIT AND RACEWAY SYSTEMS TO BE INSTALLED WITH SEPARATE GROUND CONDUCTOR. CC. T SY IS NOT TO BE USED AS THE SOLE GROUNDING MEANS. 35. PRIOR TO THE INSTALLATION OF ANY RACEMAY, COORDINATE REQUIREMENTS AND CLEARANCES I AND GENERAL SERVICES I AND CLEARANCES I AND CLEARANCE I AND 36. CONDUCTORS: INSULATED SOFT ANNEALED 98% PURE COPPER WITH COLOR CODING, B AND SMALLER TO BE SOLID, #8 AND LARGER TO BE STRANDED, MINIMUM #12 UNLESS OTHERY _ INL ATE CONDUCTOR WILL BE ALLOWED. CONDUCTORS MUST BE INSTALLED IN ACCORDANCE WITH ME AND CONDUCTORS MUST BE INSTALLED IN ACCORDANCE WITH ME SUPPORTED FROM CEILING SUPPORT WIRES, THIN MAY NOT BE USED UNDERGROUND, AT OUTSIDE, OR IN WET LOCATIONS. ALL INSULATION TO BE RATED FOR 600 V AND #8 TO 4/0: SERVICE ENTRANCE: OVER #4/O ORDINARY SERVICE: OVER #4/O WET OR HOT SERVICE: WIRE THRU FLUORESCENT FIXTURES OR WHITHIN OF HTG E 37. ALL WIRING TO BE COLOR-CODED AS FOLLOWS: 120/208 VOLT SYSTEM PHASE A OR LI BLACK PHASE B OR L2 RED PHASE B PHASE C PHASE C OR L3 BLUE NEUTRAI GROUND CIFIC Y NOTED OTHERWISE (IE. LOW VOLTAGE PLENUM RATED 38. ALL WIRING SHALL BE IN CONDUIT, UNI ES 34. THE USE OF SHARED NEUTRALS COLUMN TO LOCAL CODES . ALL OTHER EQUIPMENT REQUIRING A NEUTRAL CONDUCTOR SHALL HAVE A DINICATED LL SIZE NEUTRAL. MITTED UNLESS LOCATION WITHIN THE SINGLE FAMILY RESIDENTIAL UNIT. OPERLY SUPPORTED IN ACCORDANCE WITH THE CEILING SYSTEM MANUFACTURER RECOMMENDATION AND L CODE REQUIREMENTS. SHALL HAVE A MINIMUM OF 90 MIN. BATTERY BACK-UP, OR AS REQUIRED BY LOCAL CODE OCK-ON CIRCUIT BREAKERS FOR CIRCUITS SERVING EXIT SIGN FIXTURES AND EMERGENCY 43. LAYOUT BRANC. CIRCUIT WIRING AND ARRANGEMENT OF HOME RUNS FOR MAXIMUM ECONOMY AND EFFICIENCY. 44. INSTALL CONDUIT CONTINUOUS BETWEEN BOXES AND CABINETS WITH NO MORE THAN FOUR (4) 90 DEGREE BENDS. SECURELY FASTEN IN PLACE WITH STRAPS, HANGERS AND STEEL SUPPORTS AS REQUIRED, DO NOT SUPPORT CONDUIT FROM SUSPENDED CEILING GRID OR SUSPENSION WIRES, BEAM CONDUIT ENDS BEFORE INSTALLATION AND THOROUGHLY CLEAN BEFORE INSTALLATION, OPENINGS SHALL BE PLUGGED OR COVERED TO KEEP CONDUIT CLEAN. TERMINALS ON SWITCHES AND OUTLET SHALL NOT BE USED TO "FEED THRU" TO THE NEXT SWITCH OR

45. ALL EXIT AND EMERGENCY LIGHTS SHALL BE CONNECTED AHEAD OF ANY SWITCH.

46. ELECTRICAL CONTRACTOR TO PREPARE AND FURNISH OWNER "AS-BUILT" PLANS FOR ALL WORK INSTALLED.

TYPICAL FOR ALL RECEPTAGLES, OUTLETS

JUNCTION BOXES AND EQUIPMENT: NUMBER

ARC FAULT CIRCUIT INTERRUPTER

DOUBLE DUPLEX RECEPTACLE

SWITCHED DUPLEX RECEPTACLE - ONE OUTLET

SPECIAL RECEPTACLE AMPERE AND VOLTAGE

SURFACE RACEWAY WITH RECEPTACLES, AS

DUPLEX RECEPTACLE - FLOOR MOUNTED

SPECIAL RECEPTACLE - FLOOR MOUNTED

CEILING MOUNTED DUPLEX RECEPTACLE

JUNCTION BOX, SIZE AND MOUNT AS REQUIRED

RATING AS INDICATED ON DRAWING

SWITCHED LOWER CASE LETTER DENOTES SWITCH

GROUND FAULT INTERRUPTER SURGE SUPPRESSION TYPE

ISOLATED GROUND TYPE.

DUPLEX RECEPTACLE

SINGLE RECEPTACLE

INDICATED ON DRAWINGS

FLOOR JUNCTION BOX

ELECTRIC MOTOR

TERMINAL BLOCKS.

INDICATE EQUIPMENT TAG

INDICATE EQUIPMENT TAG

ELECTRICAL PANEL LETTERS

PANELBOARD IDENTIFICATION

HOMERUN CIRCUITS TO PANE OAR.
NUMBER OF ARROWS INDICALES NUMB.

TES CONCEALED NEW EQUIPMENT/CONDUIT

INDICATES EXISTING EQUIPMENT/CONDUIT TO BE

CABLE TRAY (LADDER STYLE) NUMBER DENOTES

DATA SYSTEM SYSTEM OUTLET BOX, WITH 3/4"

CONDUIT SUB UP ABOVE HUNG CEILING

CONDUIT SUB UP ABOVE HUNG CEILING

CONDUIT STUB UP ABOYE HUNG CEILING WITH DRAG LINE AND BUSHED ENDS

DATA OUTLET BOX - FLOOR MOUNTED

TELE OUTLET BOX - FLOOR MOUNTED

TELEPHONE POKE THRU

TELEPHONE/ DATA POKE THRU

3/4" \times 4' \times 6' PLYWOOD FASTENED TO THE WALL WITH 3/4" CHANNEL.

DATA POKE THRU

WITH DRAG LINE AND BUSHED ENDS

TELEPHONE SYSTEM OUTLET BOX, WITH 3/4"

COMBINATION TELEPHONE/DATA BOX WITH I"

COMBINATION TELEPHONE/DATA OUTLET FLOOR

WITH DRAG LINE AND BUSHED ENDS

TAG SEE PANEL SCHEDULE

AND NUMBERS INDICATE

HOMERUNS, I PH 120V

FEEDER TAG WIT COM

EQUIPMENT/CONDUIT

FLEXIBLE CONNECTION

-----O CONDUIT TURNING UP

— CONDUIT TURNING DOWN

BUS DUCT

SMITCH

PUSHBUTTON

DATA:

INDICATING LIGHT

DEMOLISHED AND/OR REMOVED

EQUIPMENT ENCLOSURE LIMITS

HAND OFF AUTO SELECTOR

FOR DETAILS.

I PH 120V

DATA

MOTOR# LOCATION

WALL MOUNTED JUNCTION BOX

NUMBER INDICATES HORSEPOWER

ELECTRICAL OR TELEPHONE MANHOLE

ELECTRICAL OR TELEPHONE HANDHOLE

TERMINAL BOX. SIZE IN ACCORDANCE WITH NEC

REQUIREMENTS AND TO ACCOMMODATE ALL

PULL BOX. SIZE IN ACCORDANCE WITH NEC

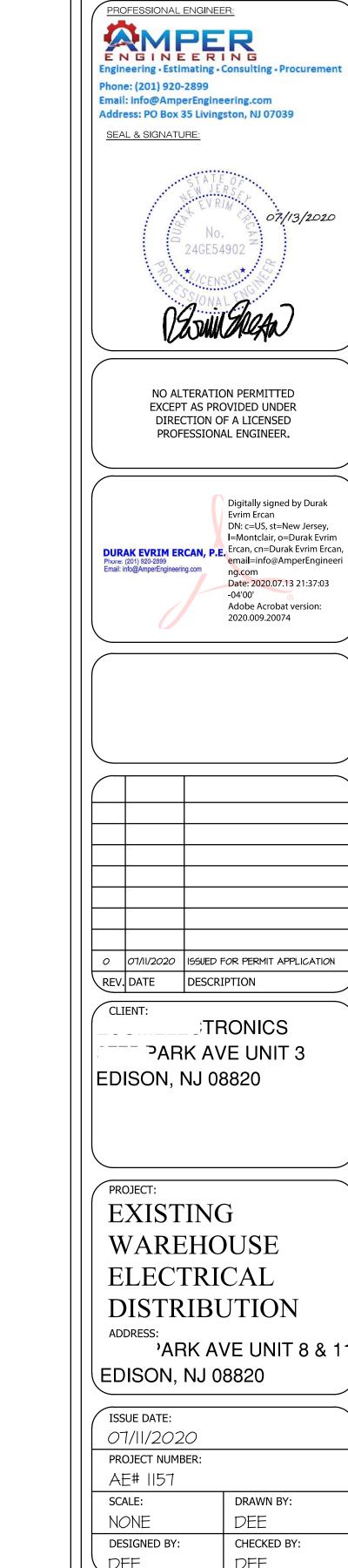
SURFACE PANELBOARD LETTERS & NUMERALS

RECESSED PANELBOARD LETTERS & NUMERALS

WEATHERPROOF

DENOTES PANEL CIRCUIT NUMBER.

<u>LIGHTING:</u> TYPICAL FOR ALL LIGHTING FIXTURES: ABBREVIATIONS: SEE LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION, TYPE, FOR ALL DISTRIBUTION EQUIPMENT. GFP - GROUND FAULT PROTECTION ST - SHUNT TRIP NUMBER DENOTES BRANCH CIRCUIT NUMBER AT RESPECTIVE ABOVE FINISHED FLOOR LIGHTING PANELBOARD. LOWER CASE LETTER DENOTES LSIG - LONG TIME, SHORT TIME INSTANTANEOUS AND ABOVE FINISHED GRADE SWITCHED CIRCUIT. GROUND FAULT PROTECTION FUNCTIONS ARC FLASH INTERRUPTER B 1440 44 TYPICAL LIGHTING FIXTURE 100% - 100% RATED EQUIPMENT. ARC FLASH CIRCUIT INTERRUPTER (E)— ELECTRIC OPERATED DEVICE ASYM ASYMMETRICAL ATS AUTOMATIC TRANSFER SWITCH SINGLE POLE SWITCH — ELECTRONIC TRIP TYPE DEVICE AMERICAN WIRE GAUGE BASIC IMPULSE LEVEL DOUBLE POLE SWITCH BKR BREAKER BLDG BUILDING CAT CATALOG THREE-WAY SWITCH CB CIRCUIT BREAKER THERMAL MAGNETIC CIRCUIT BREAKER TOP CCTY CLOSED CIRCUIT TELEVISION NUMBER DENOTES TRIP AMPERE RATING BOTTON CKT CIRCUIT FOUR-WAY SWITCH NUMBER DENOTES FRAME SIZE AMPERE RATING #P - DENOTES NUMBER OF POLES CENTER LINE CLG CEILING SINGLE POLE KEY SWITCH CNTL CONTROL CIRCUIT BREAKER WITH ELECTRONIC TRIP CO CONDUIT ONLY THREE WAY KEY SWITCH PROGRAMMER. TOP NUMBER INDICATES FRAME DOUBLE DUPLEX RECEPTACLE - FLOOR MOUNTED CPT CONTROL POWER TRANSFORMER SIZE SIZE, BOTTOM NUMBER INDICATES SENSOR RATING. #P - DENOTES NUMBER OF POLES CURRENT TRANSFORMER SINGLE POLE SWITCH WITH PILOT LIGHT COPPER CABINET UNIT HEATER DIMMING SWITCH DEMOLISH DRAW-OUT TYPE THERMAL MAGNETIC CIRCUIT BREAKER TOP NUMBER DENOTES TRIP AMPERE DIAMETER RATING BOTTOM NUMBER DENOTES FRAME SIZE YOS OCCUPANCY SENSOR TYPE SWITCH AMP RATING #P - DENOTES NUMBER OF POLES DISC DISCONNECT DN DOWN DISTRIBUTION PANEL BOARD MEDIUM VOLTAGE DRAW-OUT CIRCUIT BREAKER TOP NUMBER DENOTES TRIP SIZE AMPERE RATING DMG BOTTOM NUMBER DENOTES FRAME SIZE AMP EMPTY CONDUIT RATING #P - DENOTES NUMBER OF POLES MANUAL MOTOR TOGGLE TYPE STARTER WITH **ELEVATION** ELEC ELECTRICAL DRAW-OUT MCC EVNR CIRCUIT BREAKER EQUIP EQUIPMENT COMBINATION STARTER TOP NUMBER DENOTES EMERGENCY LIGHTING EXISTING TO REMAIN TRIP SIZE AMPERE RATING MCP DENOTES MOTOR EXIST EXISTING EXIT EMERGENCY LIGHTING WITH EXIT SIGN N# - DENOTES NEMA STARTER SIZE FIRE ALARM #P - DENOTES NUMBER OF POLES FURNISHED BY OTHER EXIT EXIT SIGN FDR FFFDFR DRAW-OUT FUSED SWITCH TOP NUMBER DENOTES FIXT FIXTURE SWITCH AMPERE RATING BOTTOM NUMBER MS DENOTES FUSE AMPERE RATING FLOOF SENSOR P - DENOTES NUMBER OF POLES FULL VOLTAGE NON-REVERSING FVNR PC PHOTOCELL GROUND GENERATOR GEN 09 OCCUPANCY *G*FCI GROUND FAULT CIRCUIT INTERRUPTER FUSED MEDIUM VOLTAGE DRAW OUT STARTER TC TIME GROUND FAULT INTERRUPTER TOP NUMBER DENOTES FUSE AMPERE RATING N# -HIGH INTENSITY DISCHARGE #P - DENOTES NUMBER OF POLES R DL TES CONTACTOR IDENTIFICATION HOA. HAND-OFF-AUTOMATIC E CO. ICTOR SCHEDULE FOR NUMBER HORSE POWER AND DETAILS. INTERRUPTING CAPACITY UNFUSED DISCONNECT SWITCH. JUNCTION BOX NUMBER DENOTES SWITCH AMPERE RATING KILOVOLT #P - DENOTES NUMBER OF POLES KILOVOLT AMPERE KILOWATT KILOWATT HOUR FUSED DISCONNECT SWITCH TOP OR LOCAL CONTROL PANEL LOCK FOR RESPECTIVE KEY 3P/100 FIRST NUMBER DENOTES SHITCH INTERLOCK WITH KEY CAPTIVE IN LOAD INTERRUPTER SWITCH SECOND NUMBER DENOTES LIGHTING PANEL LTG #P - DENOTES NUMBER OF POLES LIGHTING LOCK FOR RESPECTIVE KEY INTERLOCK MAX MAXIMUM MOTOR CONTROL CENTER ELECTRONIC METERING DEVICE MEDIUM VOLTAGE UNFLISED LOAD INTERRUPTER MCS MOLDED CASE SWITCH SWITCH NUMBER DENOTES SWITCH AMPERE MDP MAIN DISTRIBUTION PANEL #P - DENOTES NUMBER OF POLES AMMETER - AMMETER MIN MINIMUM MAIN SWITCHBOARD MSG MAIN SWITCHGEAR VOLTMETER - VOLTMETER MEDIUM VOI TAGE FUSED LOAD INTERRUPTER MANUAL TRANSFER SWITCH SWITCH TOP NUMBER DENOTES SWITCH AMPERE NON-AUTOMATIC WHM RATING #P - DENOTES NUMBER OF POLES WATTHOUR NORMALLY CLOSED NATIONAL ELECTRIC CODE NOT IN CONTRACT UTILITY COMPANY METER MAGNETIC MOTOR STARTER WITH THERMAL NTS NOT TO SCALE FUSE MAGNETIC MOTOR STARTER CONTACTOR
N# - DENOTES NEMA STARTER SIZE POLE SPD SURGE PROTECTOR PHASE PANEL COMBINATION MAGNETIC MOTOR STARTER WITH DISCONNECT SWITCH. POTENTIAL TRANSFORMER } H= HARMONIC N# - DENOTES NEMA STARTER SIZE POWER PANEL FILTER POWER CURRENT TRANSFORMER (CT. RECEP RECEPTACLE NUMBER RATIO DENOTES CT PRIMARY POWER FACTOR CORRECTION AND SECONDARY CURRENT RATINGS PFCC EXISTING TO BE RELOCATED NUMBER IN PARENTHESIS INDICATES QUANTITY RVNR REDUCED VOLTAGE, NON REVERSING CAPACITOR SHIELDED CABLE POTENTIAL TRANSFORMER WITH PRIMARY AND SURGE SUPRESSION ENCLOSED CIRCUIT BREAKER TOP OR SWITCHBOARD **-**WV--FIRST NUMBER DENOTES SWITCH RESISTOR SWGR SWITCHGEAR) 1000 OR CB AMPERE RATING BOTTOM OR SECOND SYMMETRICAL NUMBER DENOTES FUSE AMPERE RATING #P - DENOTES NUMBER OF TEL TELEPHONE TYP TYPICAL **GENERATOR** (100HP) UNLESS OTHERWISE NOTED UON ENCLOSED CIRCUIT BREAKER/COMBINATION VOLT OR VOLTAGE MEDIUM VOLTAGE CABLE STRESS CIRCUIT PROTECTOR CONTINUOUS AMPERE VOLT AMPERE CONNECTION VFD VARIABLE FREQUENCY DRIVE #P - DENOTES NUMBER OF POLES MHM WATT HOUR METER 600 VOLT CABLE LIMITER CONNECTION WP WEATHERPROOF WW WIREWAY LIGHTNING ARRESTER, NUMBER IN XFMR TRANSFORMER ENCLOSED CT GROUNDED WYE RELAY. NUMBER (5) DENOTE ANSI DEVICE FUNCTION UNGROUNDED WYE AUTOMATIC TRANSFER OPEN DELTA CONNECTION DELTA CONNECTION NODE AUTOMATIC TRANSFER V 1200A SWITCH WITH BYPASS 1 4P - 4W ISOLATION WIRE GROUND TEST ELECTRODE GROUND ROD XFMR-I 1000 KVA TRANSFORMER SIZE AS NOTED 13,200 V-480Y/2TIV 3P - 4W VOLTAGE AS INDICATED UNDERGROUND GROUND SYSTEM BARE CABLE. SIZE AS NOTED OR INDICATED. BUILDING GROUND SYSTEM BARE CABLE SIZE AS NOTED OR INDICATED PACKAGED EQUIPMENT WITH DISCONNECT GROUND GRID CABLE CONNECTION SWITCH AND MOTOR STARTER BATTERY #V DENOTES DC VOLTAGE



MPER ENGINEERING Engineering • Estimating • Consulting • Procurement Phone: (201) 920-2899 Email: info@AmperEngineering.com Address: PO Box 35 Livingston, NJ 07039 SEAL & SIGNATURE: 07/13/2020 24GE5490 NO ALTERATION PERMITTED EXCEPT AS PROVIDED UNDER DIRECTION OF A LICENSED PROFESSIONAL ENGINEER. Digitally signed by Durak Evrim Ercan DN: c=US, st=New Jersey, I=Montclair, o=Durak Evrim

O 07/11/2020 ISSUED FOR PERMIT APPLICATION REV. DATE DESCRIPTION

email=info@AmperEngineeri

Date: 2020.07.13 21:37:03

Adobe Acrobat version:

2020.009.20074

CLIENT: **∴TRONICS** F --- PARK AVE UNIT 3 |EDISON, NJ 08820

PROJECT: **EXISTING** WAREHOUSE ELECTRICAL **DISTRIBUTION** ADDRESS:

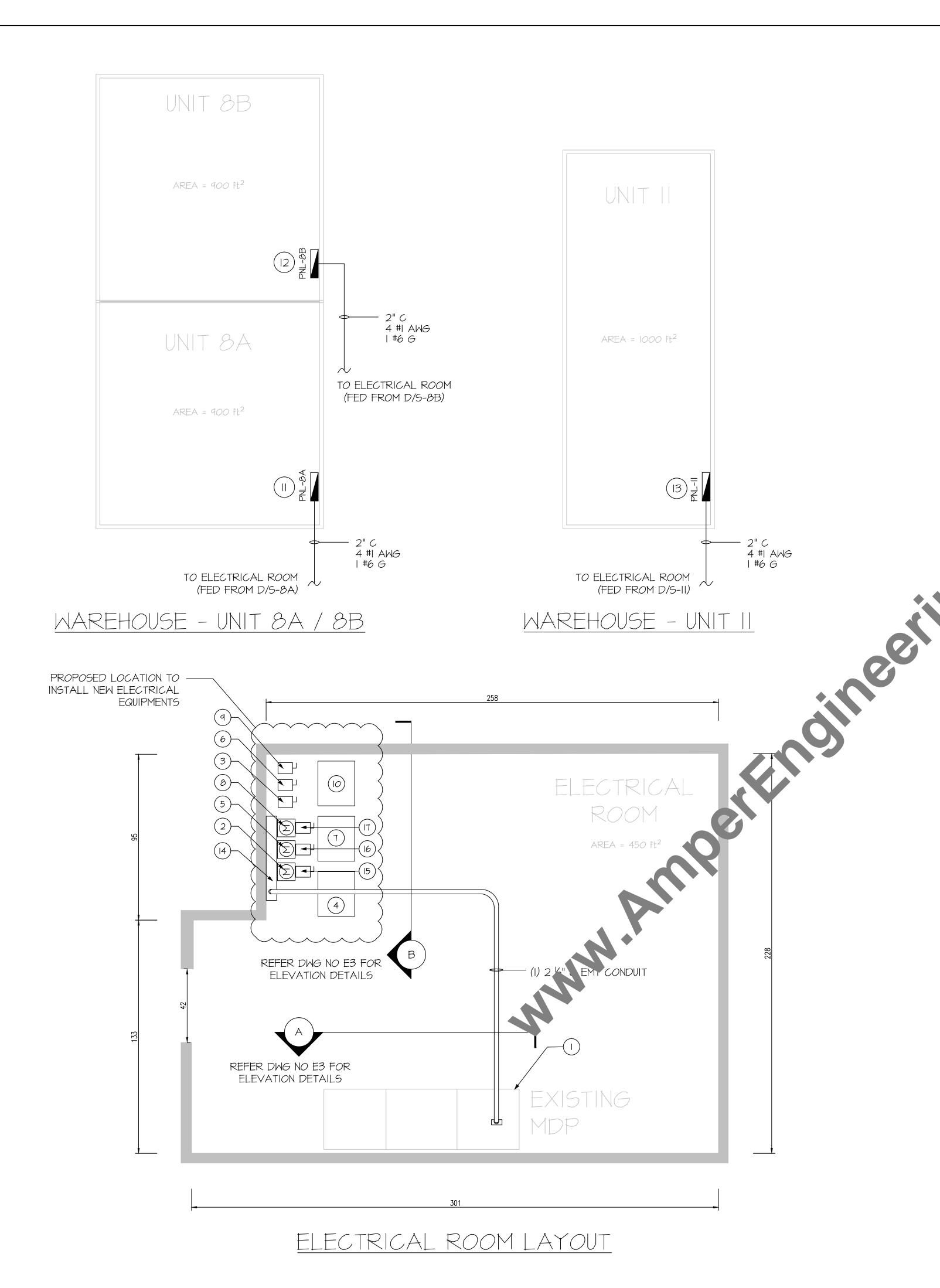
'ARK AVE UNIT 8 & 11 EDISON, NJ 08820

ISSUE DATE: 07/11/2020 PROJECT NUMBER: AE# 1157 DRAWN BY: NONE DESIGNED BY: CHECKED BY: DEE

DRAWING TITLE: PROJECT TITLE SCOPE OF WORK DRAWING INDEX

DRAWING NO:

REVISION:



EQUIPMENT SCHEDULE						
ITEM NO.	TAG NO.	DESCRIPTION				
		(3) POLE BREAKER ADDED, RATED 150 AMP				
2	WHM-8A	WATTHOUR METER AND METER PAN AS REQUIRED				
3	D/S-8A	3P, FUSED 100A DISCONNECT SWITCH				
4	XFMR-8A	30kVA STEP DOWN TRANSFORMER 480V A - 120V/208V Y				
5	WHM-8B	WATTHOUR METER AND METER PAN AS REQUIRED				
6	D/S-8B	3P, FUSED 100A, DISCONNECT SWITCH				
7	XFMR-8B	30kVA STEP DOWN TRANSFORMER 480V Δ - 120V/208V Y				
8	MHM-II	WATTHOUR METER AND METER PAN AS REQUIRED				
q	D/S-II	3P, FUSED 100A, DISCONNECT SWITCH				
10	XFMR-II	30kVA STEP DOWN TRANSFORMER 480V A - 120V/208V Y				
	PNL-8A	DISTRIBUTION PANEL 100A, 120/208V, 3P-4W, 42 CKT				
(12)	PNL-8B	DISTRIBUTION PANEL 100A, 120/208V, 3P-4W, 42 CKT				
(13)	PNL-II	DISTRIBUTION PANEL 100A, 120/208V, 3P-4W, 42 CKT				
[14]		WIREWAY (SIZE 6"x 6")				
[15]	D/S-8A	3P, FUSED 50A, DISCONNECT SWITCH				
(16)	D/S-8B	3P, FUSED 50A, DISCONNECT SWITCH				
[17]	D/S-II	3P, FUSED 50A, DISCONNECT SWITCH				

NOTES:

- I. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
- 2. ELECTRICAL PLANS ARE DIAGRAMMATIC ONLY COORDINATE. COORDINATE ELECTRICAL EQUIPMENT LOCATION AND INSTALLATION WITH EQUIPMENT BEING SERVED. PROVIDE ALL POWER FINAL CONNECTIONS TO THE SYSTEM AS REQUIRED.
- 3. SPACE PROVISION FOR THE NEW (3) ELECTRICAL METER AND (3) STEP DOWN TRANSFORMERS AT ELECTRICAL ROOM SHALL BE FIELD VERIFIED.
- 4. STEP DOWN TRANSFORMERS SHALL BE GROUNDED PER ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE. SEE DRAWING NO. E4 FOR TYPICAL TRANSFORMER GROUNDING DETAILS.
- 5. ELECTRICAL EQUIPMENT TO BE INSTALLED SHALL HAVE KAIC RATING DERIVED FROM MDP KAIC RATING.



PROFESSIONAL ENGINEER:

NO ALTERATION PERMITTED EXCEPT AS PROVIDED UNDER DIRECTION OF A LICENSED PROFESSIONAL ENGINEER.

O 01/II/2020 ISSUED FOR PERMIT APPLICATION
REV. DATE DESCRIPTION

TRONICS

PARK AVE UNIT 3

EDISON, NJ 08820

EXISTING
WAREHOUSE
ELECTRICAL
DISTRIBUTION

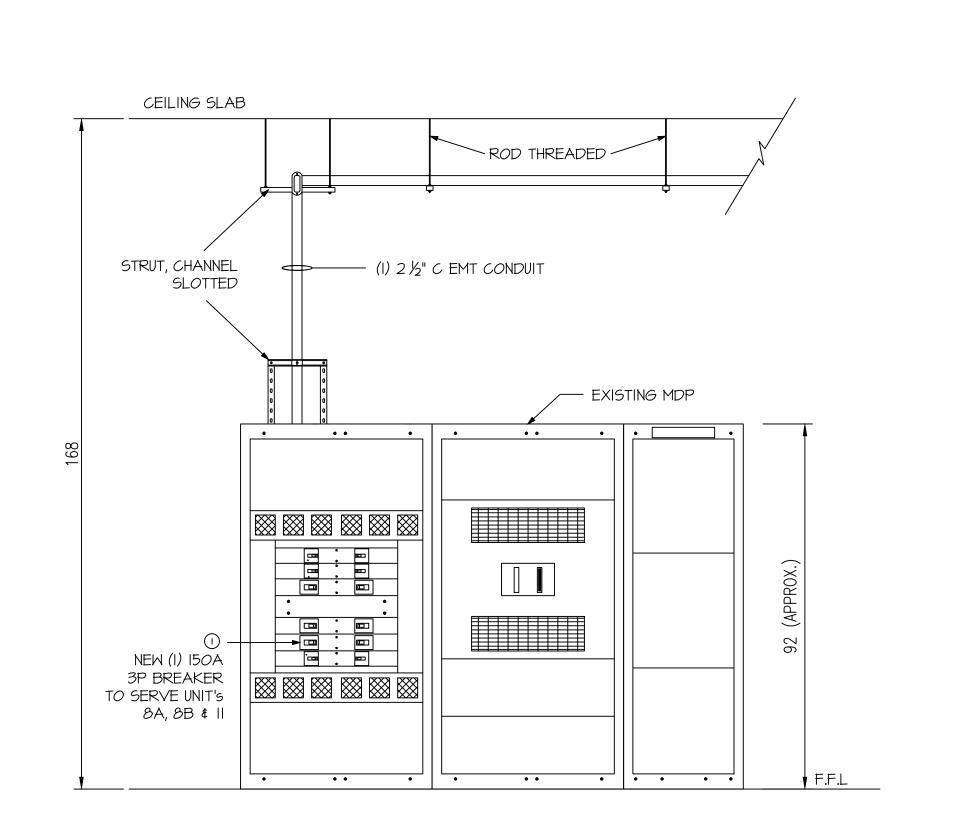
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ISSUE DATE:	
07/11/2020	
PROJECT NUMBER:	
AE# 1157	
SCALE:	DRAWN BY:
NONE	DEE
DESIGNED BY:	CHECKED BY:
DEE	DEE

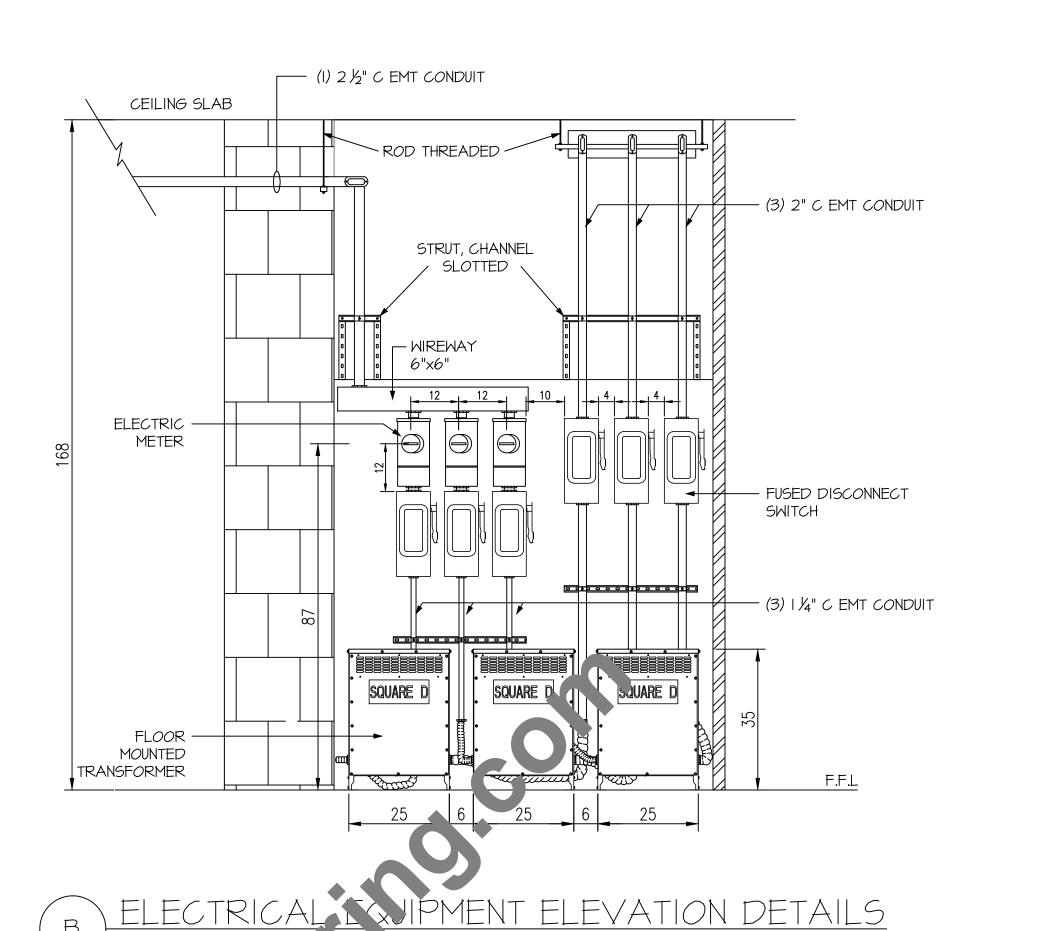
ELECTRICAL EQUIPMENT LAYOUT AND SCHEDULE

RAWING NO:

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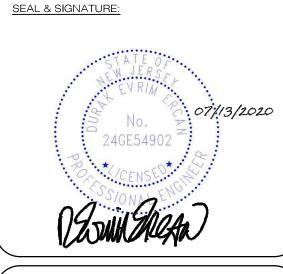


EXISTING MDB ELEVATION DETAILS SCALE: ½" = 1'-0"



NOTES:

- I. CONTRACTOR TO VERIFY ALL NOTED DIMENSIONS IN FIELD. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
- 2. INSTALLATION OF NEW WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.
- 3. COORDINATE WITH ARCHITECT TO VERIFY ELEVATION AND DETAILS FOR EXACT LOCATION, MOUNTING HEIGHTS AND ADDITIONAL INFORMATION PRIOR TO COMMENCE WORK.



Engineering • Estimating • Consulting • Procurement

Email: info@AmperEngineering.com Address: PO Box 35 Livingston, NJ 07039

PROFESSIONAL ENGINEER:

Phone: (201) 920-2899

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0 07/11/2020 ISSUED FOR PERMIT APPLICATION REV. DATE DESCRIPTION

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PROJECT: **EXISTING** WAREHOUSE ELECTRICAL DISTRIBUTION

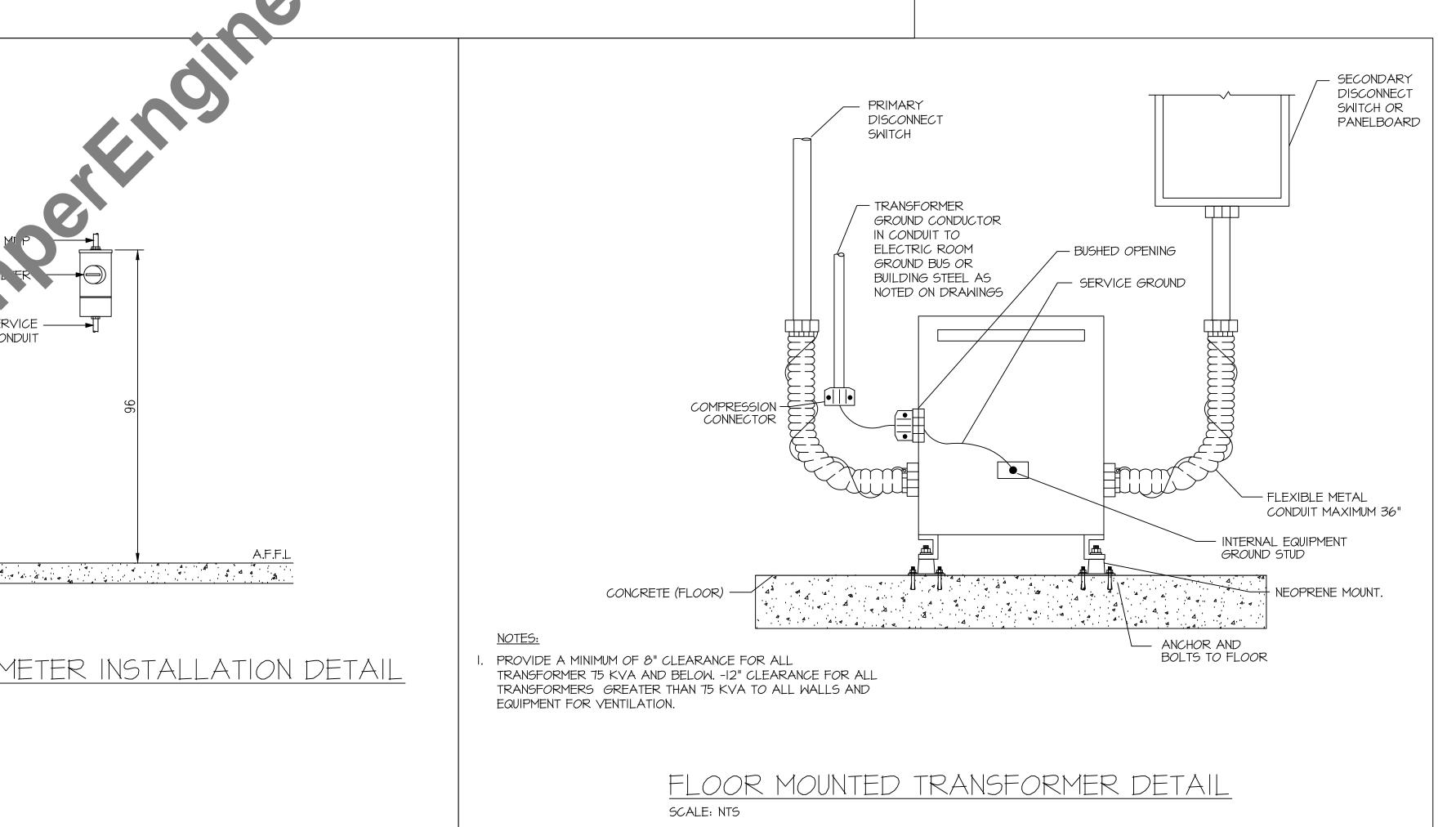
'ARK AVE UNIT 8 & 11 **EDISON, NJ 08820**

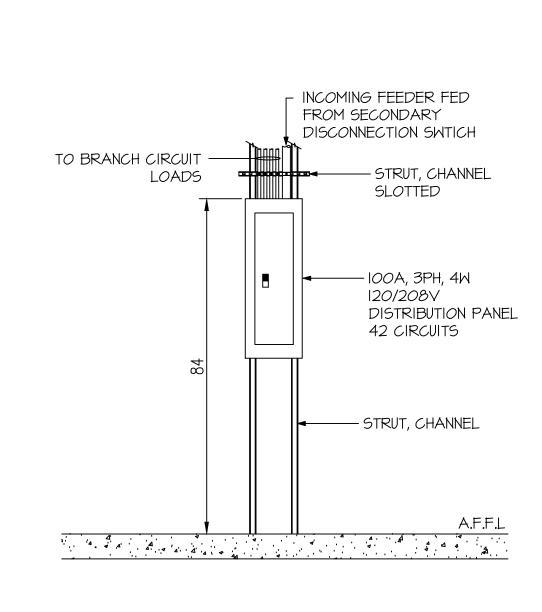
ISSUE DATE: 07/11/2020 PROJECT NUMBER: AE# 1157 DRAWN BY: NONE DEE DESIGNED BY: CHECKED BY: DEE

DRAWING TITLE: **ELEVATION AND** INSTALLATION DETAILS

DRAWING NO:

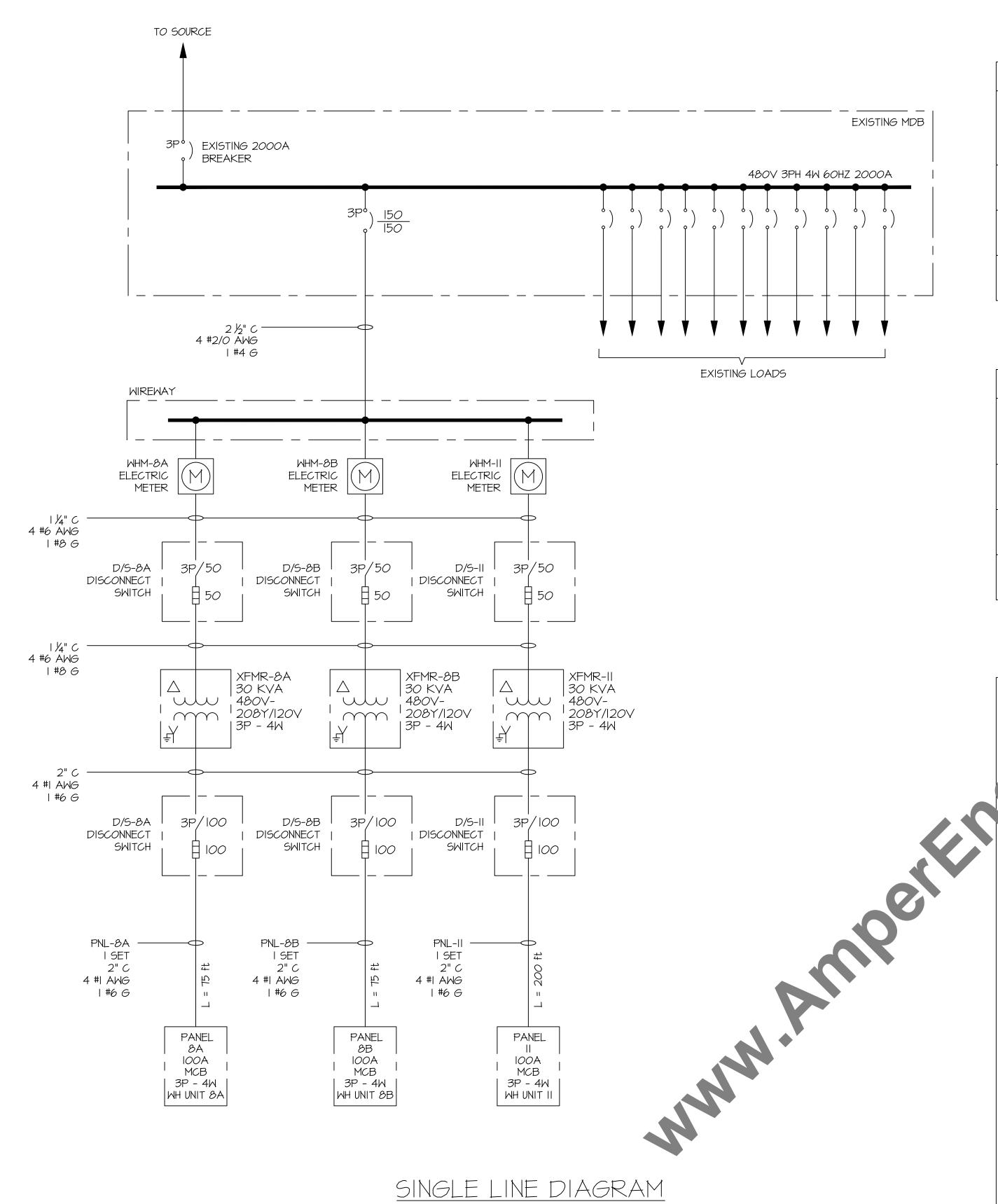
REVISION:





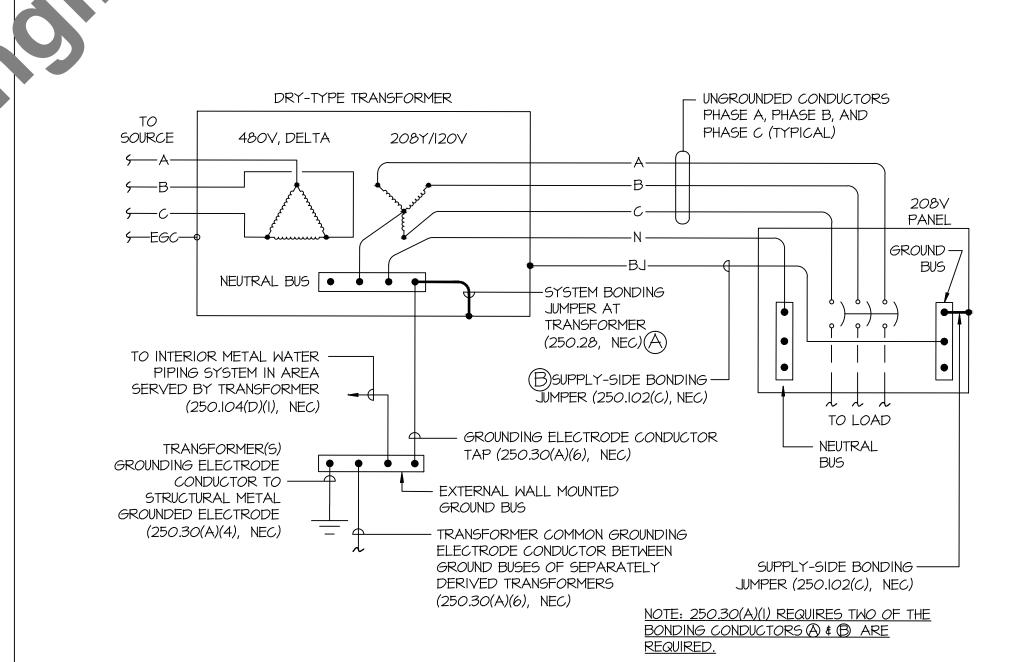
DISTRIBUTION PANEL INSTALLATION DETAIL SCALE: NTS

ELECTRIC METER INSTALLATION DETAIL SCALE: NTS



					VOLTA	GE DROF	, CALCUL	ATION				
	CABLE ROUTE SYSTEM PARAMETERS			INPUT PARAMETERS					RESULT			
TAG	FROM	ТО	PHASE	CONDUCTOR	INSTALLATION	DISTANCE IN FEET (ft)	VOLTAGE	MAX V.D (%)	CURRENT (AMP) (END OF CABLE RUN)	PARALLEL (SETS)	VOLTAGE DROP	MINIMUM CONDUCTOR SIZE
PNL-8A	UNIT-8A	ELEC RM	3	COPPER	CONDUIT	75	208	3	100	I	0.93%	#I AWG
PNL-8B	UNIT-8B	ELEC RM	3	COPPER	CONDUIT	75	208	3	100	I	0.93%	#I AWG
PNL-II	UNIT-II	ELEC RM	3	COPPER	CONDUIT	200	208	3	100	I	2.47%	#I AWG

			COND	UIT FILL	TABLE				
	CON	DUIT	CONDUCTORS GROUND				FROUND	FILL	
TAG	TYPE	SIZE	TYPE	SIZE	NO. OF WIRES	SIZE	NO. OF WIRES	(%)	
PNL-8A	EMT	2"	THHN	#I AI.c	4	#6 G	I	19.17%	
PNL-8A	EMT	2"	THHN	#1 # 16	4	#6 G	I	19.17%	
PNL-8A	EMT	2"	THHN	#I AWG	4	#6 G	I	19.17%	



GROUNDING TABLE					
CABLE ID	NEC REFERENCE	SIZE			
А	250.28 TABLE 250.102(C)(1)	#6			
В	250.102 (C) TABLE 250.102(C)(I)	#6			

COMMERCIAL BUILDING TRANSFORMER SOLID GROUNDING SCALE: NTS

PROFESSIONAL ENGINEER:

PROFESSIONAL ENGINEER:

ENGINEER:

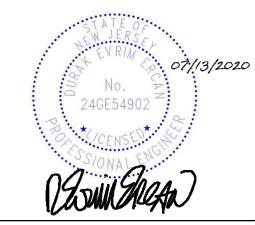
Engineering · Estimating · Consulting · Procurement

Phone: (201) 920-2899

Email: info@AmperEngineering.com

Address: PO Box 35 Livingston, NJ 07039

SEAL & SIGNATURE:



NO ALTERATION PERMITTED EXCEPT AS PROVIDED UNDER DIRECTION OF A LICENSED PROFESSIONAL ENGINEER.

O OT/II/2020 ISSUED FOR PERMIT APPLICATION
REV. DATE DESCRIPTION

TRONICS

PARK AVE UNIT 3

EDISON, NJ 08820

PROJECT:
EXISTING
WAREHOUSE
ELECTRICAL
DISTRIBUTION
ADDRESS:
'ARK AVE UNIT 8 & 11

ISSUE DATE:

O7/II/2020

PROJECT NUMBER:

AE# 1157

SCALE: DRAWN BY:

NONE DEE

DESIGNED BY: CHECKED BY:

DEE

DEE

EDISON, NJ 08820

DRAWING TITLE:
SINGLE LINE DIAGRAM &
TRANSFORMER
GROUNDING DETAILS

DRAWING NO:

E4

0

REVISION: