DESIGN INTENT NOTES

IT IS THE INTENT OF THIS PROJECT TO REPLACE THE EXISTING HEATING AND COOLING PLANT, STAND-BY POWER GENERATOR SYSTEM, THE ELECTRICAL DISTRIBUTION EQUIPMENT, PLANT AREA LIGHTING SYSTEMS AND FIRE ALARM SYSTEMS. THESE SYSTEMS SHALL BE REPLACED IN TOTALITY.

THIS WORK SHALL TAKE PLACE IN A PHASED APPROACH THAT WILL ALLOW UNINTERRUPTED HEATING / COOLING AND POWER TO ALL THE BUILDINGS AND EQUIPMENT. THE CONTRACT DOCUMENTS INDICATE THE MINIMUM PHASING REQUIREMENTS TO CONVEY THE DESIGN INTENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL PHASING OF WORK INCLUDING ALL NECESSARY LABOR AND MATERIALS, TEMPORARY WORK, PIPING FEEDERS AND EQUIPMENT IN ORDER TO PROPERLY PHASE THE WORK AND MEET THE DESIGN INTENT.

THE SCOPE OF WORK SHALL INCLUDE TEMPORARY SERVICES. THE CONTRACTOR SHALL PROCURE TEMPORARY BOILERS AND CHILLERS FOR AS LONG AS IS NECESSARY IN ORDER TO PROVIDE TEMPORARY HOT WATER AND CHILLED WATER. THE CONTRACTOR SHALL PROVIDE TEMPORARY POWER FOR EQUIPMENT INCLUDING GENERATORS FOR POWER AND ALL FUEL REQUIRED. PROVIDE TEMPORARY PIPING CONNECTIONS AND MODIFICATIONS TO EXISTING PIPING SYSTEMS. PROVIDE TEMPORARY CONTROLS AND MODIFICATIONS TO EXISTING CONTROLS IN ORDER TO FACILITATE THE INTEGRATION OF TEMPORARY AND NEW SYSTEMS SO THAT THE BUILDINGS ARE CONTINUALLY SERVED WITH HOT WATER AND OR CHILLED WATER.

IN GENERAL, IT WILL BE NECESSARY TO DEMOLISH ALL ABANDONED MECHANICAL, PLUMBING, AND ELECTRICAL EQUIPMENT PIPING AND CONDUITS IN THE MAIN PLANT AND IN THE ORIGINAL PLANT TO MAKE SPACE FOR NEW EQUIPMENT. THE INTENT IS TO INSTALL THE NEW CHILLER AND BOILER PLANT AS WELL THE NEW PRIMARY/SECONDARY PIPING SYSTEMS AS WELL AS ALL NECESSARY SUNDRY ITEMS SUCH AS PUMPS, COOLING TOWERS BREECHING, COMBUSTION AIR DAMPERS, FUEL OIL PIPING, GAS PIPING, OIL PUMPS, POWER, AND CONTROLS SO THAT THE NEW PLANT IS FULLY FUNCTIONAL BEFORE REMOVAL OF THE TEMPORARY HEATING AND COOLING EQUIPMENT. THE EXISTING BUILDINGS AND SECONDARY PUMPS SHALL REMAIN CONNECTED TO EXISTING PIPING AND TEMPORARY HEATING/COOLING PLANT UNTIL SUCH TIME AS THE PLANT IS OPERATIONAL.

WHEN THE NEW HEATING/COOLING PLANT IS OPERATIONAL INCLUDING SECONDARY PUMPS AND CONTROLS, EACH BUILDING'S SECONDARY PIPING SYSTEM CAN BE CONNECTED TO THE NEW SECONDARY PIPING SYSTEMS AND PUMP SETS SO AS TO CAUSE THE MINIMUM OF SYSTEM DOWN TIME FOR EACH BUILDING. WHEN ALL BUILDINGS ARE CONNECTED TO THEIR NEW SECONDARY PUMP SETS AND THEN NEW PLANT DEMOLITION OF THE REMAINING EXISTING PUMPS, POWER AND CONTROLS CAN BEGIN.

WHEN DEMOLITION OF THE EXISTING ABANDONED EQUIPMENT IS COMPLETE THE NEW DOMESTIC WATER HEATING SYSTEM SHALL BE CONSTRUCTED ALONG WITH MODIFICATIONS TO THE DOMESTIC WATER, SANITARY, STORM AND GAS SYSTEMS. WHEN THE NEW DOMESTIC WATER HEATING SYSTEM HAS BEEN CONSTRUCTED AND IS FULLY OPERATIONAL AND CONNECTED TO THE EXISTING DISTRIBUTION SYSTEM, THE EXISTING HEATING SYSTEM MAY BE DEMOLISHED.

IN SUPPORT OF THE PROJECT'S MECHANICAL, PLUMBING AND ELECTRICAL WORK THERE IS A CERTAIN AMOUNT OF GENERAL CONSTRUCTION THAT IS REQUIRED. THIS WORK SHALL BE PHASED AS NECESSARY IN ORDER TO FACILITATE THE CONSTRUCTION OF NEW MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT AND SYSTEMS. THIS SHALL INCLUDE SITE WORK AND RESTORATION AS WELL AS CUTTING, PATCHING, PAINTING, CONCRETE, FIRE STOPPING, DOORS AND HARDWARE.

SYMBOLS AND ABBREVIATIONS

SYMBOL	ABBREVIATION	DESCRIPTION
	-	CONDUIT AND WIRING
	-	CONDUIT & WIRING TO BE REMOVED UON
EXUG	-	EXISTING BURIED CONDUIT
DMUG	-	DEM. BURIED CONDUIT
UG-E	-	BURIED CONDUIT
OH	-	OVERHEAD CONDUCTORS
	-	HOMERUN TO PANEL, ARROWS INDICATE # 1P
	-	MULTI-POLE HOMERUN
	-	ELECTRICAL EQUIPMENT AS INDICATED
	-	ELECTRICAL EQUIPMENT TO BE REMOVED UON
M	-	ELECTRIC METER
J	-	JUNCTION BOX
F	-	FUSED DISCONNECT SWITCH
F	-	UNFUSED DISCONNECT SWITCH
M F	-	COMBINATION MOTOR STARTER/FUSED DISC.
M	-	MOTOR STARTER
M	-	MOTOR
	-	BATTERY PACK EMERGENCY LIGHT FIXTURE
	-	EXIT LIGHT, FACES-SHADED, CHEVRON-ARROW
S_x	-	SINGLE POLE SWITCH (x - INDICATES FIXTURE BEING CONTROLLED)
S_x^3	-	THREE WAY SWITCH (x - INDICATES FIXTURE BEING CONTROLLED)
S_x^4	-	FOUR WAY SWITCH (x - INDICATES FIXTURE BEING CONTROLLED)
S_M	-	MOTOR RATED TOGGLE SWITCH
	-	DUPLEX RECEPTACLE
	-	DOUBLE DUPLEX RECEPTACLE
	-	SPECIAL RECEPTACLE
F	-	FIRE ALARM MANUAL PULL STATION
F	-	FIRE ALARM COMBINATION AUDIO/VISUAL DEVICE (15/75 CD - STROBE)
F 110	-	FIRE ALARM COMBINATION AUDIO/VISUAL DEVICE (110 CD - STROBE)
F	-	FIRE ALARM STROBE 15/75 CD
F 110	-	FIRE ALARM STROBE 110 CD
CO	-	CARBON MONOXIDE DEVICE (15/75 CD - STROBE)
S EL; SH; SC	-	SMOKE DETECTOR. EL - ELEVATOR LOBBY; SH - SMOKE HATCH; SC - PLENUM RATED ABOVE CEILING
SB	SB	FIRE ALARM DEVICE. SB - SOUNDER BASE FOR SMOKE OR CARBON MONOXIDE DETECTOR
H	-	HEAT DETECTOR
CO	-	CARBON MONOXIDE DETECTOR
TS	-	FIRE ALARM TAMPER SWITCH
WF	-	FIRE ALARM WATER FLOW SWITCH
ANN	-	FIRE ALARM ANNUNCIATOR PANEL
CM	CM	FIRE ALARM CONTROL MODULE
MM	MM	FIRE ALARM MONITORING MODULE
FACP	FACP	FIRE ALARM CONTROL PANEL
BPS	BPS	BOOSTER POWER SUPPLY
DGP	DGP	DATA GATHERING PANEL
R	-	FIRE ALARM RELAY
	EOL	END OF LINE RESISTOR
TC	-	TIME CLOCK
O	-	PUSHBUTTON
EPO	EPO	EMERGENCY POWER OFF SWITCH
	CB	CIRCUIT BREAKER
	-	ENCLOSED CIRCUIT BREAKER
250A 150F	-	FUSED SWITCH
G	GEN	GENERATOR
OR	GND	GROUND AS PER LOCAL CODE
	-	GROUND BAR
OR	-	GROUND ROD
	-	TRANSFER SWITCH
OR T	XFMR	TRANSFORMER
	CT	CURRENT TRANSFORMER
	-	UTILITY POLE
WM	WM	WATER MAIN
B	-	BOILER BREAK GLASS STATION

SYMBOL	ABBREVIATION	DESCRIPTION
	NC	NORMALLY CLOSED CONTACTS
	NO	NORMALLY OPEN CONTACTS
	CV	CONTROL VALVE
M	MD	MOTORIZED DAMPER
	SD OR CFSD	SMOKE DAMPER
UH	UH	UNIT HEATER
	A	AMPERE(S)
	AC	AIR CONDITIONER
	ACC	AIR CONDITIONER CONDENSER
	AFF	ABOVE FINISHED FLOOR
	AF	AMPERAGE OF FUSE
	AGL	ABOVE GRADE LEVEL
	AHU	AIR HANDLING UNIT
	AL	ALUMINIUM
	ARC	ARC FAULT INTERRUPTER
	AS	AMPERAGE OF SWITCH
	ATS	AUTOMATIC TRANSFER SWITCH
	AWG	AMERICAN WIRE GAUGE
	BCW	BARE COPPER WIRE
	BLDG	BUILDING
	BMS	BUILDING MANAGEMENT SYSTEM
	C	CONDUIT
	CD	CANDELA
	CKT	CIRCUIT
	CLG	CEILING
	COL	COLUMN
	CU	COPPER
	CUH	CABINET UNIT HEATER
	DEM.	DEMOLISH AND REMOVE
	DISC	DISCONNECT
	DIM	DIMMER
	DWG	DRAWING
	ELEV	ELEVATOR
	EMT	ELECTRICAL METALLIC TUBING
	EM	EMERGENCY
	EX.	EXISTING TO REMAIN
	F	FLOOR
	FBO	FURNISHED BY OTHERS
	FC	FAN COIL UNIT
	GEN	GENERATOR
	GFI	GROUND FAULT INTERRUPTER
	HP	HORSEPOWER
	HVAC	HEATING VENTILATION AIR CONDITIONING
	IMC	INTERMEDIATE METAL CONDUIT
	KVA	KILO-VOLT-AMPERE
	KW	KILO-WATT
	MAX	MAXIMUM
	MCB	MAIN CIRCUIT BREAKER
	MCC	MOTOR CONTROL CENTER
	MIN	MINIMUM
	MLO	MAIN LUG ONLY
	MTS	MANUAL TRANSFER SWITCH
	NIC	NOT IN CONTRACT
	NL	NIGHT LIGHT
	NTS	NOT TO SCALE
	OH	OVERHEAD
	P	POLE
	PBO	PROVIDED BY OTHERS
	PNL	PANEL
	PT	PRESSURE TREATED
	PVC	POLY VINYL CHLORIDE
	REL.	REMOVE AND RELOCATE
	RGS	RIGID GALVANIZED STEEL
	RTU	ROOF TOP UNIT
	SCH	SCHEDULE
	SPD	SURGE PROTECTION DEVICE
	SW	SWITCH(ES)
	TELCO	TELEPHONE COMPANY
	TYP	TYPICAL
	UG	UNDERGROUND
	UON	UNLESS OTHERWISE NOTED
	UV	UNIT VENTILATOR
	VIF	VERIFY IN FIELD
	V	VOLT(S)
	VSD	VARIABLE SPEED DRIVE
	WG	WIRE GUARD
	WH	WATER HEATER
	WP	WEATHERPROOF

NOTES:
1. ALL SYMBOLS AND ABBREVIATIONS MAY NOT BE APPLICABLE FOR THIS PROJECT.
2. SEE LIGHTING FIXTURE SCHEDULE FOR LIGHT FIXTURE SYMBOLS.

GENERAL NOTES

1. ALL WORK SHOWN IS NEW UNLESS OTHERWISE NOTED (UON) EXISTING TO REMAIN (EX.).
2. THE DRAWINGS ARE TO BE CONSIDERED SCHEMATIC ONLY AND DO NOT NECESSARILY SHOW THE EXACT LOCATIONS AND DETAILS OF THE WORK TO BE INSTALLED.
3. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND PAYING ALL FEES ASSOCIATED WITH THIS WORK INCLUDING FILING WITH THE UTILITY COMPANY (AS REQUIRED), AND WITH LOCAL AUTHORITY HAVING JURISDICTION.
4. ALL WORK INVOLVING THE ELECTRIC SERVICE SHALL BE COORDINATED AND APPROVED BY THE UTILITY COMPANY.
5. THE CONTRACTS SHALL SUBMIT FOR REVIEW AND APPROVAL A COMPOSITE SHOP DRAWING, FULLY COORDINATED WITH ALL OTHER TRADES INDICATING ALL DUCTWORK, MECHANICAL EQUIPMENT, PIPING, ELECTRICAL EQUIPMENT, PLUMBING PIPING AND EQUIPMENT, LIGHTS, CONDUITS, DIFFUSERS, GRILLES AND FIRE ALARM DEVICES.
6. ALL CONDUCTORS SHALL BE COPPER UON "ON DRAWINGS".
7. ELECTRONIC FILES OF THE MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS ARE AVAILABLE TO THE CONTRACTOR. THE ENGINEER MAY GRANT THE CONTRACTOR A LIMITED LICENSE TO MAKE A DERIVATIVE WORK OF THE DATABASE FOR THE PURPOSE OF SHOP DRAWINGS, SUBMITTALS AND AS-BUILT DRAWINGS. UPON REQUEST, THE ENGINEER SHALL PROVIDE A RELEASE FORM THAT MUST BE SIGNED AND RETURNED BY THE CONTRACTOR PRIOR TO RELEASE OF THE ELECTRONIC FILES.
8. CIRCUIT NUMBERS ARE FOR INFORMATION PURPOSES ONLY. ACTUAL CIRCUIT NUMBERS SHALL BE DETERMINED IN THE FIELD.
9. CORE DRILLING OR TRENCHING THROUGH AN EXISTING FLOOR SLAB, WHEN REQUIRED, SHALL BE COORDINATED WITH THE OWNER. FLOOR SLABS SHALL BE RADAR SCANNED PRIOR TO CORE DRILLING OR TRENCHING. ALL WORK, INCLUDING CORE DRILLING, RADAR SCAN, INSTALLATION OF FIRE STOPPING, & CONDUIT/CABLE INSTALLATION SHALL BE PERFORMED DURING NON-BUSINESS HOURS AND INCLUDED IN BASE BID. USE EXTREME CAUTION DURING ANY CUTTING OPERATION TO AVOID DAMAGE TO EXISTING EQUIPMENT/SYSTEMS. ANY ITEMS DAMAGED AS A RESULT OF CORE DRILLING SHALL BE REPAIRED AT NO COST TO THE CLIENT. ALL CORES SHALL BE FIRE SEALED.
10. FOR EACH WALL MOUNTED COMMUNICATIONS OUTLET, PROVIDE A 1900 JUNCTION BOX WITH AN EXTENDER COLLAR AND 1 INCH CONDUIT WITH DRAGLINE 6 INCHES ABOVE ACCESSIBLE CEILING FOR INSTALLATION OF CABLE BY OTHERS.
11. COMMUNICATION WIRING BY OTHERS. COORDINATE COMMUNICATION JACKS WITH REPRESENTATIVE, TYPICAL.
12. WHERE GFI RECEPTACLES ARE CIRCUITED WITH GENERAL CONVENIENCE RECEPTACLES, THE GFI RECEPTACLE SHALL BE THE LAST DEVICE ON THE CIRCUIT.
13. INSTALL CONDUIT EXPANSION FITTINGS AT ALL LOCATIONS WHERE CONDUITS CROSS BUILDING OR STRUCTURE EXPANSION JOINTS.
14. CEILING MOUNTED RECEPTACLES SHALL BE MOUNTED FLUSH TO CEILING.
15. UNLESS OTHERWISE NOTED, DISCONNECT SWITCHES, STARTERS, HOAS AND MOTOR RATED TOGGLE SWITCHES OUTSIDE OF THE MCC FOR MECHANICAL PUMPS, CABINET AND UNIT HEATERS, RETURN FANS, ROOF FANS, VAV BOXES, COMPRESSORS, FAN COIL UNITS, AIR HANDLERS AND CONDENSERS SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. COORDINATE ALL WORK WITH THE MECHANICAL CONTRACTOR. MCC AND INTEGRAL VFDS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
16. DISCONNECT SWITCHES FOR MOTORIZED DAMPERS, CFSD/SD AND VAV BOXES SUPPLIED BY MECHANICAL CONTRACTOR AND INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR. SWITCHES NOT SHOWN ON PLANS.
17. INCLUDE IN BASE BID (10) 1P-20A CIRCUITS (150' LENGTH EACH) FOR HVAC SYSTEM CONTROL PANELS. EXACT LOCATION OF CONTROL PANELS SHALL BE COORDINATED WITH DIVISION 23 IN THE FIELD. CIRCUITS SHALL ORIGINATE FROM THE FOLLOWING PANELBOARDS:

    BOILER ROOM - LP1-6,8,10,
    LP2-16,18,20,22,
    LP3-6,8,10
18. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CUTTING, PATCHING, PAINTING, AND FINAL RESTORATION REQUIRED TO FACILITATE THE DEMOLITION AND INSTALLATION OF ALL ELECTRICAL EQUIPMENT, INCLUDING BUT NOT LIMITED TO PANELBOARDS, CONDUITS, WIRING, DEVICES, FIXTURES, ETC. INCLUDING ABOVE CEILINGS CONTRACTOR TO REMOVE AND REPLACE CEILINGS, AND OPEN AND PATCH WALLS, AS REQUIRED TO EXECUTE THE ELECTRICAL WORK.

COMMISSIONING SCOPE NOTES

1. REFER TO SPECIFICATION SECTION 19113 FOR GENERAL CX REQUIREMENTS, AND SECTION 260800 FOR COMMISSIONING OF ELECTRICAL SYSTEMS. THE OWNER SHALL HIRE A THIRD PARTY COMMISSIONING AGENT.
2. PRIOR TO COMMISSIONING, THE CONTRACTOR SHALL PROVIDE A STATEMENT CONFIRMING THAT ALL SYSTEMS ARE FULLY OPERATIONAL AND ALL PRE-FUNCTIONAL TESTS AND CHECKS LISTED BELOW HAVE BEEN SUCCESSFULLY COMPLETED. SUBMIT A COPY OF ALL CHECK SHEETS FOR ENGINEER REVIEW AND APPROVAL.
3. PRE-FUNCTIONAL TESTS AND CHECKS (PREREQUISITES FOR COMMISSIONING):

    THE CONTRACTOR SHALL PERFORM THE FOLLOWING AT A MINIMUM -
    - ENSURE THAT ALL SUBMITTALS ARE COMPLETED AND APPROVED BY ENGINEER AND COMMISSIONING AGENT.
    - CERTIFY THAT ALL SYSTEMS TO BE COMMISSIONED, SUBSYSTEMS AND EQUIPMENT HAVE BEEN INSTALLED, CALIBRATED AND STARTED; ACCORDING TO THE CONTRACT DOCUMENTS COMPLETE. ALL MANUFACTURER STARTUP REQUIREMENTS.
    - CERTIFY THAT ALL RELEVANT INSTRUMENTATION AND CONTROL SYSTEMS HAVE BEEN COMPLETED AND CALIBRATED; ARE OPERATING ACCORDING TO CONTRACT DOCUMENTS; AND THAT PRETEST SET POINTS HAVE BEEN RECORDED.
    - SET SYSTEMS, SUBSYSTEMS AND EQUIPMENT TO OPERATING MODE TO BE TESTED (E.G., NORMAL SHUT DOWN, NORMAL AUTO POSITION, NORMAL MANUAL POSITION, AND ALARM CONDITIONS).
    - VERIFY EACH OF THE SYSTEMS ONCE IT IS OPERATING IN A STEADY STATE CONDITION. REFER TO THE SEQUENCE OF OPERATIONS.
    - INSPECT AND VERIFY THE POSITION OF EACH DEVICE AND INTERLOCK IDENTIFIED ON CHECKLISTS. SIGN OFF EACH ITEM AS ACCEPTABLE OR FAILED. REPEAT THIS TEST FOR EACH OPERATING CYCLE THAT APPLIES TO SYSTEM BEING TESTED.
    - SIMULATE CONDITIONS REQUIRED IN ORDER TO TEST ALL SAFETY CUTOUTS, ALARMS AND INTERLOCKS WITH LIFE SAFETY SYSTEMS DURING EACH MODE OF OPERATION WHEN APPLICABLE.
    - ANNOTATE CHECKLIST OR DATA SHEET WHEN A DEFICIENCY IS OBSERVED.
    - VERIFY EQUIPMENT INTERFACE WITH MONITORING AND CONTROL SYSTEM.
3. AFTER PRE-FUNCTIONAL TESTING IS COMPLETE, THE CONTRACTOR SHALL PERFORM FUNCTIONAL TESTING IN THE PRESENCE OF THE COMMISSIONING AGENT FOR THE SYSTEMS LISTED BELOW IN ACCORDANCE WITH THE COMMISSIONING SPECIFICATIONS:
    - GENERATOR
    - MCC
4. AFTER FUNCTIONAL TESTING, THE COMMISSIONING AGENT (CX) SHALL ISSUE A REPORT OF TEST RESULTS AND DOCUMENT ANY DEFICIENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CORRECTION OF ALL DEFICIENCIES. THE CONTRACTOR SHALL SEND A WRITTEN RESPONSE TO THE OWNER/ENGINEER/CX AGENT THAT AN OPEN ISSUE HAS BEEN RECTIFIED. THE DEFICIENCY SHALL NOT BE CONSIDERED RESOLVED UNTIL THE APPROPRIATE RETESTING IS PERFORMED WITH THE CX AGENT.
5. PRIOR TO TURNOVER (OWNER ACCEPTANCE), A COMPLETE AND SUCCESSFUL DEMONSTRATION OF ALL SYSTEM OPERATING FUNCTIONS AND ALARMS SHALL BE PERFORMED BY THIS CONTRACTOR IN THE PRESENCE OF THE OWNERS REPRESENTATIVE AND COMMISSIONING AGENT.
6. IN ADDITION TO THE ABOVE, THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:
    - PARTICIPATE IN MAINTENANCE ORIENTATION AND INSPECTION MEETING.
    - PARTICIPATE IN PROCEDURES MEETING FOR TESTING.
    - EXECUTE INSTALLATION PRE-FUNCTIONAL CHECK SHEETS.
    - SUPPORT FUNCTIONAL TESTING WITH QUALIFIED TECHNICIANS.
    - RESPOND TO CX DEFICIENCIES IN ACCORDANCE WITH OWNER SCHEDULE.
    - PARTICIPATE IN FINAL REVIEW AT ACCEPTANCE MEETING.
    - NOTIFY COMMISSIONING AGENT AT MINIMUM TWO WEEKS IN ADVANCE OF ANY TESTING.

DEFINITION OF TERMS

1. WHEREVER IN THE CONTRACT DOCUMENTS THE WORD "CLIENT" IS USED, IT MUST BE UNDERSTOOD THAT "COUNTY OF ROCKLAND" IS INTENDED.
2. WHEREVER IN THE CONTRACT DOCUMENTS THE WORD "ENGINEER" IS USED, IT MUST BE UNDERSTOOD THAT "OLA CONSULTING ENGINEERS" IS INTENDED.
3. WHEREVER IN THE CONTRACT DOCUMENTS THE WORDS "ELECTRICAL UTILITY" OR "POWER COMPANY" ARE USED, IT MUST BE UNDERSTOOD THAT "ORANGE AND ROCKLAND" IS INTENDED.
4. WHEREVER IN THE CONTRACT DOCUMENTS THE WORDS "TELEPHONE UTILITY" OR "TELCO" ARE USED, IT MUST BE UNDERSTOOD THAT "VERIZON" IS INTENDED.
5. WHEREVER IN THE CONTRACT DOCUMENTS THE WORDS "FIRE ALARM SYSTEM" OR "FIRE ALARM VENDOR" ARE USED, IT MUST BE UNDERSTOOD THAT "ALARM SPECIALISTS" IS INTENDED.
6. "WORK" MUST BE DEEMED TO CONSIST OF ALL LABOR AND OPERATIONS, TRANSPORTATION, HOISTING, MATERIALS, TOOLS, EQUIPMENT, SERVICES, INSPECTIONS, INVESTIGATIONS, COORDINATION AND SUPERVISION REQUIRED AND / OR REASONABLY NECESSARY TO PRODUCE THE CONSTRUCTION REQUIRED BY THE CONTRACT DOCUMENTS.
7. "FURNISH" MEANS THE DESIGN, FABRICATION, PURCHASE AND DELIVERY TO THE JOB SITE.
8. "INSTALL OR INSTALLATION" MEANS THE ACT OF PHYSICALLY PLACING, APPLYING, SETTING, ERECTING, ANCHORING, SECURING, ETC., CONSTRUCTION MATERIALS, EQUIPMENT, FURNISHINGS, APPLIANCES, AND SIMILAR ITEMS SPECIFIED AND FURNISHED AT THE JOB SITE. INSTALLATION OF SPECIFIED ITEMS MUST BE COMPLETE IN ALL RESPECTS.
9. "PROVIDE" MEANS TO FURNISH AND INSTALL CONSTRUCTION MATERIAL, EQUIPMENT, ETC. AS DEFINED ABOVE.
10. THE FOLLOWING ARE DEFINITIONS OF SHOP DRAWING STAMP ACTIONS:

A. "NO EXCEPTIONS TAKEN" MEANS THAT THE SHOP DRAWING IS CORRECT AS TO PERFORMANCE, CAPACITY, ETC. AND SUBSTANTIAL CONFORMANCE TO THE CONTRACT DRAWINGS AND SPECIFICATIONS. FABRICATION AND/OR PURCHASE MAY COMMENCE.

B. "MAKE CORRECTIONS NOTED" MEANS THAT THE SHOP DRAWING IS CORRECT AS TO PERFORMANCE, CAPACITY, ETC. AND SUBSTANTIAL CONFORMANCE TO THE CONTRACT DRAWINGS AND/OR SPECIFICATIONS, SUBJECT TO AND IN COMPLIANCE WITH THE ANNOTATIONS AND/OR CORRECTIONS INDICATED ON THE SHOP DRAWING. FABRICATION AND/OR PURCHASE MAY COMMENCE.

C. "AMEND AND RESUBMIT" MEANS THAT THE COMMENTS AND/OR CORRECTION ARE SO EXTENSIVE AND IMPORTANT THAT THE REVIEWER WANTS TO SEE HOW THE COMMENTS AND/OR CORRECTIONS ARE RESOLVED PRIOR TO RELEASE FOR FABRICATION AND/OR PURCHASE. FABRICATIONS AND/OR PURCHASE MAY NOT COMMENCE.

D. "REJECTED" MEANS THAT THE SHOP DRAWING DOES NOT COMPLY OR CONFORM TO THE CONTRACT DRAWINGS AND/OR SPECIFICATIONS. FABRICATION AND/OR PURCHASE MAY NOT COMMENCE.

TYPICAL BRANCH CIRCUIT WIRING LEGEND

- 2-#12 & 1-#12 GND (1-1P-20A OR 1-1P-15A CB)
- 3-#12 & 1-#12 GND (3P-20A OR 3P-15A CB)
- 2-#12 & 1-#12 GND (2P-20A OR 2P-15A CB)

13 — CIRCUIT # / RECEPTACLE

10 — A: LIGHT FIXTURE TYPE; B: SWITCH CONTROL; LIGHT FIXTURE; CIRCUIT #

NOTES:
1. EACH 120V AND 277V CIRCUIT SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR. SHARED NEUTRAL HOMERUNS ARE NOT PERMITTED.
2. CONDUCTORS SHALL BE INCREASED FOR VOLTAGE DROP AND DERATING AS PER APPLICABLE ELECTRICAL CODE. FOR CIRCUITS THAT ARE BETWEEN 100' AND 150' IN LENGTH, PHASE AND NEUTRAL CONDUCTORS SHALL BE #10 AWG. FOR CIRCUITS THAT ARE BETWEEN 150' AND 225' IN LENGTH, PHASE AND NEUTRAL CONDUCTORS SHALL BE #8 AWG. FOR LENGTHS GREATER THAN 225' IN LENGTH, VERIFY CONDUCTOR SIZES WITH ENGINEER.

TRENCHING NOTES

1. CONTRACTOR SHALL LOCATE ALL EXISTING UNDERGROUND UTILITIES THAT ARE NOT PART OF N.Y. STATE "CODE 753" PRIOR TO DIGGING.
2. ALL EXCAVATING IN THE AREA OF THE EXISTING UNDERGROUND EQUIPMENT, PIPES AND CONDUITS SHALL BE PERFORMED BY HAND.
3. ANY AREA/PLANTS OR LANDSCAPING OR PAVEMENTS DISTURBED DURING THE EXCAVATION SHALL BE RESTORED OR REPLACED TO MATCH EXISTING CONDITIONS BY THE CONTRACTOR AT NO COST TO THE OWNER.
4. ANY EXISTING BURIED CONDUITS, DRAINAGE, SPRINKLER PIPING, ETC. THAT IS DISTURBED AND/OR DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
5. THE PLANS SHOW SOME KNOWN SUBSURFACE STRUCTURES, ABOVE GROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST IN THE WORKING AREA, EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATIONS INDICATED. IN PARTICULAR, THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH PIPELINES, SUBSURFACE STRUCTURES AND/OR UTILITIES IN THE AREA MAY OR MAY NOT BE SHOWN; AND IT SHALL BE HIS RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK. 48 HOURS BEFORE YOU DIG, DRILL OR BLAST, CALL 1-800-962-7962 (NY STATE).

DEMOLITION NOTES

1. ALL EQUIPMENT SHALL BE DISCONNECTED AND REMOVED BACK TO POWER SOURCE ORIGINATION UNLESS OTHERWISE NOTED (UON) EXISTING TO REMAIN (EX.).
2. CONTRACTOR SHALL VERIFY EXTENT OF DEMOLITION WORK IN THE FIELD PRIOR TO BID AND SHALL INCLUDE ALL LABOR AND MATERIALS IN BASE BID INCLUDING ALL TEMPORARY CONNECTIONS, CONDUIT AND WIRE IN ORDER TO ACCOMMODATE CONSTRUCTION AND PROVIDE CONTINUOUS SERVICE TO DEVICES AND SYSTEMS TO REMAIN, TEMPORARY AND PERMANENTLY. WORK REQUIRING THE SHUT-DOWN OF THE BUILDING POWER SHALL BE PERFORMED DURING OVERTIME AND SHALL BE INCLUDED IN BASE BID.
3. CIRCUIT BREAKER, CONDUIT AND CONDUCTOR SIZES INDICATED SHALL BE FIELD VERIFIED PRIOR TO BID.
4. ALL EXISTING ELECTRICAL EQUIPMENT NO LONGER IN USE, SUCH AS DISCONNECT SWITCHES, MOTOR CONTROLLERS, MOTOR STARTER PANELS, ETC. SHALL BE REMOVED UON.
5. ALL DISCONNECTED & REMOVED EXISTING ELECTRICAL ITEMS THAT ARE NOT BEING REUSED SHALL BE RETURNED TO THE OWNER OR DISPOSED OF AS DIRECTED.
6. THE CONTRACTOR SHALL INCLUDE IN THE BASE BID FOR ALL MATERIAL & LABOR REQUIRED FOR THE EXTENSIONS, REROUTING & RELOCATION OF EXISTING SYSTEM COMPONENTS, EQUIPMENT, WIRING, CONDUITS & CABLING SO AS TO MAINTAIN OPERATION OF ALL SYSTEMS THROUGHOUT THE BUILDING DURING DEMOLITION & CONSTRUCTION PHASES.

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KEYPLAN

CAMPUS - KEYPLAN

NO.	DESCRIPTION	DATE
1	ISSUED FOR BID	11/01/2021

PROJECT
CAPITAL PROJECT 4466
BUILDING E UTILITY PLANT
RENOVATION & IMPROVEMENTS
DR. ROBERT L. YEAGER HEALTH CENTER
50 SANATORIUM ROAD,
POMONA, NY 10970

DRAWING TITLE
ELECTRICAL SYMBOLS, ABBREVIATIONS AND GENERAL NOTES

SEAL	SCALE	PROJECT NO.
	NONE	NRCK00160.00
	DRAWN BY: VB	DRAWING NO.
	CHECKED BY: ML	E0.1
	DATE: 04-28-2020	

1 ELECTRICAL DEMOLITION SITE PART PLAN
SCALE: 1" = 10'-0"

NORTH

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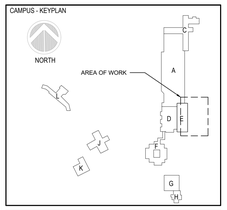

NO.	DESCRIPTION	DATE
1	ISSUED FOR BID	11/01/2021

PROJECT

CAPITAL PROJECT 4466
BUILDING E UTILITY PLANT
RENOVATION & IMPROVEMENTS
DR. ROBERT L. YEAGER HEALTH CENTER
50 SANATORIUM ROAD,
POMONA, NY 10970

DRAWING TITLE

ELECTRICAL DEMO & TEMP WORK SITE PART PLAN

SEAL

SCALE: AS NOTED	PROJECT NO.: NRCK00016.00
DRAWN BY: VB	DRAWING NO.: E0.2
CHECKED BY: ML	
DATE: 04-28-2020	

1 ELECTRICAL SITE PART PLAN
SCALE: 1" = 10'-0"

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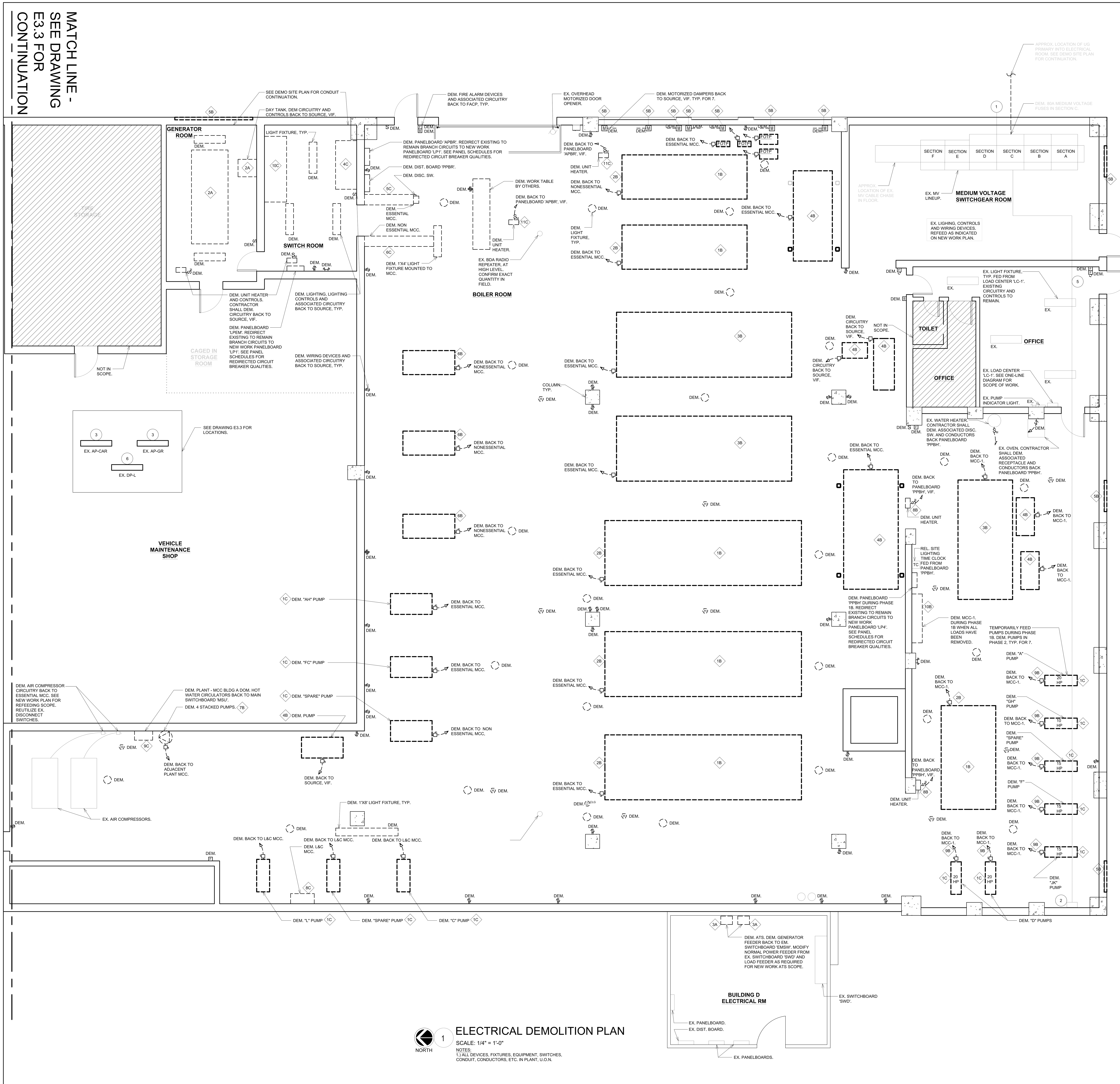
DRAWING TITLE

ELECTRICAL SITE PART PLAN - POWER

SEAL

SCALE	AS NOTED
PROJECT NO.	NRCK0016.00
DRAWN BY	VB
DRAWING NO.	E0.3
CHECKED BY	ML
DATE	04-28-2020



ELECTRICAL DEMOLITION PLAN

1 ELECTRICAL DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

NOTES:
1.) ALL DEVICES, FIXTURES, EQUIPMENT, SWITCHES, CONDUIT, CONDUCTORS, ETC. IN PLANT, U.O.N.

ELECTRICAL PHASING CONCEPT NOTES

1. INSTALL THE NEW GENERATOR OUTSIDE OF THE BUILDING AND MAKE OPERATIONAL.
2. REMOVE EXISTING GENERATOR AND PREP THE ROOM TO BE A NEW ELECTRICAL ROOM.
3. INSTALL NEW 480-VOLT FEEDER FROM GENERATOR TO BLDG. D. IN BLDG. D ELECTRICAL ROOM, INSTALL NEW STEP-DOWN TRANSFORMER AND 208-VOLT EMERGENCY DISTRIBUTION BOARD. REPLACE EXISTING 3 POLE ATS'S WITH 4 POLE ATS'S. ENERGIZE BLDG. D ATS'S. TEMP FEED ATS LOADS FROM NORMAL POWER SWITCHBOARD WHILE NEW EQUIPMENT IS INSTALLED IN BLDG. D. ELECTRICAL ROOM.
   EXTEND NORMAL POWER AND LOAD CIRCUITRY TO NEW ATS'S. MAKE OPERATIONAL.
4. INSTALL TEMPORARY SERVICE CONDUCTORS AND CONDUIT FROM THE
   EXISTING 750KVA PAD MOUNTED TRANSFORMER TO EXISTING SWITCHBOARD MSU. PENETRATE SIDE OF 750KVA TRANSFORMER ENCLOSURE ABOVE GRADE FOR TEMPORARY SERVICE CONDUIT.
5. ELECTRICAL SHUTDOWN #1:
   MODIFY 750KVA TRANSFORMER SECONDARY COPPER DETAIL TERMINAL POINTS AS REQUIRED TO LAND TEMPORARY SERVICE CONDUCTORS. REMOVE SECONDARY CONDUCTORS BETWEEN 1000KVA TRANSFORMER AND MSU. TERMINATE BOTH ENDS OF TEMPORARY SERVICE CONDUCTORS. DISCONNECT PRIMARY SERVICE FROM 1000KVA TRANSFORMER. REMOVE 1000KVA TRANSFORMER PRIMARY CONDUCTORS BACK TO MV LINEUP AND MAKE SAFE. RE-ENERGIZE ELECTRICAL SERVICE.
6. REMOVE EXISTING 1000KVA, 208-VOLT PAD MOUNTED TRANSFORMER.
7. INSTALL ALL NEW 480-VOLT AND 208-VOLT ELECTRICAL EQUIPMENT IN NEW MAIN ELECTRICAL ROOM.
8. INSTALL NEW 480-VOLT MOTOR CONTROL CENTERS, NEW PANELBOARDS AND ASSOCIATED FEEDERS IN THE UTILITY PLANT.
9. INSTALL NEW 2000KVA, 480-VOLT PAD MOUNTED TRANSFORMER. INSTALL UNDERGROUND PRIMARY BETWEEN MV LINEUP AND TRANSFORMER. INSTALL SECONDARY SERVICE TO NEW ELECTRICAL ROOM. MAKE TERMINATIONS AT THE 2000KVA TRANSFORMER AND WITHIN THE NEW ELECTRICAL ROOM.
10. ELECTRICAL SHUTDOWN #2:
    TERMINATE PRIMARY SERVICE CONDUCTORS FOR 2000KVA TRANSFORMER WITHIN MV LINEUP. RE-ENERGIZE ELECTRICAL SERVICE.
11. ENERGIZE ELECTRICAL ROOM EQUIPMENT, MCCS AND NEW PANELBOARDS THROUGHOUT THE UTILITY PLANT.
12. PER MECHANICAL PHASING PLAN, INSTALL NEW MECHANICAL EQUIPMENT AND POWER EQUIPMENT FROM NEW 480-VOLT ELECTRICAL SYSTEM. DEMO EXISTING MECHANICAL EQUIPMENT THAT IS BEING REPLACED, INCLUDING ASSOCIATED ELECTRICAL CIRCUITRY.
13. ONCE ALL OF THE EXISTING MECHANICAL EQUIPMENT AND CIRCUITRY HAS BEEN REMOVED AND REPLACED, REMOVE THE EXISTING 208-VOLT ELECTRICAL DISTRIBUTION EQUIPMENT, INCLUDING UTILITY PLANT PANELBOARDS, MCCS AND EMERGENCY SWITCHBOARD.
14. FEED SHOP AND LAUNDRY PANELS FROM NEW UTILITY PLANT 208-VOLT SYSTEM.
15. ELECTRICAL SHUTDOWN #3:
    DISCONNECT PRIMARY AND SECONDARY SERVICE FROM 750KVA TRANSFORMER. REMOVE 750KVA TRANSFORMER PRIMARY CONDUCTORS BACK TO MV LINEUP AND MAKE SAFE. RE-ENERGIZE ELECTRICAL SERVICE. BUILDING SHALL RUN ON GENERATOR POWER WHILE WORK DURING SHUTDOWN #3 IS PERFORMED.
16. REMOVE EXISTING 750KVA, 208-VOLT TRANSFORMER AND SWITCHBOARD MSU.
17. INSTALL NEW 225KVA, 208-VOLT PAD MOUNTED UTILITY TRANSFORMER. INSTALL UNDERGROUND PRIMARY BETWEEN MV LINEUP AND TRANSFORMER. INSTALL SECONDARY SERVICE TO ELECTRICAL ROOM. INSTALL SHOP DISTRIBUTION BOARD DBS MAKE TERMINATIONS AT THE 225KVA TRANSFORMER AND WITHIN THE NEW ELECTRICAL ROOM.
18. ELECTRICAL SHUTDOWN #4:
    TERMINATE PRIMARY SERVICE CONDUCTORS FOR 225KVA TRANSFORMER WITHIN MV LINEUP. RE-ENERGIZE ELECTRICAL SERVICE.

X ELECTRICAL EX. EQUIPMENT NOTES

1. EXISTING MEDIUM VOLTAGE SWITCHGEAR TO REMAIN.
2. EXISTING 13.2KV PULL BOX FOR BUILDING D ELECTRIC SERVICE TO REMAIN.
3. EXISTING PANELBOARD IN SHOP TO REMAIN.
4. EXISTING PAD MOUNTED UTILITY TRANSFORMER FOR BUILDING D TO REMAIN. SEE SITE PLAN FOR LOCATION.
5. EXISTING OVERHEAD 13.2KV FEEDER TO BUILDING D TO REMAIN.
6. EXISTING DISTRIBUTION BOARD IN LAUNDRY TO REMAIN.

X ELECTRICAL DEMOLITION PHASE 1A NOTES

1A. DEMOLISH 1000KVA PAD MOUNTED UTILITY TRANSFORMER. SEE SITE PLAN FOR LOCATION.
2A. DEMOLISH 500KW DIESEL GENERATOR AND DAY TANK.
3A. DEMOLISH 3-POLE AUTOMATIC TRANSFER SWITCH IN BUILDING D.

X ELECTRICAL DEMOLITION PHASE 1B NOTES

1B. DEMOLISH EXISTING STEAM BOILERS, ASSOCIATED DISCONNECT SWITCH, CONTROLS AND CIRCUITRY BACK TO SOURCE.
2B. DEMOLISH EXISTING BURNER, BURNER CONTROLS, ASSOCIATED DISCONNECT AND CIRCUITRY BACK TO SOURCE.
3B. DEMOLISH EXISTING CHILLERS, ASSOCIATED DISCONNECT SWITCH, CONTROLS AND CIRCUITRY BACK TO SOURCE.
4B. DEMOLISH EXISTING CONDENSATE RETURN, BOILER FEED TANKS, ASSOCIATED DISCONNECT SWITCH, CONTROLS AND CIRCUITRY BACK TO SOURCE.
5B. DEMOLISH EXISTING MOTORIZED DAMPERS, ASSOCIATED DISCONNECT SWITCH, CONTROLS AND CIRCUITRY BACK TO SOURCE.
6B. DEMOLISH EXISTING COOLING TOWER PUMPS, ASSOCIATED DISCONNECT SWITCH, CONTROLS AND CIRCUITRY BACK TO SOURCE.
7B. DEMOLISH EXISTING PUMP, ASSOCIATED DISCONNECT SWITCH, CONTROLS AND CIRCUITRY BACK TO SOURCE.
8B. DEMOLISH EXISTING UNIT HEATERS, ASSOCIATED DISCONNECT SWITCH, CONTROLS AND CIRCUITRY BACK TO SOURCE.
9B. DEMOLISH PUMP CIRCUITRY BACK TO MCC-1. CONTRACTOR SHALL MAKE PROVISIONS TO TEMP. REFEED PUMPS UNTIL PUMPS ARE DEMOLISHED IN PHASE 2. SEE NEW WORK.
10B. DEMOLISH ORIGINAL BUILDING MCC-1.

X ELECTRICAL DEMOLITION PHASE 2 NOTES

1C. DEMOLISH EXISTING DUEL TEMPERATURE BUILDING PUMPS, ASSOCIATED DISCONNECT SWITCH, CONTROLS AND CIRCUITRY BACK TO SOURCE.
2C. DEMOLISH EXISTING EXPANSION TANKS, ASSOCIATED DISCONNECT SWITCH, CONTROLS AND CIRCUITRY BACK TO SOURCE.
3C. DEMOLISH 750KVA PAD MOUNTED UTILITY TRANSFORMER.
4C. DEMOLISH EM SWITCHBOARD AND 2000A SERVICE SWITCH FOR NON-ESSENTIAL MCC.
5C. DEMOLISH ESSENTIAL MCC.
6C. DEMOLISH NON-ESSENTIAL MCC.
7C. NOT USED.
8C. REMOVE "BUILDING" C&L MCC.
9C. DEMOLISH BUILDING A DOMESTIC HOT WATER CIRCULATORS MCC.
10C. DEMOLISH SWITCHBOARD 'MSU'.
11C. DEMOLISH EXISTING UNIT HEATERS, ASSOCIATED DISCONNECT SWITCH, CONTROLS AND CIRCUITRY BACK TO SOURCE.

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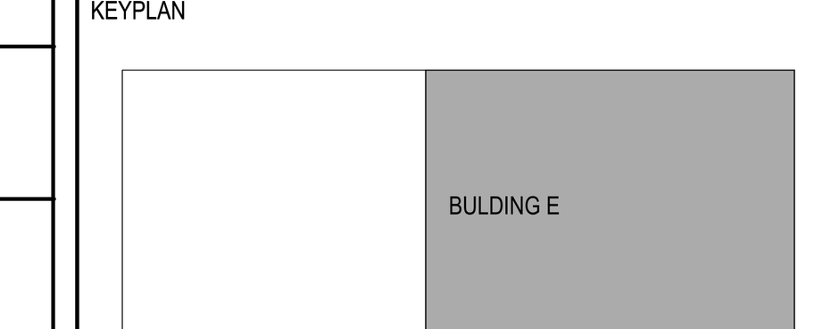

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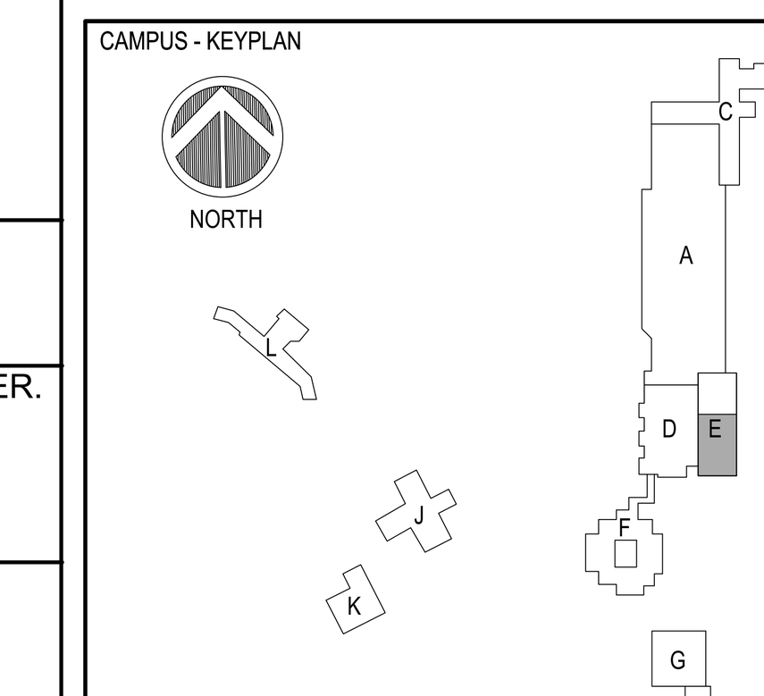

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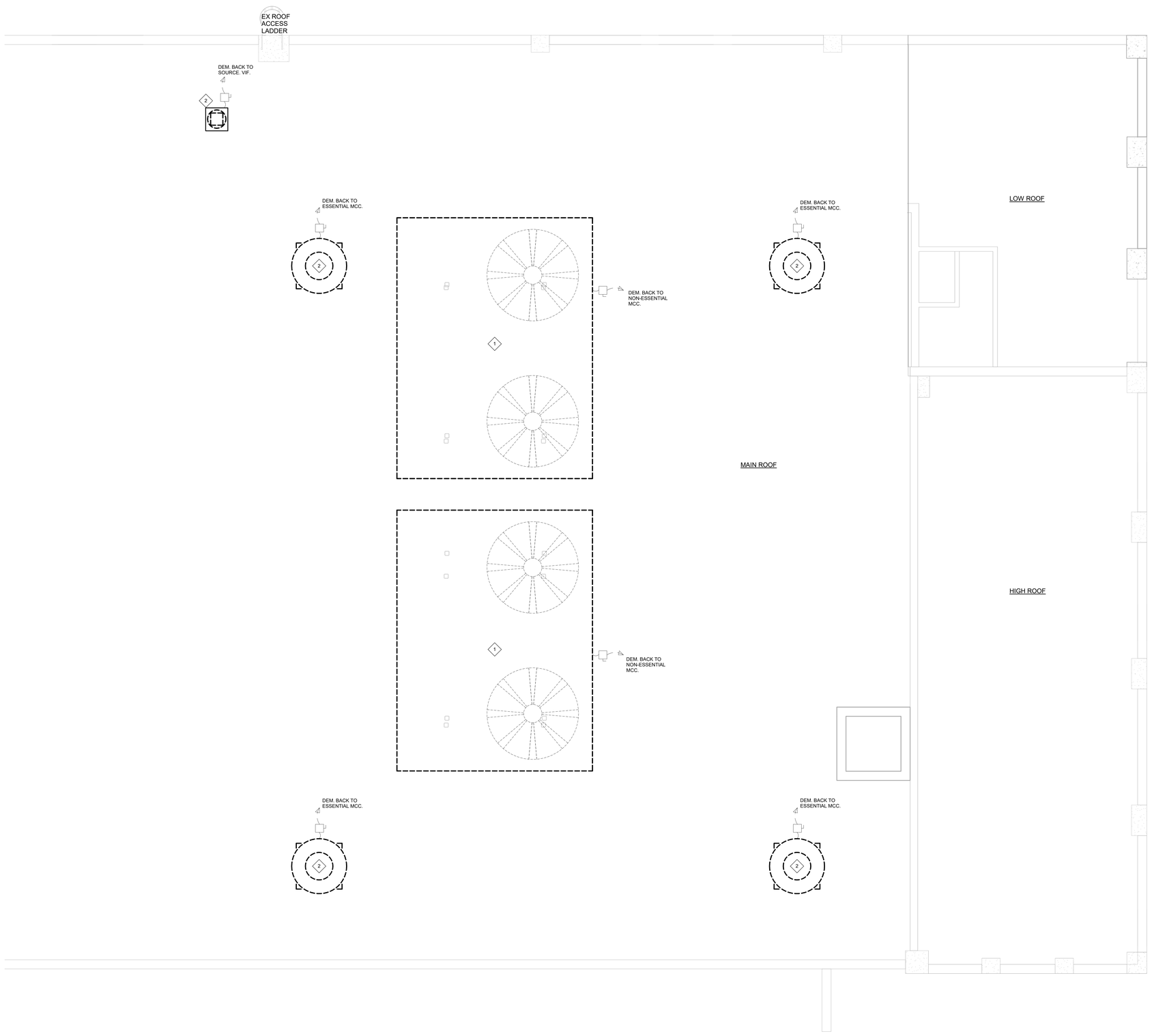
POMONA, NY 10970

DRAWING TITLE
ELECTRICAL DEMOLTION PLAN

SEAL

SCALE	PROJECT NO.
1/4" = 1'-0"	NRCK0016.00
DRAWN BY: VB	DRAWING NO.
CHECKED BY: ML	E1.1
DATE: 04-28-2020	



NORTH

1 ELECTRICAL DEMOLITION ROOF PLAN - PHASE 1B

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

X ELECTRICAL DEMOLITION NOTES

1. DEMOLISH EXISTING COOLING TOWERS, ASSOCIATED DISCONNECT SWITCH, CONTROLS AND CIRCUITRY BACK TO SOURCE.
2. DEMOLISH EXISTING EXHAUST FANS, ASSOCIATED DISCONNECT SWITCH, CONTROLS AND CIRCUITRY BACK TO SOURCE.

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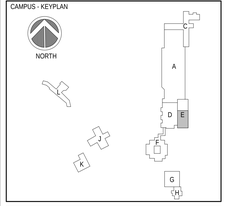

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ELECTRICAL DEMOLITION ROOF PLAN

SEAL	SCALE	PROJECT NO.
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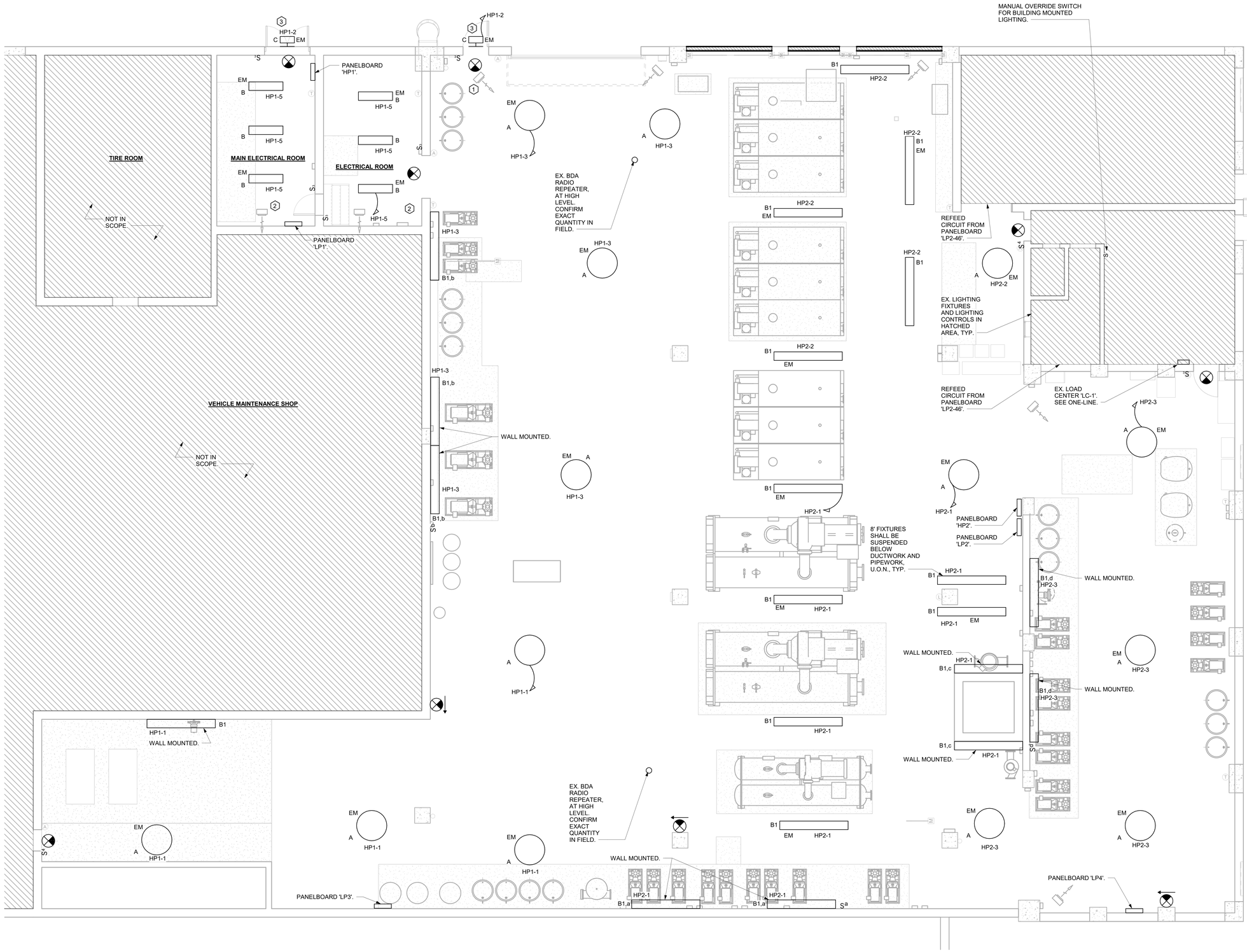
LIGHTING CONTROL LEGEND

1. LIGHTING CIRCUITS SHALL BE WIRED THROUGH CONTACTOR. MANUAL ON/OFF WALL SWITCHES SHALL CONTROL CONTACTOR. WALL MOUNTED LINEAR LED FIXTURES SHALL BE CONTROLLED LOCALLY WHERE INDICATED.

2. MANUAL ON/OFF WALL SWITCHES.

3. PHOTOCELL AND TIMECLOCK CONTROLLED WITH MANUAL OVERRIDE SWITCH.



ELECTRICAL NEW WORK LIGHTING PLAN

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

NOTES:
1.) CONTRACTOR SHALL COORDINATE LIGHT FIXTURE LOCATION WITH MECHANICAL AND PLUMBING PIPING.

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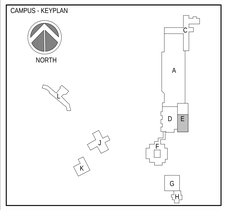

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ELECTRICAL LIGHTING PLAN

SEAL	SCALE	PROJECT NO.
	1/4" = 1'-0"	NRCK00016.00
	DRAWN BY: VB	DRAWING NO.
	CHECKED BY: ML	E2.1
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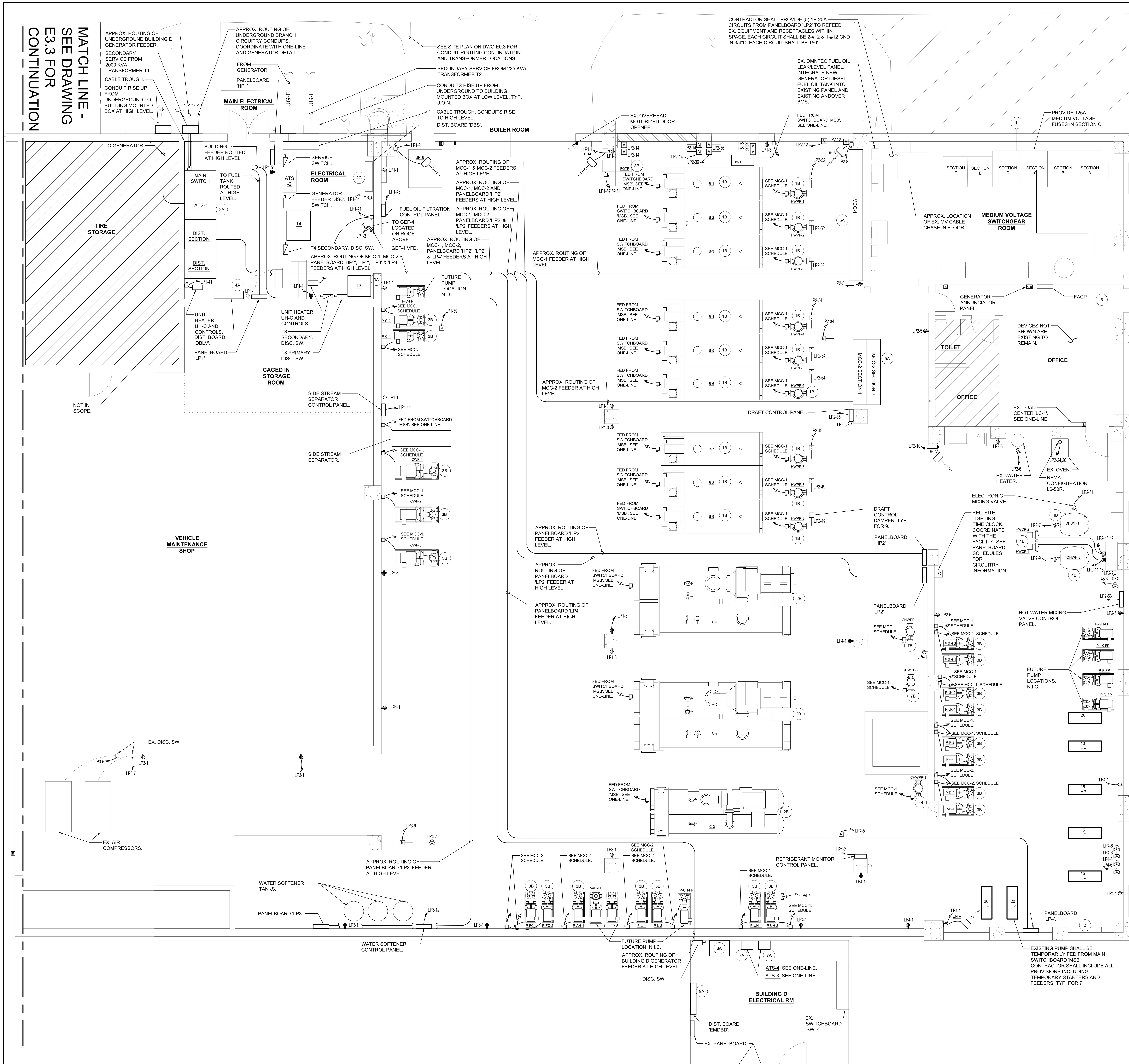

1 ELECTRICAL NEW WORK POWER FLOOR PLAN
SCALE: 1/4" = 1'-0"

ELECTRICAL PHASING NOTES - GENERAL

1. SEE DRAWING E1.1 FOR GENERAL ELECTRICAL PHASING CONCEPT NOTES.

(X) ELECTRICAL EXISTING EQUIPMENT NOTES

1. EXISTING MEDIUM VOLTAGE SWITCHGEAR.
2. EXISTING 13.2KV PULL BOX FOR BUILDING D ELECTRIC SERVICE.
3. EXISTING PANELBOARD IN SHOP. SEE DRAWING E3.3 FOR LOCATION.
4. NOT USED.
5. EXISTING OVERHEAD 13.2KV FEEDER TO BUILDING D. CONNECT TO NEW MEDIUM VOLTAGE SWITCHGEAR.
6. EXISTING DISTRIBUTION BOARD IN LAUNDRY. SEE DRAWING E3.3 FOR LOCATION.

(XA) ELECTRICAL NEW WORK PHASE 1A NOTES

1A. NEW 1000KVA PAD MOUNTED TRANSFORMER FOR 480 VOLT ELECTRICAL SERVICE FOR UTILITY PLANT. SEE SITE PLAN FOR LOCATION.

2A. NEW MAIN SWITCHBOARD 'MSB' FOR UTILITY PLANT - 2500 AMP, 480Y/277 VOLT, 3 PHASE WITH MAIN SERVICE SWITCH, INTEGRAL ATS, DISTRIBUTION SECTIONS AND SPD.

3A. NEW 112.5KVA DRY TYPE TRANSFORMER FOR 208Y/120 VOLT, 3 PHASE LOADS FOR UTILITY PLANT.

4A. NEW UTILITY PLANT DISTRIBUTION BOARD 'DBP' - 400 AMP, 208Y/120 VOLT, 3 PHASE.

5A. NEW MOTOR CONTROL CENTER FOR UTILITY PLANT - (2) 800 AMP, 480Y/277 VOLT.

6A. NEW DIESEL GENERATOR TO PROVIDE BACKUP POWER FOR ENTIRE UTILITY PLANT - 2 MW, 480Y/277 VOLT, 3 PHASE. SEE SITE PLAN FOR LOCATION.

7A. NEW 4-POLE AUTOMATIC TRANSFER SWITCH IN BUILDING D.

8A. NEW 112.5KVA DRY TYPE TRANSFORMER FOR 208Y/120 VOLT, 3 PHASE EMERGENCY POWER TO BUILDING D AUTOMATIC TRANSFER SWITCHES.

9A. NEW BUILDING D EMERGENCY DISTRIBUTION BOARD "EMDBD" - 400 AMP, 208Y/120 VOLT.

(XB) ELECTRICAL NEW WORK PHASE 1B NOTES

1B. NEW DUEL FUEL CONDENSING BOILERS WITH INLINE PRIMARY PUMP.
2B. NEW ELECTRIC 2-STAGE CENTRIFUGAL CHILLER.
3B. NEW BUILDING SECONDARY AND CONDENSER WATER PUMPS.
4B. NEW HOT WATER HEATERS AND PUMPS.
5B. NEW COOLING TOWERS ON ROOF.
6B. NEW GENERAL EXHAUST FANS ON ROOF.
7B. CHILLED WATER PRIMARY PUMP.
8B. FUEL OIL TRANSFER PUMP.

(XC) ELECTRICAL NEW WORK PHASE 2 NOTES

1C. NEW 225KVA PAD MOUNTED TRANSFORMER FOR 208 VOLT ELECTRICAL SERVICE FOR SHOP. SEE SITE PLAN FOR LOCATION.
2C. NEW SERVICE DISTRIBUTION BOARD 'DBS' FOR SHOP - 800 AMP, 208Y/120 VOLT, 3 PHASE.

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DRAWING TITLE

ELECTRICAL NEW WORK POWER FLOOR PLAN

SEAL		
	SCALE 1/4" = 1'-0"	PROJECT NO. NRCK0016.00
	DRAWN BY VB	DRAWING NO.
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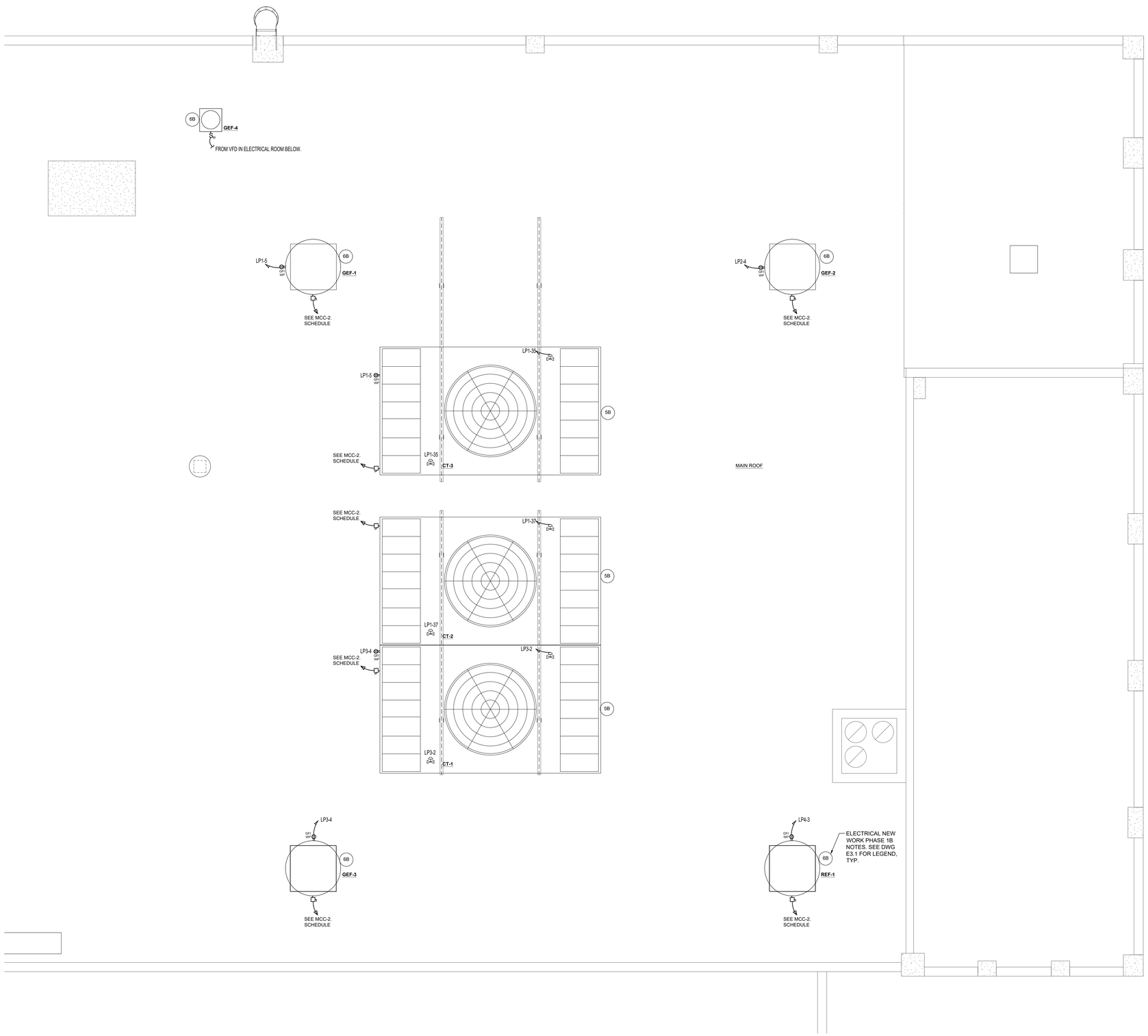

NORTH

1 ELECTRICAL NEW WORK ROOF POWER PLAN

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

NOTES:
1. SEE PHASING AND EQUIPMENT NOTES ON E3.1.

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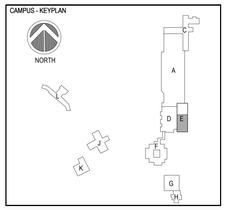
KEYPLAN

CAMPUS - KEYPLAN



NO.	DESCRIPTION	DATE
1	ISSUED FOR BID	11/01/2021

PROJECT

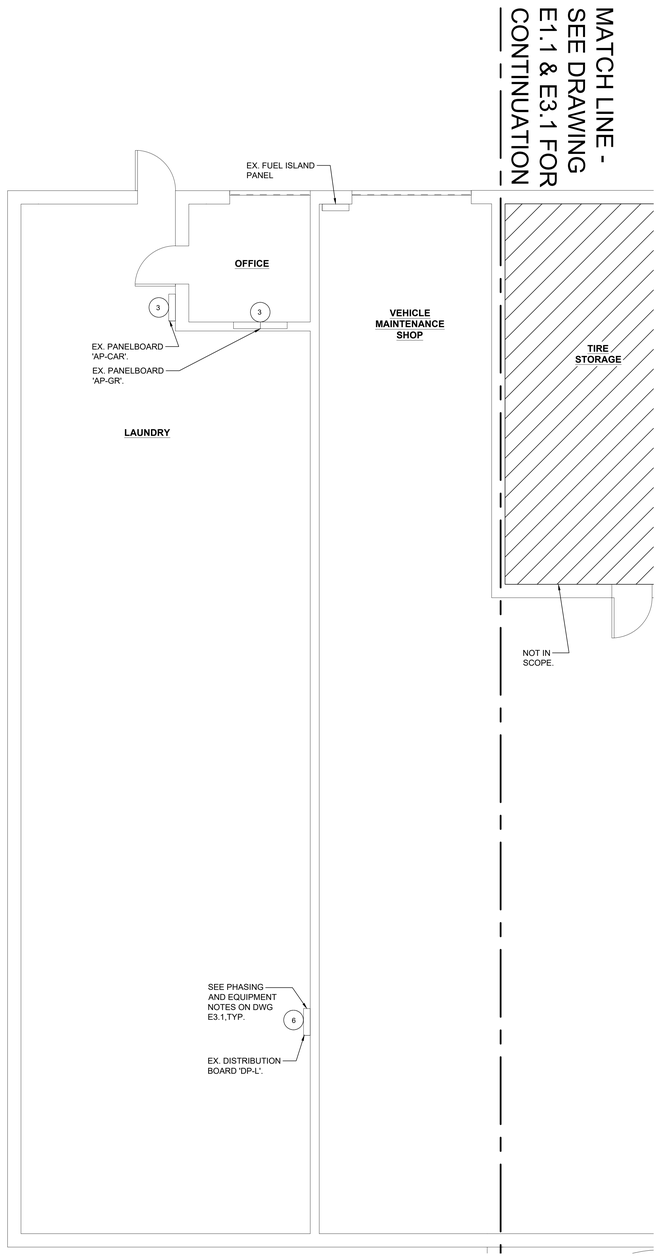
CAPITAL PROJECT 4466
BUILDING E UTILITY PLANT
RENOVATION & IMPROVEMENTS
DR. ROBERT L. YEAGER HEALTH CENTER

50 SANATORIUM ROAD,
POMONA, NY 10970

DRAWING TITLE

ELECTRICAL NEW WORK
ROOF POWER PLAN

SEAL	SCALE	PROJECT NO.
	1/4" = 1'-0"	NRCK0016.00
	DRAWN BY: VB	DRAWING NO.
	CHECKED BY: ML	E3.2
	DATE: 04-28-2020	



NORTH

1 ELECTRICAL NEW WORK POWER FLOOR PLAN - CONTINUED
SCALE: 1/4" = 1'-0"

NOTES:
1. SEE PHASING AND EQUIPMENT NOTES ON E3.1.

CLIENT

Rockland County

Facilities Management

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Director Facilities Management

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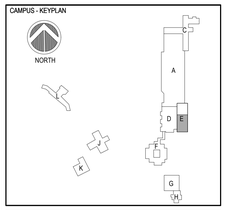
KEYPLAN

CAMPUS - KEYPLAN



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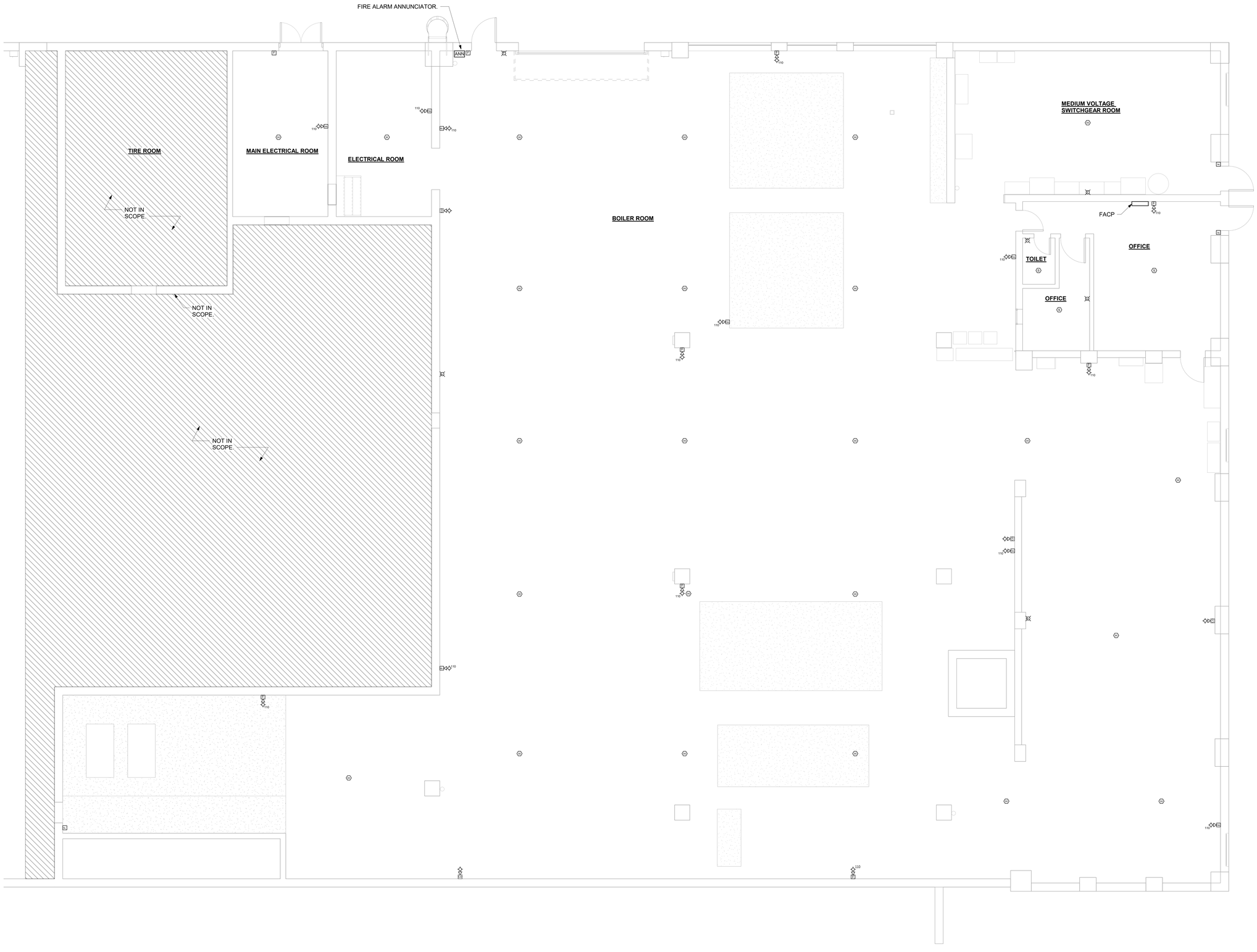
DRAWING TITLE

ELECTRICAL NEW WORK POWER FLOOR PLAN - CONTINUED

SEAL	SCALE	PROJECT NO.
	1/4" = 1'-0"	NRCK0016.00
	DRAWN BY: VB	DRAWING NO.
	CHECKED BY: ML	E3.3
	DATE: 04-28-2020	



1 ELECTRICAL NEW WORK FIRE ALARM PLAN
NORTH
SCALE: 1/4" = 1'-0"

CLIENT

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KEYPLAN

BUILDING E
AREA OF WORK

CAMPUS - KEYPLAN

NORTH

NO.	DESCRIPTION	DATE
1	ISSUED FOR BID	11/01/2021

PROJECT

CAPITAL PROJECT 4466
BUILDING E UTILITY PLANT
RENOVATION & IMPROVEMENTS
DR. ROBERT L. YEAGER HEALTH CENTER
50 SANATORIUM ROAD,
POMONA, NY 10970

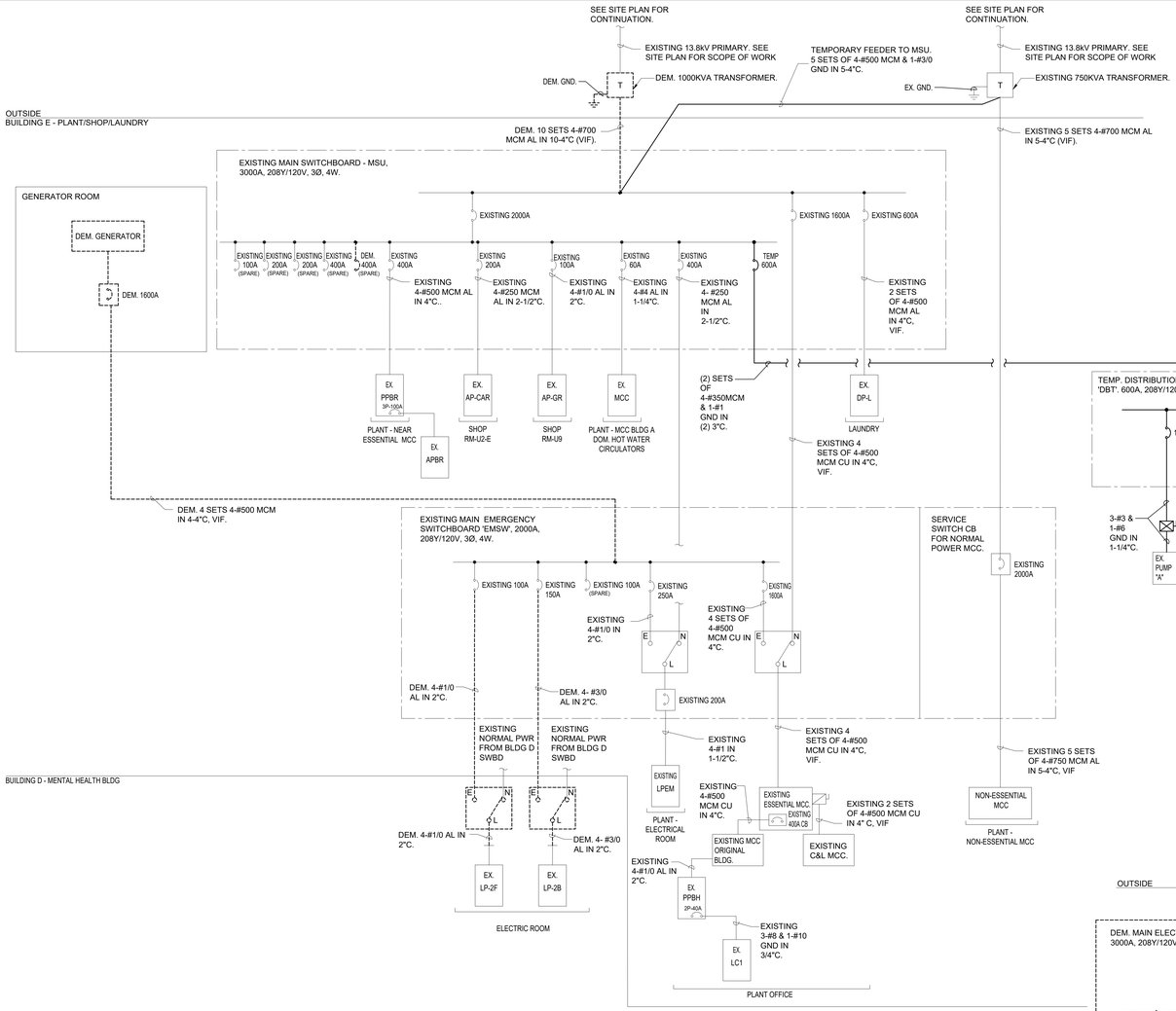
DRAWING TITLE

ELECTRICAL FIRE ALARM PLAN

SEAL

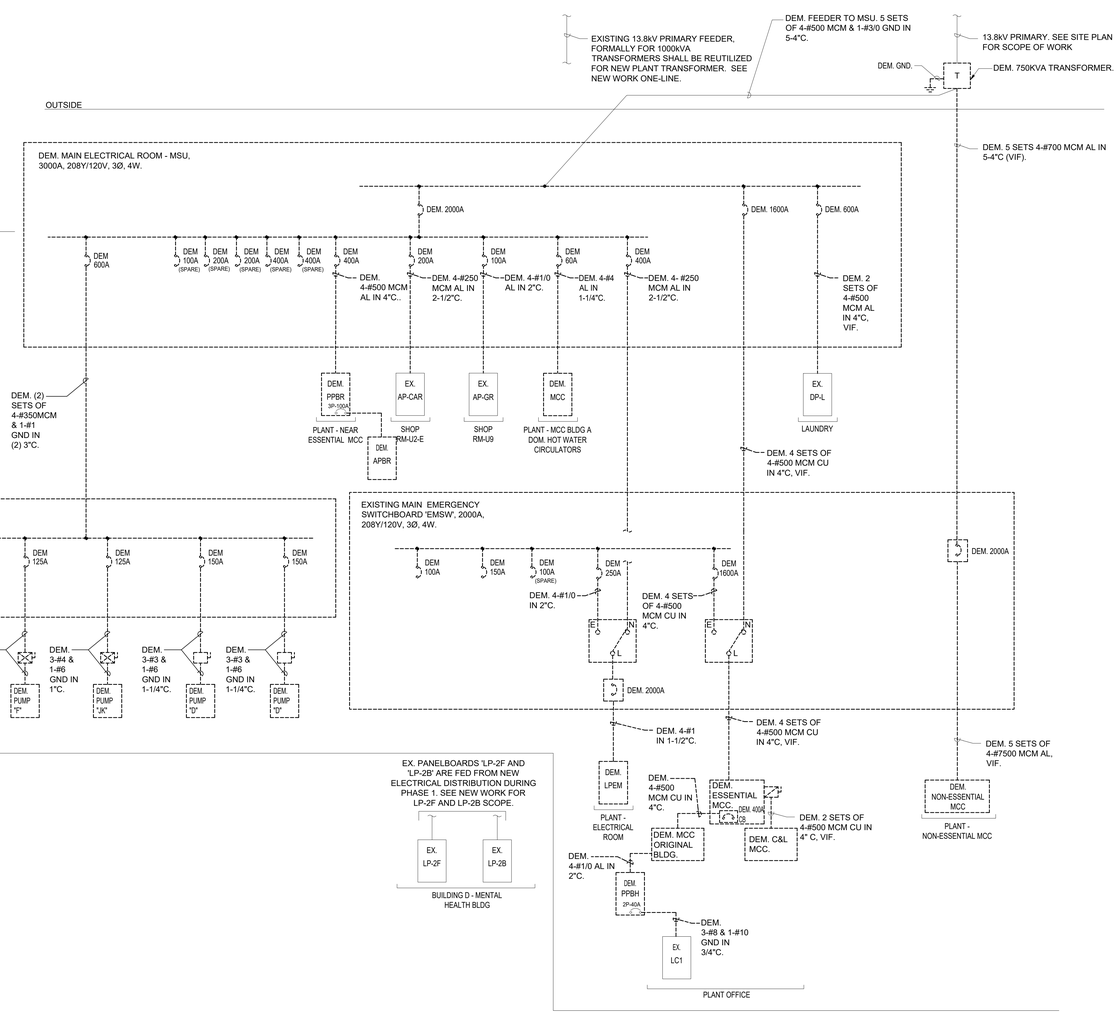
SCALE	1/4" = 1'-0"
PROJECT NO.	NRCK0016.00
DRAWN BY	VB
DRAWING NO.	
CHECKED BY	ML
DATE	04-28-2020

E4.1



1 ELECTRICAL DEMOLITION AND TEMPORARY WORK ONE-LINE DIAGRAM - PHASE 1
SCALE: NONE

NOTES:
1. ALL CIRCUIT BREAKERS AND SWITCHES ARE 3 POLE, U.O.N.



2 ELECTRICAL DEMOLITION AND TEMPORARY WORK ONE-LINE DIAGRAM - PHASE 2
SCALE: NONE

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KEYPLAN

CAMPUS - KEYPLAN

NO.	DESCRIPTION	DATE
1	ISSUED FOR BID	11/01/2021

PROJECT
CAPITAL PROJECT 4466
BUILDING E UTILITY PLANT RENOVATION & IMPROVEMENTS
DR. ROBERT L. YEAGER HEALTH CENTER
50 SANATORIUM ROAD, POMONA, NY 10970

DRAWING TITLE
ELECTRICAL PHASE 1&2 DEMOLITION ONE-LINE DIAGRAMS

SEAL

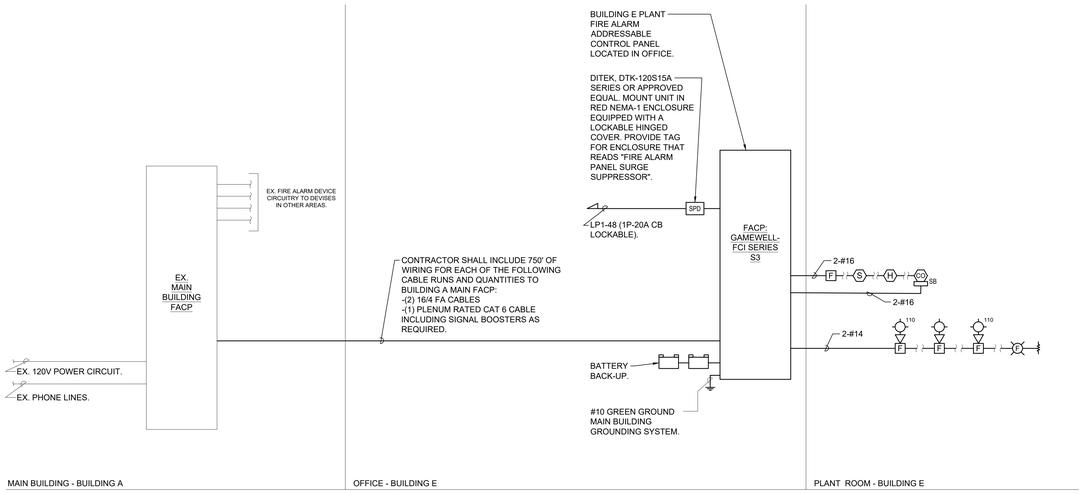
SCALE: NONE	PROJECT NO.: NRCK0016.00
DRAWN BY: VB	DRAWING NO.: E5.1
CHECKED BY: ML	
DATE: 04-28-2020	

WIRING/CONDUIT LEGEND:

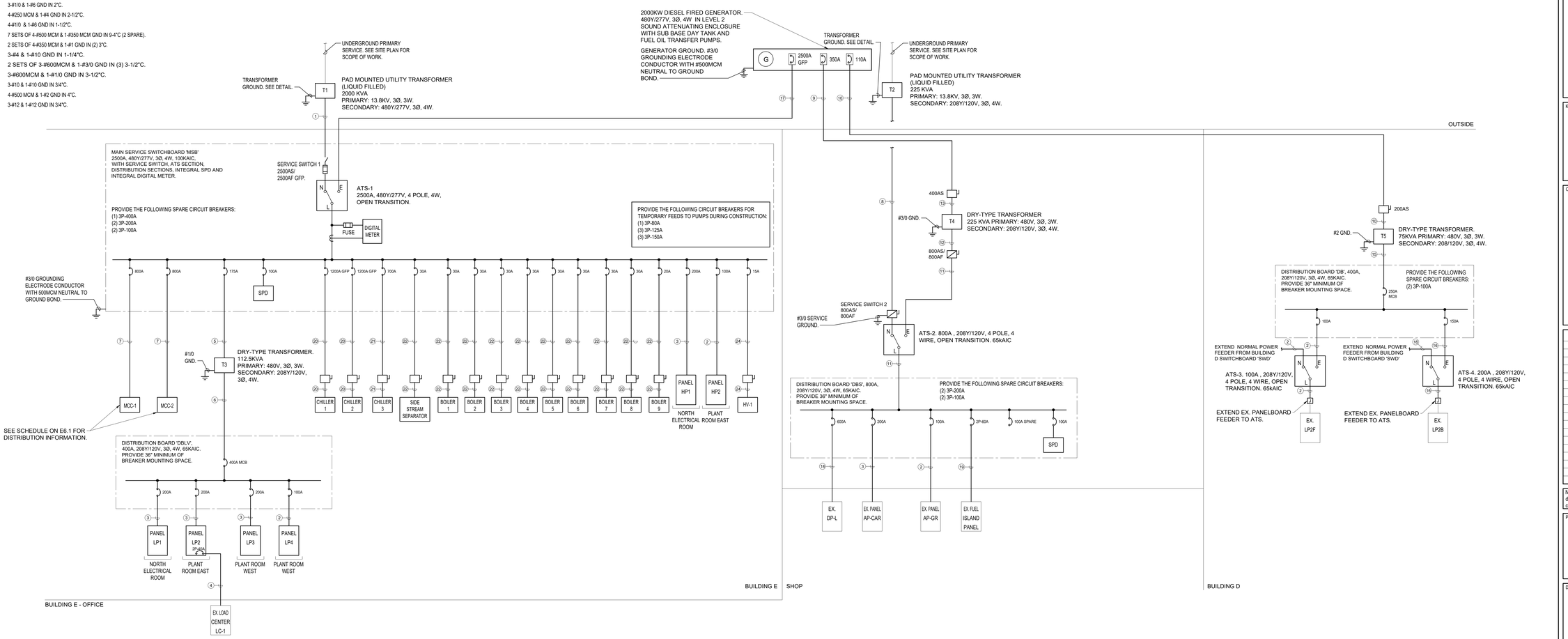
1. 7 SETS OF 4-#500 MCM IN 9-4"C (2 SPARE).
2. 4-#2 & 1-#8 GND IN 1-1/4"C.
3. 4-#3/0 & 1-#6 GND IN 2"C.
4. 3-#8 & 1-#10 GND IN 3/4"C.
5. 3-#2/0 & 1-#6 GND IN 2"C.
6. 4-#600MCM & 1-#1/0 GND IN 3-1/2"C.
7. 2 SETS OF 3-#600MCM & 1-#1/0 GND IN (2) 3-1/2"C.
8. 2 SETS OF 4-#600 MCM IN 3-4"C (1 SPARE).
9. 3-#500 MCM & 1-#1/0 GND IN 2-4"C (1 SPARE TO BUILDING E).
10. 3-#1 & 1-#6 GND IN 1-1/2"C.
11. 2 SETS OF 4-#600 MCM & 1-#1/0 GND IN 2-4"C.
12. 2 SETS OF 4-#600 MCM & 1-#3/0 GND IN 2-4"C.
13. 3-#500 MCM & 1-#1/0 GND IN 4"C.
14. 3-#1/0 & 1-#6 GND IN 2"C.
15. 4-#250 MCM & 1-#4 GND IN 2-1/2"C.
16. 4-#1/0 & 1-#6 GND IN 1-1/2"C.
17. 7 SETS OF 4-#500 MCM & 1-#350 MCM GND IN 9-4"C (2 SPARE).
18. 2 SETS OF 4-#350 MCM & 1-#1 GND IN (2) 3"C.
19. 3-#4 & 1-#10 GND IN 1-1/4"C.
20. 2 SETS OF 3-#600MCM & 1-#3/0 GND IN (3) 3-1/2"C.
21. 3-#600MCM & 1-#1/0 GND IN 3-1/2"C.
22. 3-#10 & 1-#10 GND IN 3/4"C.
23. 4-#500 MCM & 1-#2 GND IN 4"C.
24. 3-#12 & 1-#12 GND IN 3/4"C.

RISER NOTES:

1. THIS IS NOT A POINT-TO-POINT WIRING DIAGRAM. PRIOR TO STARTING ANY WORK, A WORKING POINT-TO-POINT WIRING DIAGRAM SHALL BE OBTAINED FROM FIRE ALARM SYSTEM VENDOR AND PERFORM ALL WORK IN ACCORDANCE WITH THAT DIAGRAM.
2. ELECTRICAL CONTRACTOR SHALL INCLUDE IN THE BASE BID ALL 120V CIRCUITS THAT ARE REQUIRED TO SUPPORT THE OPERATION OF THE FIRE ALARM SYSTEM. COORDINATE REQUIREMENTS WITH THE FIRE ALARM VENDOR.
3. QUANTITY OF STROBE BOOSTER POWER SUPPLY PANELS AND ASSOCIATED 120V CIRCUITS SHALL BE COORDINATED WITH SELECTED FIRE ALARM SYSTEM MANUFACTURER AND/OR FIRE ALARM VENDOR.
4. PROVIDE ALL NECESSARY WIRING, MODULES, COMPONENTS, EXTENDER CABINET, AND PROGRAMMING REQUIRED TO CONNECT NEW DEVICES TO EXISTING SYSTEM.
5. PROVIDE ALL NECESSARY HARDWARE AND PROGRAMMING TO PROVIDE THE CLIENT WITH 20% SPARE CAPACITY ON ALL INITIATING AND INDICATING CIRCUITS.
6. PROVIDE AS PART OF THE BASE CONTRACT ALL LABOR AND MATERIALS TO INSTALL TEN (10) ADDITIONAL FIRE ALARM DEVICES DURING CONSTRUCTION. THE ADDITIONAL FIRE ALARM DEVICES CAN BE BUT NOT LIMITED TO SMOKE DETECTOR, HEAT DETECTOR, DOOR HOLDER, DUCT DETECTOR, FAN SHUTDOWN, TAMPER SWITCHES, FLOW SWITCHES, ETC. INCLUDE ALL LABOR AND MATERIALS INCLUDING WIRE, BOXES, CONDUIT, TERMINATIONS, HARDWARE, SOFTWARE, PROGRAMMING AND TESTING.
7. CARBON MONOXIDE DETECTORS SHALL BE SUPERVISED BY FIRE ALARM SYSTEM AND SHALL NOT SEND AN ALARM SIGNAL TO THE SYSTEM. THESE DETECTORS SHALL BE MOUNTED ON SOUNDER BASES WHICH PROVIDE LOCAL ALARM ONLY IN A TEMPORAL 4 PATTERN OR CONSTANT TONE.
8. ALL VISUAL ALARM DEVICES SHALL BE ADA COMPLIANT.
9. PROVIDE REMOTE LED INDICATORS FOR ALL CONCEALED FIRE ALARM DEVICES SUCH AS DUCT SMOKE DETECTORS, ABOVE CEILING SMOKE DETECTORS, ELEVATOR SHAFT DETECTORS, MONITORING AND CONTROL MODULES, ETC. LED INDICATORS FOR DEVICES MOUNTED ABOVE DROP CEILINGS SHALL BE MOUNTED BELOW ASSOCIATED DEVICES. LABEL INDICATORS TO INDICATE DEVICE SERVED.
10. CONTRACTOR TO PROVIDE SMOKE DETECTOR(S) IN ALL LOCATIONS CONTAINING FIRE ALARM CONTROL PANELS, DATA GATHERING PANELS, BOOSTER POWER SUPPLIES, OR ANY OTHER FIRE ALARM SYSTEM PANEL, WHETHER SHOWN ON PLANS OR NOT.
11. CONTROL MODULES USED TO INITIATE EMERGENCY CONTROL FUNCTIONS THAT DO NOT FAIL IN A SAFE POSITION SHALL BE LOCATED WITHIN 3 FEET OF THE COMPONENT CONTROLLING THE EMERGENCY CONTROL FUNCTION PER NFPA 72. THIS INCLUDES, BUT IS NOT LIMITED TO, CONTROL MODULES CONNECTED TO FAN MOTOR CONTROLLERS, ELEVATOR CONTROLLERS, ETC.
12. BATTERY BACKUP FOR FACP SHALL PROVIDE A MINIMUM OF 24 HOURS OF STAND BY POWER FOLLOWED BY 45 MINUTES OF ALARM.
13. ALL FIRE ALARM PANELS, JUNCTION BOX COVERS, ETC SHALL BE PAINTED "FIRE DEPARTMENT RED".



2 FIRE ALARM RISER DIAGRAM - BUILDING E
SCALE: NONE



1 ELECTRICAL NEW WORK ONE-LINE DIAGRAM
SCALE: NONE

NOTES:

1. ALL CIRCUIT BREAKERS AND SWITCHES ARE 3 POLE, U.O.N.
2. PROVIDE 4" CONCRETE HOUSEKEEPING PAD FOR ALL TRANSFORMERS.

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KEYPLAN

CAMPUS - KEYPLAN

NO.	DESCRIPTION	DATE
1	ISSUED FOR BID	11/01/2021

PROJECT
CAPITAL PROJECT 4466
BUILDING E UTILITY PLANT
RENOVATION & IMPROVEMENTS
DR. ROBERT L. YEAGER HEALTH CENTER
50 SANATORIUM ROAD,
POMONA, NY 10970

DRAWING TITLE
ELECTRICAL NEW WORK ONE-LINE AND FIRE ALARM RISER DIAGRAMS

SEAL	SCALE	PROJECT NO.
	NONE	NRCK0016.00
	DRAWN BY: VB	DRAWING NO.
	CHECKED BY: ML	E5.2
	DATE: 04-28-2020	

LIGHTING FIXTURE SCHEDULE

FIXTURE DESIGNATION	MANUFACTURER	CATALOG NUMBER	LAMPS	VOLTS	MOUNTING	REMARKS
A	HOLOPHANE	PHZ-40L-4K-70CRI-AS-P-277-W-E10WCP	(1) 288W LED	277	PENDANT	PHUZION LED HIGH BAY FIXTURE WITH 40,000 LUMEN OUTPUT. PROVIDE EM OPTION WHERE INDICATED FOR 90 MINUTES OF BATTERY BACKUP TIME, MINIMUM.
B	LITHONIA LIGHTING	FEM-L48-4000LM-IMACD-277-35K-80CRI-BSL722	(1) 23.8W LED	277	SURFACE	4' LED LINEAR LIGHT FIXTURE WITH 4000 LUMEN OUTPUT. WHERE INDICATED "EM" ON PLAN PROVIDE EMERGENCY OPTION FOR 90 MINUTES OF BATTERY BACKUP TIME, MINIMUM.
B1	LITHONIA LIGHTING	FEM-L96-15000LM-IMACD-277-35K-80CRI-BSL722	(1) 94.3W LED	277	SURFACE	8' LED LINEAR LIGHT FIXTURE WITH 15000 LUMEN OUTPUT. WHERE INDICATED "EM" ON PLAN PROVIDE EMERGENCY OPTION FOR 90 MINUTES OF BATTERY BACKUP TIME, MINIMUM.
C	LITHONIA LIGHTING	DSXW1-L3D 20C-1000-30K -120	(1) 40W LED	120V	SURFACE	LED EXTERIOR WALL LUMINAIRE.
	LITHONIA LIGHTING	LQM-S-W-3-R-120/277-ELN	EXIT - LED 0.71W	277	SURFACE WALL MOUNTED	LED EXIT SIGN WITH 90 MINUTES OF NICAD BATTERY BACKUP TIME. 8" RED LETTERS ON WHITE BACKGROUND. SURFACE MOUNTED WHITE CORROSION-PROOF THERMOPLASTIC HOUSING.

NOTES:

1.) VERIFY ALL FIXTURE CATALOG NUMBERS FOR INTENDED APPLICATIONS WITH REQUIRED ACCESSORIES.
2.) ALL BALLASTS AND DRIVERS IN FIXTURES LOCATED OUTDOORS SHALL BE ZERO DEGREE RATED STARTING TEMPERATURE. REFER TO DRAWINGS FOR LOCATION OF FIXTURES.
3.) LIGHT FIXTURES INDICATED AS EMERGENCY (EM) ON DRAWINGS SHALL CONTAIN AN EMERGENCY BACK-UP BATTERY WHERE POSSIBLE THE SHALL BE INTERNAL TO FIXTURE WITH A VISUAL INDICATING CHARGE LAMP AND TEST SWITCH. IF IT IS NOT POSSIBLE TO INSTALL THE EMERGENCY BATTERY IN THE FIXTURE, THE CONTRACTOR SHALL FURNISH & INSTALL A REMOTE EMERGENCY BATTERY. EACH BATTERY PACK SHALL BE CONNECTED SO THAT THE FIXTURE CAN BE SWITCHED UNDER NORMAL CONDITIONS AND IN THE EVENT OF A POWER OUTAGE, THE FIXTURE SHALL AUTOMATICALLY ILLUMINATE FOR 90 MINUTES WITH A 1200 LUMEN OUTPUT (TOTAL FROM FIXTURE), MINIMUM.
4.) ALL EXIT AND EMERGENCY FIXTURES SHALL BE FED FROM UNSWITCHED LEG OF ASSOCIATED LOCAL LIGHTING CIRCUITS.
5.) IN THE EVENT THE CONTRACTOR CHOOSES TO SUBSTITUTE LIGHT FIXTURES FOR THOSE THAT ARE SPECIFIED ON THE LIGHT FIXTURE SCHEDULE, THE CONTRACTOR SHALL SUBMIT POINT-TO-POINT PHOTOMETRIC CALCULATIONS FOR ALL AREAS WHERE THE SUBSTITUTED FIXTURES ARE INDICATED TO BE INSTALLED ON THE DRAWINGS. THESE CALCULATIONS SHALL BE SUBMITTED ALONG WITH THE LIGHT FIXTURE SHOP DRAWINGS.

MCC-1 MOTOR CONTROL CENTER SCHEDULE

NAME: MCC-1 LOCATION: BOILER ROOM KAIC RATING: 65KAIC WIRE: 3
MAIN RATING: 800A MAIN CB: MLO VOLTAGE: 480Y/277V PHASE: 3

CKT #	DESIGNATION	HP	FLA	CB SIZE/ POLE(S)	STARTER TYPE	FEEDER			REMARKS
						WIRE	GROUND	CONDUIT	
1	HOT WATER PRIMARY PUMP HWPP-1	5	7.6	3P-20A	VFD	3-#12	1-#12	3/4"C	-
2	HOT WATER PRIMARY PUMP HWPP-2	5	7.6	3P-20A	VFD	3-#12	1-#12	3/4"C	-
3	HOT WATER PRIMARY PUMP HWPP-3	5	7.6	3P-20A	VFD	3-#12	1-#12	3/4"C	-
4	HOT WATER PRIMARY PUMP HWPP-4	5	7.6	3P-20A	VFD	3-#12	1-#12	3/4"C	-
5	HOT WATER PRIMARY PUMP HWPP-5	5	7.6	3P-20A	VFD	3-#12	1-#12	3/4"C	-
6	HOT WATER PRIMARY PUMP HWPP-6	5	7.6	3P-20A	VFD	3-#12	1-#12	3/4"C	-
7	HOT WATER PRIMARY PUMP HWPP-7	5	7.6	3P-20A	VFD	3-#12	1-#12	3/4"C	-
8	HOT WATER PRIMARY PUMP HWPP-8	5	7.6	3P-20A	VFD	3-#12	1-#12	3/4"C	-
9	HOT WATER PRIMARY PUMP HWPP-9	5	7.6	3P-20A	VFD	3-#12	1-#12	3/4"C	-
10	CHILLED WATER PRIMARY PUMP CHWPP-1	20	27	3P-70A	VFD	3-#8	1-#8	3/4"C	-
11	CHILLED WATER PRIMARY PUMP CHWPP-2	20	27	3P-70A	VFD	3-#8	1-#8	3/4"C	-
12	CHILLED WATER PRIMARY PUMP CHWPP-3	7.5	11	3P-30A	VFD	3-#12	1-#12	3/4"C	-
13	CONDENSER WATER PUMP CWP-1	75	96	3P-250A	VFD	3-#1	1-#4	1-1/4"C	-
14	CONDENSER WATER PUMP CWP-2	75	96	3P-250A	VFD	3-#1	1-#4	1-1/4"C	-
15	CONDENSER WATER PUMP CWP-3	75	96	3P-250A	VFD	3-#1	1-#4	1-1/4"C	-
16	PUMP P-F-1	15	21	3P-50A	VFD	3-#10	1-#10	3/4"C	-
17	PUMP P-F-2	15	21	3P-50A	VFD	3-#10	1-#10	3/4"C	-
18	PUMP P-F-FP	15	-	-	VFD	-	-	-	PROVISIONS FOR FUTURE PUMP.
19	PUMP P-JK-1	15	21	3P-50A	VFD	3-#10	1-#10	3/4"C	-
20	PUMP P-JK-2	15	21	3P-50A	VFD	3-#10	1-#10	3/4"C	-
21	PUMP P-JK-FP	15	-	-	VFD	-	-	-	PROVISIONS FOR FUTURE PUMP.
22	PUMP P-GH-1	7.5	11	3P-30A	VFD	3-#12	1-#12	3/4"C	-
23	PUMP P-GH-2	7.5	11	3P-30A	VFD	3-#12	1-#12	3/4"C	-
24	PUMP P-GH-FP	7.5	-	-	VFD	-	-	-	PROVISIONS FOR FUTURE PUMP.
25	PUMP P-UH-1	2	3.4	3P-15A	VFD	3-#12	1-#12	3/4"C	-
26	PUMP P-UH-2	2	3.4	3P-15A	VFD	3-#12	1-#12	3/4"C	-
27	PUMP P-UH-FP	2	-	-	VFD	-	-	-	PROVISIONS FOR FUTURE PUMP.

NOTES:
1. BASED ON EATON WITH DH-1-TYPE VFDS, BACNET IP COMMUNICATIONS AND 24-PORT MANAGED ETHERNET SWITCH OR APPROVED EQUAL.

MCC-2 MOTOR CONTROL CENTER SCHEDULE

NAME: MCC-2 LOCATION: BOILER ROOM KAIC RATING: 65KAIC WIRE: 3
MAIN RATING: 800A MAIN CB: MLO VOLTAGE: 480Y/277V PHASE: 3

CKT #	DESIGNATION	HP	FLA	CB SIZE/ POLE(S)	STARTER TYPE	FEEDER			REMARKS
						WIRE	GROUND	CONDUIT	
1	COOLING TOWER CT-1	25	34	3P-90A	VFD	3-#6	1-#8	3/4"	-
2	COOLING TOWER CT-2	25	34	3P-90A	VFD	3-#6	1-#8	3/4"	-
3	COOLING TOWER CT-3	25	34	3P-90A	VFD	3-#6	1-#8	3/4"	-
4	PUMP P-AH-1	75	96	3P-250A	VFD	3-#1	1-#4	1-1/4"C	-
5	PUMP P-AH-FP	75	-	-	VFD	-	-	-	PROVISIONS FOR FUTURE PUMP.
6	PUMP P-FC-1	75	96	3P-250A	VFD	3-#1	1-#4	1-1/4"C	-
7	PUMP P-FC-2	75	96	3P-250A	VFD	3-#1	1-#4	1-1/4"C	-
8	PUMP P-L-1	30	40	3P-100A	VFD	3-#6	1-#8	3/4"C	-
9	PUMP P-L-2	30	40	3P-100A	VFD	3-#6	1-#8	3/4"C	-
10	PUMP P-L-FP	30	-	-	VFD	-	-	-	PROVISIONS FOR FUTURE PUMP.
11	PUMP P-C-1	30	40	3P-100A	VFD	3-#6	1-#8	3/4"C	-
12	PUMP P-C-2	30	40	3P-100A	VFD	3-#6	1-#8	3/4"C	-
13	PUMP P-C-FP	30	-	-	VFD	-	-	-	PROVISIONS FOR FUTURE PUMP.
14	PUMP P-D-1	30	40	3P-100A	VFD	3-#6	1-#8	3/4"C	-
15	PUMP P-D-2	30	40	3P-100A	VFD	3-#6	1-#8	3/4"C	-
16	PUMP P-D-FP	30	-	-	VFD	-	-	-	PROVISIONS FOR FUTURE PUMP.
17	GENERAL EXHAUST FAN GEF-1	1.5	3	3P-15A	VFD	3-#12	1-#12	3/4"C	-
18	GENERAL EXHAUST FAN GEF-2	1.5	3	3P-15A	VFD	3-#12	1-#12	3/4"C	-
19	GENERAL EXHAUST FAN GEF-3	1.5	3	3P-15A	VFD	3-#12	1-#12	3/4"C	-
20	REFRIGERANT EXHAUST FAN REF-1	1.5	3	3P-15A	VFD	3-#12	1-#12	3/4"C	-

NOTES:
1. BASED ON EATON WITH DH-1-TYPE VFDS, BACNET IP COMMUNICATIONS AND 24-PORT MANAGED ETHERNET SWITCH OR APPROVED EQUAL.

'LP1' PANEL SCHEDULE

MAIN RATING: 200A MAIN C.B.: 200A KAIC RATING: 22KAIC
VOLTAGE: 208Y/120V PHASE: 3 WIRE: 4 MOUNTING: SURFACE

CIRC. NO.	LOAD DESCRIPTION	BKR. AMPS	NO. OF POLES	NO. OF POLES	BKR. AMPS	LOAD DESCRIPTION	CIRC. NO.
1	RECEPTACLES	20	1	1	15	UH-B	2
3	GEF-4	15	1	1	15	UH-B	4
5	ROOF RECEPTACLES	20	1	1	20	HVAC CONTROLS	6
7	* - EX. LOAD	20	1	1	20	HVAC CONTROLS	8
9	* - EX. LOAD	20	1	1	20	HVAC CONTROLS	10
11	* - EX. LOAD	20	1	1	20	## - EX. LOAD	12
13	* - EX. LOAD	20	1	1	20	## - EX. LOAD	14
15				1	20	## - EX. LOAD	16
17	** - EX. LOAD - WATER SOFTENER	20	3	1	20	## - EX. LOAD	18
19				1	20	## - EX. LOAD	20
21				1	20	## - EX. LOAD	22
23	# - EX. LOAD - WELDER	60	3	1	20	## - EX. LOAD	24
25				1	20	## - EX. LOAD	26
27				1	20	## - EX. LOAD	28
29	** - EX. LOAD - OUTSIDE ELECTRIC DOOR	20	3	1	20	## - EX. LOAD	30
31				1	15	BOILER BREAKGLASS	32
33	* - EX. LOAD	20	1	1	20	GENERATOR RECEPTACLE	34
35	ROOF CONTROL VALVES	20	1	1	20	GENERATOR BATTERY CHARGER	36
37	ROOF CONTROL VALVES	20	1	2	20	GENERATOR BLOCK HEATER	38
39	MOTORIZED DAMPERS	20	1				40
41	EX. UNIT HEAER	15	1	1	15	EX. UNIT HEATER	42
43	FUEL OIL FILTRATION PANEL	20	1	1	20	SIDE STREAM SEPARATOR PANEL	44
45				1	20	SPARE	46
47	CHEMICAL PUMP/CABINET	15	3	1	20	FACP	48
49				2	30	HEAT TRACE CONTROL PANEL	50
51							52
53	FILTRATION PUMP/CABINET	15	3	1	20	REC - ELEC. ROOMS	54
55				1	15	LIGHTING CONTACTOR	56
57				1	20	OVERFILL ALARM	58
59	FUEL OIL TRANSFER PUMP	15	3	1	20		60
61				-	-	-	62
63	-	-	-	-	-	-	64
65	-	-	-	-	-	-	66
67	-	-	-	-	-	-	68
69	SPARE	20	1	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	1	20	SPARE	82
83	SPARE	20	1	1	20	SPARE	84

LK - PROVIDE LOCKING TABS ON C.B.; GF - GFI TYPE C.B.; GP - GFP TYPE C.B.;
AF - ARC FAULT TYPE C.B.; ST - SHUNT TRIP C.B.

NOTES:
1. * - EX. LOAD MIGRATED FROM DEMOLISHED PANELBOARD 'AP-BR'. CONTRACTOR SHALL INCLUDE 100' OF 2-#12 & 1-#12 GND IN 3/4"C FOR EXTENDING CIRCUIT.
2. ** - EX. LOAD MIGRATED FROM DEMOLISHED PANELBOARD 'AP-BR'. CONTRACTOR SHALL INCLUDE 100' OF 3-#12 & 1-#12 GND IN 3/4"C FOR EXTENDING CIRCUIT.
3. # - EX. LOAD MIGRATED FROM DEMOLISHED DIST. BOARD 'PPBR'. CONTRACTOR SHALL INCLUDE 100' OF 3-#12 & 1-#12 GND IN 3/4"C FOR EXTENDING CIRCUIT.
4. ## - EX. LOAD MIGRATED FROM DEMOLISHED PANELBOARD 'LPEM'. CONTRACTOR SHALL INCLUDE 100' OF 2-12 & 1-#12 GND IN 3/4"C FOR EXTENDING CIRCUIT.

'LP2' PANEL SCHEDULE

MAIN RATING: 200A MAIN C.B.: 200A KAIC RATING: 22KAIC
VOLTAGE: 208Y/120V PHASE: 3 WIRE: 4 MOUNTING: SURFACE

CIRC. NO.	LOAD DESCRIPTION	BKR. AMPS	NO. OF POLES	NO. OF POLES	BKR. AMPS	LOAD DESCRIPTION	CIRC. NO.
1	LOAD CENTER	40	2	1	20	CONTROL VALVE	2
3				1	20	ROOF RECEPTACLE	4
5	RECEPTACLES	20	1	1	20	EX. HOT WATER HEATER	6
7	DHWH-1	20	1	1	15	UH-B	8
9	DHWH-2	20	1	1	15	UH-A	10
11	HWCP-1	30	2	1	20	MOTORIZED DAMPERS	12
13				1	20	MOTORIZED DAMPERS	14
15	* - EX. LOAD	20	1	1	20	HVAC CONTROLS	16
17	* - EX. LOAD	20	1	1	20	HVAC CONTROLS	18
19	* - EX. LOAD	20	1	1	20	HVAC CONTROLS	20
21	* - EX. LOAD	20	1	1	20	HVAC CONTROLS	22
23	* - EX. LOAD	20	1	2	40	** - EX. LOAD - OVEN	24
25	* - EX. LOAD	20	1				26
27	* - EX. LOAD	20	1				28
29	* - EX. LOAD	20	1	3	15	FUEL OIL TRANSFER PUMP	30
31	* - EX. LOAD	20	1				32
33	* - EX. LOAD	20	1	1	20	MOTORIZED DAMPERS	34
35	DRAFT CONTROL PANEL	20	1	1	20	MOTORIZED DAMPERS	36
37	SPARE	20	1	1	20	EX. MV ROOM LOAD	38
39	SPARE	20	1	1	20	EX. MV ROOM LOAD	40
41	SPARE	20	1	1	20	EX. MV ROOM LOAD	42
43	FUEL OIL FILTRATION PANEL	20	1	1	20	SIDE STREAM SEPARATOR PANEL	44
45	HWCP-2	30	2	1	20	LTG - MV ELEC. ROOM	46
47				1	20	DRAFT CONTROL PANEL	48
49	DRAFT CONTROL DAMPER	20	1	1	20	DRAFT CONTROL PANEL	50
51	HOT WATER MIXING VALVE	20	1	1	20	DRAFT CONTROL DAMPER	52
53	HOT WATER MIXING VALVE PNL	20	1	1	20	DRAFT CONTROL DAMPER	54
55	SPARE	20	1	1	20	EX. MV ROOM LOAD	56
57	SPARE	20	1	1	20	EX. MV ROOM LOAD	58
59	SPARE	20	1	1	20	SPARE	60
61	SPARE	20	1	1	20	SPARE	62
63	SPARE	20	1	1	20	SPARE	64
65	SPARE	20	1	1	20	SPARE	66

LK - PROVIDE LOCKING TABS ON C.B.; GF - GFI TYPE C.B.; GP - GFP TYPE C.B.;
AF - ARC FAULT TYPE C.B.; ST - SHUNT TRIP C.B.

NOTES:
1. * - EX. LOAD MIGRATED FROM DEMOLISHED PANELBOARD 'PPBH'. CONTRACTOR SHALL INCLUDE 100' OF 2-#12 & 1-#12 GND IN 3/4"C FOR EXTENDING CIRCUIT.
2. ** - EX. LOAD MIGRATED FROM DEMOLISHED PANELBOARD 'PPBH'. CONTRACTOR SHALL INCLUDE 100' OF 3-#8 & 1-#10 GND IN 3/4"C FOR EXTENDING CIRCUIT.

'LP3' PANEL SCHEDULE

MAIN RATING: 200A MAIN C.B.: 200A KAIC RATING: 22KAIC
VOLTAGE: 208Y/120V PHASE: 3 WIRE: 4 MOUNTING: SURFACE

CIRC. NO.	LOAD DESCRIPTION	BKR. AMPS	NO. OF POLES	NO. OF POLES	BKR. AMPS	LOAD DESCRIPTION	CIRC. NO.
1	RECEPTACLES	20	1	1	20	MOTORIZED CONTROL VALVES	2
3	RECEPTACLES	20	1	1	20	ROOF RECEPTACLES	4
5	AIR COMPRESSOR	20	1	1	20	HVAC CONTROLS	6
7	AIR COMPRESSOR	20	1	1	20	HVAC CONTROLS	8
9	MOTORIZED DAMPER	20	1	1	20	HVAC CONTROLS	10
11	-	-	-	1	20	WATER SOFTENER CONTROL PNL	12
13	-	-	-	-	-	-	14
15	-	-	-	-	-	-	16
17	-	-	-	-	-	-	18
19	-	-	-	-	-	-	20
21	-	-	-	-	-	-	22
23	-	-	-	-	-	-	24
25	-	-	-	-	-	-	26
27	-	-	-	-	-	-	28
29	-	-	-	-	-	-	30
31	-	-	-	-	-	-	32
33	-	-	-	-	-	-	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

LK - PROVIDE LOCKING TABS ON C.B.; GF - GFI TYPE C.B.; GP - GFP TYPE C.B.;
AF - ARC FAULT TYPE C.B.; ST - SHUNT TRIP C.B.

NOTES:

'LP4' PANEL SCHEDULE

MAIN RATING: 100A MAIN C.B.: 100A KAIC RATING: 22KAIC
VOLTAGE: 208Y/120V PHASE: 3 WIRE: 4 MOUNTING: SURFACE

CIRC. NO.	LOAD DESCRIPTION	BKR. AMPS	NO. OF POLES	NO. OF POLES	BKR. AMPS	LOAD DESCRIPTION	CIRC. NO.
1	RECEPTACLES	20	1	1	20	REFRIGERANT MONITOR PANEL	2
3	ROOF RECEPTACLE	20	1	1	15	UH-A	4
5	MOTORIZED DAMPER	20	1	1	20	CONTROL VALVES	6
7	CONTROL VALVE	20	1	-	-	-	8
9	-	-	-	-	-	-	10
11	-	-	-	-	-	-	12
13	-	-	-	-	-	-	14
15	-	-	-	-	-	-	16
17	-	-	-	-	-	-	18
19	-	-	-	-	-	-	20
21	-	-	-	-	-	-	22
23	-	-	-	-	-	-	24
25	-	-	-	-	-	-	26
27	-	-	-	-	-	-	28
29	-	-	-	-	-	-	30
31	-	-	-	-	-	-	32
33	-	-	-	-	-	-	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

LK - PROVIDE LOCKING TABS ON C.B.; GF - GFI TYPE C.B.; GP - GFP TYPE C.B.;
AF - ARC FAULT TYPE C.B.; ST - SHUNT TRIP C.B.

NOTES:

'HP1' PANEL SCHEDULE

MAIN RATING: 200A MAIN C.B.: MLO KAIC RATING: 35KAIC
VOLTAGE: 480Y/277V PHASE: 3 WIRE: 4 MOUNTING: SURFACE

CIRC. NO.	LOAD DESCRIPTION	BKR. AMPS	NO. OF POLES	NO. OF POLES	BKR. AMPS	LOAD DESCRIPTION	CIRC. NO.
1	LTG - BOILER ROOM	20	1	20	1	LTG - EXTERIOR	2
3	LTG - BOILER ROOM	20	1	"	"	-	4
5	LTG - BOILER ROOM	20	1	-	-	-	6
7	-	"	"	"	"	-	8
9	-	-	-	-	-	-	10
11	-	"	"	"	"	-	12
13	-	"	"	"	"	-	14
15	-	-	-	-	-	-	16
17	-	"	"	"	"	-	18
19	-	-	-	-	-	-	20
21	-	-	-	-	-	-	22
23	-	-	-	-	-	-	24
25	-	-	-	-	-	-	26
27	-	-	-	-	-	-	28
29	-	-	-	-	-	-	30
31	-	-	-	-	-	-	32
33	-	-	-	-	-	-	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

LK - PROVIDE LOCKING TABS ON C.B.; GF - GFI TYPE C.B.; GP - GFP TYPE C.B.;
AF - ARC FAULT TYPE C.B.; ST - SHUNT TRIP C.B.

NOTES:

'HP2' PANEL SCHEDULE

MAIN RATING: 100A MAIN C.B.: 100A KAIC RATING: 35KAIC
VOLTAGE: 480Y/277V PHASE: 3 WIRE: 4 MOUNTING: SURFACE

CIRC. NO.	LOAD DESCRIPTION	BKR. AMPS	NO. OF POLES	NO. OF POLES	BKR. AMPS	LOAD DESCRIPTION	CIRC. NO.
1	LTG - BOILER ROOM	20	1	1	20	LTG - BOILER ROOM	2
3	LTG - BOILER ROOM	20	1	"	"	-	4
5	-	-	-	-	-	-	6
7	-	"	"	"	"	-	8
9	-	-	-	-	-	-	10
11	-	"	"	"	"	-	12
13	-	-	-	-	-	-	14
15	-	-	-	-	-	-	16
17	-	-	-	-	-	-	18
19	-	-	-	-	-	-	20
21	-	-	-	-	-	-	22
23	-	-	-	-	-	-	24
25	-	-	-	-	-	-	26
27	-	-	-	-	-	-	28
29	-	-	-	-	-	-	30
31	-	-	-	-	-	-	32
33	-	-	-	-	-	-	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

LK - PROVIDE LOCKING TABS ON C.B.; GF - GFI TYPE C.B.; GP - GFP TYPE C.B.;
AF - ARC FAULT TYPE C.B.; ST - SHUNT TRIP C.B.

NOTES:

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KEYPLAN

CAMPUS - KEYPLAN

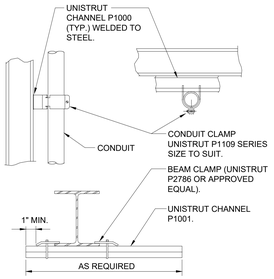
NO.	DESCRIPTION	DATE
1	ISSUED FOR BID	11/01/2021

PROJECT
CAPITAL PROJECT 4466
BUILDING E UTILITY PLANT
RENOVATION & IMPROVEMENTS
DR. ROBERT L. YEAGER HEALTH CENTER
50 SANATORIUM ROAD,
POMONA, NY 10970

DRAWING TITLE
ELECTRICAL SCHEDULES

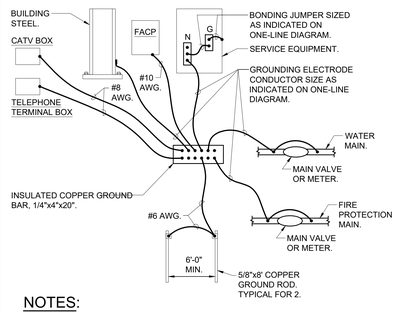
SEAL

SCALE: NONE
PROJECT NO.: NRCK00016.00
DRAWN BY: VB
DRAWING NO.: E6.1
CHECKED BY: ML
DATE: 04-28-2020



CONDUIT SUPPORTED FROM STRUCTURAL STEEL

16 SCALE: NONE

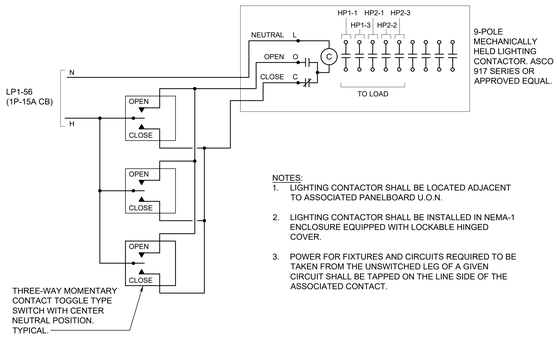


NOTES:

1.) CONNECTION TO WATER MAIN AND FIRE PROTECTION MAIN SHALL BE A MAXIMUM OF 5'-0" FROM WHERE THE PIPE ENTERS THE BUILDING AND BE PRIOR TO ANY METER, VALVE JOINT, ETC.
2.) ALL CONNECTIONS TO THE GROUND BAR SHALL BE MADE USING COMPRESSION LUGS SIZED TO ACCOMODATE THE CONDUCTORS.

SERVICE GROUNDING DETAIL TYPICAL

15 SCALE: NONE

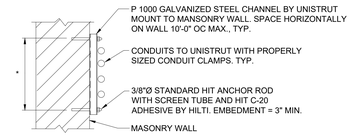


NOTES:

1. LIGHTING CONTACTOR SHALL BE LOCATED ADJACENT TO ASSOCIATED PANELBOARD U.O.N.
2. LIGHTING CONTACTOR SHALL BE INSTALLED IN NEMA-1 ENCLOSURE EQUIPPED WITH LOCKABLE HINGED COVER.
3. POWER FOR FIXTURES AND CIRCUITS REQUIRED TO BE TAKEN FROM THE UNSWITCHED LEG OF A GIVEN CIRCUIT SHALL BE TAPPED ON THE LINE SIDE OF THE ASSOCIATED CONTACT.

LIGHTING CONTROL CONTACTOR WIRING DIAGRAM

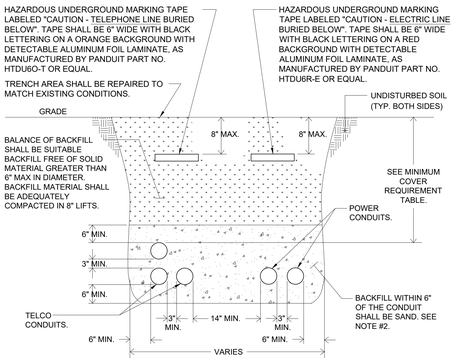
10 SCALE: NONE



* LENGTH AS REQUIRED FOR NUMBER OF CONDUITS

TYPICAL CONDUIT SUPPORT ON MASONRY

4 SCALE: 1" = 1'-0"



TRENCHING DETAIL FOR CONDUIT

14 SCALE: NONE

MINIMUM COVER REQUIREMENT TABLE

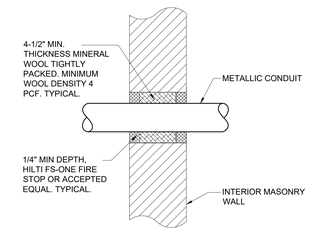
LOCATION	NONMETALLIC RACEWAYS LISTED FOR DIRECT BURIAL WITHOUT CONCRETE ENCASEMENT OR OTHER APPROVED RACEWAYS
ALL LOCATION NOT SPECIFIED BELOW.	18"
IN TRENCH BELOW 2-IN. THICK CONCRETE OR EQUIVALENT.	12"
UNDER MINIMUM OF 4-IN. THICK CONCRETE EXTERIOR SLAB WITH NO VEHICULAR TRAFFIC AND THE SLAB EXTENDING NOT LESS THAN 6 IN. BEYOND THE UNDERGROUND INSTALLATION.	4" SEE NOTE #2.
UNDER STREETS, HIGHWAYS, ROADS, ALLEYS, DRIVEWAYS, AND PARKING LOTS.	24"

NOTES:

1.) DETAIL SHOWN FOR INFORMATION PURPOSES. SAME CONCEPT SHALL ALSO APPLY FOR SINGLE CONDUITS.

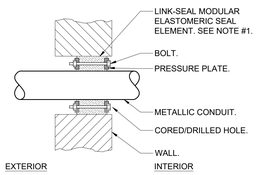
2.) SAND MAY BE OMITTED FOR INSTALLATIONS WHERE COVER REQUIREMENTS ARE 6" OR LESS.

3.) CONDUIT AND WIRING FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.



TYPICAL INTERIOR MASONRY WALL CONDUIT PENETRATION DETAIL

7 SCALE: NONE

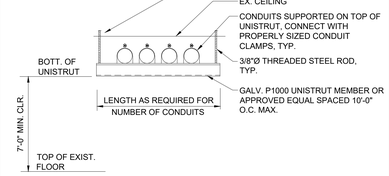


NOTES:

1.) SEAL ASSEMBLY BASED ON MODEL "C" LINK-SEAL MODULAR SEAL, WITH EPDM SEAL ELEMENT, REINFORCED NYLON POLYMER PRESSURE PLATES, STEEL WITH 2-PART ZINC DICHROMATE & CORROSION INHIBITING COATING NUTS AND BOLTS AND WITH A OPERATING TEMPERATURE RANGE OF -40°F TO +250°F.
2.) PROVIDE AND INSTALL TWO SEALS WHEN PENETRATED WALL THICKNESS IS GREATER THAN 12".
3.) PRVOIDE SCHEDULE 80 WALL SLEEVE FOR NEW WALL CONSTRUCTION PER MANUFACTURER'S REQUIREMENTS.

TYPICAL EXTERIOR MASONRY WALL BELOW GRADE CONDUIT PENETRATION DETAIL

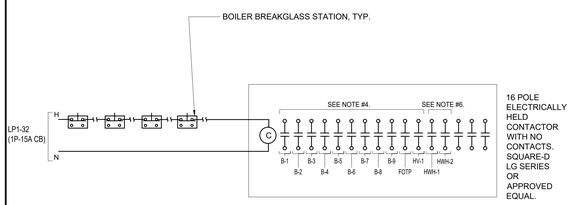
3 SCALE: NONE



CEILING CONSTRUCTION	ANCHOR TYPE	EMBEDMENT
NORMAL WT. CONC HILT	HDI DROP-IN ANCHOR	1" MIN.
CINDER CONCRETE	HILTI KWIK BOLT II	3" MIN.
HOLLOW CONSTRUCTION	TOGGLE BOLTS	NA

TRAPEZE SUPPORT DETAIL

13 SCALE: NONE



BOILER EMERGENCY SHUTDOWN WIRING DIAGRAM

11 SCALE: NONE

NOTES:

1.) ALL EQUIPMENT AND WIRING ASSOCIATED WITH THIS DIAGRAM SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UON.

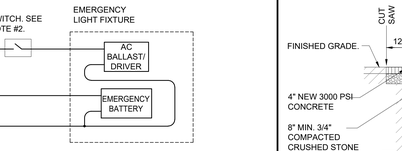
2.) CONTACTOR SHALL BE INSTALLED IN A NEMA-1 ENCLOSURE EQUIPPED WITH A LOCKABLE HINGED COVER.

3.) BOILER BREAKGLASS STATIONS SHALL BE AS MANUFACTURED BY SQUARE-D, TYPE KYK117 OR APPROVED EQUAL.

4.) INTERCEPT SOURCE OF POWER TO EACH MOTOR CONTROL CIRCUIT AND ROUTE CIRCUIT THRU CONTACTOR. ALL WIRING TO BE 2-#12 UON. COORDINATE WITH MECHANICAL CONTRACTOR.

5.) ALL RELAYS TO BE INSTALLED IN NEMA-1 ENCLOSURES.

6.) SEE ELECTRICAL PLANS FOR BRANCH CIRCUITRY INFORMATION.

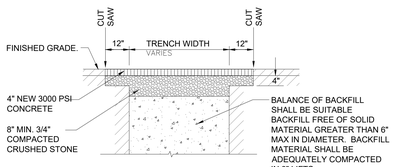


NOTES:

1. THE CONNECTION TO THE LAMPS IS NOT SHOWN - FOLLOW MANUFACTURER WIRING DIAGRAMS.
2. "SWITCH" REPRESENTS A SINGLE POLE SWITCH, A SET OF CONTACTS, A COMBINATION OF 3-WAY AND 4 WAY SWITCHES, ETC. SEE DRAWINGS FOR ACTUAL SWITCH CONFIGURATION.

SWITCHED EMERGENCY FIXTURE WIRING DIAGRAM

9 SCALE: NONE

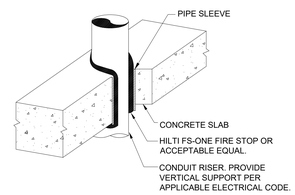


NOTE:

1. REFER TO TRENCHING DETAIL FOR TRENCH INFORMATION.

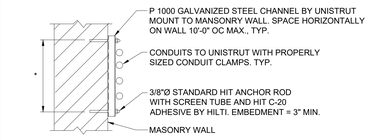
CONCRETE PAVEMENT REPLACEMENT DETAIL

6 SCALE: NONE



TYPICAL VERTICAL CONDUIT PENETRATION DETAIL

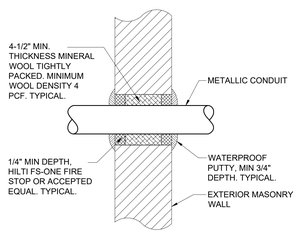
2 SCALE: NONE



* LENGTH AS REQUIRED FOR NUMBER OF CONDUITS

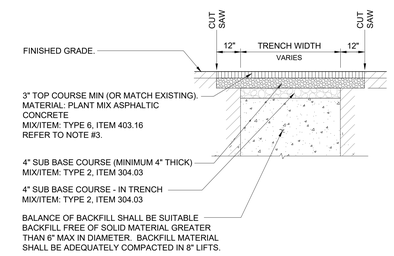
TYPICAL CONDUIT SUPPORT ON MASONRY

12 SCALE: 1" = 1'-0"



TYPICAL EXTERIOR MASONRY WALL ABOVE GRADE CONDUIT PENETRATION DETAIL

8 SCALE: NONE

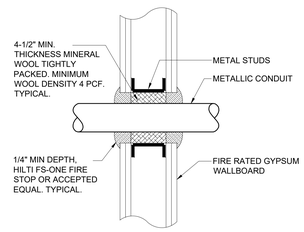


NOTES:

1.) THICKNESS INDICATED REFERS TO COMPACTED MEASURE.
2.) ITEM NUMBERS REFER TO NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
3.) REFER TO TRENCHING DETAIL FOR TRENCH INFORMATION.

BITUMINOUS PAVEMENT REPLACEMENT DETAIL

5 SCALE: NONE



TYPICAL FIRE RATED GYPSUM WALL CONDUIT PENETRATION DETAIL

1 SCALE: NONE

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KEYPLAN

CAMPUS - KEYPLAN

NO.	DESCRIPTION	DATE
1	ISSUED FOR BID	11/01/2021

PROJECT
CAPITAL PROJECT 4466
BUILDING E UTILITY PLANT RENOVATION & IMPROVEMENTS
DR. ROBERT L. YEAGER HEALTH CENTER
50 SANATORIUM ROAD, POMONA, NY 10970

DRAWING TITLE
ELECTRICAL DETAILS

SEAL

SCALE: NONE	PROJECT NO.: NRCK00016.00
DRAWN BY: VB	DRAWING NO.: E7.1
CHECKED BY: ML	
DATE: 04-28-2020	

15 KV CABLE TESTING:

1. REFERENCES: ANSI/IEEE C2 - NATIONAL ELECTRICAL SAFETY CODE, ANSI/NFPA 70 - NATIONAL ELECTRICAL CODE, IEEE 48 - TEST PROCEDURES AND REQUIREMENTS FOR HIGH-VOLTAGE ALTERNATING-CURRENT CABLE TERMINATIONS.

2. SUBMITTALS: PROVIDE FOR CABLE, TERMINATIONS, ACCESSORIES & TEST REPORTS. MANUFACTURER'S INSTRUCTIONS: INDICATE APPLICATION CONDITIONS AND LIMITATIONS OF USE STIPULATED BY PRODUCT TESTING AGENCY SPECIFIED UNDER REGULATORY REQUIREMENTS.

3. PROJECT RECORD DOCUMENTS: ACCURATELY RECORD ACTUAL SIZES AND LOCATIONS OF CABLES.

4. OPERATION AND MAINTENANCE DATA: INCLUDE INSTRUCTIONS FOR TESTING AND CLEANING CABLE AND ACCESSORIES.

5. QUALIFICATIONS: MANUFACTURER, COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS SPECIFIED IN THIS SECTION WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE. INSTALLER, COMPANY SPECIALIZING IN INSTALLING PRODUCTS SPECIFIED IN THIS SECTION WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE.

6. MANUFACTURERS: 1) OKONITE COMPANY, 2) KING WIRE INC. 3) KERITE.

7. FIELD QUALITY CONTROL: INSPECT EXPOSED CABLE SECTIONS FOR PHYSICAL DAMAGE, PROPER CONNECTIONS AS SHOWN ON DRAWINGS AND AS REQUIRED, GROUNDING, CABLE SUPPORTS, AND TERMINATIONS FOR PROPER INSTALLATION. PERFORM DC HIGH POTENTIAL TEST OF EACH CONDUCTOR IN ACCORDANCE WITH NEMA WC 8 AND THE FOLLOWING REQUIRED TESTS.

8. THE 15KV CABLE SHALL BE DC PROOF TESTED BY AN INDEPENDENT TESTING FIRM. THE ATTACHED DC PROOF TESTING FORM SHALL BE COMPLETED BY THE TESTING FIRM AND SUBMITTED FOR REVIEW.

9. TEST LEVELS: A DIRECT-CURRENT VOLTAGE TEST SHALL BE MADE FOR SOLID DIELECTRIC CABLE IN ACCORDANCE WITH THE FOLLOWING TABLE:

RATED CIRCUIT VOLTAGE PHASE TO PHASE KV	DC TEST VOLTAGE KV
15	40

A. THE VOLTAGE SHALL BE APPLIED BETWEEN THE CONDUCTOR AND THE METALLIC SHEATH, SHIELD OR CONCENTRIC NEUTRAL WIRES.

B. THE MAXIMUM APPLIED DIRECT-CURRENT VOLTAGE SHALL NOT BE GREATER THAN THREE (3) TIMES THE ALTERNATING CURRENT VOLTAGE RATING OF THE CABLE OR CABLE ACCESSORY.

C. THE RATE OF INCREASE FROM THE INITIALLY APPLIED VOLTAGE TO THE SPECIFIED TEST VOLTAGE SHALL BE APPROXIMATELY UNIFORM AND SHALL NOT BE OVER 100 PERCENT IN 10 SECONDS OR LESS THAN 100 PERCENT IN 60 SECONDS.

D. THE DURATION OF THE TEST SHALL BE 15 MINUTES AT FULL VOLTAGE AND THE LEAKAGE CURRENT SHALL NOT BE RECORDED UNTIL AT FULL VOLTAGE. THE CABLE MUST MAINTAIN THE SPECIFIED TEST VOLTAGE FOR THE DURATION OF THE TEST TO BE CONSIDERED ACCEPTABLE.

10. PREPARATION FOR TESTING: THE INDEPENDENT TESTING COMPANY PERSONNEL SHALL COMPLY WITH THE FOLLOWING MINIMUM REQUIREMENTS:

A. SAFETY - (TO PRECLUDE ACCIDENTAL CONTACT WITH THE CABLE(S) BEING TESTED)

1. THE TEST AREA AND THE CABLE (S) UNDER TEST SHALL BE ROPED OFF.

2. "DANGER-HIGH VOLTAGE" SIGNS SHALL BE DISPLAYED AROUND ALL ROPED OFF AREAS.

3. TEST PERSONNEL SHALL BE STATIONED AT ALL EXPOSED CABLE TERMINATIONS.

B. CLEARANCES - THE CABLE UNDER TEST MUST BE COMPLETELY ISOLATED FROM ALL EQUIPMENT.

1. TO REDUCE LEAKAGE CURRENT DURING TESTING, CLEAN THE TERMINATIONS AND COVER ANY EXPOSED METALLIC SURFACES WITH PLASTIC WRAP OR DUCT SEAL TO REDUCE CORONA EFFECTS.

2. MAINTAIN A CLEARANCE OF AT LEAST TWO FEET BETWEEN TEST POINT OR EXPOSED CABLE ENDS UNDER TEST AND ANY UNENERGIZED SURFACE AND AT LEAST THREE FEET BETWEEN TEST POINT OR EXPOSED CABLE ENDS AND ANY ENERGIZED SURFACE (BUS IN SWITCHGEAR, OTHER CIRCUITS OR CABLES, ETC.)

11. GROUNDING:

A. THE METALLIC SHIELDS (CONCENTRIC NEUTRALS, COPPER OR ZINC TAPES, DRAIN WIRES) OR METALLIC SHEATHS OF SHIELDED CABLE MUST BE GROUNDED DURING THE TEST.

B. CABLES NOT UNDER TEST MUST BE GROUNDED ON BOTH CONDUCTORS AND METALLIC SHEATHS.

C. AFTER EACH CABLE TEST THE CABLE SHALL BE ALLOWED TO DISCHARGE TO 10KV OR BELOW BEFORE APPLYING A GROUND. AN APPROPRIATE GROUNDING STICK OR RUBBER GLOVE SHALL BE USED AND/OR WORN WHEN APPLYING THE GROUND. GROUND MUST REMAIN ON FOR AT LEAST 15 MINUTES TO DRAIN CHARGE FROM TESTING.

12. CONNECTIONS

A. ALL BOLTED TERMINATIONS SWITCHES SHALL BE UNBOLTED AND PULLED INTO CLEARANCES AS NOTED ABOVE.

B. ALL LEADS EXTENDING FROM THE TOP OF ANY TERMINATION TO OVERHEAD LINES MUST BE REMOVED AND THE TERMINATION LOWERED TO OBTAIN ADEQUATE CLEARANCE.

13. SAMPLE: REPORTING FORM - DC PROOF TESTING

REPORTING FORM - DC PROOF TESTING

TESTING COMPANY NAME_____

CUSTOMER_____

LOCATION_____

DATE OF TEST____ TESTER'S NAME_____

HUMIDITY____% TEMPERATURE_____

WEATHER: CLOUDY__ RAIN__ SNOW__

FOG__ SUNNY__

PHASE IDENTIFICATION			
KV TEST VOLTAGE			
MICROAMPERES	μ	μ	μ
TEST SET LEAKAGE			
15 SECONDS			
30 SECONDS			
45 SECONDS			
1 MINUTE			
2 MINUTES			
3 MINUTES			
4 MINUTES			
5 MINUTES			
6 MINUTES			
7 MINUTES			
8 MINUTES			
9 MINUTES			
10 MINUTES			
11 MINUTES			
12 MINUTES			
13 MINUTES			
14 MINUTES			
15 MINUTES			

CABLE MANUFACTURER: _____

CABLE RELATED VOLTAGE: _____

OPERATING VOLTAGE: _____

CONDUCTOR SIZE: _____

TYPE OF INSULATION: _____

NUMBER OF CONDUCTORS: _____

LENGTH: _____

AGE: _____

TYPE OF JACKET: _____

SEPARATE NEUTRAL: _____

OR

CONCENTRIC NEUTRAL WIRES: _____

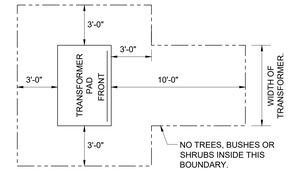
TYPE OF TERMINATIONS AT TEST END: _____

TYPE OF TERMINATIONS AT OPPOSITE END: _____

REMARKS: _____

14. PROTECTION:

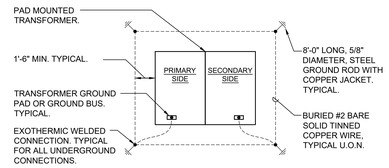
A. PROTECT INSTALLED CABLES FROM ENTRANCE OF MOISTURE.



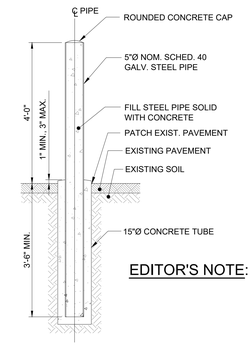
TRANSFORMER CLEARANCE NOTES:

1.) AREA IN FRONT OF DOOR TO BE CLEAR OF ALL ROCKS, STUMPS AND OTHER OBSTRUCTIONS SO THAT THE OPERATOR HAS A SAFE WORKING AREA.
2.) UTILITY COMPANY SHALL HAVE THE RIGHT TO CUT BACK GROWING BUSHES TO WITHIN STATED CLEARANCES.

3 CLEARANCE FOR PLANTING AROUND TRANSFORMER PAD
SCALE: NONE



4 PAD MOUNTED TRANSFORMER GROUNDING DETAIL
SCALE: NONE



EDITOR'S NOTE:

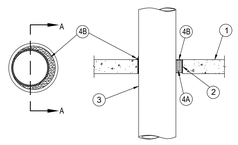
2 TYPICAL BOLLARD ON GRADE DETAIL
SCALE: NONE

NOTES:
1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 26 IN.
   - SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
2. STEEL SLEEVE (OPTIONAL) - NOM 14 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY.
3. THROUGH PENETRANTS - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING OR SLEEVE SHALL BE MIN 0 IN. (POINT CONTACT) TO MAX 2 IN. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
   A. STEEL PIPE - NOM 24 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   B. IRON PIPE - NOM 24 IN. DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 24 IN DIAM (OR SMALLER) CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE.
   C. CONDUIT - NOM 6 IN. DIAM (OR SMALLER) STEEL CONDUIT OR NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.
   D. COPPER TUBING - NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
   E. COPPER PIPE - NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
4. FIRESTOP SYSTEM - THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:
   A. PACKING MATERIAL - MIN 4 IN. THICKNESS OF MIN 4 PCF MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
   B. FILL,VOID OR CAVITY MATERIALS* - CAULK OR SEALANT - MIN 1/4 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL. MIN 1/4 IN. DIAM BEAD OF CAULK APPLIED TO THE PENETRANT/CONCRETE OR PENETRANT/SLEEVE INTERFACE AT THE POINT CONTACT LOCATION ON THE TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL.

3M COMPANY - CP 25WB+ CAULK OR FB-3000 WT SEALANT.
(THE W RATING APPLIES ONLY WHEN FB-3000 WT IS USED.)

*BEARING THE UL CLASSIFICATION MARKING

SYSTEM NO. C-AJ-1274
AUGUST 23, 2004
F RATING - 3 HR
T RATING - 0 HR
W RATING - CLASS I (SEE ITEM 4)



SECTION A-A

6 UNINSULATED PIPE AND CONDUIT FIRE STOPPING DETAIL
SCALE: NONE

1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M³) CONCRETE. FLOOR ASSEMBLY MAY ALSO BE CONSTRUCTED OF ANY MIN 6 IN. (152 MM) THICK UL CLASSIFIED HOLLOW-CORE PRECAST CONCRETE UNITS*. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. DIAM OF OPENING TO BE NOM 2 IN. (51 MM) LARGER THAN OUTSIDE DIAM OF PIPE COVERING MATERIAL (ITEM 3). MAX DIAM OF OPENING 12 IN. (305 MM). MAX DIAM OF OPENING IN FLOORS CONSTRUCTED OF HOLLOW-CORE CONCRETE IS 7 IN. (178 MM).

SEE CONCRETE BLOCKS (CAZT) AND PRECAST CONCRETE UNITS (CFTV) CATEGORIES IN FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

2. THROUGH PENETRANTS - ONE METALLIC PIPE OR TUBING TO BE INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN OPENING. PENETRANT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBES MAY BE USED:

A. STEEL PIPE - NOM 4 IN. (102 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

B. IRON PIPE - NOM 4 IN. (102 MM) DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.

C. COPPER TUBING - NOM 4 IN. (102 MM) DIAM (OR SMALLER) TYPE M (OR HEAVIER) COPPER TUBE.

D. COPPER PIPE - NOM 4 IN. (102 MM) DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

3. PIPE COVERING - NOM 3 IN. (78 MM) THICK (OR LESS) HOLLOW CYLINDRICAL HEAVY DENSITY GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH PRODUCT. ANNULAR SPACE BETWEEN THE PIPE COVERING AND PERIPHERY OF OPENING OR SLEEVE SHALL BE MIN 3/8 IN. (10 MM) TO MAX 1-1/2 IN. (38 MM). WHEN PIPE COVERING MATERIAL THICKNESS IS LESS THAN 3 IN. (76 MM), T RATING IS 0 HR.

SEE PIPE AND EQUIPMENT COVERING - MATERIALS (BRGU) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.

4. FIRESTOP SYSTEM - THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:

A. PACKING MATERIAL - (OPTIONAL, NOT SHOWN) - POLYETHYLENE BACKER ROD OR NOM 1 IN. (25 MM) THICKNESS OF TIGHTLY-PACKED MINERAL WOOL BATT OR GLASS FIBER INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL. IN FLOORS CONSTRUCTED OF HOLLOW-CORE CONCRETE, PACKING MATERIAL TO BE RECESSED FROM TOP AND BOTTOM SURFACES OF FLOOR OR SLEEVE AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

A1. FORMING MATERIAL* - AS AN ALTERNATE TO THE PACKING MATERIAL IN ITEM 5A, NOM 4 IN. (102 MM) WIDE STRIPS OF MIN 1/2 IN (13 MM) THICK COMPRESSIBLE MAT FOLDED IN HALF LENGTHWISE AND STACKED TO A THICKNESS GREATER THAN THE WIDTH OF THE ANNULAR SPACE AND COMPRESSIONFITTED, EDGE-FIRST, TO FILL THE ANNULAR SPACE TO A MIN 2 IN. (51 MM) DEPTH. TOP OF FORMING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS NECESSARY TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL. IN FLOORS CONSTRUCTED OF HOLLOW-CORE CONCRETE, FORMING MATERIAL TO BE RECESSED FROM TOP AND BOTTOM SURFACES OF FLOOR OR SLEEVE AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

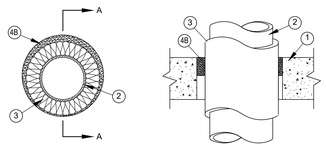
3M COMPANY - FIRE BARRIER PACKING MATERIAL

B. FILL, VOID OR CAVITY MATERIALS* - SEALANT - MIN 2 IN. (51 MM) THICKNESS OF SEALANT APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL. IN FLOORS CONSTRUCTED OF HOLLOW-CORE CONCRETE, MIN 2 IN. (51 MM) THICKNESS OF SEALANT APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP AND BOTTOM SURFACES OF FLOOR OR SLEEVE.

3M COMPANY - FB-3000 WT

*BEARING THE UL CLASSIFICATION MARK

SYSTEM NO. C-AJ-5310
JUNE 14, 2007
T RATING - 0 AND 1 HR (SEE ITEM 3)
F RATING - 2 HR



SECTION A-A

5 INSULATED PIPE FIRE STOPPING DETAIL
SCALE: NONE

LEGEND:

1. 4-#12 AWG. START CIRCUIT FROM AUTOMATIC TRANSFER SWITCH TO GENERATOR CONTROL PANEL.
2. TWISTED SHIELDED PAIR - BELDEN #9841. COMMUNICATIONS CIRCUIT FROM GENERATOR CONTROL PANEL TO REMOTE ANNUNCIATOR.
3. 2-#12 AWG. POWER FROM GENERATOR SET BATTERY TO REMOTE ANNUNCIATOR.
4. POWER CONDUIT FOR BRANCH CIRCUITS TO GENERATOR SET. SEE CIRCUIT INFORMATION FOR ITEMS 5, 6 & 7 BELOW.
5. LP1-34
6. LP1-36
7. LP1-38,40

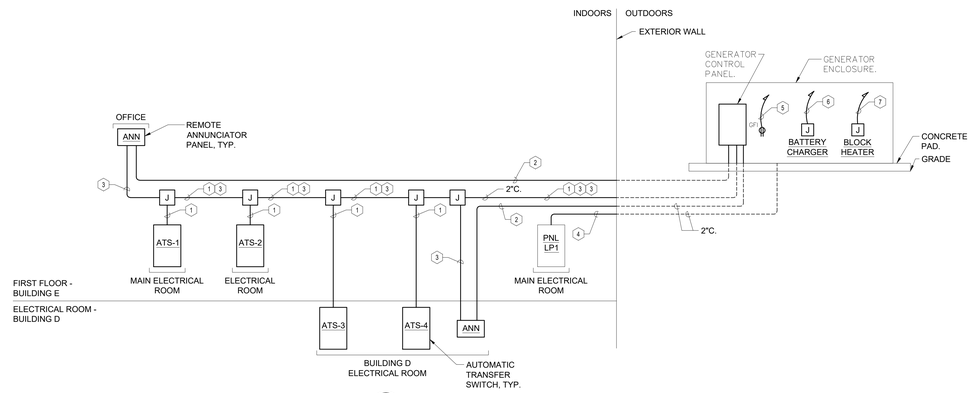
NOTES:

1.) WIRING ON THIS DETAIL SHOWN FOR INFORMATIONAL PURPOSES ONLY. COORDINATE EXACT SIZE, QUANTITY AND TYPE OF WIRING WITH MANUFACTURER'S SUGGESTION FOR EQUIPMENT PURCHASED.

2.) CONDUITS SHALL BE 1" U.O.N.

3.) SEE ONE-LINE DIAGRAM FOR POWER OUTPUT FEEDERS INFORMATION.

4.) SEE SITE PLAN FOR ADDITIONAL REQUIREMENTS.



1 GENERATOR CONTROL WIRING RISER DIAGRAM
SCALE: NONE

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KEYPLAN

CAMPUS - KEYPLAN

NO.	DESCRIPTION	DATE
1	ISSUED FOR BID	11/01/2021

PROJECT
CAPITAL PROJECT 4466
BUILDING E UTILITY PLANT
RENOVATION & IMPROVEMENTS
DR. ROBERT L. YEAGER HEALTH CENTER
50 SANATORIUM ROAD,
POMONA, NY 10970

DRAWING TITLE
ELECTRICAL DETAILS

SEAL

SCALE	PROJECT NO.
NONE	NRCK00016.00
DRAWN BY: VB	DRAWING NO.
CHECKED BY: ML	E7.2
DATE: 04-28-2020	