

FIRST FLOOR PLAN - PLUMBING
SCALE: 1/8" = 1'-0"

KEYED DEMOLITION NOTES:

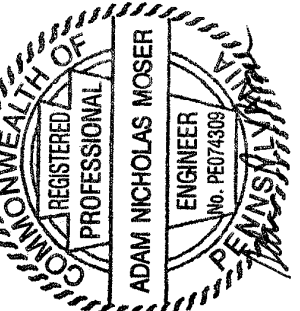
- 1 TEMPORARILY REMOVE EXISTING COMPRESSED AIR PIPING EXPOSED ALONG EXISTING WALL TO ALLOW FOR CONSTRUCTION OF NEW WALL. RE-INSTALL EXISTING COMPRESSED AIR PIPING FOLLOWING NEW WALL CONSTRUCTION.
- 2 DISCONNECT EXISTING DOMESTIC WATER PIPING TO EXISTING WATER HEATER. RE-PIPE WATER HEATER PER DETAIL.
- 3 REMOVE EXISTING DOMESTIC WATER PEX PIPING BACK TO MAIN TAKE-OFF AT EQUIPMENT ROOM.
- 4 REMOVE ABANDONED EXISTING PVC VENT PIPE. CAP AT FLOOR.
- 5 DISCONNECT EXISTING VENT RISER PIPING AND RE-PIPE TO ALLOW FOR CONSTRUCTION OF NEW WALL.

KEYED DRAWING NOTES:

- 1 CONNECT NEW 2" LPG BRANCH PIPING TO EXISTING RISER AND ROUTE TO NEW HEATING EQUIPMENT.
- 2 SEE DETAIL 2/P3 FOR RE-PIPING EXISTING DOMESTIC WATER HEATER.
- 3 CONNECT NEW DCW PIPING TO EXISTING SUPPLY HEADER.
- 4 CONNECT EXISTING DHW BRANCH PIPING TO NEW DHW SUPPLY PIPING.
- 5 CONNECT NEW COMPRESSED AIR PIPING TO EXISTING COMPRESSED AIR PIPING HEADER.

REVISIONS	DESCRIPTION
DATE	DESCRIPTION
07.14.21	FIRE PUMP ROOM ADDED. STORAGE ROOM SIZE INCREASE
07.27.21	STORAGE ROOMS OMITTED. OH COILING DOOR ADDED
08.30.21	MEP REVISIONS FOR OWNER CHANGES

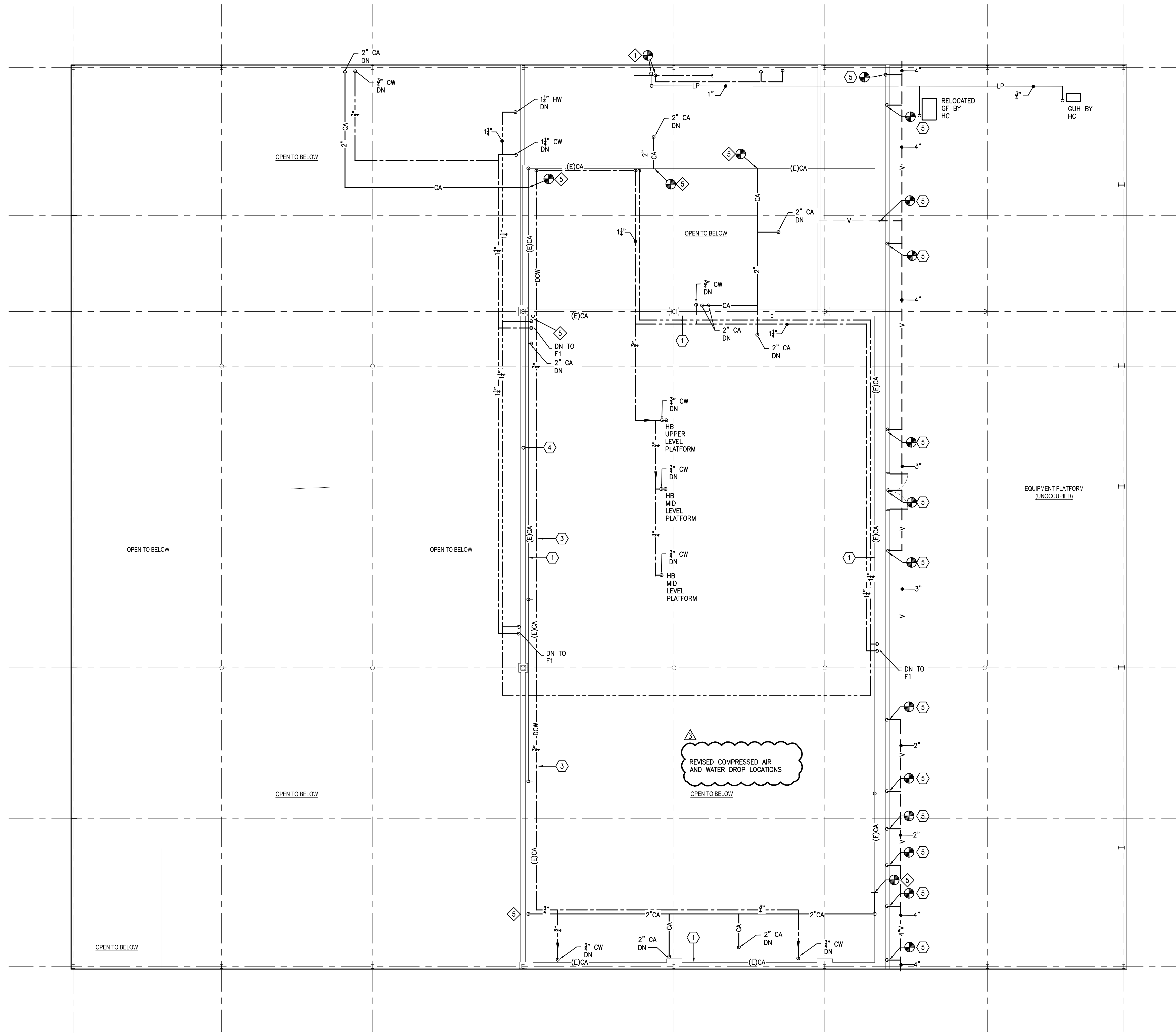
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1/8" FIRST FLOOR PLAN - PLUMBING
PROPOSED BUILDING RENOVATIONS AT SHARTLESVILLE FOR
BULK CHEMICALS
72 FEICK INDUSTRIAL DRIVE UPPER BERN TOWNSHIP, BERKS COUNTY, PA.

ALL DIMENSIONS AND EXISTING CONDITIONS
SHALL BE CHECKED AND VERIFIED
BY THE CONTRACTOR AT THE SITE.
JOB NO.: 20003.00
DRAWN BY: SA
DATE: 08.30.2021



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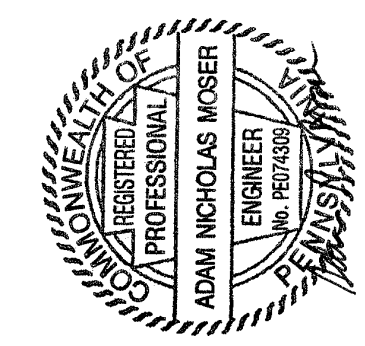
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- 4 CONNECT EXISTING DHW BRANCH PIPING TO NEW DHW SUPPLY PIPING.
- 5 CONNECT NEW COMPRESSED AIR PIPING TO EXISTING COMPRESSED AIR PIPING HEADER.

UPPER FLOOR PLAN - PLUMBING
SCALE: 1/8" = 1'-0"

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07.27.21	STORAGE ROOMS OMITTED, OH COILING DOOR ADDED
08.30.21	MEP REVISIONS FOR OWNER CHANGES

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1/8" UPPER FLOOR PLAN - PLUMBING
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72 FEICK INDUSTRIAL DRIVE, UPPER BERN TOWNSHIP, BERKS COUNTY, PA.

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PLUMBING LEGEND

(ALL SYMBOLS MAY NOT APPLY TO THIS PROJECT)

	2-WAY CONTROL VALVE		DOMESTIC COLD WATER
	MIXING VALVE		DOMESTIC HOT WATER
	BACKFLOW PREVENTER		DOMESTIC HOT WATER RECIRC.
	SAFETY RELIEF VALVE		DI-IONIZED PROCESS WATER
	WATER PRESSURE REDUCING VALVE		WELL WATER SUPPLY
	BALL OR BUTTERFLY VALVE		SANITARY WASTE
	CALIBRATED BALANCING VALVE		SANITARY WASTE - UNDERGROUND
	CHECK VALVE		SANITARY VENT
	STRAINER		ACID WASTE
	GAS COCK		ACID WASTE VENT
	GAS REGULATOR		NATURAL GAS PIPING
	WATER HAMMER ARRESTOR - SIZE PER PDI STANDARD		DOUBLE WALL CONTAINMENT GAS PIPING - UNDERGROUND
	UNION OR FLANGED CONNECTION		GAS VENT PIPING
	FLEXIBLE PIPE CONNECTION		GAS VENT PIPING - UNDERGROUND
	FLOW METER		LIQUIFIED PETROLEUM GAS PIPING
	SOLENOID VALVE		RAINWATER CONDUCTOR
	THERMOMETER		RAINWATER CONDUCTOR - BELOW
	WATER METER		CONDENSATE DRAIN PIPING
	AQUASTAT		PUMPED CONDENSATE PIPING
	NEEDLE VALVE		TEMPERED WATER
	TRAP PRIMER		COMPRESSED AIR
	KEYED DRAWING NOTE		
	KEYED DEMOLITION NOTE		
	CONNECT TO EXISTING		
	EXTENT OF DEMOLITION		

ABBREVIATIONS

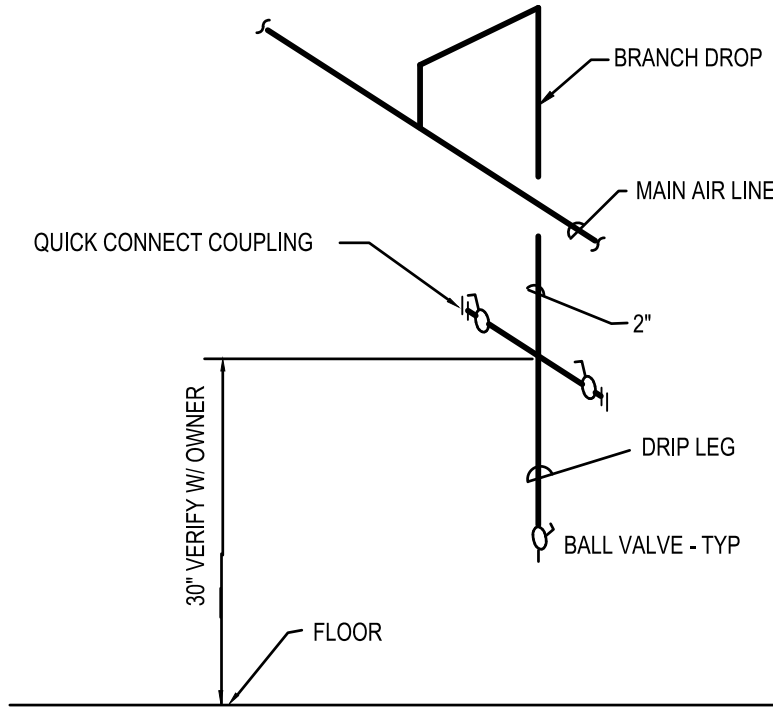
ABV	ABOVE	FCO	FLOOR CLEAN OUT
APPROX	APPROXIMATELY	FD	FLOOR DRAIN
ARCH	ARCHITECTURAL	FLR	FLOOR
A/TR	ACID VENT THRU ROOF	GC	GENERAL CONTRACTOR
BLW	BELOW	HW	HOT WATER
BLDG	BUILDING	HC	HEATING CONTRACTOR
CA	COMPRESSED AIR	HW	HEATING CONTRACTOR
CD	CONDENSATE DRAIN	INVT	INVERT
CLG	CEILING	LAV	LAVATORY
CO	CLEAN OUT	MH	MAN HOLE
COND	CONDENSATE	PC	PLUMBING CONTRACTOR
CONN	CONNECT	PP	PNEUMATIC PUMP (BY OTHERS)
CW	COLD WATER	REQ'D	REQUIRED
DI	DEIONIZED WATER	RWC	RAIN WATER CONDUCTOR
DN	DOWN	SAN	SANITARY
DWG	DRAWING	SH	SHOWER
EC	ELECTRICAL CONTRACTOR	SS	STAINLESS STEEL
EL	ELEVATION	TYP	TYPICAL
EQUIP	EQUIPMENT	UR	URINAL
EXIST	EXISTING	V	VENT
EXP	EXPANSION	VTR	VENT THRU ROOF
		WC	WATER CLOSET
		WCO	WALL CLEAN OUT

PUMP SCHEDULE

SYMBOL	G.P.M.	HEAD	PUMP MOTOR			EFFICIENCY	MODEL	MANUF.	REMARKS
			H.P.	R.P.M.	ELECTRIC				
CP-1	3.0	15'	.08	2650	120-1-60	-	PL-308	BELL & COSSETT	BRONZE BODY

PLUMBING FIXTURE SCHEDULE

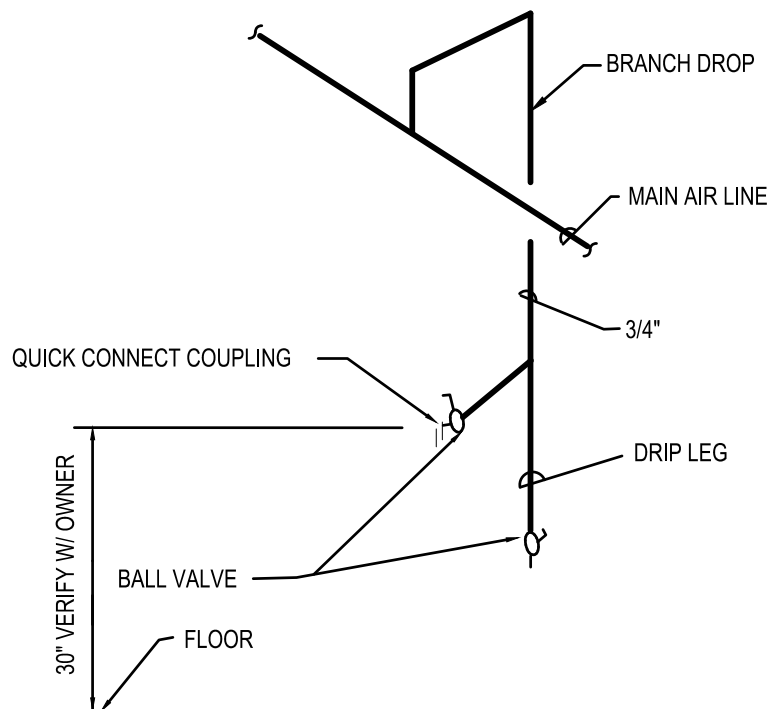
SYMBOL	FIXTURE	C.W.	H.W.	SAN.	VENT	TRAP	MOUNTING	RIM HEIGHT	REMARKS
F1	EMERGENCY STATION	1 1/4"	1 1/4"	TO FLOOR	1-1/2"	2"	FLOOR / WALL	SEE ARCH.	W/ ANSI Z358.1 COMPLIANT EMERGENCY MIXING VALVE



6

COMPRESSED AIR DROP DETAIL

NO SCALE



4

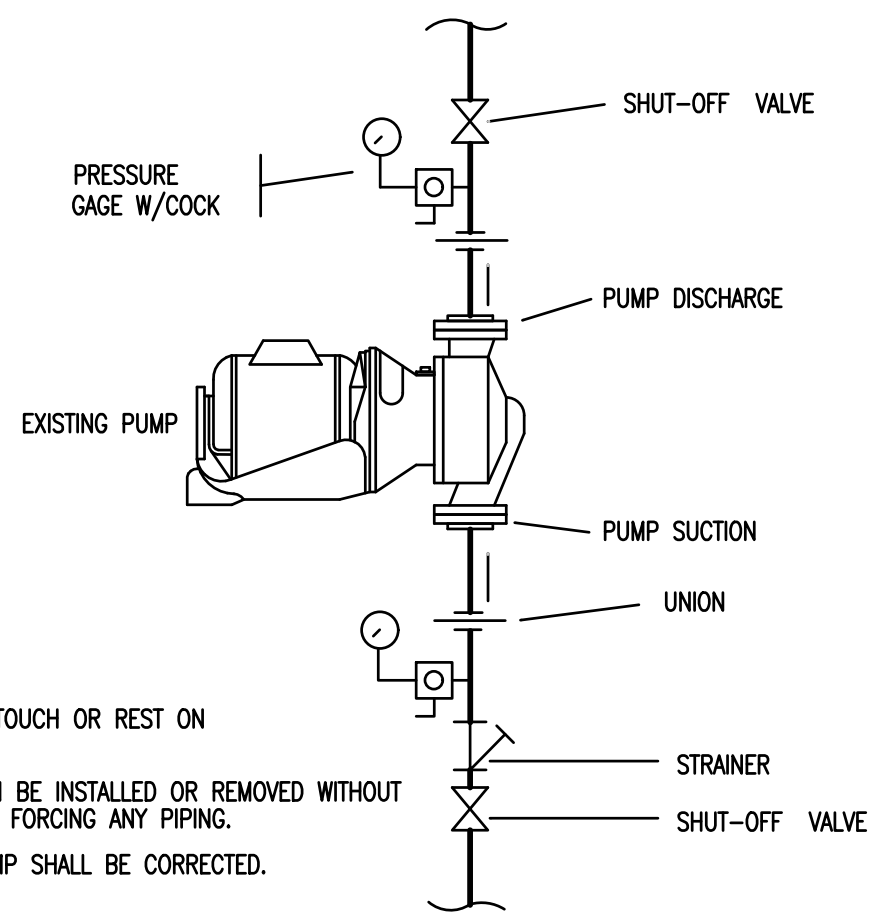
COMPRESSED AIR DROP DETAIL

NO SCALE

5

-

NO SCALE

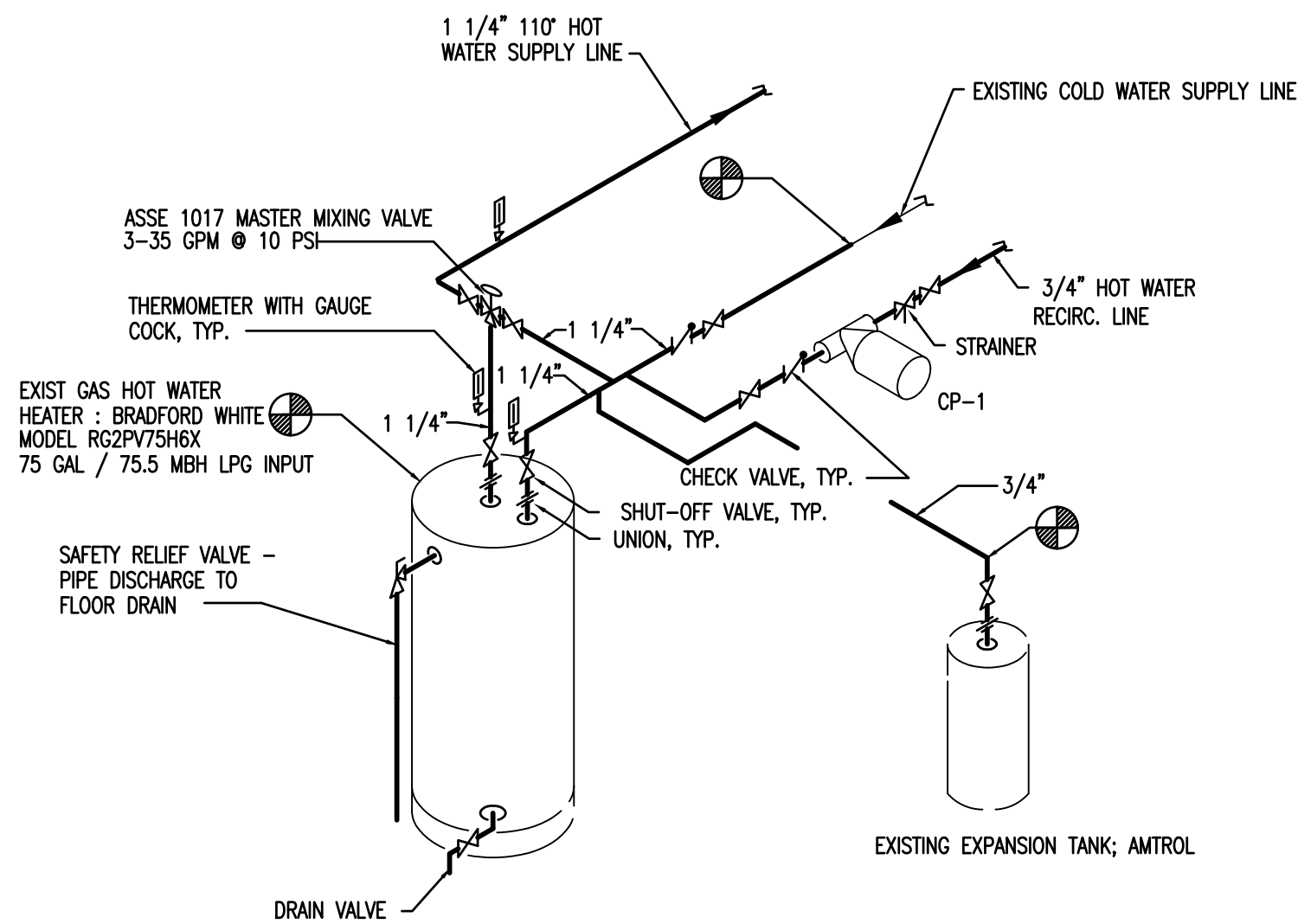


- NOTES:**
- PUMP SHALL BE INSTALLED LEVEL AND SHALL NOT TOUCH OR REST ON ANY PART OF THE BUILDING STRUCTURE.
 - PUMP SHALL BE INSTALLED SO THAT THE PUMP CAN BE INSTALLED OR REMOVED WITHOUT REMOVING ANY PIPING OR VALVES OR SPRINGING OR FORCING ANY PIPING.
 - ANY VIBRATION OR EXCESSIVE NOISE FROM THE PUMP SHALL BE CORRECTED.

2

IN-LINE PUMP DETAIL

NO SCALE



3

EXISTING WATER HEATER DETAIL

NO SCALE

1

-

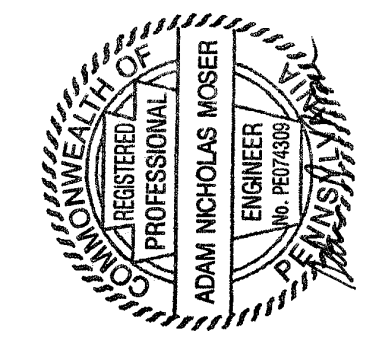
NO SCALE

REVISIONS

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PLUMBING SCHEDULES & DETAILS
PROPOSED BUILDING RENOVATIONS AT SHARTLESVILLE FOR
BULK CHEMICALS
72 FELCK INDUSTRIAL DRIVE, UPPER BERN TOWNSHIP, BERKS COUNTY, PA.

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PLUMBING SPECIFICATIONS

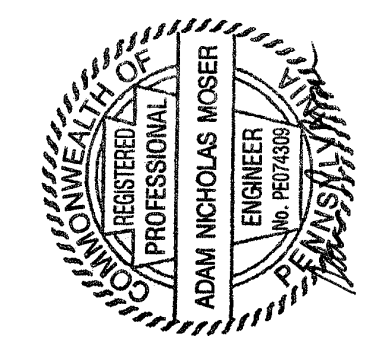
- 15.0 **QUALITY ASSURANCE**
 A. Monitor quality control over suppliers, manufacturers, products, services, site conditions and workmanship, to produce work of specified quality.
 B. Follow manufacturers written instructions completely.
 C. Work shall be completed by personnel qualified to complete work of specified quality.
 D. Secure equipment and provide installations that are complete with positive anchoring and support devices designed to handle the stresses, vibration, physical use and/or abuse the equipment and installations may expect to experience.
- 15.1 **SUBSTITUTIONS**
 Equip. specified on specs. indicates type, size, capacity & standard of quality. All equipment may be substituted only with approved equip. that meets or exceeds the design criteria listed.
- 15.2 **MECHANICAL/ELECTRICAL COORDINATION**
 A. All piping shall be kept a minimum of 3 feet away from and shall not run above any and all electrical enclosures and equipment.
- 15.3 **SUBMITTALS**
 A. Prior to any installations, submit for review, PDF of all shop drawings and catalog data for all materials and equipment intended for use and/or installation.
 B. The contractor shall include warranties, guarantees, O&M manuals, balancing reports and functional test verification documentation.
- 15.4 **REGULATORY REQUIREMENTS**
 A. Conform to the locally observed and applicable Building, Mechanical, Plumbing and Fire Protection codes.
 B. Fire Protection: Conform to the latest edition of the National Fire Protection, State and Local Codes.
 C. Obtain required permits and request inspections as necessary and in accordance with each "Authority having jurisdiction".
- 15.5 **PROJECT/SITE CONDITIONS**
 A. The drawings indicated approximate locations of utilities, and existing installations and services. It is the responsibility of the Contractor to verify, in the field, the exact locations of all such utilities. The Contractor shall conform to all requirements of the local utility companies and the facility owner. The Contractor shall include in the bid, prices for valves, meter boxes, meters and any other equipment that the utility companies or facility owner may require.
- 15.6 **SYSTEMS COMMISSIONING**
 A. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequences, or any other conditions required to be verified prior to start-up. Prevent any potential damage to equipment or systems caused by inadequate or incorrect start-up preparation.
 B. Execute start-up under the supervision of responsible and qualified Contractor's personnel certified in the start-up of each piece of equipment or system. Certification shall be in accordance with manufacturers requirements.
 C. Test, Adjust and Balance all equipment and systems as required to provide a complete and correctly operating system in accordance with the indicated design drawings.
- 15.7 **GUARANTEE**
 THE CONTRACTOR SHALL ALSO FURNISH THE OWNER A WRITTEN WARRANTY STATING THAT ALL EQUIPMENT, MATERIAL, AND WORKMANSHIP PROVIDED UNDER THE CONTRACT AND ANY SUBSEQUENT CHANGE ORDERS THEREO ARE FREE FROM ANY DEFECTS AND ARE FULLY GUARANTEED FOR A ONE (1) YEAR PERIOD FROM THE TIME OF FINAL ACCEPTANCE. THE GUARANTEE SHALL ALSO WARRANT THAT ALL EQUIPMENT, MATERIAL AND WORKMANSHIP WHICH MAY PROVE DEFECTIVE WITHIN THE GUARANTEE PERIOD SHALL BE REPLACED, BY THE CONTRACTOR, AT NO ADDITIONAL COST TO THE OWNER. **GUARANTEE (IN TRIPLICATE)**
- 15.8 **PROGRESS CLEANING**
 A. Maintain work areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
 B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and any other closed or remote spaces, prior to enclosing the space.
 C. Remove waste materials, debris and rubbish from site weekly and dispose off-site.
- 15.9 **STORAGE AND PROTECTION**
 A. Store and protect materials and equipment in accordance with manufacturer's instructions. Contractor is responsible for damage to stored equipment and materials due to inadequate or insufficient protection.
- 15.10 **AS-BUILT DRAWINGS**
 A. Maintain a record set of installation drawings during construction. A record shall be kept on these drawings of all deviations and changes from the contract drawings. This record shall include final locations of all utilities, equipment, piping, ducts, controls, etc. At the completion of the work the contractor shall forward these drawings to the owner.
- 15.11 **OPERATION AND MAINTENANCE DATA**
 A. Furnish three (3) sets of complete instructions for operation of all equipment and systems including complete wiring diagrams for control systems and equipment. The data shall be bound in a notebook, organized, indexed and delivered to the owner.
- 15.12 **FILL MATERIALS**
 A. Fill fill shall be any type material which consists of hard durable materials and soil binder, without excessive clay, organic matter or any other unsuitable material.
 B. Acceptance of fill shall be based on the above requirements and final acceptance shall be made by the engineer.
- 15.13 **CUTTING AND PATCHING**
 A. Perform cutting and patching required for all installations. Cutting and patching shall conform to the requirements of building owner.
 B. Examination: inspect existing conditions prior to commencing with any work, including items subject to potential damage or removal during cutting and patching. After uncovering existing work, inspect conditions affecting new installations and performance of these installations. Beginning of cutting and patching indicates the Contractor's acceptance of the existing conditions.
 C. Preparation: Provide temporary supports as required to ensure structural integrity of the work. Provide devices and methods to protect other portions of the project from damage. Provide protection from weather or work environment elements (dust, debris, etc.) of areas which may be exposed by uncovering work. Maintain accessions free from water.
 D. Cutting and Patching: Perform cutting and patching including any required excavation and fill. Fill installations such that they integrate with other work. Remove and replace defective or non-conforming work. Remove samples of installed work for testing when requested. Provide all openings and penetrations required for mechanical work.
 E. Performance: Perform work in such a manner as to avoid damage to work of other trades or existing installations to remain. Provide adequate surfaces to receive patching and finishing. Employ original installer to perform cutting and patching materials that are exposed to weather, are moisture resistant or are exposed to view. Cut rigid materials with a masonry saw or core drill. The use of pneumatic tools is not allowed without written prior approval. Restore and repair work with new products or materials in accordance with requirements of contract documents. Integrate pipes, sleeves, ducts, conduit, and other penetrations with new and existing work neatly through the surfaces of such work. All fire-rated walls, partitions, ceilings, or floor construction that are penetrated shall be completely sealed with required fire rated material to the full thickness of the penetrated construction. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, completely refinish.
- 15.14 **EXCAVATING, TRENCHING, BACKFILLING AND EXISTING SITE IMPROVEMENTS**
 A. Perform all excavating, trenching, and backfilling required for the construction of the mechanical work. Excavate trenches to sufficient width to properly install the work. Keep trenches free from water during construction.
 B. Comply with the associated rules and regulations governing the respective utilities in the performance of all work.
 C. Perform final grading of trench bottoms with hand tools. Grade trench bottoms evenly to ensure uniform bedding of all piping.
 D. Trench backfilling shall proceed only after piping has been inspected, tested, and locations of pipe lines and appurtenances have been recorded on the record drawings.
- 15.15 **INSULATION**
 A. Pipe insulation shall be Armstrong Armaflex AP. Insulation shall be provided in accordance with ICC 2015 for water distribution piping and shall be installed in accordance with manufacturer's recommendations. provide insulation with self adhering seams. piping from 2" to 2" shall be insulated with minimum 1" of insulation. Piping 2" and larger shall be insulated with minimum 1-1/2" of insulation.
- 15.16 **General Requirements**
 A. Provide steel pipe sleeves in masonry wall penetrations and sheet metal sleeves (tightly fitted to the cut opening) in wood penetrations.
 B. Provide permanent labels on all equipment with drawing tag numbers and normal settings.
 C. Provide pipe labels every 15' including type of duty and direction of flow for each new piping system.
- 15.17 **PIPING**
 A. Sanitary vent piping shall be solid-wall PVC pipe, ASTM D 2665, type DWV. Fittings shall be PVC socket fittings; ASTM D 2665, ASTM S 331 waste and vent patterns.
 B. Above ground potable water and condensate drain piping shall be copper tubing, ASTM B88, type L, hard draw Fittings shall be ASME B16.18, cast bronze or ASME B16.22, wrought copper and bronze. Joints shall be ASTM B32, solder, grade 657A.
 C. Alternative Aboveground potable water shall be PEX-w/ ASTM F876 and F877.
 D. Compressed air piping shall be ASTM A 120 schedule 40, seamless black steel w/malleable-iron threaded fittings. Alternative compressed air piping shall be copper tubing, ASTM B88, type L, hard draw Fittings shall be ASME B16.18, cast bronze or ASME B16.22, wrought copper and bronze. Joints shall be ASTM B32, solder, grade 657A.
 E. Valves: 400 psig wog threads or soldered ends. Ball valves shall be bronze two piece body, stainless steel ball and stem, left hand seats and stuffing box ring, lever handle, threaded and soldered ends.
 F. Route piping in an orderly manner and conceal all piping in walls, pipe chases, utility spaces, above ceilings, below grade or floors. Support horizontal piping ever 6 feet minimum. Provide adequate support systems to carry full load of piping with adequate provisions for pipe movement from vibration and expansion.
 G. Disinfect potable water piping before placing piping in service. Disinfect piping in accordance with local codes and the "Authority having jurisdiction". In the absence of specific local codes or direction from the "Authority having jurisdiction", disinfect piping in accordance with the latest International Plumbing Code.
 H. Test and assure a tight seal on all sanitary, vent, and water piping in accordance with local codes and as acceptable to the "Authority having jurisdiction". Perform test in the presence of the tenant or the tenant representative and the "Authority having jurisdiction". In the absence of local codes, perform testing in accordance with the 2015 IPC Code.
 I. LP Gas pipe shall be ASTM A 120 schedule 40, seamless black steel w/malleable-iron threaded fittings. Install as per local gas company requirements and codes.

15.18 **PLUMBING FIXTURES**

F1: **EMERGENCY SHOWER/EYEWASH**
 WMS model 8330, stainless steel station, ADA-compliant with all stainless steel equipment including eyewash with stainless steel bowl and universal emergency sign. Provide ANSI Z358.1 thermostatic mixing valve and optional stainless steel ball valves and top supply.

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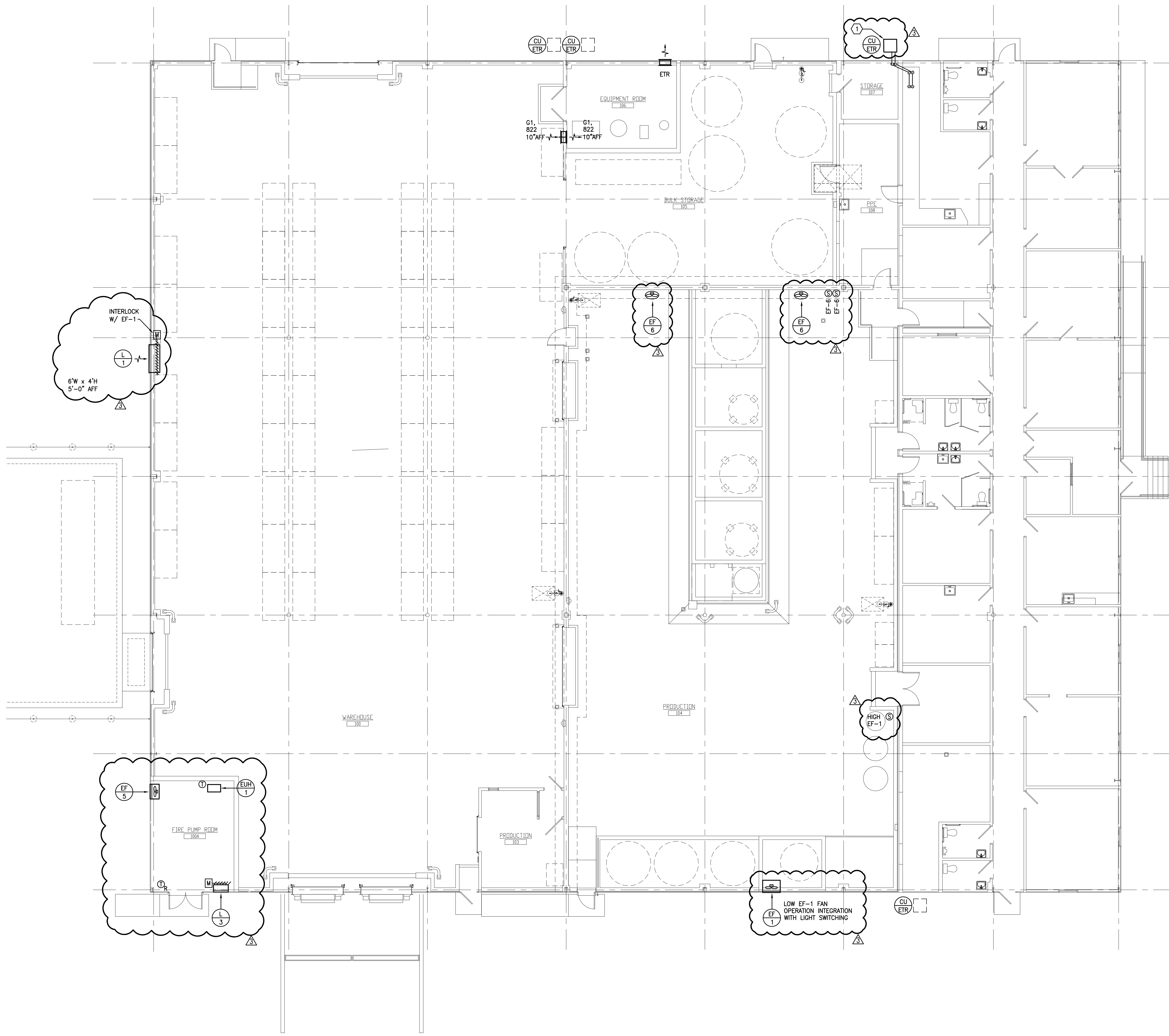
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PLUMBING DETAILS & SCHEMATICS
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 72 FEICK INDUSTRIAL DRIVE UPPER BERN TOWNSHIP, BERKS COUNTY, PA.

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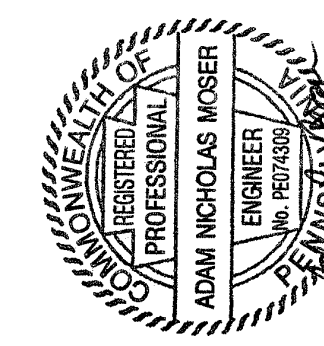
KEYED DEMOLITION NOTES:

① EXISTING SPLIT SYSTEM CONDENSER TO REMAIN.

FIRST FLOOR PLAN - HVAC
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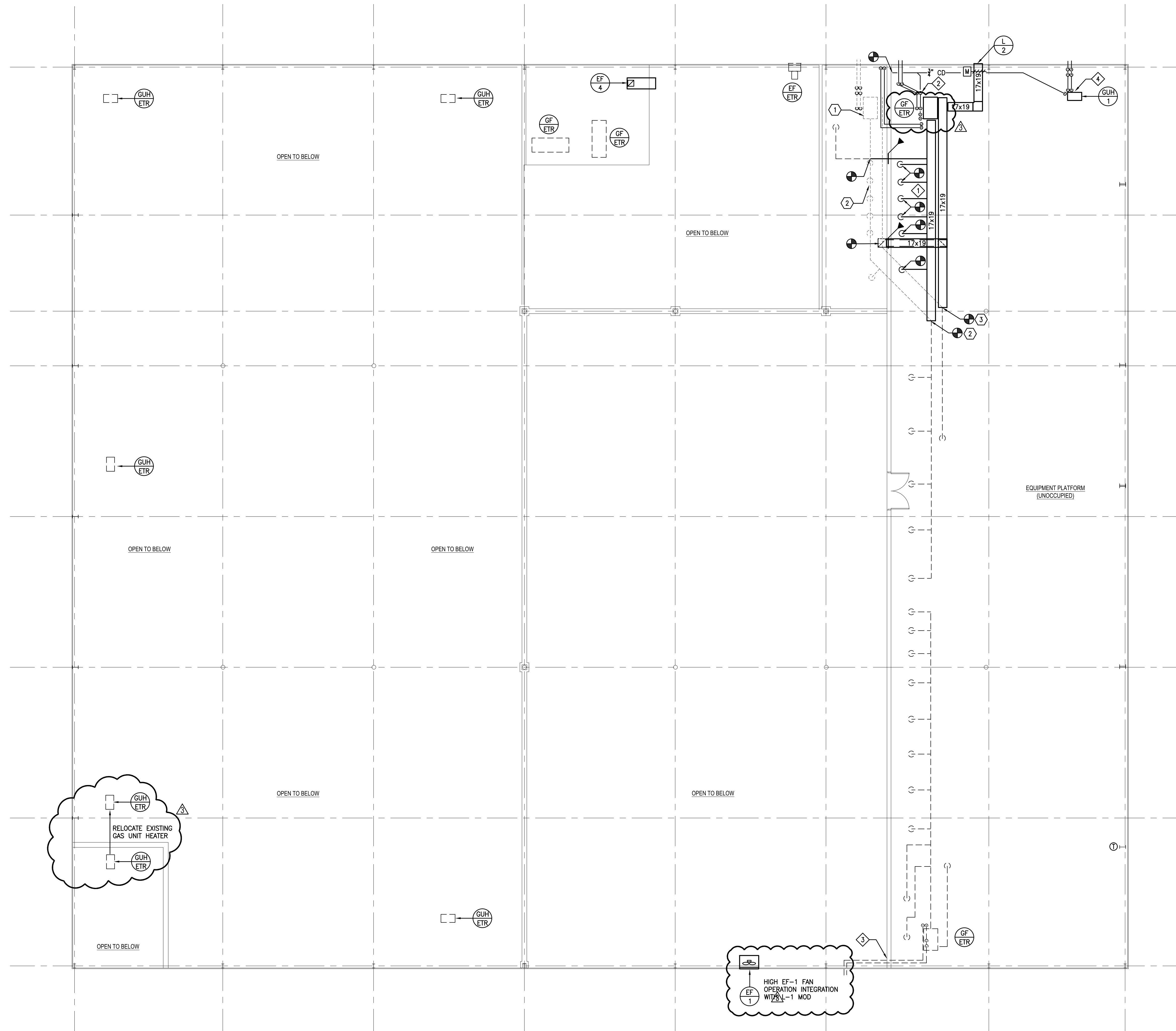
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72 FEICK INDUSTRIAL DRIVE, UPPER BERN TOWNSHIP, BERKS COUNTY, PA.

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SECOND FLOOR PLAN - HVAC
SCALE: 1/8" = 1'-0"

KEYED DEMOLITION NOTES:

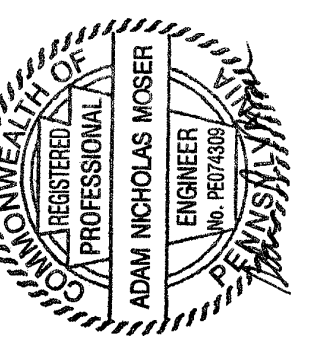
- 1 RELOCATE EXISTING SPLIT SYSTEM LP GAS FURNACE, INTAKE, FLUE, CONDENSATE PIPING AND CONTROLS.
- 2 REMOVE EXISTING FIBERGLASS DUCTWORK TO POINTS INDICATED. DISCONNECT FLEXIBLE DUCT TO AND RECONNECT TO NEW SUPPLY DUCT MAIN.
- 3 REMOVE EXISTING RETURN AIR FIBERGLASS DUCTWORK AND RECONNECT EXISTING MAIN TO NEW MAIN.

KEYED DRAWING NOTES:

- 1 CONNECT EXISTING FLEXIBLE BRANCH DUCT TO NEW SUPPLY MAIN.
- 2 RE-INSTALL EXISTING LPG FURNACE SPLIT SYSTEM. ROUTE NEW CONDENSATE PIPING TO CONNECT AT EXISTING VENT RISER. ROUTE INTAKE AND FLUE PIPING THRU EXTERIOR WALL. PROVIDE NEW OA LOUVER AND MOD.
- 3 FIRE SEAL EXISTING FLUE/ INTAKE PENETRATIONS.
- 4 ROUTE 4" FLUE AND INTAKE FROM GUH THRU EXTERIOR WALL. ROUTE CONDENSATE TO INDIRECT WASTE AT EXISTING VENT RISER.

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1/8" MEZZANINE PLAN - HVAC
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DATE: 08.30.2021

HVAC LEGEND

(ALL SYMBOLS MAY NOT APPLY TO THIS PROJECT)

	2-WAY CONTROL VALVE		HEATING WATER SUPPLY
	3-WAY CONTROL VALVE		HEATING WATER RETURN
	BACKFLOW PREVENTER		DUAL TEMPERATURE WATER SUPPLY
	SAFETY RELIEF VALVE		DUAL TEMPERATURE WATER RETURN
	WATER PRESSURE REDUCING VALVE		CHILLED WATER SUPPLY
	BALL OR BUTTERFLY VALVE		CHILLED WATER RETURN
	CALIBRATED BALANCING VALVE		CONDENSER WATER SUPPLY
	CHECK VALVE		CONDENSER WATER RETURN
	STRAINER		HEAT PUMP WATER SUPPLY
	TRIPLE DUTY VALVE		HEAT PUMP WATER RETURN
	HIGH CAPACITY AUTOMATIC AIR VENT		REFRIGERANT LIQUID
	MANUAL AIR VENT		REFRIGERANT SUCTION
	UNION OR FLANGED CONNECTION		FUEL OIL SUPPLY
	FLEXIBLE PIPE CONNECTION		FUEL OIL RETURN
	FLOW METER		FUEL OIL GAGE
	ELECTROMAGNETIC FLOW METER		FUEL OIL VENT
	SOLENOID VALVE		CONDENSATE DRAIN
	TEMPERATURE SENSOR		VERTICAL FIRE DAMPER - 1 1/2 HR.
	THERMOSTAT REVERSE ACTING		HORIZONTAL FIRE DAMPER - 1 1/2 HR.
	CO2 SENSOR		VERTICAL FIRE DAMPER - 3 HR.
	HUMIDITY SENSOR		HORIZONTAL FIRE DAMPER - 3 HR.
	PRESSURE GAUGE		VERTICAL SMOKE DAMPER
	THERMOMETER		HORIZONTAL SMOKE DAMPER.
	P/T PLUG		KEYED DRAWING NOTE
	ELECTRIC OPERATOR		KEYED DEMOLITION DRAWING NOTE
	PNEUMATIC OPERATOR		CONNECT TO EXISTING
	AQUASTAT		EXTENT OF DEMOLITION
	SMOKE DETECTOR FURNISHED BY OTHERS INSTALLED BY HC		INDICATES LINED DUCTWORK (SEE SPECS FOR MATERIAL)
	NEEDLE VALVE		INDICATES MANUAL BALANCING DAMPER
	MOTOR OPERATED DAMPER		INDICATES DUCT RISE OR DROP
			HIGH POINT

ABBREVIATIONS

ABV	ABOVE
ALUM	ALUMINUM
BDD	BACKDRAFT DAMPER
BEL	BELOW
CLG	CEILING
DN	DOWN
EC	ELECTRICAL CONTRACTOR
EA	EACH
EXH	EXHAUST
EXIST	EXISTING
FLR	FLOOR
GC	GENERAL CONTRACTOR
GTC	GENERAL TRADES CONTRACTOR
HC	HVAC CONTRACTOR
MOD	MOTOR OPERATED DAMPER
OA	OUTSIDE AIR
PC	PLUMBING CONTRACTOR
RA	RETURN AIR
RC	ROOFING CONTRACTOR
REQ'D	REQUIRED
SA	SUPPLY AIR
TYP	TYPICAL
VD	VOLUME DAMPER - MANUAL
W/	WITH

GENERAL PROJECT NOTES:

- REFER TO ARCHITECTURAL DRAWINGS FOR BUILDING SECTIONS. USE INFORMATION RELATING TO CEILING HEIGHTS, FLOOR TO FLOOR ELEVATIONS, ETC. TO DETERMINE PIPE AND DUCT RISER QUANTITIES AND TO VERIFY ROUTING OF SAME.
- REFRIGERANT PIPING RUNS BETWEEN DX EVAPORATOR COILS AND THEIR ASSOCIATED AIR-COOLED CONDENSING UNITS SHALL BE SIZED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. RUN LENGTHS SHALL BE CALCULATED FROM PLANS, BUILDING SECTIONS AND FIELD CONDITIONS. ALL REFRIGERANT PIPING SHALL BE CONCEALED. PROVIDE ALL REQUIRED TRAPS IN VERTICAL REFRIGERANT RISERS AND ALL MISCELLANEOUS REFRIGERANT COMPONENTS THAT ARE INDICATED IN THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
- HVAC CONTRACTOR IS REQUIRED TO COORDINATE ALL HVAC WORK WITH THE WORK OF ALL OTHER TRADES TO ENSURE CORRECT AND QUALITY INSTALLATIONS.
- DUCT DIMENSIONS GIVEN ARE METAL (OUTSIDE) DIMENSIONS UNLESS OTHERWISE NOTED.
- ALL LOW VOLTAGE WIRING (UNDER 120V) REQUIRED FOR HVAC EQUIPMENT SHALL BE PROVIDED BY THE HVAC CONTRACTOR PER THE MANUFACTURER'S WRITTEN INSTRUCTIONS UNLESS OTHERWISE NOTED.

EXHAUST FAN SCHEDULE											BASIS OF DESIGN: LOREN COOK
SYMBOL	CFM	SP	FAN DATA			DRIVE	CONTROL	MOUNTING	MODEL	REMARKS	
			H.P.	RPM	ELECTRICAL						
EF-1	6500	.25"	1.0	961	120V-1Ø	BELT	MANUAL SWITCH	WALL	30EP424B		
EF-4	822	0.35"	1/2	1100	120V-1Ø	DIRECT	MANUAL SWITCH	CEILING	GC1000	SPEED CONTROLLER	
EF-5	2508	0.125"	1/4	1550	120V-1Ø	DIRECT	THERMOSTAT	WALL	484X42	DAYTON UTILITY MOUNTED EXHAUST SHUTTER	
EF-6	7150	-	1/3	1725	120V-1Ø	DIRECT	MANUAL SWITCH	WALL	20CAC-HPWD		

NOTES: 1. MODEL NUMBERS ARE INDICATED FOR REFERENCE ONLY. THE DUTIES AND CAPACITIES ARE TO BE USED FOR FINAL UNIT SELECTION BY THE MANUFACTURER.

GAS-FIRED UNIT HEATER SCHEDULE											BASIS OF DESIGN: STERLING
SYMBOL	FAN DATA				INPUT (MBH) LPG	OUTPUT (MBH) LPG	SIZE FLUE INTAKE	MOUNTING	MODEL	REMARKS	
	CFM	RPM	H.P.	ELECTRICAL							
GUH-1	740	1050	1/12	120-1-60	60	49.8	4"/4"	HORIZONTAL	GG060	-	

NOTES: 1. MODEL NUMBERS ARE INDICATED FOR REFERENCE ONLY. THE DUTIES AND CAPACITIES ARE TO BE USED FOR FINAL UNIT SELECTION BY THE MANUFACTURER.

LOUVER SCHEDULE								BASIS OF DESIGN: POTTORFF
SYMBOL	FUNCTION	CFM	WIDTH x HEIGHT	MIN. FREE AREA (SQ. FT.)	STATIC PRESSURE	MODEL	REMARKS	
L-1	INTAKE	7700	60" x 48"	10.26	0.06"	ECD-635	-	
L-2	INTAKE	350	18" x 12"	4.6	0.06"	ECD-635	-	
L-3	INTAKE	2508	36" x 36"	4.6	0.06"	ECD-635	INTERLOCK 120V MOD W/ EF-5	

GRILLE SCHEDULE						
SYMBOL	SIZE	MODEL	N.C.	BORDER TYPE	MANUFACTURER	REMARKS
G1	22x10	301RL-SS	<20	SURFACE	TITUS	

UNIT HEATER SCHEDULE										BASIS OF DESIGN: MARKEL
SYMBOL	FAN DATA				KW	MOUNTING	MODEL	REMARKS		
	CFM	RPM	H.P.	ELECTRICAL						
EUH-1	400	1600	1/100	208V-1Ø	2.5	WALL	H2B5103N	PROVIDE INTEGRAL THERMOSTAT		

NOTES: 1. MODEL NUMBERS ARE INDICATED FOR REFERENCE ONLY. THE DUTIES AND CAPACITIES ARE TO BE USED FOR FINAL UNIT SELECTION BY THE MANUFACTURER.

REVISIONS	DESCRIPTION
DATE	DESCRIPTION
07.14.21	FIRE PUMP ROOM ADDED, STORAGE ROOM SIZE INCREASE
07.27.21	STORAGE ROOMS OMITTED, OH COOLING DOOR ADDED
08.30.21	MEP REVISIONS FOR OWNER CHANGES

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HVAC SCHEDULES
PROPOSED BUILDING RENOVATIONS AT SHARTLESVILLE FOR
BULK CHEMICALS
72 FEICK INDUSTRIAL DRIVE UPPER BERN TOWNSHIP, BERKS COUNTY, PA.

ALL DIMENSIONS AND EXISTING CONDITIONS
SHALL BE CHECKED AND VERIFIED
BY THE CONTRACTOR AT THE SITE.

JOB NO.: 20003.00
DRAWN BY: SA
DATE: 08.30.2021

MECHANICAL SPECIFICATIONS

- 15.0 QUALITY ASSURANCE
- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions and workmanship, to produce Work of specified quality.
- B. Follow manufacturer's written instructions completely. Work shall be completed by personnel qualified to complete work of specified quality.
- C. Secure equipment and provide installations that are complete with positive anchoring and support devices designed to handle the stresses, vibration, physical use and/or abuse the equipment and installations may expect to experience.
- 15.1 SUBSTITUTIONS
- Equip. specified on dwgs. indicates type, size, capacity & standard of quality. All equipment may be substituted only with approved equip. that meets or exceeds the design criteria listed.
- 15.2 MECHANICAL/ELECTRICAL COORDINATION
- A. All piping shall be kept a minimum of 3 feet away from and shall not run above any and all electrical enclosures and equipment.
- B. HVAC and Plumbing contractors shall furnish and install starters and disconnects for all equipment they supply unless otherwise indicated. Final electrical connections shall be made by the electrical contractor.
- C. The HVAC contractor shall furnish and install all control wiring, conduits and materials required to provide complete HVAC control systems.
- 15.3 SUBMITTALS
- A. Prior to any installations, submit for review electronic shop drawings and catalog data for all materials and equipment intended for use and/or installation.
- 15.4 REGULATORY REQUIREMENTS
- A. Conform to the locally observed and applicable Building, Mechanical, Plumbing and Fire Protection codes.
- B. Fire Protection: Conform to the latest edition of the National Fire Protection, State and Local Codes.
- C. Obtain required permits and request inspections as necessary and in accordance with each "Authority having jurisdiction".
- 15.5 PROJECT/SITE CONDITIONS
- A. The drawings indicated approximate locations of utilities, and existing installations and services. It is the responsibility of the Contractor to verify, in the field, the exact locations of all such utilities. The Contractor shall conform to all requirements of the local utility companies and the facility owner. The Contractor shall include in the bid, prices for valves, meter boxes, meters and any other equipment that the utility companies or facility owner may require.
- 15.6 SYSTEMS COMMISSIONING
- A. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequences, or any other conditions required to be verified prior to start-up. Prevent any potential damage to equipment or systems caused by inadequate or incorrect start-up preparation.
- B. Execute start-up under the supervision of responsible and qualified Contractor's personnel certified in the start-up of each piece of equipment or system. Certification shall be in accordance with manufacturers requirements.
- C. Test, Adjust and Balance all equipment and systems as required to provide a complete and correctly operating system in accordance with the indicated design drawings.
- 15.7 GUARANTEE
- THE CONTRACTOR SHALL ALSO FURNISH THE OWNER A WRITTEN STATING THAT ALL EQUIPMENT, MATERIAL AND WORKMANSHIP PROVIDED UNDER THE CONTRACT AND ANY SUBSEQUENT CHANGE ORDERS THERETO ARE FREE FROM ANY DEFECTS AND ARE FULLY GUARANTEED FOR A ONE (1) YEAR PERIOD FROM THE TIME OF FINAL ACCEPTANCE. THE GUARANTEE SHALL ALSO WARRANT THAT ALL EQUIPMENT, MATERIAL AND WORKMANSHIP WHICH MAY PROVE DEFECTIVE WITHIN THE GUARANTEE PERIOD SHALL BE REPLACED BY THE CONTRACTOR, AT NO ADDITIONAL COST TO THE OWNER. GUARANTEE (IN TRIPLICATE)
- 15.8 PROGRESS CLEANING
- A. Maintain work areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and any other closed or remote spaces, prior to enclosing the space.
- C. Remove waste materials, debris and rubbish from site weekly and dispose off-site.

- 15.9 STORAGE AND PROTECTION
- A. Store and protect materials and equipment in accordance with manufacturer's instructions. Contractor is responsible for damage to stored equipment and materials due to inadequate or insufficient protection.
- 15.10 AS-BUILT DRAWINGS
- A. Maintain a record set of installation drawings during construction. A record shall be kept on these drawings of all deviations and changes from the contract drawings. This record shall include final locations of all utilities, equipment, piping, ducts, controls, etc. At the completion of the work the contractor shall forward these drawings to the owner.
- 15.11 OPERATION AND MAINTENANCE DATA
- A. Furnish five (3) sets of complete instructions for operation of all equipment and systems including complete wiring diagrams for control systems and equipment. The data shall be bound in a notebook, organized, indexed and delivered to the owner.
- 15.12 FILL MATERIALS
- A. Fill: Fill shall be any type material which consists of hard durable materials and soil binder, without excessive clay, organic matter or any other unsuitable material.
- B. Acceptance of fill shall be based on the above requirements and final acceptance shall be made by the engineer.
- 15.13 CUTTING AND PATCHING
- A. Perform cutting and patching required for all installations. Cutting and patching shall conform to the requirements of building owner.
- B. Examination: Inspect existing conditions prior to commencing with any work, including items subject to potential damage or movement during cutting and patching. After uncovering existing work, inspect conditions affecting new installations and performance of these installations. Beginning of cutting and patching indicates the Contractor's acceptance of the existing conditions.
- C. Preparation: Provide temporary supports as required to ensure structural integrity of the work. Provide devices and methods to protect other portions of the project from damage. Provide protection from weather or work environment elements (dust, debris, etc.) of areas which may be exposed by uncovering work. Maintain excavations free from water.
- D. Cutting and Patching: Perform cutting and patching including any required excavation and fill. Fit installations such that they integrate with other work. Remove and replace defective or non-conforming work. Remove samples of installed work for testing when requested. Provide all openings and penetrations required for mechanical work.
- E. Performance: Perform work in such a manner as to avoid damage to work of other trades or existing installations to remain. Provide adequate surfaces to receive patching and finishing. Employ original installer to perform cutting and patching materials that are exposed to weather, are moisture resistant or are exposed to view. Cut rigid materials with a masonry saw or core drill. The use of pneumatic tools is not allowed without written prior approval. Restore and repair work with new products or materials in accordance with requirements of contract documents. Integrate pipes, sleeves, ducts, conduit, and other penetrations with new and existing work neatly through the surfaces of such work. All fire-rated walls, partitions, ceilings, or floor construction that are penetrated shall be completely sealed with required fire rated material to the full thickness of the penetrated construction. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, completely refinish.
- 15.14 EXCAVATING, TRENCHING, BACKFILLING, AND EXISTING SITE IMPROVEMENTS
- A. Perform all excavating, trenching, and backfilling required for the construction of the mechanical work. Excavate trenches to sufficient width to properly install the work. Keep trenches free from water during construction.
- B. Comply with the associated rules and regulations governing the respective utilities in the performance of all work.
- C. Perform final grading of trench bottoms with hand tools. Grade trench bottoms evenly to ensure uniform bearing of all piping.
- D. Trench backfilling shall proceed only after piping has been inspected, tested, and locations of pipe lines and appurtenances have been recorded on the record drawings.

- 15.15 DUCTWORK
- A. Ductwork shall be ASTM galvanized steel sheet, lock-forming quality, having G60 zinc coating in conformance with ASTM A50.
- B. Flexible duct shall be two ply vinyl film supported by helically wound spring steel wire with fiberglass insulation, polyethylene vapor barrier. The maximum length of flexible duct shall not exceed 6 feet.
- C. Fabricate, install, and support ductwork in accordance with SMACNA HVAC duct construction standards - metal and flexible. Provide duct material, gages, reinforcing and sealing for operating pressures of plus or minus 2 inches w.g.
- D. Insulate galvanized ductwork with 1-1/2 inch thick fiberglass ductwrap (ASTM C 553, Class B-2). Install as per manufacturer's recommendations.
- E. Provide turning vanes of the same material as the ductwork in all 90 degree elbows. Use 45 degree takeoff at all branches. Do not use splitter dampers or extractors.
- F. Provide and single blade, 18 gauge minimum galvanized steel volume dampers. Provide dampers with locking, indicating quadrant regulators.

MECHANICAL NOTES

- Provide all materials, equipment, supports, controls, wiring, conduit, labor, etc. for a complete installation. Coordinate work with all other trades. Resolution of interferences, rough-in conflicts, discrepancies, etc. shall be coordinated prior to the start of any installation. All conflicts or potential conflicts shall be brought to the attention of the Architect immediately, and before proceeding with the work.
- Each contractor shall perform all demolition, cutting and patching of the work unless indicated otherwise, even if not explicitly indicated on the drawings. This demolition, cutting and patching includes removal of equipment that will no longer be utilized for this project. Equipment that is to be removed shall be turned over to the owner unless the owner does not want the equipment, in which case the contractor shall remove from site, and before proceeding with the work.
- All pipe, duct, and conduit penetrations through fire rated walls, partitions, floors, and ceilings shall be properly sealed to provide fire protection in accordance with the specifications.
- All roof openings and flashing shall be provided by the building owner. The contractor shall be responsible for counter flashing.
- Coordinate installation of GRD's with structure and lighting fixtures. Adjust and/or relocate existing or new diffusers, registers, grilles and sprinklers as indicated or required.

REVISIONS	DESCRIPTION	DATE
1	FIRE PUMP ROOM ADDED, STORAGE ROOM SIZE INCREASE	07.14.21
2	STORAGE ROOMS OMITTED, OH COILING DOOR ADDED	07.27.21
3	MEP REVISIONS FOR OWNER CHANGES	08.30.21

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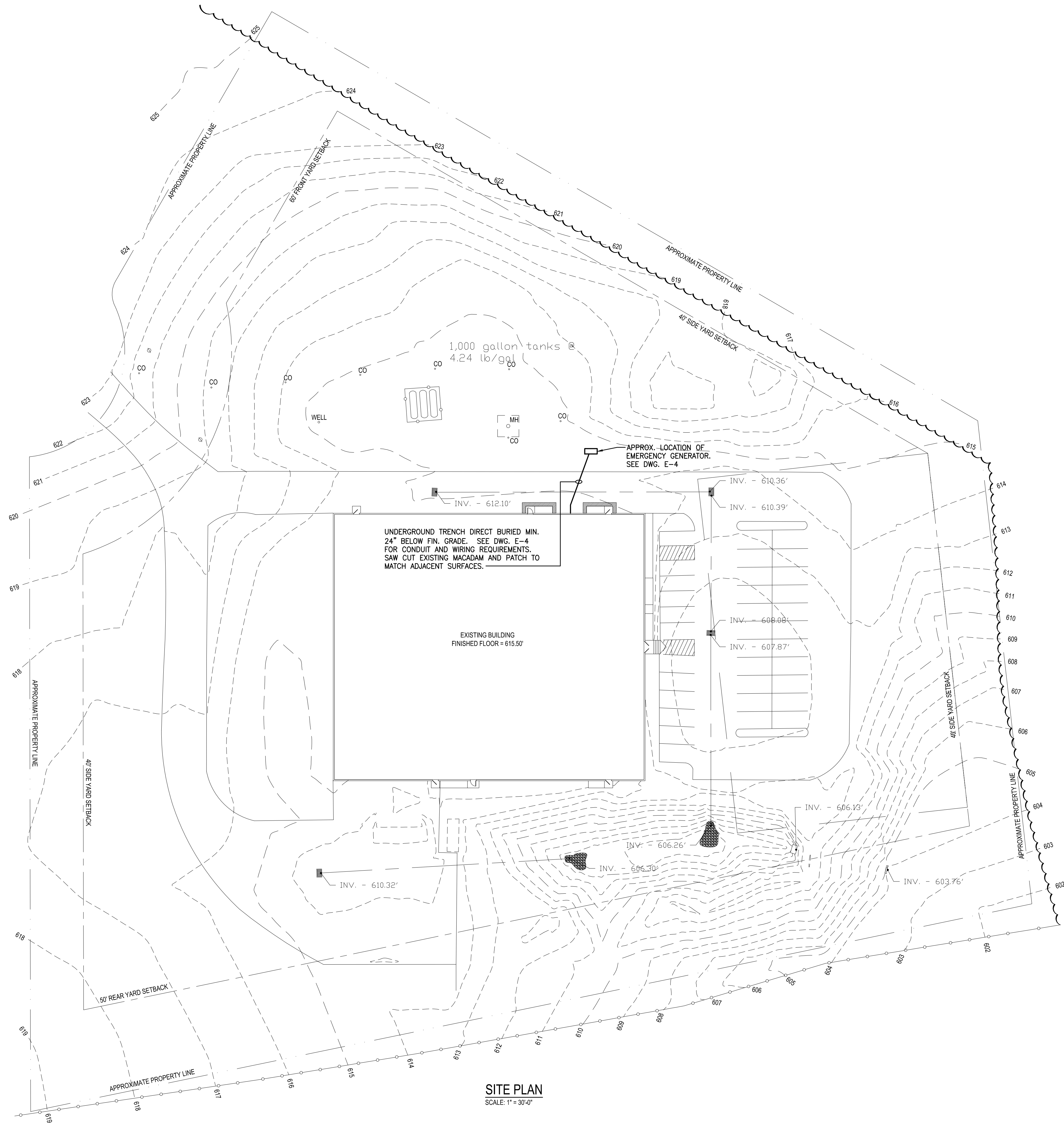


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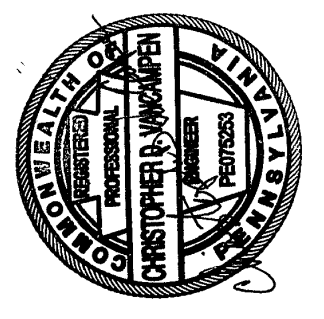
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SITE PLAN
SCALE: 1" = 30'-0"

DATE	DESCRIPTION
07.14.21	FIRE PUMP ROOM ADDED, STORAGE ROOM SIZE INCREASE
07.27.21	STORAGE ROOMS OMITTED, OH COILING DOOR ADDED
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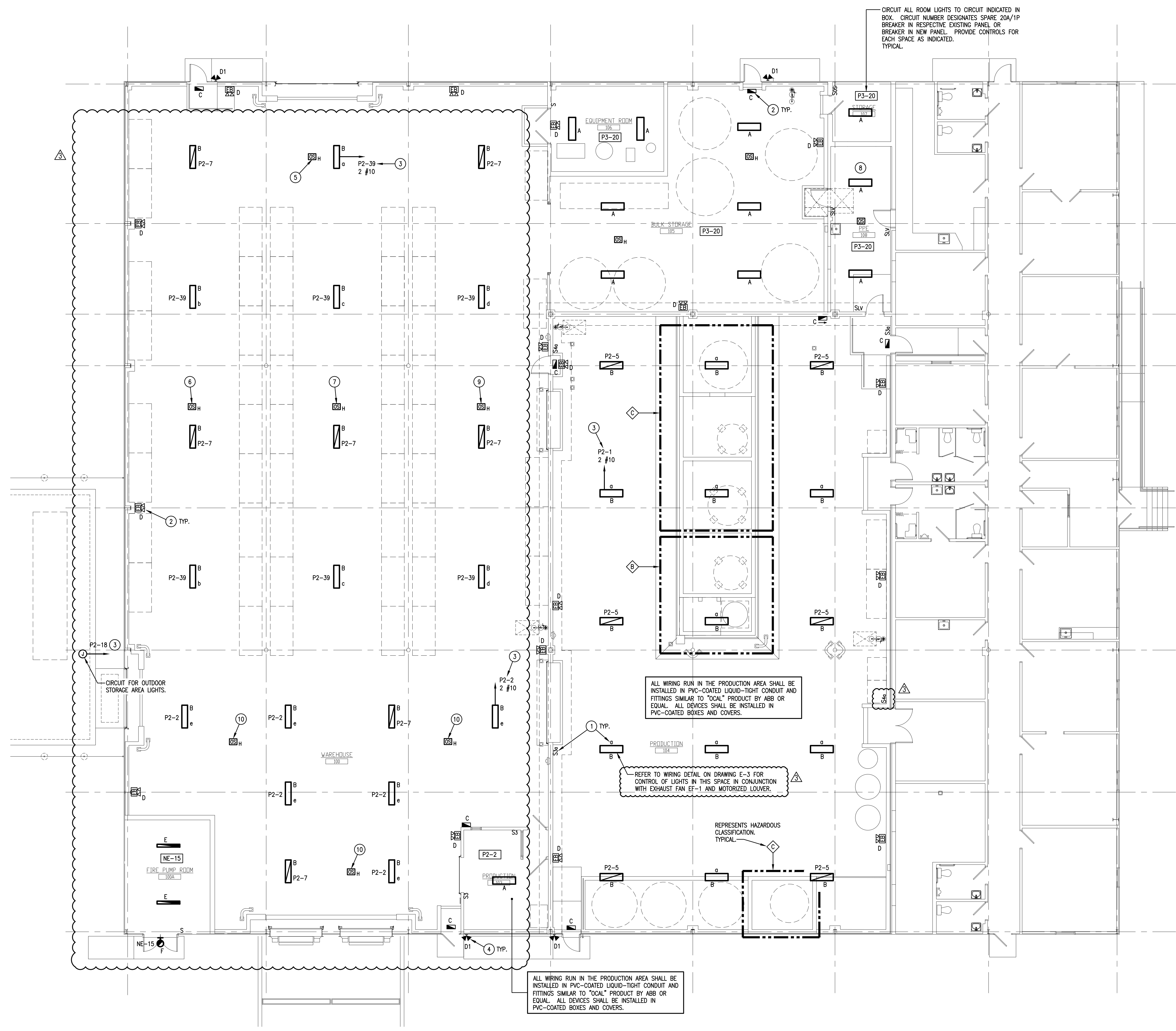


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SITE PLAN - ELECTRICAL
PROPOSED BUILDING RENOVATIONS AT SHARTLESVILLE FOR
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72 FEICK INDUSTRIAL DRIVE, UPPER BERN TOWNSHIP, BERKS COUNTY, PA.

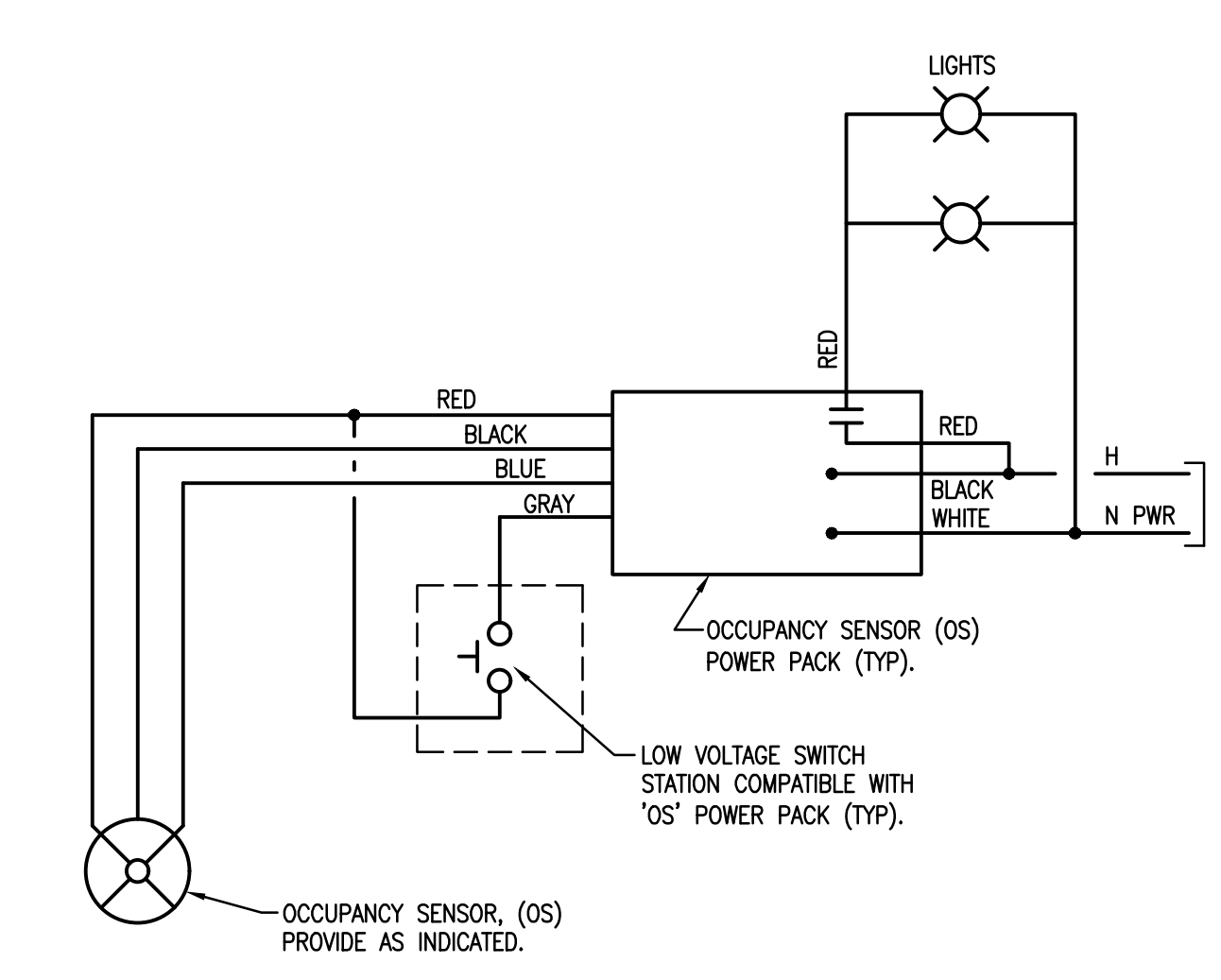
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CIRCUIT ALL ROOM LIGHTS TO CIRCUIT INDICATED IN BOX. CIRCUIT NUMBER DESIGNATES SPARE 20A/1P BREAKER IN RESPECTIVE EXISTING PANEL OR BREAKER IN NEW PANEL. PROVIDE CONTROLS FOR EACH SPACE AS INDICATED. TYPICAL.

- DRAWING NOTES:**
1. LIGHT FIXTURE WIRING. SUB-LETTERS INDICATE WHICH LIGHT FIXTURE SWITCH CONTROLS. WIRE TO INDICATED SWITCHES WITHIN ROOM ACCORDINGLY.
 2. CONNECT ALL TYPE 'C' AND 'D' LIGHT FIXTURES TO LINE SIDE (AHEAD OF CONTROL DEVICES) OF 120V ROOM LIGHTING CIRCUIT.
 3. CIRCUIT LIGHTS TO CIRCUIT INDICATED. CIRCUIT NUMBER DESIGNATES SPARE 20A/1P BREAKER IN RESPECTIVE EXISTING PANEL. PROVIDE CONTROLS AS INDICATED.
 4. CONNECT ALL TYPE 'D1' REMOTE FIXTURE HEADS TO NEAREST TYPE 'D' EMERGENCY BATTERY UNIT VIA 2 #12 & #10-3/4". VERIFY CIRCUIT CAPACITY DOES NOT EXCEED BATTERY UNIT OUTPUT WATTS PRIOR TO WIRING ROUGH-IN.
 5. OCCUPANCY SENSOR SHALL ONLY CONTROL LIGHT FIXTURES IN WAREHOUSE WITH SUB "g".
 6. OCCUPANCY SENSOR SHALL ONLY CONTROL LIGHT FIXTURES IN WAREHOUSE WITH SUB "b".
 7. OCCUPANCY SENSOR SHALL ONLY CONTROL LIGHT FIXTURES IN WAREHOUSE WITH SUB "c".
 8. REFER TO OCCUPANCY SENSOR WIRING DETAIL THIS DRAWING FOR LIGHTING WIRING REQUIREMENTS IN THIS SPACE.
 9. OCCUPANCY SENSOR SHALL ONLY CONTROL LIGHT FIXTURES IN WAREHOUSE WITH SUB "d".
 10. OCCUPANCY SENSOR SHALL ONLY CONTROL LIGHT FIXTURES IN WAREHOUSE WITH SUB "e".



- DETAIL NOTES:**
1. VERIFY ALL DEVICES AND WIRING WITH MANUFACTURER PRIOR TO ROUGH-IN.
 2. SYSTEM SHALL BE PROGRAMMED FOR MANUAL ON OPERATION.
 3. PROVIDE ADDITIONAL DEVICES AS REQUIRED FOR INDICATED CONTROL.

OCCUPANCY SENSOR WIRING DETAIL
NO SCALE

HAZARDOUS LOCATION CLASSIFICATIONS:

B USE TANKS BLEND CATEGORY 1 LIQUIDS; THEREFORE, ALL ELECTRICAL CIRCUITS AND DEVICES SHALL BE LOCATED MINIMUM 5' OUTSIDE OPEN AREA OF TANKS AND MINIMUM 5' OUTSIDE DKE SYSTEM AROUND TANK. ANY WIRING OR DEVICES LOCATED WITHIN THE 5' CLASSIFIED AREA SHALL BE CLASS 1 RATED.

C USE TANKS 'UTA', 'UTB' AND 'UTC' SHALL NOT BE USED TO BLEND NFPA FLAM. 1A, B OR C LIQUIDS PER OWNER OPERATION. NO SPECIAL CLASSIFIED WIRING REQUIRED.

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

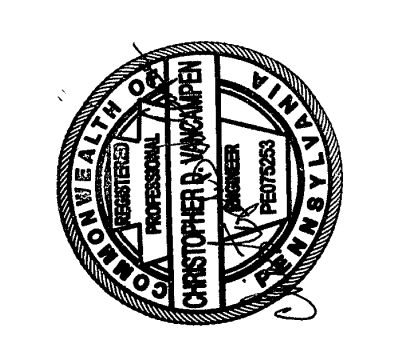
REMOVE ALL EXISTING LIGHTING (INCLUDING EXIST SIGNS, EMERGENCY BATTERY UNITS AND REMOTE HEADS) AND ASSOCIATED WIRING AND CONTROLS IN ALL AREAS WHERE NEW LIGHTING AND CONTROLS ARE INDICATED. OFFICE AREA LIGHTS AND CONTROLS TO REMAIN. EXTERIOR BUILDING LIGHTS TO REMAIN.

LIGHTING FIXTURE SCHEDULE						
TYPE	MANUFACTURER	CATALOG NUMBER	WATTS	VOLTS	MOUNTING	REMARKS
A	FIXTURE FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR		140	120	SUSPENDED	
B	H.E. WILLIAMS	EGL2-4-L250/850-HA-DIM-UNV	178	120	SUSPENDED	MOUNT APPROX. 23' AFF
C	LITHONIA	LV S W 1 R 120/277 ELN SD 4X	3.3	120	UNIVERSAL	NOTE 1 SINGLE FACE EXIT SIGN
D	LITHONIA	WLTU LED	2.7	120/9.6	WALL	EMERGENCY BATTERY UNIT
D1	LITHONIA	ELA T QWP L0309	281.5	9.6	WALL	BATTERY REMOTE FIXTURE HEADS
E	LITHONIA	SBL4 4000LM 80CRI 40K MIN10 MVOLT	32	120	CHAIN HUNG	
F	LITHONIA	WDGE2 LED P3 40K 80CRI VF MVOLT SRM PE DDBXD	23	120	WALL	EXTERIOR WALL SCONCE WITH PHOTOCCELL

- LIGHTING FIXTURE SCHEDULE NOTES:**
1. VERIFY MOUNTING CONFIGURATION (WALL OR CEILING) AND DIRECTIONAL ARROWS PRIOR TO ORDERING FIXTURE.

REVISIONS	DESCRIPTION
DATE	07/14/21
DESCRIPTION	FIRE PUMP ROOM ADDED, STORAGE ROOM SIZE INCREASE
DATE	07/27/21
DESCRIPTION	STORAGE ROOMS OMITTED, OH COOLING DOOR ADDED
DATE	08/30/21
DESCRIPTION	MEP REVISIONS FOR OWNER CHANGES

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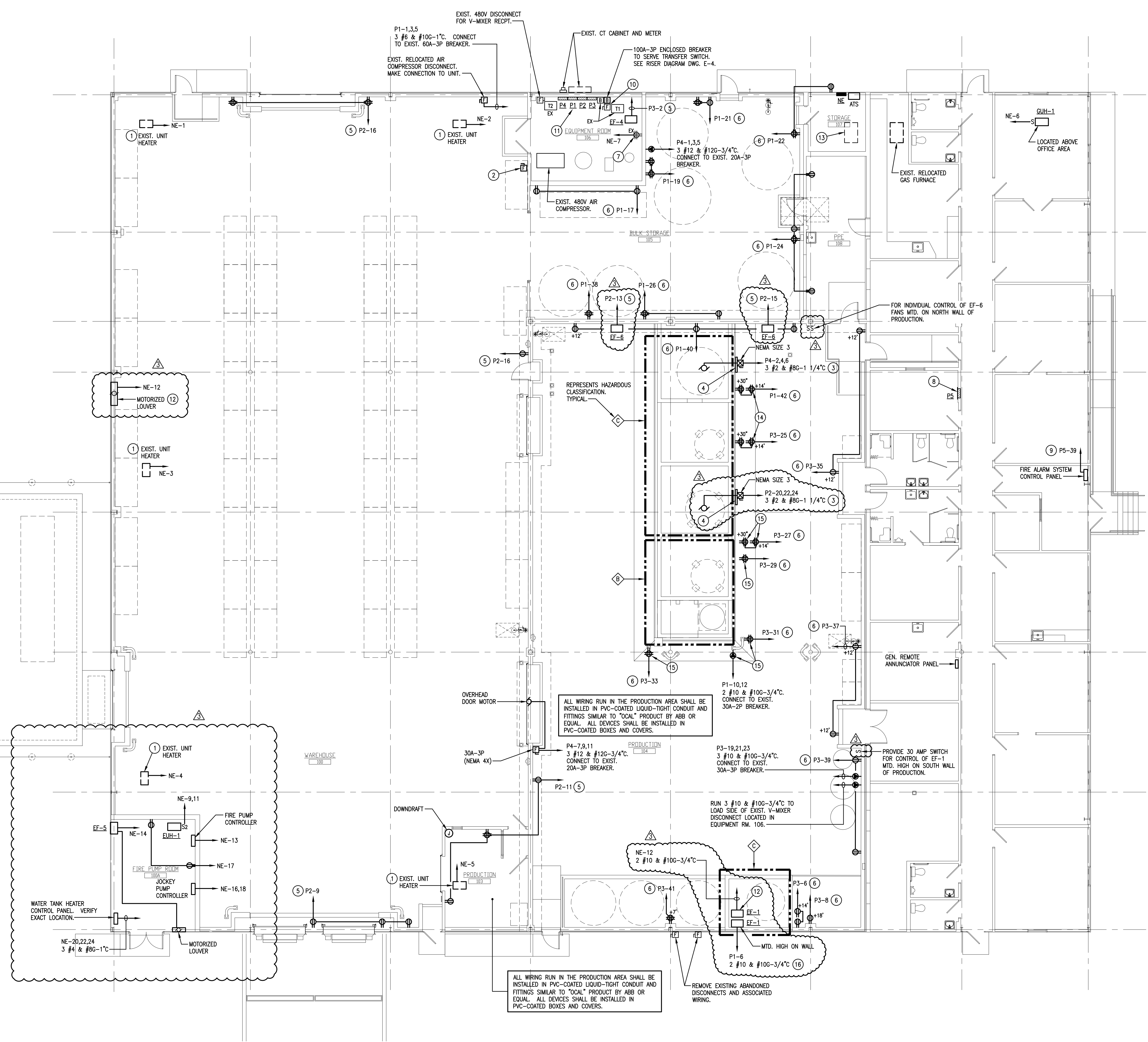


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FIRST FLOOR PLAN - LIGHTING
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BULK CHEMICALS
72 FEICK INDUSTRIAL DRIVE UPPER BERN TOWNSHIP, BERKS COUNTY, PA.

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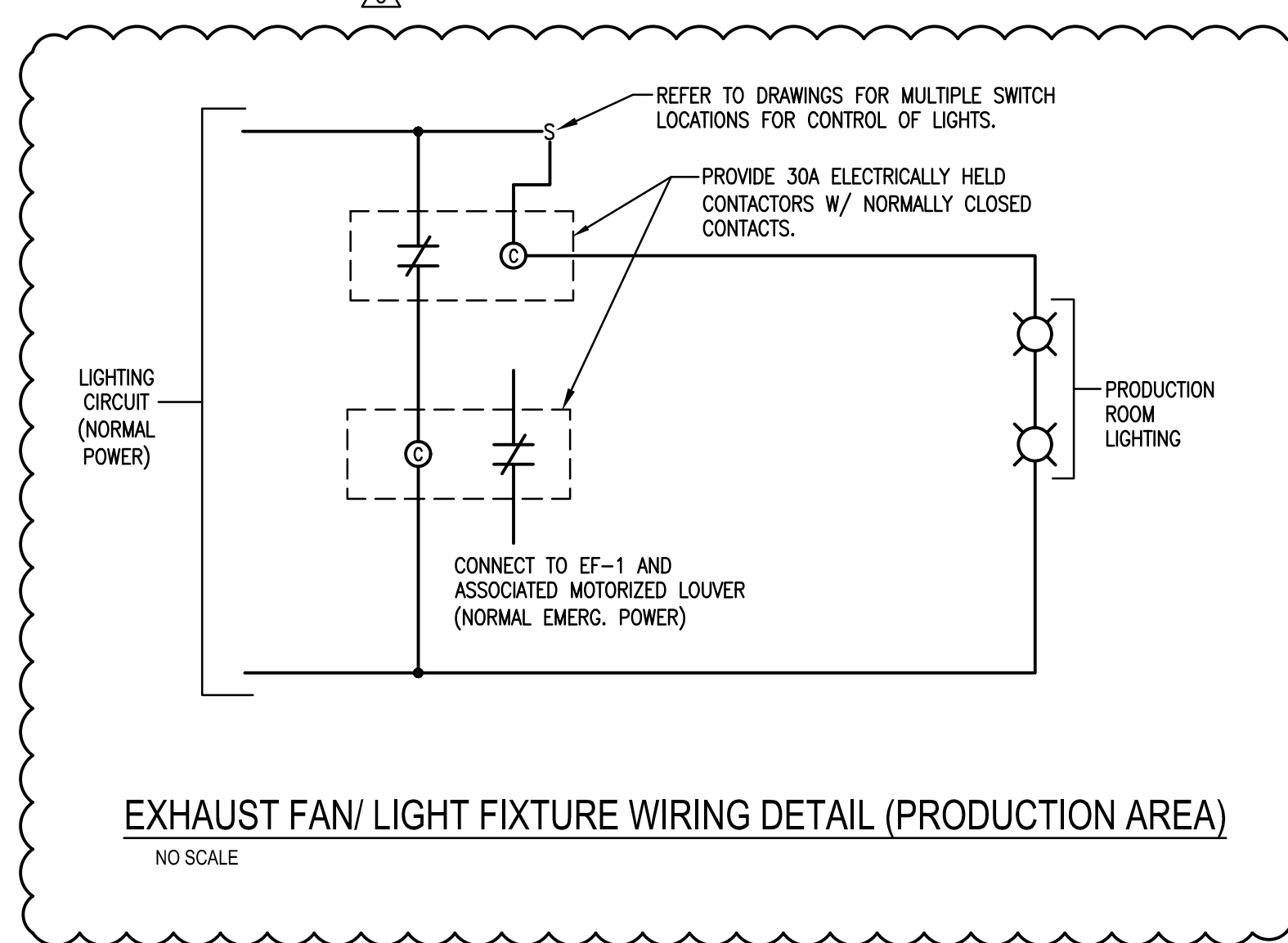


FIRST FLOOR PLAN - POWER
SCALE: 1/8" = 1'-0"

REMOVE ALL EXISTING ELECTRICAL EQUIPMENT AND ASSOCIATED WIRING IN ALL AREAS, EXCLUDING EQUIPMENT ROOM 106, WHERE NEW EQUIPMENT, DEVICES AND WIRING ARE INDICATED. EQUIPMENT ROOM 106 AND OFFICE AREA ELECTRICAL EQUIPMENT TO REMAIN UNLESS NOTED OTHERWISE.

DRAWING NOTES:

- REMOVE EXISTING CIRCUIT TO HVAC EQUIPMENT AND PROVIDE NEW AS INDICATED. ALL ASSOC. ELECTRICAL EQUIPMENT TO REMAIN.
- REMOVE EXISTING CIRCUIT TO AIR COMPRESSOR AND RELOCATE DISCONNECT TO NORTH WALL OF WAREHOUSE.
- REMOVE EXISTING BREAKER IN PANEL SPACE AND PROVIDE NEW 90A/3P CIRCUIT BREAKER TO MATCH EXISTING CUTLER HAMMER PANEL AND CONNECT CIRCUIT.
- PROVIDE EQUIPMENT SUPPORT RACK TO MOUNT ELECTRICAL EQUIPMENT AS INDICATED. PROVIDE MISCELLANEOUS UNISTRUT, HARDWARE AND VERTICAL CHANNEL SUPPORTS AS REQUIRED AND PROPERLY ANCHOR EQUIPMENT BACK TO CATWALK RAILING SUPPORTS MINIMUM 18" DISTANCE FROM EDGE OF TANK. ALL RACK COMPONENTS SHALL BE STAINLESS STEEL.
- CIRCUIT NUMBER DESIGNATES SPARE 20A/1P BREAKER IN RESPECTIVE EXISTING PANEL.
- REMOVE EXISTING BREAKER IN PANEL SPACE AND PROVIDE NEW 20A/1P CIRCUIT BREAKER TO MATCH EXISTING CUTLER HAMMER PANEL AND CONNECT CIRCUIT.
- REMOVE EXISTING CIRCUIT TO WIRING DEVICE AND PROVIDE NEW AS INDICATED.
- REMOVE EXISTING BRANCH WIRING FROM CIRCUIT BREAKERS 40 AND 42. PULL CIRCUITS BACK TO POINT ABOVE ACCESSIBLE CEILING, SPLICE IN JUNCTION BOX AND EXTEND 4 #12 & #120-3/4" TO NEW PANEL 'NE' AND RECONNECT (CKTS. 8 & 10). LABEL BREAKERS IN PANEL 'PS' SPARE.
- PROVIDE NEW 20A/1P CIRCUIT BREAKER IN PANEL SPACE, WITH HANDLE LOCK ACCESSORY, TO MATCH EXISTING CUTLER HAMMER PANEL AND CONNECT CIRCUIT.
- RELOCATED DISCONNECT SWITCH FOR 480V AIR COMPRESSOR. SEE RISER DIAGRAM ON DRAWING E-4.
- REFER TO RISER DIAGRAM ON DRAWING E-4 FOR WIRE TROUGH WORK BELOW EXISTING PANEL LOCATIONS. TRACE EXISTING CIRCUITS WITHIN ALL (4) EXISTING PANELS TO PROPERLY IDENTIFY ALL ACTIVE CIRCUITS WITHIN EACH PANEL AND PROVIDE NEW TYPED CIRCUIT DIRECTORY INDEX CARDS FOR PANELS. LABEL ALL ABANDONED BREAKERS "SPARE".
- FAN MOUNTED LOW ON WALL OF PRODUCTION AREA. REFER TO EXHAUST FAN/LIGHT FIXTURE WIRING DETAIL THIS DRAWING FOR CONTROL OF FAN AND ASSOCIATED MOTORIZED LOUVER IN CONJUNCTION WITH PRODUCTION ROOM LIGHTS.
- EXISTING GAS FURNACE TO BE RELOCATED APPROXIMATELY 8' IN THE EAST DIRECTION. DISCONNECT CIRCUIT, EXTEND TO NEW LOCATION AS REQUIRED AND RECONNECT.
- PROVIDE MISC. VERTICAL CHANNEL SUPPORTS AND UNISTRUT, ATTACHED TO CATWALK STEEL RAILING, AS REQUIRED TO MOUNT DEVICE AT HEIGHT INDICATED.
- MOUNT DEVICE MINIMUM 5' DISTANCE FROM OPEN AREA OF TANKS UTC, UTH AND UTI TO COMPLY WITH NFPA CLASSIFIED AREA. FIELD VERIFY EXACT MOUNTING LOCATION OF DEVICE WITH OWNER PRIOR TO ROUGH-IN.
- REMOVE EXISTING BREAKER IN PANEL SPACE AND PROVIDE NEW 30A/1P CIRCUIT BREAKER TO MATCH EXISTING CUTLER HAMMER PANEL AND CONNECT CIRCUIT.



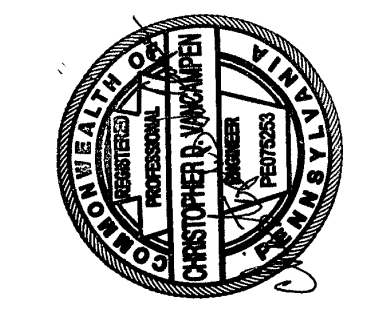
EXHAUST FAN/LIGHT FIXTURE WIRING DETAIL (PRODUCTION AREA)
NO SCALE

HAZARDOUS LOCATION CLASSIFICATIONS:

- USE TANKS BLEND CATEGORY 1 LIQUIDS; THEREFORE, ALL ELECTRICAL CIRCUITS AND DEVICES SHALL BE LOCATED MINIMUM 5' OUTSIDE OPEN AREA OF TANKS AND MINIMUM 5' OUTSIDE DIKE SYSTEM AROUND TANK. ANY WIRING OR DEVICES LOCATED WITHIN THE 5' CLASSIFIED AREA SHALL BE CLASS 1 RATED.
- USE TANKS 'UTA', 'UTH' AND 'UTC' SHALL NOT BE USED TO BLEND NFPA FLAM. 1A, B OR C LIQUIDS PER OWNER OPERATION. NO SPECIAL CLASSIFIED WIRING REQUIRED.

REVISIONS	DESCRIPTION
DATE	DESCRIPTION
07.14.21	FIRE PUMP ROOM ADDED. STORAGE ROOM SIZE INCREASE
07.27.21	STORAGE ROOMS OMITTED. OH COILING DOOR ADDED
08.30.21	MEP REVISIONS FOR OWNER CHANGES

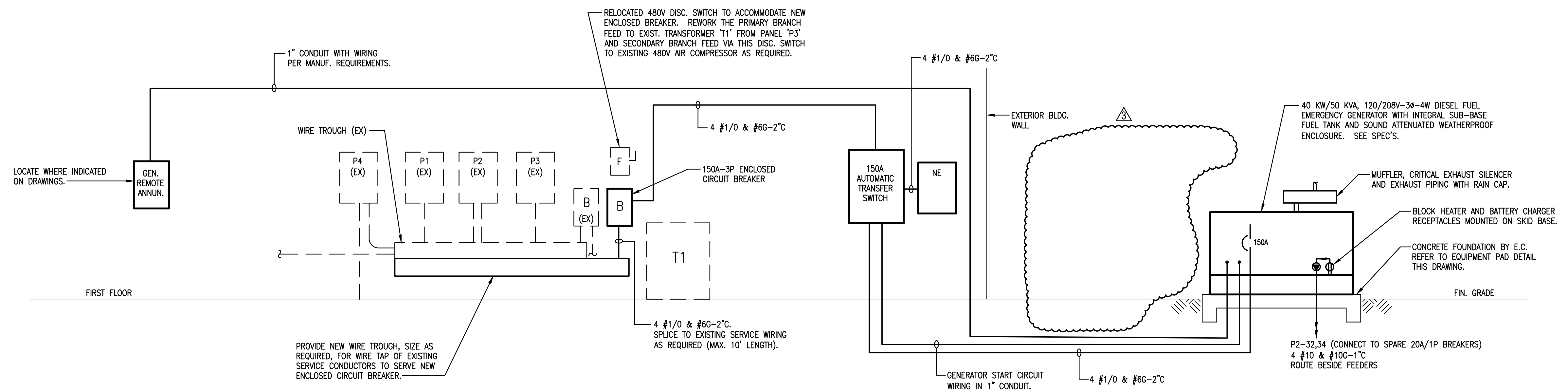
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FIRST FLOOR PLAN - POWER
PROPOSED BUILDING RENOVATIONS AT SHARTLESVILLE FOR
BULK CHEMICALS
72 FELICK INDUSTRIAL DRIVE UPPER BERN TOWNSHIP, BERKS COUNTY, PA.

ALL DIMENSIONS AND EXISTING CONDITIONS
SHALL BE CHECKED AND VERIFIED
BY THE CONTRACTOR AT THE SITE.
JOB NO.: 20003.00
DRAWN BY: DS
DATE: 08.30.2021



POWER RISER DIAGRAM
NO SCALE

EXISTING PANEL

WITH GRD. BAR & 100% RATED NEUTRAL			AIC RATING	
PANEL	MAINS	200A MCB	-	
VOLTS	120/208	MOUNTING SURFACE	EQUIPMENT RM. 106	
REMARKS AND LOCATION	LOAD	BKR	CKT	REMARKS AND LOCATION
WAREHOUSE AIR COMPRESSOR	9000	60	1	SPARE
SPARE		2	20	SPARE
EXISTING LOAD		3	5	EF-1 PRODUCTION
SPARE		4	2	EXISTING LOAD
EXISTING LOAD		6	30	DONCO MIXER
EXISTING LOAD		8	20	SPARE
RECPT'S BULK STORAGE	360	10	30	SPARE
RECPT'S BULK STORAGE	720	12	20	EXISTING LOAD
RECPT'S BULK STORAGE	540	14	20	RECPT'S BULK STORAGE
EXISTING LOAD		16	20	RECPT'S BULK STORAGE
EXISTING LOAD		18	20	RECPT'S BULK STORAGE
EXISTING LOAD		20	20	SPARE
SPARE		22	20	RECPT'S BULK STORAGE
SPARE		24	20	RECPT'S BULK STORAGE
EXISTING LOAD		26	20	RECPT'S BULK STORAGE
EXISTING LOAD		28	20	SPARE
SPARE		30	2	SPARE
SPARE		32	3	EXISTING LOAD
EXISTING LOAD		34	2	RECPT'S BULK STORAGE
EXISTING LOAD		36	20	RECPT'S PRODUCTION
EXISTING LOAD		38	20	RECPT'S PRODUCTION
EXISTING LOAD		40	20	RECPT'S PRODUCTION
EXISTING LOAD		42	20	RECPT'S PRODUCTION

■ PROVIDE NEW BREAKER.

EXISTING PANEL

WITH GRD. BAR & 100% RATED NEUTRAL			AIC RATING	
PANEL	MAINS	200A MCB	-	
VOLTS	120/208	MOUNTING SURFACE	EQUIPMENT RM. 106	
REMARKS AND LOCATION	LOAD	BKR	CKT	REMARKS AND LOCATION
LIGHTS PRODUCTION	1602	20	1	LIGHTS WAREHOUSE & PROD. RM.
SPARE		2	3	EXISTING LOAD
NIGHT LIGHTS PRODUCTION	1068	20	5	EXISTING LOAD
NIGHT LIGHTS WAREHOUSE	1246	20	7	EXISTING LOAD
RECPT'S WAREHOUSE	540	20	9	EXISTING LOAD
RECPT'S WAREHOUSE	720	20	11	SPARE
EF-6 PRODUCTION	860	20	13	SPARE
EF-6 PRODUCTION	860	20	15	RECPT'S WAREHOUSE
EXISTING LOAD		18	20	LIGHTS OUTDOOR STORAGE
EXISTING LOAD		20	19	17400 PRODUCTION MIXING MOTOR
SPARE		22	23	EXISTING LOAD
EXISTING LOAD		24	3	EXISTING LOAD
EXISTING LOAD		26	20	EXISTING LOAD
EXISTING LOAD		28	20	EXISTING LOAD
EXISTING LOAD		30	20	EXISTING LOAD
EXISTING LOAD		32	20	GENERATOR BLOCK HEATER
EXISTING LOAD		34	20	GENERATOR BATTERY CHARGER
EXISTING LOAD		36	20	SPARE
EXISTING LOAD		38	2	SPARE
LIGHTS WAREHOUSE	1246	20	39	SPARE
EXISTING LOAD		40	20	SPARE
EXISTING LOAD		42	2	SPARE

■ PROVIDE NEW BREAKER.

EXISTING PANEL

WITH GRD. BAR & 100% RATED NEUTRAL			AIC RATING	
PANEL	MAINS	200A MCB	-	
VOLTS	120/208	MOUNTING SURFACE	EQUIPMENT RM. 106	
REMARKS AND LOCATION	LOAD	BKR	CKT	REMARKS AND LOCATION
EXISTING LOAD		100	1	EF-4
EXISTING LOAD		2	20	SPARE
EXISTING LOAD		4	20	RECPT'S PRODUCTION
EXISTING LOAD		6	20	RECPT'S PRODUCTION
EXISTING LOAD		8	20	RECPT'S PRODUCTION
EXISTING LOAD		10	40	SPARE
EXISTING LOAD		12	2	SPARE
EXISTING LOAD		14	30	SPARE
EXISTING LOAD		16	13	SPARE
EXISTING LOAD		18	3	SPARE
EXISTING LOAD		20	13	LIGHTS EQUIPMENT, STOR. ROOMS
EXISTING LOAD		22	20	SPARE
EXISTING LOAD		24	20	SPARE
EXISTING LOAD		26	2	EXISTING LOAD
EXISTING LOAD		28	15	EXISTING LOAD
EXISTING LOAD		30	20	EXISTING LOAD
EXISTING LOAD		32	20	SPARE
EXISTING LOAD		34	20	SPARE
EXISTING LOAD		36	20	SPARE
EXISTING LOAD		38	20	SPARE
EXISTING LOAD		40	3	SPARE
EXISTING LOAD		42	20	EXISTING LOAD

■ PROVIDE NEW BREAKER.

EXISTING PANEL

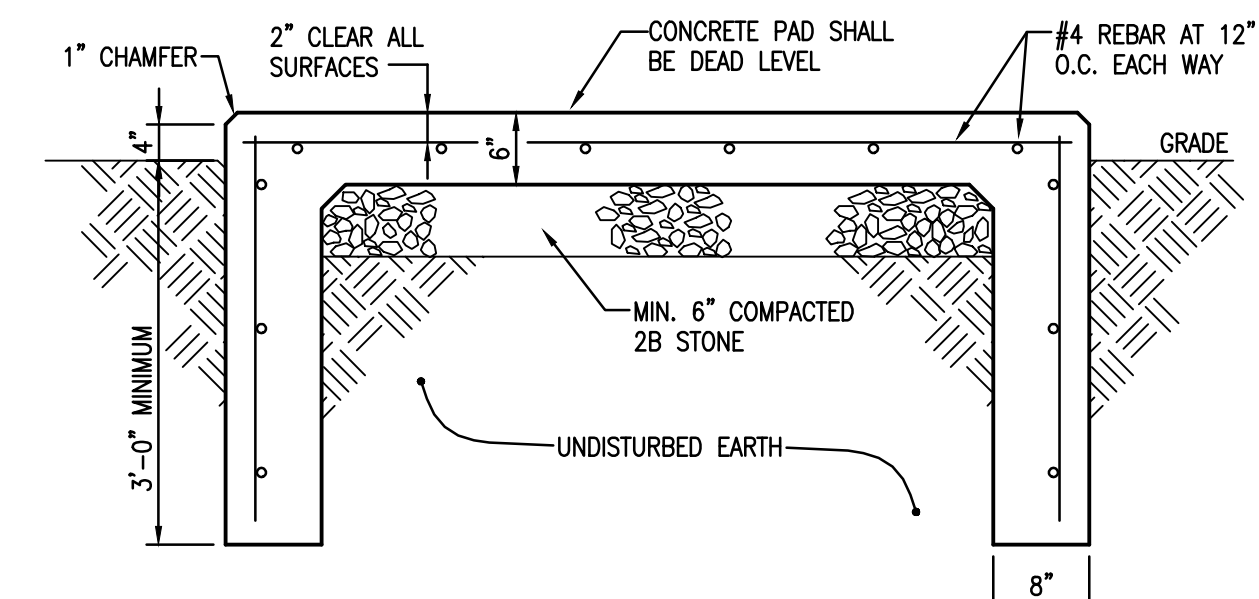
WITH GRD. BAR & 100% RATED NEUTRAL			AIC RATING	
PANEL	MAINS	200A MLO	-	
VOLTS	120/208	MOUNTING SURFACE	EQUIPMENT RM. 106	
REMARKS AND LOCATION	LOAD	BKR	CKT	REMARKS AND LOCATION
BULK STORAGE PUMP RECPT.	3960	20	1	17400 PRODUCTION TANK 3 MOTOR
EXISTING LOAD		2	3	EXISTING LOAD
EXISTING LOAD		3	5	EXISTING LOAD
EXISTING LOAD		4	3	EXISTING LOAD
OVERHEAD DOOR OPERATOR	2800	20	7	SPARE
EXISTING LOAD		8	20	SPARE
EXISTING LOAD		10	10	SPARE
EXISTING LOAD		12	3	SPARE
EXISTING LOAD		14	30	SPARE
EXISTING LOAD		16	18	SPARE
EXISTING LOAD		18	3	SPARE
EXISTING LOAD		20	19	SPARE
EXISTING LOAD		22	2	SPARE
EXISTING LOAD		24	20	SPARE
EXISTING LOAD		26	2	SPARE
EXISTING LOAD		28	40	SPARE
EXISTING LOAD		30	25	SPARE
EXISTING LOAD		32	27	EXISTING CONDENSING UNIT
EXISTING LOAD		34	50	SPACE
EXISTING LOAD		36	2	SPACE
EXISTING LOAD		38	2	SPACE
EXISTING LOAD		40	20	SPACE
EXISTING LOAD		42	20	SPACE

■ PROVIDE NEW BREAKER.

EXISTING PANEL

WITH GRD. BAR & 100% RATED NEUTRAL			AIC RATING	
PANEL	MAINS	200A MLO	-	
VOLTS	120/208	MOUNTING FLUSH	IT ROOM	
REMARKS AND LOCATION	LOAD	BKR	CKT	REMARKS AND LOCATION
EXISTING LOAD		2	15	EXISTING LOAD
EXISTING LOAD		4	20	EXISTING LOAD
EXISTING LOAD		6	20	EXISTING LOAD
EXISTING LOAD		8	15	EXISTING LOAD
EXISTING LOAD		10	20	EXISTING LOAD
EXISTING LOAD		12	15	EXISTING LOAD
EXISTING LOAD		14	20	EXISTING LOAD
EXISTING LOAD		16	20	EXISTING LOAD
EXISTING LOAD		18	15	EXISTING LOAD
EXISTING LOAD		20	15	EXISTING LOAD
EXISTING LOAD		22	20	EXISTING LOAD
EXISTING LOAD		24	15	EXISTING LOAD
EXISTING LOAD		26	15	EXISTING LOAD
EXISTING LOAD		28	15	EXISTING LOAD
EXISTING LOAD		30	15	EXISTING LOAD
EXISTING LOAD		32	15	EXISTING LOAD
EXISTING LOAD		34	15	EXISTING LOAD
EXISTING LOAD		36	20	EXISTING LOAD
EXISTING LOAD		38	20	EXISTING LOAD
EXISTING LOAD		40	20	SPARE
EXISTING LOAD		42	20	SPARE

■ PROVIDE NEW BREAKER WITH HANDLE LOCK-ON ACCESSORY.



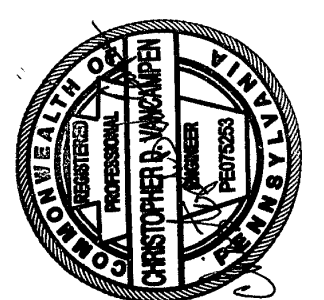
NOTES:
1. EQUIPMENT PAD SHALL EXTEND MINIMUM 6" FROM EDGE OF GENERATOR EQUIPMENT ON ALL SIDES.

EQUIPMENT PAD DETAIL
NO SCALE

REVISIONS	DESCRIPTION
DATE	07/14/21
DESCRIPTION	FIRE PUMP ROOM ADDED, STORAGE ROOM SIZE INCREASE
DATE	07/27/21
DESCRIPTION	STORAGE ROOMS OMITTED, OH COOLING DOOR ADDED
DATE	08/30/21
DESCRIPTION	MFP REVISIONS FOR OWNER CHANGES

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RISER DIAGRAM AND PANEL SCHEDULES
PROPOSED BUILDING RENOVATIONS AT SHARTLESVILLE FOR
BULK CHEMICALS
72 FELCK INDUSTRIAL DRIVE UPPER BERN TOWNSHIP, BERKS COUNTY, PA.

ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE.
JOB NO.: 20003.00
DRAWN BY: DS
DATE: 08.30.2021

ELECTRICAL SPECIFICATIONS

IT IS THE INTENT OF THESE SPECIFICATIONS AND ACCOMPANYING DRAWINGS THAT THE CONTRACTOR SHALL, UNLESS OTHERWISE SPECIFIED HEREIN, FURNISH ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT INCLUDING SCAFFOLDING TO COMPLETE THE INSTALLATION OF THE ENTIRE ELECTRICAL SYSTEM AS SPECIFIED HEREIN. CONTRACTOR SHALL PROPERLY INSTALL, EQUIP, ADJUST, AND PUT INTO PERFECT OPERATION, THE RESPECTIVE PORTIONS OF THE INSTALLATION SPECIFIED, AND SO INTERCONNECT THE VARIOUS ITEMS OR SECTIONS OF THE WORK IN ORDER TO FORM A COMPLETE AND PROPERLY OPERATING WHOLE.

THE WORK SHALL INCLUDE ALL MATERIAL AND LABOR REQUIRED TO PROVIDE THE ELECTRICAL WORK SPECIFIED AND SHOWN ON DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ACCESSORIES, PARTS, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM.

THE WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

1. PANELBOARDS AND DISCONNECT SWITCHES
2. FEEDERS
3. BRANCH CIRCUITS
4. CONNECTIONS TO EQUIPMENT
5. LIGHTING FIXTURES
6. WIRING DEVICES
7. EMERGENCY LIGHTING EQUIPMENT
8. TESTING
9. GROUNDING
10. CUTTING AND PATCHING
11. MOTOR STARTERS
12. DEMOLITION
13. BOXES
14. FIRE ALARM EQUIPMENT AND CONNECTIONS
15. EMERGENCY GENERATOR AND TRANSFER SWITCH

THE WORK SHALL INCLUDE OBTAINING ALL PERMITS, PAYING ALL PERMIT FEES, SCHEDULING ALL REQUIRED INSPECTIONS AND PAYING ALL UTILITY AND INSPECTION FEES.

RULES AND REGULATIONS

ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE NATIONAL ELECTRICAL CODE (NEC), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), INTERNATIONAL BUILDING CODE (IBC) AND ALL APPLICABLE LOCAL CODES. CERTIFICATE OF APPROVAL, IN TRIPLICATE, FOR ROUGH AND FINISHED WIRING, FROM THE INSPECTION AGENCY(S) MUST BE DELIVERED TO THE ARCHITECT BEFORE FINAL PAYMENT CAN BE AUTHORIZED. INDEPENDENT INSPECTION AGENCY(S) MUST BE APPROVED BY LOCAL AUTHORITIES.

MATERIALS AND WORKMANSHIP

ALL MATERIALS SHALL BE NEW, OF THE BEST RESPECTIVE KINDS, MANUFACTURED BY THE COMPANY OR COMPANIES MENTIONED AND SHALL BE OF DOMESTIC MANUFACTURE. ALL EQUIPMENT SHALL BE UL-APPROVED.

POWER WIRING TO OTHER EQUIPMENT

ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CONDUIT, DISCONNECT SWITCHES, WIRE, OUTLET BOXES AND FINAL CONNECTIONS TO CONNECT ANY PIECE OF EQUIPMENT FURNISHED BY OTHER CONTRACTORS. THE CONTROL WIRING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR FURNISHING THE EQUIPMENT.

MATERIALS AND INSTALLATION

IN GENERAL, BRANCH CIRCUITS SHALL BE 90% COPPER CONDUCTORS TYPE THWN/THHN EXCEPT WHERE HOT OR DAMP CONDITIONS REQUIRE A DIFFERENT TYPE OF INSTALLATION. MINIMUM SIZE SHALL BE #12 AWG. #12 AND #10 AWG SHALL BE SOLID COPPER. #8 AWG AND LARGER SHALL BE STRANDED.

ALL WIRING LOCATED INDOORS, WITH THE EXCEPTION OF THE OFFICE AREA, SHALL BE INSTALLED IN CONDUIT. CONCEALED TYPE MC CABLE IS PERMITTED IN THE OFFICE AREA ONLY FOR CIRCUITS RATED 50 AMPS OR LESS. EMT SHALL BE INSTALLED CONCEALED IN ALL FINISHED AREAS OF THE BUILDING. EXPOSED CONDUIT SHALL BE RUN IN ALL UNFINISHED AREAS ONLY. INSTALL ALL CONDUITS PARALLEL OR PERPENDICULAR TO BUILDING SURFACES. INSTALL ALL CONDUITS GROUPED TOGETHER WHERE POSSIBLE. ALL WIRING IN EXPOSED AREAS SHALL BE INSTALLED IN EMT UNLESS NOTED OTHERWISE ON DRAWINGS.

ALL CIRCUITS INSERTED IN CONCRETE OR EARTH SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT, AND ALL EXPOSED EXTERIOR CIRCUITS SHALL BE RUN IN RIGID GALVANIZED STEEL. ALL WIRING SHALL BE INSTALLED AS PER THE NATIONAL ELECTRICAL CODE.

DRAWINGS

THE DRAWINGS ISSUED WITH THESE SPECIFICATIONS ARE DIAGRAMMATIC AND SHOW THE APPROXIMATE LOCATIONS OF EQUIPMENT, FIXTURES, FEEDER RUNS, BRANCH CIRCUITS, ETC. PREMISE LOCATIONS SHALL BE COORDINATED IN THE FIELD AS CONSTRUCTION PROCEEDS. PROVIDE ALL NECESSARY MISCELLANEOUS INCIDENTAL MATERIALS AND ACCESSORIES REQUIRED TO MAKE THE WORK COMPLETE IN ALL RESPECTS EVEN IF NOT PARTICULARLY SHOWN OR SPECIFIED.

RECEPTACLES, SWITCHES AND PLATES

CONTRACTOR SHALL PROVIDE ALL PLATES, RECEPTACLES AND LIGHT SWITCHES AS SHOWN. ALL RECEPTACLES AND LIGHT SWITCHES SHALL BE 120/277 VOLT, 20 AMP, HEAVY DUTY TYPE AND OF ONE MANUFACTURER. ALL WALL PLATES SHALL BE STAINLESS STEEL. DEVICES LOCATED IN EXPOSED SURFACE-MOUNTED BOXES SHALL BE INSTALLED IN A BOX WITHOUT KNOCKOUTS AND A METAL PLATE. WHERE RECEPTACLES ARE INSTALLED EXTERIOR TO THE BUILDING, THEY SHALL HAVE WR (WEATHER RESISTANT) LABEL.

SAFETY SWITCHES

SAFETY SWITCHES SHALL BE FUSIBLE TYPE OF NEMA CONSTRUCTION, HEAVY-DUTY, WITH POSITIVE QUICK-MAKE/QUICK-BREAK OPERATING MECHANISM. PROVIDE NEMA 3R ENCLOSURE WHEN INSTALLED OUTDOORS.

FUSES

THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DUAL-ELEMENT FUSES AND ONE SET OF SPARES FOR EACH FUSEHOLDER FOR ALL FUSED SWITCHES ON THIS PROJECT. TURN OVER SPARE FUSES TO OWNER.

ELECTRICAL LEGEND

(REFER TO SPECIFICATIONS FOR MORE INFORMATION)
NOTE: DIMENSIONS ARE TO CENTER OF DEVICE, UNLESS NOTED OTHERWISE.

SYMBOL	DESCRIPTION
	LED LIGHTING FIXTURE.
	LIGHTING FIXTURE - NIGHT LIGHT CIRCUIT.
	EXIT LIGHTING FIXTURE - NORMAL AND EMERGENCY POWER - ARROW(S) INDICATE DIRECTIONAL MARKERS.
	EMERGENCY BATTERY UNIT WITH 2 LAMPS.
	EMERGENCY BATTERY PACK REMOTE HEAD. WIRE WITH MINIMUM #12 AWG.
	S - SINGLE POLE SWITCH - 20 AMP - MOUNT 46" AFF.
	S2 - 2 POLE SINGLE THROW SWITCH - 20 AMP - MOUNT 46" AFF.
	S3 - THREE WAY LIGHT SWITCH - 20 AMP - MOUNT 46" AFF.
	S4 - FOUR WAY LIGHT SWITCH - 20 AMP - MOUNT 46" AFF.
	SxSx - SUB-LETTERS INDICATE WHICH SWITCH CONTROLS INDICATED FIXTURES WITH SAME SUB-LETTERS - MOUNT 46" AFF.
	Sv - LOW VOLTAGE SWITCH STATION CONNECTED TO ROOM OCCUPANCY SENSOR POWER PACK. PROVIDE SINGLE BUTTON STATION, UNO - MOUNT 46" AFF.
	Sos - PIR OCCUPANCY SENSING WALL SWITCH - LINE VOLTAGE. MOUNT 46" AFF.
	[OS] - CEILING/WALL MOUNTED PIR OCCUPANCY SENSING UNIT - LOW VOLTAGE WITH POWER PACK. VERIFY LOCATION OF SENSOR WITH MANUFACTURER PRIOR TO INSTALLATION.
	H[OS] - CEILING MOUNTED HIGH-BAY PIR OCCUPANCY SENSING UNIT - LOW VOLTAGE WITH POWER PACK. VERIFY LOCATION OF SENSOR WITH MANUFACTURER PRIOR TO INSTALLATION.
	⊕ - GROUND FAULT DUPLEX RECEPTACLE WITH WEATHERPROOF "WHILE-IN-USE" COVER - 20 AMP - 120 VOLT, 36" AFF UNLESS NOTED OTHERWISE.

PANELBOARDS

PANELBOARDS SHALL BE OF THE DEAD FRONT, AUTOMATIC CIRCUIT BREAKER TYPE, SUITABLE FOR CONNECTION TO THE SYSTEM CHARACTERISTICS AND WITH CIRCUIT BREAKERS AS CALLED FOR IN THE PANEL SCHEDULE. CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE WITH QUICK-MAKE/QUICK-BREAK OPERATING MECHANISM AND WITH TRIP INDICATION. TRIP INDICATION SHALL BE CLEARLY INDICATED BY BREAKER HANDLE TAKING A POSITION BETWEEN "ON" AND "OFF". ALL 2-POLE AND 3-POLE BREAKERS SHALL BE A COMMON TRIP. BUS BARS SHALL BE COPPER. PROVIDE A HINGED FRONT COVER (ENTIRE FRONT TRIM HINGED TO BOX AND WITH STANDARD DOOR WITHIN HINGED TRIM COVER). PANELBOARDS SHALL BE PROVIDED WITH A CIRCUIT DIRECTORY TO INDICATE INSTALLED CIRCUIT LOADS AFTER BALANCING PANELBOARD LOADS. DIRECTORY SHALL BE TYPED/WRITTEN ON INDEX CARD. HANDWRITTEN DIRECTORIES ARE NOT ACCEPTABLE. ACCEPTABLE MANUFACTURER: Eaton/CUTLER HAMMER.

FIXTURES

THE CONTRACTOR SHALL PROVIDE LIGHTING FIXTURES IN ACCORDANCE WITH LAYOUT INDICATED ON THE DRAWINGS. FIXTURES SHALL BE EQUIPPED WITH ALL COMPONENT PARTS OF METAL, GLASS, WIRING, SELF-ALIGNING HANGERS, MOUNTING HARDWARE AND OTHER ACCESSORIES AS REQUIRED TO MAKE EACH UNIT COMPLETE AND OPERABLE IN ITS ENTIRETY.

DEMOLITION

THE CONTRACTOR SHALL REMOVE ALL ELECTRICAL DEVICES AND EQUIPMENT REQUIRED TO PERFORM HIS WORK. ANY EXISTING ELECTRICAL DEVICES OR EQUIPMENT THAT MUST BE RELOCATED TO ACCOMMODATE NEW WORK SHALL BE PROVIDED BY THE CONTRACTOR. THERE SHALL BE NO ADDITIONAL EXPENSE FOR THIS WORK PASSED ON TO THE OWNER. ALL ELECTRICAL ITEMS REMOVED SHALL REMAIN THE PROPERTY OF THE OWNER UNLESS THE OWNER DOES NOT WANT THEM. ITEMS NOT CLAIMED BY THE OWNER SHALL BE LEGALLY REMOVED FROM THE SITE BY THE CONTRACTOR.

BOXES

FURNISH AND INSTALL BOXES SUITABLE FOR EACH USE.

ALL WALL MOUNTED BOXES SHALL BE SURFACE MOUNTED EXCLUDING THE OFFICE AREA. BOXES WITHIN THE OFFICE AREA SHALL BE RECESSED. ALL BOXES SHALL BE SET LEVEL AND PLUMB.

CEILING MOUNTED BOXES IN AREAS WITH SUSPENDED CEILINGS SHALL BE SUPPORTED FROM THE CEILING SUPPORT STRUCTURAL MEMBERS AND SHALL NOT BE SUPPORTED DIRECTLY FROM THE CEILING SUPPORT TEE MEMBERS. IN AREAS WITHOUT SUSPENDED CEILINGS, BOXES SHALL BE SECURED DIRECTLY TO THE BUILDING STRUCTURAL MEMBERS.

FIRE ALARM SYSTEM

PROVIDE NEW FIRE ALARM SYSTEM FOR BUILDING PER NOTATION ON FLOOR PLAN DRAWING. COORDINATE ALL WORK WITH BERSHIRE SYSTEMS GROUP, INC. (610) 775-1200.

SUBMITTALS

1. PRODUCT DATA: PROVIDE ELECTRICAL CHARACTERISTICS AND CONNECTION REQUIREMENTS. PROVIDE SYSTEM WIRING DIAGRAM SHOWING EACH DEVICE AND BATTERY CALCULATIONS AS REQUIRED BY AHJ.

RECORD ACTUAL LOCATIONS OF INITIATING DEVICES, SIGNALING APPLIANCES AND END-OF-LINE DEVICES.

CONFORM TO REQUIREMENTS OF IBC, NFPA 72 AND NFPA 101.

FURNISH PRODUCTS LISTED AND CLASSIFIED BY UL FM AS SUITABLE FOR PURPOSE SPECIFIED AND INDICATED.

EMERGENCY GENERATOR SYSTEM

PROVIDE DIESEL EMERGENCY GENERATOR SET WITH INTEGRAL DUAL-WALL, SUB-BASE, UL LISTED DIESEL FUEL TANK SIZED FOR 24 HOUR RUN-TIME AT FULL LOAD WITH FILL AND VENT LINES TO THE EXTERIOR PER MANUFACTURERS REQUIREMENTS. PROVIDE REQUIRED PUMPS, FUEL FILTER, SOLENOID AND CHECK VALVES. PROVIDE SOUND ATTENUATED WEATHERPROOF ENCLOSURE SHALL BE CAPABLE OF REDUCING THE AVERAGE GENERATOR SOUND PRESSURE LEVEL OF NO MORE THAN 72 dBA, 7 METERS FROM THE GENERATOR.

PROVIDE ENGINE STARTING SYSTEM INCLUDING BATTERIES, DIGITAL INSTRUMENT CONTROL PANEL, ALTERNATOR PROTECTION RELAY, TRANSFER SWITCH, REMOTE ANNUNCIATOR PANEL, CRITICAL EXHAUST SILENCER, EXHAUST PIPING, FUEL FILTERS, CONDENSATE DRAIN, CONCRETE FOUNDATION, VIBRATION CONTROL, BATTERY CHARGER, BLOCK HEATER AND ANY OTHER REQUIRED ACCESSORIES.

GENERATOR SHALL BE IN COMPLIANCE WITH NFPA 37 AND NFPA 101. COMPLY WITH APPLICABLE LOCAL CODE REQUIREMENTS OF THE AHJ AND NEC ARTICLES 700, 701 AND 702 PERTAINING TO CONSTRUCTION AND INSTALLATION OF EMERGENCY AND STANDBY SYSTEMS. ACCEPTABLE MANUFACTURERS: CUMMINS/OMN, GENERAC, KOHLER OR MTU.

PROVIDE SURFACE MOUNT REMOTE ANNUNCIATOR AT LOCATION INDICATED ON DRAWINGS. PROVIDE THE FOLLOWING VISUAL NOTIFICATIONS: GENERATOR RUN, BATTERY CHARGER AC FAILURE, LOW BATTERY VOLTAGE, HIGH BATTERY VOLTAGE, OVERCRANK, OVERSPEED, LOW OIL PRESSURE, HIGH WATER TEMPERATURE, LOW WATER TEMPERATURE AND EMERGENCY STOP. THE ANNUNCIATOR SHALL PROVIDE AUDIBLE AS WELL AS VISUAL ALARMS FOR CRITICAL ITEMS.

PROVIDE REMOTE E-STOP FOR GENERATOR MEETING ALL NFPA 110 AND LOCAL JURISDICTION REQUIREMENTS. INSTALL E-STOP MUSHROOM BUTTON ADJACENT TO REMOTE ANNUNCIATOR. PROVIDE 100% LOAD BANK TEST AND TOP OFF DIESEL FUEL TANK AT COMPLETION OF PROJECT. PROVIDE A SIGN AT MAIN SERVICE ENTRANCE EQUIPMENT LOCATION INDICATING TYPE AND LOCATION OF EMERGENCY POWER SOURCE IN ACCORDANCE WITH NEC ARTICLE 700.7.

AUTOMATIC TRANSFER SWITCH SHALL BE DELAYED TRANSITION TYPE WITH SOLID NEUTRAL SIMILAR TO ASCO POWER TECHNOLOGIES SERIES 4000 OR EQUAL. PROVIDE SIZE AS INDICATED ON DRAWINGS IN NEMA 1 ENCLOSURE.

GENERAL ELECTRICAL NOTES:

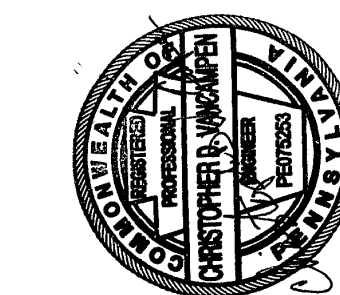
(APPLY TO ALL SHEETS)

1. THE CONTRACTOR SHALL PROVIDE ALL CIRCUITS (FEEDER AND BRANCH) WITH AN EQUIPMENT GROUND CONDUCTOR PROVIDED IN ACCORDANCE WITH N.E.C. TABLE 250-122.
2. CONDUIT SLEEVES MUST BE PROVIDED FOR ALL LOW VOLTAGE WIRING RUN IN OR THROUGH WALLS.
3. IN ROOMS WITHOUT CEILINGS, LOW VOLTAGE WIRING MUST BE RUN IN CONDUIT. NO EXPOSED LOW VOLTAGE WIRING WILL BE PERMITTED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY MISCELLANEOUS STEEL REQUIRED FOR MOUNTING ELECTRICAL EQUIPMENT. THE CONTRACTOR IS RESPONSIBLE TO SIZE STEEL AND INSTALL PROPERLY FOR THE LOAD INTENDED.
5. ALL LOW VOLTAGE WIRING, NOT INSTALLED IN CONDUIT, ABOVE CEILINGS MUST BE RUN PERPENDICULAR AND/OR PARALLEL TO BUILDING STEEL. ALL CABLES MUST BE NEATLY TRAINED AND WIRE TIED TO THE BUILDING STEEL OR INSTALLED ON J-HOOKS, BRIDLE RINGS OR IN CABLE TRAY WITH 25% SPARE CAPACITY. CABLES THAT ARE SIMPLY DRAPPED THROUGH STEEL OR RUN AT ODD ANGLES WILL HAVE TO BE REMOVED AND REINSTALLED.
6. ALL CONDUIT AND WIRING RUN TO FINISHED SPACES (I.E., CORRIDORS, OFFICES, STORAGE ROOMS, ETC.) MUST BE CONCEALED. CONDUIT MAY BE RUN EXPOSED IN UNFINISHED AREAS (I.E., WAREHOUSE, PRODUCTION, EQUIPMENT ROOMS, ETC.).
7. OUTLETS MOUNTED BACK TO BACK AND/OR THE USE OF THROUGH BOXES IS NOT PERMITTED.
8. THE CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING AND PATCHING OF EXISTING SURFACES THAT IS REQUIRED FOR HIS WORK. PATCHING SHALL INCLUDE EVERYTHING EXCEPT FINAL FINISH.
9. THE CONTRACTOR SHALL COORDINATE ALL DEVICES ASSOCIATED WITH MECHANICAL, PLUMBING AND ARCHITECTURAL EQUIPMENT INDICATED TO HAVE POWER CONNECTIONS WITH CONTRACTOR PROVIDING EQUIPMENT PRIOR TO ORDERING DEVICES AND ROUGH-INS. THE CONTRACTOR SHALL REQUEST SHOP DRAWINGS FOR ALL EQUIPMENT REQUIRING POWER BEFORE ROUGH-IN.
10. FOR WORK REQUIRED WITHIN AREAS OF THE BUILDING WHERE NO GENERAL TRADES WORK IS REQUIRED, THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR REMOVING AND REPLACING ALL CEILING TILES, INCLUDING INSULATION FOUND ABOVE THE CEILING TO PERFORM HIS WORK. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO NOTIFY THE OWNER/ENGINEER IN WRITING WITH DATED PHOTOGRAPHIC EVIDENCE OF ANY DAMAGED CEILING TILES PRIOR TO REMOVAL. OTHERWISE, THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGED CEILING TILES WITHIN THE AREA OF WORK.
11. ALL LOW VOLTAGE (BELOW 120V) COPPER CABLE RUN TO EXTERIOR OF BUILDING MUST BE LIGHTNING PROTECTED PER CODE. CONTRACTOR SHALL PROVIDE SOLID STATE LIGHTNING PROTECTION.
12. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES USING PA-ONE CALL, REVIEWING THE SITE SURVEY DRAWINGS AND REQUESTING ANY INFORMATION THE OWNER MAY BE ABLE TO PROVIDE ABOUT THE LOCATION OF TRENCHING AND EXCAVATING FOR ALL EXTERIOR CONDUITS, GENERATOR, EQUIPMENT PADS, ETC.
13. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL KNOWN AND UNKNOWN UNDERGROUND UTILITIES AND EQUIPMENT FOR BOTH EXTERIOR AND INTERIOR APPLICATIONS WITH THE USE OF GROUND PENETRATING RADAR (GPR) BEFORE TRENCHING, SAW CUTTING, AND EXCAVATING. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ANY BELOW GRADE UTILITIES THAT ARE DAMAGED DUE TO FAILURE TO VERIFY THE LOCATIONS OF ALL UNDERGROUND UTILITIES. SIGNED AND DATED DOCUMENTATION OF GPR SHALL BE AVAILABLE UPON REQUEST.
14. UNLESS NOTED OTHERWISE, LIGHT SWITCHES INDICATED IN ROOMS SHALL CONTROL THE LIGHTING WITHIN THAT ROOM. WHERE MULTIPLE SWITCHES ARE INDICATED, REFER TO THE ASSOCIATED DRAWING NOTES AND/OR SUB-LETTER DESIGNATION FOR THE LIGHTING TO BE CONTROLLED BY EACH SWITCH.

REVISIONS	DESCRIPTION
DATE	DESCRIPTION
07/14/21	FIRE PUMP ROOM ADDED, STORAGE ROOM SIZE INCREASE
07/27/21	STORAGE ROOMS OMITTED, OH COILING DOOR ADDED
08/30/21	MEP REVISIONS FOR OWNER CHANGES

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SYMBOL LEGEND, SPECIFICATIONS AND NOTES
PROPOSED BUILDING RENOVATIONS AT SHARTLESVILLE FOR
BULK CHEMICALS
72 FELICK INDUSTRIAL DRIVE UPPER BERN TOWNSHIP, BERKS COUNTY, PA.

ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE.

JOB NO.: 20003.00
DRAWN BY: DS
DATE: 08.30.2021