HVAC SYSTEM DESCRIPTION

0. GENERAL: SYSTEMS 1 THRU 3 ARE GAS FURANCES AND CONDENSING UNITS SERVING EXTERIOR AREAS. SYSTEMS 4 THRU 7 ARE HEAT PUMP/AIR HANDLER SYSTEMS SERVING INTERIOR AREAS. THESE SYSTEMS USE AN ENERGY RECOVERY VENTILATOR IN ORDER TO PROVIDE NEEDED RELIEF AIR AND CODE REQUIRED MAKEUP AIR.

1. SYSTEM 1, LOBBY/RECEPTION: TWINNED GAS FURNACES AND TWO 3-TON CONDENSING UNITS, GF/CU-1A & 1B.

2. SYSTEM 2, NORTH EXTERIOR: GF-2/CU-2 SERVES THE 1st AND 2nd FLOORS ON THE NORTH PERIMETER.

3. SYSTEM 3, SOUTH EXTERIOR: GF-3/CU-3 SERVES THE 1st AND 2nd FLOORS ON THE SOUTH PERIMETER.

4. SYSTEM 4, CORES: HP-4/AH-4 SERVE THE CORRIDORS, TOILET ROOMS AND MISCELLANEOUS AREAS OF THE 1st AND 2nd FLOORS.

5. SYSTEM 5, 1ST FLOOR CONFERENCE ROOM: HP-5/AH-5.

6. SYSTEM 6, BREAK/TRAINING: HP-6/AH-6.

7. SYSTEM 7, 2ND FLOOR CONFERENCE ROOM: HP-7/AH-7.

8. SYSTEM 8, IT ROOM: HP-8/AH-8.

9. SYSTEM 9, STAIRWELL: HP-9/AH-9A (IST FLR) & 9B (2ND FLR).

10. SYSTEM 10, VESTIBULE: CABINET HEATER CH-10.

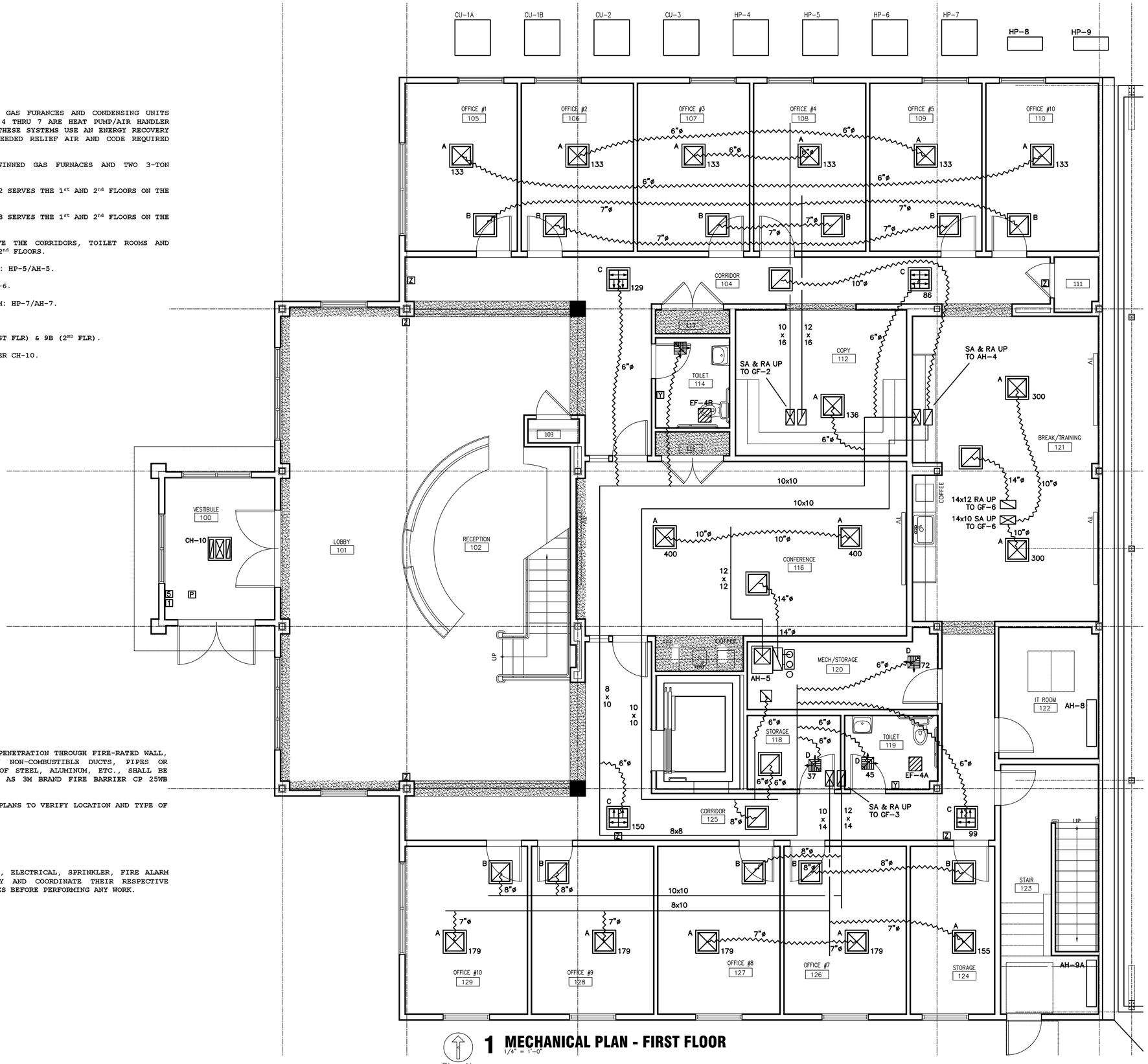
FIRE STOPPING SPECIFICATIONS

1. THE ANNULAR SPACE CREATED BY THE PENETRATION THROUGH FIRE-RATED WALL, FLOORS OR CEILING ASSEMBLIES BY NON-COMBUSTIBLE DUCTS, PIPES OR INCIDENTAL SUPPORT ELEMENTS MADE OF STEEL, ALUMINUM, ETC., SHALL BE SEALED WITH APPROVED SEALANT SUCH AS 3M BRAND FIRE BARRIER CP 25WB CAULK.

2. REFER TO THE LATEST ARCHITECTURAL PLANS TO VERIFY LOCATION AND TYPE OF ALL FIRE RATED ASSEMBLIES.

TRADE COORDINATION SPECIFICATIONS

1. THE GENERAL, MECHANICAL, PLUMBING, ELECTRICAL, SPRINKLER, FIRE ALARM CONTRACTORS SHALL MEET REGULARLY AND COORDINATE THEIR RESPECTIVE SCOPE OF WORK WITH ALL OTHER TRADES BEFORE PERFORMING ANY WORK.



Plan N.

1 MECHANICAL PLAN - FIRST FLOOR
1/4" = 1'-0"

RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN

1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9806 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:

Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:

Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester County NJ 08094

REVISIONS:

7/14/2021 - Progress Set
9/03/2024 - Progress Set

SHEET TITLE:

MECHANICAL PLAN FIRST FLOOR

DRAWN BY: CSO
CHECKED BY: CSO
SCALE:
DATE: 9-03-2024
PROJECT NUMBER: 24F04

DRAWING NUMBER:

M-1

PROGRESS ISSUE 09-30-24

HVAC EQUIPMENT SCHEDULE

GF-1A & 1B, GAS FURNACE, UPFLOW, RHEEM R98MV-060A317U, MODULATING, 55,000 BTU INPUT NAT GAS @ 98.7 AFUE, MAX 1050-CFM @ 1.0-ESP, 1/2-HP DIRECT DRIVE BLOWER. 15/1 CB. 18"W X 30"D X 33"H, 123 LBS. FURNISH RXGY-E02 CONCENTRIC VENT TERMINATION KIT.

GF-2 & 3, GAS FURNACE, UPFLOW, RHEEM R98MV-085A317U, MODULATING, 84,000 BTU INPUT NAT GAS @ 98.1 AFUE, MAX 1750-CFM @ 1.0-ESP, 3/4-HP DIRECT DRIVE BLOWER. 15/1 CB. 18"W X 30"D X 33"H, 123 LBS. FURNISH RXGY-E02 CONCENTRIC VENT TERMINATION KIT.

CU-1A & 1B, CONDENSING UNIT, RHEEM RA18A236AJVCA, 3 TONS @ 18 SEER, VARIABLE SPEED COMPRESSOR AND FAN, 2571W & 29 MCA @ 208/230/1/60, 45/2 HACR CB. 34"L X 34"D X 39"H, 236 LBS.

CU-2 & 3, CONDENSING UNIT, RHEEM RA18A248AJVCA, 4 TONS @ 18 SEER, VARIABLE SPEED COMPRESSOR AND FAN, 3428W & 46 MCA @ 208/230/1/60, 70/2 HACR CB. 34"L X 34"D X 51"H, 255 LBS.

HP-4, 5, 6 & 7, HEAT PUMP, RHEEM RP18A224AJVCA, 2 TONS @ 18 SEER, VARIABLE SPEED COMPRESSOR AND FAN, 1714W & 21 MCA @ 208/230/1/60, 35/2 HACR CB. 34"L X 34"D X 39"H, 214 LBS.

AH-4, AIR HANDLER, RHEEM RHMVZ2417SEACNA, 2-TONS, MODULATING. 10-KW HEATER AND 1/3-HP @ 208/230/1/60, 60/2 HACR CB. 18"W X 22"D X 51"H, 150 LBS.

AH-5, 6 & 7, AIR HANDLER, RHEEM RHMVZ2417SEACNA, 2-TONS, MODULATING. 5-KW HEATER AND 1/3-HP @ 208/230/1/60, 20/2 HACR CB. 18"W X 22"D X 51"H, 150 LBS.

CC-1A & 1B, 2, 3, 4, 5, 6 & 7, COOLING COIL, RHEEM, UPFLOW (TO MATCH GF/CU AND HP/AH COMBINATIONS).

TS-1, 2, 3, 4, 5, 6 & 7, THERMOSTAT, RHEEM RETST800SYS, ECONET SMART.

HP-8 HEAT PUMP, SPLIT SYSTEM, PIONEER YN009GHF125RPH, 9,000 BTUH COOLING @ 14.5-EER, 10,000 BTUH HEATING @ 2.2-COP2 & 5-DEGF. 720W @ 240/1, 15/2 HACR CB. 32"W X 11"D X 23"H, 73 LBS.

AH-8, AIR HANDLER, SPLIT SYSTEM, PIONEER WF009GHF125HLH, WALL HUNG, 365/306/253 CFM, WIFI ENABLED. WIRED THRU HP-1.

HP-9 STAIRS HEAT PUMP, MITSUBISHI 2-ZONE, MXZ-C20NA2, 22,000 BTUH COOLING @ 95F, 1420W & 20-SEER, 14,600 BTUH HEATING @ 17F, 6140W & 10-HPSF. 208/1, 22.1-MCA, 25/2 HACR CB. 38"W X 13"D X 32"H, 137 LBS.

AH-9A & 9B, STAIRS AIR HANDLER, MITSUBISHI MSZ-GL06, WALL CONSOLE, 6,000 BTUH COOLING, 5 FAN SPEEDS, 0.76-AMPS, 158W @ 208/1. 32"W X 9"D X 12"H, 22-LBS. FURNISH STANDARD GRILLE.

CH-10, VESTIBULE CEILING HEATER, BERKO FFCH548, COMMERCIAL DOWNFLOW, RECESSED MOUNT. 3-KW & 14.2-AMPS @ 208/1/60. 24" X 24" X 7"H, 27 LBS.

AIR DEVICE SCHEDULE

TYPE DESCRIPTION

A CEILING DIFFUSER, TUTTLE & BAILEY, 1300A SERIES, FLUSH CONES, T-BAR LAY-IN, ROUND NECK, 24" X 24", BAKED WHITE ENAMEL, WITH OBD. NECK DIAMETER "DX" TO MATCH INTERCONNECTING FLEXIBLE DUCT SHOWN ON DRAWING. (6" FOR UP TO 137 CFM, 8/244 CFM, 10/382, 12/550, 15/641)

B RETURN AIR GRILLE, TUTTLE & BAILEY 2000, PERFORATED, T-BAR LAY-IN, 24" X 24", WHITE BAKED ENAMEL, WITH OBD. (6" DIAMETER NECK FOR UP TO 100 CFM, 8/175, 10/275, 12/395, 14/535, 16/700, 18/885)

C CEILING DIFFUSER, TUTTLE & BAILEY, AQDS-P2424 ADJUSTABLE MODULAR SQUARE DIFFUSER WITH SQUARE NECK, WITH 1/2/3/4-WAY SNAP-IN ADJUSTABLE MODULES, FOR SURFACE MOUNTING, BAKED WHITE ENAMEL, WITH OBD. FURNISH SQUARE TO ROUND TRANSITION TO MATCH INTERCONNECTING FLEXIBLE DUCT SHOWN ON DRAWING. (6X6 FOR UP TO 50 CFM, 8X8/90 CFM, 10x10/140, 12X12/205, 14X14/2800, 16X16/380, 18X18/495).

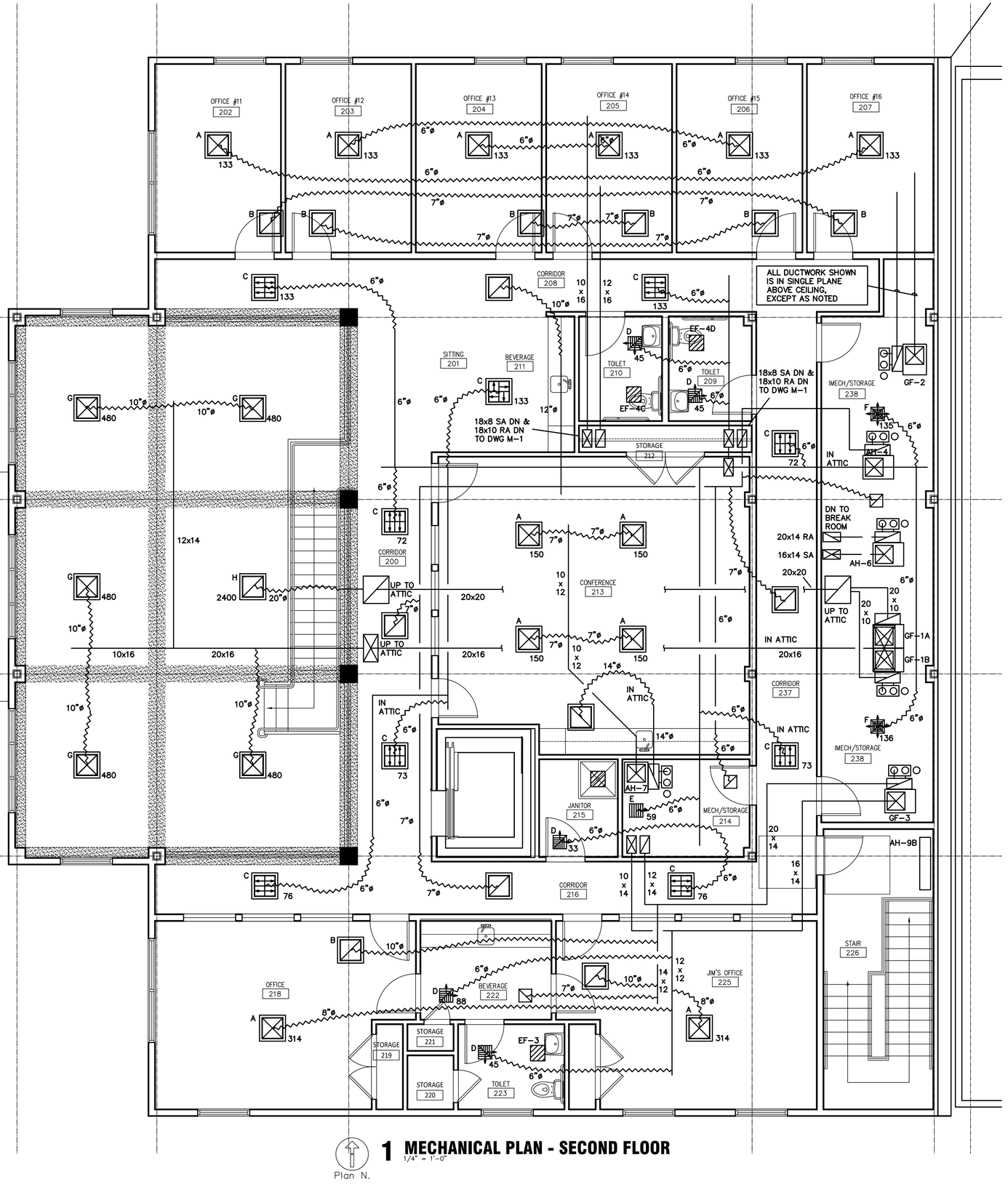
D CEILING DIFFUSER, TUTTLE & BAILEY ME-2C, 2-WAY, CORNER STYLE 2C, SURFACE MOUNTED, STEEL, 1/4" THICK EDGE, BAKED WHITE ENAMEL, WITH OBD. (6" X 6" UP TO 60 CFM, 9X9/135, 12X12/245, 15X15/385, 18X18/545, 21X21/760, 24X24/990)

E CEILING DIFFUSER, TUTTLE & BAILEY ME-1, 1-WAY, SURFACE MOUNTED, STEEL, 1/4" THICK EDGE, BAKED WHITE ENAMEL, WITH OBD. (6" X 6" UP TO 60 CFM, 9X9/135, 12X12/245, 15X15/385, 18X18/545, 21X21/760, 24X24/990)

F CEILING DIFFUSER, TUTTLE & BAILEY ME-4, 4-WAY, SURFACE MOUNTED, STEEL, 1/4" THICK EDGE, BAKED WHITE ENAMEL, WITH OBD. (6" X 6" UP TO 70 CFM, 9X9/155, 12X12/280, 15X15/440, 18X18/630, 21X21/860, 24X24/1120)

G CEILING DIFFUSER, TUTTLE & BAILEY AGITAIR, RC-40, 4-WAY, SURFACE MOUNTED, SQUARE NECK, BAKED WHITE ENAMEL, WITH OBD. SIZE TO MATCH INTERCONNECTNG DUCT SIZE ON DRAWING. (6X6/UP TO 137 CFM, 9X9/300, 12X12/550)

H RETURN AIR GRILLE, KRUEGER, EGC-5, FOR T-BAR LAY-IN, 24" X 24", UNLESS NOTED OTHERWISE ON THE DRAWINGS. FURNISH ROUND TO SQUARE ADAPTER.



Plan N.

1 MECHANICAL PLAN - SECOND FLOOR

1/4" = 1'-0"

RUGGIERI & PARTNERS

ARCHITECTURE · PLANNING · INTERIOR DESIGN

1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096

t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9804 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:

Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:

Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester County NJ 08094

REVISIONS:

7/14/2021 - Progress Set
9/03/2024 - Progress Set

SHEET TITLE:

MECHANICAL PLAN SECOND FLOOR

DRAWN BY:	CSO
CHECKED BY:	CSO
SCALE:	
DATE:	9-03-2024
PROJECT NUMBER:	24F04

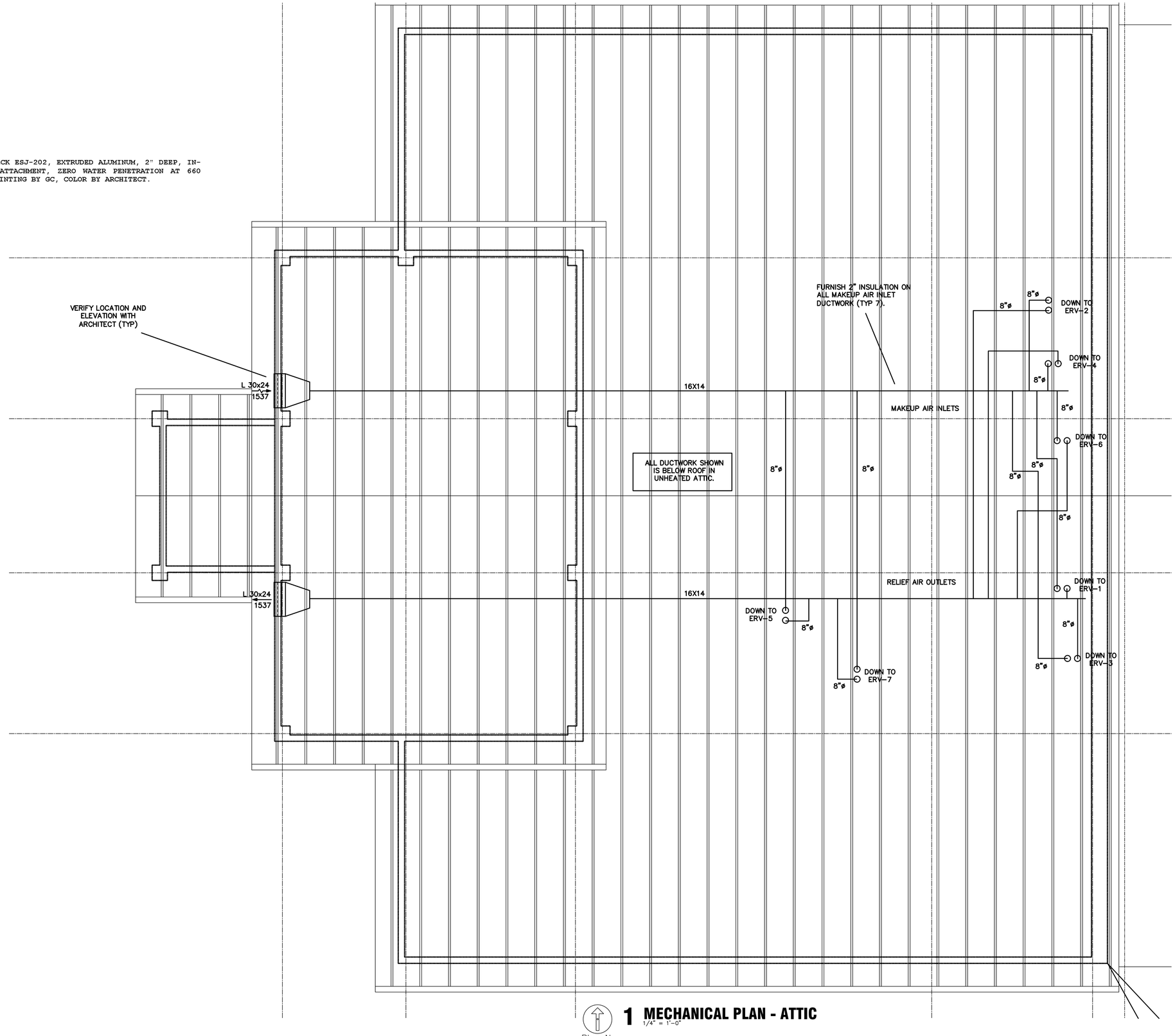
DRAWING NUMBER:

M-2

PROGRESS ISSUE 09-30-24

LOUVER SCHEDULE

TYPE	DESCRIPTION
L	LOUVER, STATIONARY, GREENHECK ESJ-202, EXTRUDED ALUMINUM, 2" DEEP, INSECT SCREEN, FACE FLANGE ATTACHMENT, ZERO WATER PENETRATION AT 660 FPM, 0.1 ISP @ 800 FPM. PAINTING BY GC, COLOR BY ARCHITECT.



Plan N.

1 MECHANICAL PLAN - ATTIC
1/4" = 1'-0"

RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN

1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9804 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:
Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:
Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester County NJ 08094

REVISIONS:
7/14/2021 - Progress Set
9/03/2024 - Progress Set

SHEET TITLE:
MECHANICAL PLAN ATTIC

DRAWN BY: CSO
CHECKED BY: CSO
SCALE:
DATE: 9-03-2024
PROJECT NUMBER: 24F04

DRAWING NUMBER:
M-3

PROGRESS ISSUE 09-30-24

VENTILATION ANALYSIS (VA)

1. THE HVAC SYSTEMS HAVE BEEN DESIGNED TO PROVIDE THE VENTILATION REQUIRED BY THE 2021 INTERNATIONAL MECHANICAL CODE, CHAPTER 4. REFER TO THE VA CALCULATIONS FOR EACH SYSTEM.

AIR BALANCE SPECIFICATIONS

1. BALANCE EACH AIR DEVICE TO THE CFM INDICATED ON THE PLANS USING A BALOMETER OR OTHER APPROVED METHOD.

2. ADJUST EACH HVAC SYSTEM MAKEUP AIR DAMPER MINIMUM OPEN POSITION TO OBTAIN THE REQUIRED MAKEUP AIR CFM VALUE INDICATED IN THE VENTILATION ANALYSIS.

3. BALANCE EACH SYSTEM WITH ALL EXHAUST FANS OPERATING.

4. IN NJ, FURNISH CERTIFIED AIR BALANCE REPORT FOR CLASS 1 & 2 BUILDINGS OF USE GROUP B AND E AS REQD BY NJAC 5:23-2.23.

VENTILATION ANALYSIS - GF-1 LOBBY

INPUTS:		INTERMEDIATES:		OUTPUTS:	
		MAX Zp	0.13	UNCOR OA CFM Vou	252
SYSTEM: MULTI ZONE		Voz	252	SYS VENT EFF, Ev	1.00
SYST POP Ps:	26	SUMazPz	26	MIN OA CFM, Vot	252
PRIAIR Vpz:	2400	D=Ps/SUMazPz	1.00	TOTAL EA CFM	0
				OA CFM REQUIRED	252
		ADDITIONAL RELIEF AIR CFM REQD AND PROVIDED			252

ZONE & OCC CAT	AREA SF	PERS OA RATE CFM/PCFM/SF	AREA OA RATE P/KSF	OCCUP DENS PERS	EA FLOW RATE QTY WC	BREATH ZONE OA CFM	ZONE AIR DIST EFFEC	ZONE AIR FLOW CFM	MAX ZONE RATIO	ZONE PRI OA AIRFLO FRACT
ROOM	Az	Rp	Ra	PZ/ KSF	#	Vbz	Ez	EA CFM	Zp	Vpz
LOBBY 101	768	7.5	0.06	30		226	1.0	0	0.13	1776
RECEP 102	270	5	0.06	5		26	1.0	0	0.04	624
	1038					252		0		2400

VENTILATION ANALYSIS - GF-2 NORTH WALL

INPUTS:		INTERMEDIATES:		OUTPUTS:	
		MAX Zp	0.10	UNCOR OA CFM Vou	160
SYSTEM: MULTI ZONE		Voz	160	SYS VENT EFF, Ev	1.00
SYST POP Ps:	12	SUMazPz	12	MIN OA CFM, Vot	160
PRIAIR Vpz:	1600	D=Ps/SUMazPz	1.00	TOTAL EA CFM	0
				OA CFM REQUIRED	160
		ADDITIONAL RELIEF AIR CFM REQD AND PROVIDED			160

ZONE & OCC CAT	AREA SF	PERS OA RATE CFM/PCFM/SF	AREA OA RATE P/KSF	OCCUP DENS PERS	EA FLOW RATE QTY WC	BREATH ZONE OA CFM	ZONE AIR DIST EFFEC	ZONE AIR FLOW CFM	MAX ZONE RATIO	ZONE PRI OA AIRFLO FRACT
ROOM	Az	Rp	Ra	PZ/ KSF	#	Vbz	Ez	EA CFM	Zp	Vpz
OFF 105	139	5	0.06	5		13	1.0	0	0.10	133
OFF 106	139	5	0.06	5		13	1.0	0	0.10	133
OFF 107	139	5	0.06	5		13	1.0	0	0.10	133
OFF 108	139	5	0.06	5		13	1.0	0	0.10	133
OFF 109	139	5	0.06	5		13	1.0	0	0.10	133
OFF 110	139	5	0.06	5		13	1.0	0	0.10	133
OFF 202	139	5	0.06	5		13	1.0	0	0.10	133
OFF 203	139	5	0.06	5		13	1.0	0	0.10	133
OFF 204	139	5	0.06	5		13	1.0	0	0.10	133
OFF 205	139	5	0.06	5		13	1.0	0	0.10	133
OFF 206	139	5	0.06	5		13	1.0	0	0.10	133
OFF 207	139	5	0.06	5		13	1.0	0	0.10	133
	1668					160		0		1600

VENTILATION ANALYSIS - GF-3 SE WALL

INPUTS:		INTERMEDIATES:		OUTPUTS:	
		MAX Zp	0.10	UNCOR OA CFM Vou	131
SYSTEM: MULTI ZONE		Voz	131	SYS VENT EFF, Ev	1.00
SYST POP Ps:	9	SUMazPz	9	MIN OA CFM, Vot	131
PRIAIR Vpz:	1600	D=Ps/SUMazPz	1.00	TOTAL EA CFM	50
				OA CFM REQUIRED	131
		ADDITIONAL RELIEF AIR CFM REQD AND PROVIDED			81

ZONE & OCC CAT	AREA SF	PERS OA RATE CFM/PCFM/SF	AREA OA RATE P/KSF	OCCUP DENS PERS	EA FLOW RATE QTY WC	BREATH ZONE OA CFM	ZONE AIR DIST EFFEC	ZONE AIR FLOW CFM	MAX ZONE RATIO	ZONE PRI OA AIRFLO FRACT
ROOM	Az	Rp	Ra	PZ/ KSF	(1) #	Vbz	Ez	EA CFM	Zp	Vpz
OFF 129	152	5	0.06	5		14	1.0	0	0.08	179
OFF 128	152	5	0.06	5		14	1.0	0	0.08	179
OFF 127	152	5	0.06	5		14	1.0	0	0.08	179
OFF 126	152	5	0.06	5		14	1.0	0	0.08	179
STOR125	104	0	0.12	0		12	1.0	0	0.10	122
OFF 218	267	5	0.06	5		26	1.0	0	0.08	314
TR 223	52				50 1	0	1.0	50	0.00	45
BEV 222	75	5	0.06	5		10	1.0	0	0.11	88
OFF 225	267	5	0.06	5		26	1.0	0	0.08	314
	1373					131		50		1600

(1) IF NUMBER IS 2 OR LESS = CFM/SF, OTHERWISE = CFM.

VENTILATION ANALYSIS - HP-4 CORE

INPUTS:		INTERMEDIATES:		OUTPUTS:	
		MAX Zp	0.16	UNCOR OA CFM Vou	189
SYSTEM: MULTI ZONE		Voz	189	SYS VENT EFF, Ev	0.99
SYST POP Ps:	7	SUMazPz	7	MIN OA CFM, Vot	192
PRIAIR Vpz:	2000	D=Ps/SUMazPz	1.00	TOTAL EA CFM	150
				OA CFM REQUIRED	192
		ADDITIONAL RELIEF AIR CFM REQD AND PROVIDED			42

ZONE & OCC CAT	AREA SF	PERS OA RATE CFM/PCFM/SF	AREA OA RATE P/KSF	OCCUP DENS PERS	EA FLOW RATE QTY WC	BREATH ZONE OA CFM	ZONE AIR DIST EFFEC	ZONE AIR FLOW CFM	MAX ZONE RATIO	ZONE PRI OA AIRFLO FRACT
ROOM	Az	Rp	Ra	PZ/ KSF	(1) #	Vbz	Ez	EA CFM	Zp	Vpz
CORR 104	291		0.06			17	1.0	0	0.08	215
COPY 112	184	5	0.06	5		16	1.0	0	0.12	136
CORR 125	337		0.06			20	1.0	0	0.08	249
STOR 118	50	0	0.12	0		6	1.0	0	0.16	37
TR 119	50				50 1	0	1.0	50	0.00	45
MECH 120	97		0.06			6	1.0	0	0.08	72
CORR 208	291		0.06			17	1.0	0	0.08	215
SIT 201	180	5	0.06	30		41	1.0	0	0.31	133
TR 209	50				50 1	0	1.0	50	0.00	45
TR 210	50				50 1	0	1.0	50	0.00	45
CORR 200	196		0.06			12	1.0	0	0.08	145
CORR 237	196		0.06			12	1.0	0	0.08	145
JC 215	45		0.06			3	1.0	0	0.08	33
MECH 214	80		0.06			5	1.0	0	0.08	59
CORR 216	207		0.06			12	1.0	0	0.08	153
MECH 238	366		0.06			22	1.0	0	0.08	271
	2670					189		150		2000

(1) IF NUMBER IS 2 OR LESS = CFM/SF, OTHERWISE = CFM.

VENTILATION ANALYSIS - HP-5 2ND FLR CONFERENCE

INPUTS:		INTERMEDIATES:		OUTPUTS:	
		MAX Zp	0.27	UNCOR OA CFM Vou	160
SYSTEM: MULTI ZONE		Voz	160	SYS VENT EFF, Ev	0.88
SYST POP Ps:	26	SUMazPz	26	MIN OA CFM, Vot	182
PRIAIR Vpz:	600	D=Ps/SUMazPz	1.00	TOTAL EA CFM	0
				OA CFM REQUIRED	182
		ADDITIONAL RELIEF AIR CFM REQD AND PROVIDED			182

ZONE & OCC CAT	AREA SF	PERS OA RATE CFM/PCFM/SF	AREA OA RATE P/KSF	OCCUP DENS PERS	EA FLOW RATE QTY WC	BREATH ZONE OA CFM	ZONE AIR DIST EFFEC	ZONE AIR FLOW CFM	MAX ZONE RATIO	ZONE PRI OA AIRFLO FRACT
ROOM	Az	Rp	Ra	PZ/ KSF	#	Vbz	Ez	EA CFM	Zp	Vpz
CONF	505	5	0.06	50		160	1.0	0	0.27	600
	505					160		0		600

VENTILATION ANALYSIS - HP-6 BREAK/TRAINING

INPUTS:		INTERMEDIATES:		OUTPUTS:	
		MAX Zp	0.33	UNCOR OA CFM Vou	200
SYSTEM: MULTI ZONE		Voz	200	SYS VENT EFF, Ev	0.82
SYST POP Ps:	15	SUMazPz	15	MIN OA CFM, Vot	245
PRIAIR Vpz:	600	D=Ps/SUMazPz	1.00	TOTAL EA CFM	0
				OA CFM REQUIRED	245
		ADDITIONAL RELIEF AIR CFM REQD AND PROVIDED			245

ZONE & OCC CAT	AREA SF	PERS OA RATE CFM/PCFM/SF	AREA OA RATE P/KSF	OCCUP DENS PERS	EA FLOW RATE QTY WC	BREATH ZONE OA CFM	ZONE AIR DIST EFFEC	ZONE AIR FLOW CFM	MAX ZONE RATIO	ZONE PRI OA AIRFLO FRACT
ROOM	Az	Rp	Ra	PZ/ KSF	#	Vbz	Ez	EA CFM	Zp	Vpz
BREAK	418	10	0.12	35		200	1.0	0	0.33	600
	418					200		0		600

VENTILATION ANALYSIS - HP-7 2ND FLR CONFERENCE

INPUTS:		INTERMEDIATES:		OUTPUTS:	
		MAX Zp	0.20	UNCOR OA CFM Vou	160
SYSTEM: MULTI ZONE		Voz	160	SYS VENT EFF, Ev	0.95
SYST POP Ps:	26	SUMazPz	26	MIN OA CFM, Vot	169
PRIAIR Vpz:	800	D=Ps/SUMazPz	1.00	TOTAL EA CFM	0
				OA CFM REQUIRED	169
		ADDITIONAL RELIEF AIR CFM REQD AND PROVIDED			169

ZONE & OCC CAT	AREA SF	PERS OA RATE CFM/PCFM/SF	AREA OA RATE P/KSF	OCCUP DENS PERS	EA FLOW RATE QTY WC	BREATH ZONE OA CFM	ZONE AIR DIST EFFEC	ZONE AIR FLOW CFM	MAX ZONE RATIO	ZONE PRI OA AIRFLO FRACT
ROOM	Az	Rp	Ra	PZ/ KSF	#	Vbz	Ez	EA CFM	Zp	Vpz
CONF	505	5	0.06	50		160	1.0	0	0.20	800
	505					160		0		800

AIR DEVICE SPECIFICATIONS

1. DEVICES SHALL BE STEEL, WHITE ENAMEL FINISH WITH VOLUME DAMPER, UNO.

2. AIR DEVICE PERFORMANCE SHALL BE AS FOLLOWS
   A) MAX FPM FACE VELOCITIES: 700 FOR SUPPLIES, 500 FOR RETURNS
   B) MAX IWC PRESSURE DROPS: 0.10 SUPPLIES, 0.06 RETURNS

3. ROUND NECK DEVICES TO MATCH SIZE OF FLEX DUCT SHOWN ON PLAN.

4. FURNISH ROUND TO SQUARE, OR ROUND TO RECTANGULAR, ADAPTERS TO INTERCONNECT ROUND/FLEXIBLE DUCT TO ALL NON-ROUND DIFFUSER COLLARS.

5. FURNISH ROYAL METAL PRODUCTS #309STRD, HIGH EFFICIENCY TAKEOFF ADAPTER AT BEGINNING OF EVERY RUNOUT.

MECHANICAL SPECIFICATIONS

1. ALL MECHANICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE 2021 INTERNATIONAL MECHANICAL CODE AND PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

2. ALL MATERIALS AND EQUIPMENT FURNISHED FOR THIS PROJECT SHALL BE NEW AND COMPLY WITH THE 90.1-2013 ASHRAE STANDARD, ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS.

3. OBTAIN ALL NECESSARY PERMITS, INSPECTIONS, LICENSES AND PAY ALL FEES.

4. PRIOR TO FINAL ACCEPTANCE OF THE MECHANICAL WORK, SUBMIT A WRITTEN STATEMENT TO THE OWNER GUARANTEEING ALL EQUIPMENT, MATERIALS, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE PROJECT. UPON WRITTEN NOTICE TO THE MECHANICAL CONTRACTOR DURING THE WARRANTY PERIOD THE MECHANICAL CONTRACTOR SHALL AT NO EXPENSE TO THE OWNER REPAIR OR REPLACE ALL DEFECTIVE MATERIALS OR WORKMANSHIP.

5. THE MECHANICAL DRAWINGS ARE DIAGRAMMATIC WITH ALL EQUIPMENT AND DEVICES, ETC., SHOWN IN SCHEMATIC FORM. THE MECHANICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT WILL FIT WITHIN THE SPACE INTENDED WITH ADEQUATE ROOM FOR MAINTENANCE.

6. THE GENERAL CONTRACTOR SHALL FURNISH ACCESS OPENINGS, LADDERS AND/OR CATWALKS AS REQUIRED, TO SERVICE OR REMOVE ALL EQUIPMENT REQUIRING MAINTENACE.

7. FURNISH ALL CONTROLS AND CONTROL WIRING TO INTERCONNECT ALL THE EQUIPMENT LISTED. FURNISH ANY ADDITIONAL MODULES, COMPONENTS, SWITCHING OR RELAYS, NOT LISTED, AS REQUIRED. COORDINATE HIGH VOLTAGE REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.

MECHANICAL SYMBOLS LEGEND

⊕	TIE IN TO SERVICE
———	NEW GALVANIZED DUCTWORK
——— – ———	EXISTING DUCTWORK TO REMAIN
— — — — — —	EXISTING DUCTWORK TO BE REMOVED
	DUCT TRANSITION
	FLEXIBLE DUCT
——— RL ———	REFRIGERANT LIQUID
——— RS ———	REFRIGERANT SUCTION
——— CV ———	COMBUSTION VENT
——— CA ———	COMBUSTION AIR INTAKE
——— G ———	NATURAL GAS
——— D ———	CONDENSATE DRAIN
A 130	CEILING DIFFUSER (LETTER = DEVICE TYPE ON AIR DEVICE SCHEDULE, NUMBER = CFM)
	RETURN AIR GRILLE/REGISTER
	SIDEWALL SUPPLY REGISTER/GRILLE
	SIDEWALL RETURN REGISTER/GRILLE
	MANUAL DAMPER W/LOCKING QUADRANT
M	MOTORIZED DAMPER (Z = ZONE DAMPER)
N	BACKDRAFT DAMPER
F	LOUVER
G	GRAVITY SHUTTER
T	THERMOSTAT
- - - - - - - - - -	CONTROL WIRING (FOR TSTAT,ETC.)

*	EXISTING
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
AHJ	AUTHORITY HAVING JURSIDICTION
AFF	ABOVE FINISHED FLOOR
NIC	NOT IN CONTRACT
+42"	INDICATES MOUNTING HEIGHT

RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN
1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9804 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:

Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:

Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester
County NJ 08094

REVISIONS:

7/14/2021 - Progress Set

9/03/2024 - Progress Set

SHEET TITLE:

MECHANICAL SPECIFICATIONS

PROGRESS ISSUE 09-30-24

DRAWN BY: CSO

CHECKED BY: CSO

SCALE:

DATE: 9-03-2024

PROJECT NUMBER: 24F04

DRAWING NUMBER:

M-4

DUCTWORK SPECIFICATIONS

1. DUCTWORK SHALL NOT BE PREFABRICATED BASED ON THESE PLANS. VISIT THE SITE AND DETERMINE AS-BUILT CONDITIONS. OBTAIN SHOP DRAWINGS OF CONNECTING EQUIPMENT AND COORDINATE DUCTWORK DESIGN WITH GC, ROOF TRUSS SUPPLIER AND/OR BUILDING STEEL SUPPLIER BEFORE PROCEEDING WITH FABRICATION.

2. DUCTWORK PERFORMANCE SHALL BE AS FOLLOWS:
   A) MAX FPM DUCT VELOCITIES: 1300 FOR MAINS; 900 FOR BRANCH RUNOUTS
   B) MAX IWC/100FT DUCT PRESS DROPS: 0.1 FOR SUPPLIES; 0.06 FOR RETURNS.

3. ALL DUCTWORK SHALL COMPLY WITH THE 2021 INTERNATIONAL MECHANICAL CODE, NFPA STANDARDS 90A&B, SMACNA STANDARDS 76 AND 79, THE LATEST SMACNA DUCT CONSTRUCTION STANDARDS AND LATEST SMACNA INSTALLATION STANDARDS.

4. DUCTWORK SHALL BE 24 GA GALVANIZED STEEL; 26 IF MAX SIDE IS 12" OR LESS.

5. INSIDE DIMENSIONS INCLUDE ACOUSTICAL LINER WHERE SPECIFIED UNDER DUCTWORK INSULATION. INSIDE DIMENSIONS OF DUCTWORK SHOWN MAY BE ALTERED TO SUIT SITE CON-DITIONS PROVIDED THAT EQUIVALENT PRESSURE DROPS ARE MAINTAINED.

6. ALL DUCTWORK SHALL BE SUPPORTED BY 1" x 22 GAGE STRAP HANGERS WITH 10 GAGE WIRE/RODS, AT INTERVALS NOT EXCEEDING 10 FEET.

7. SEAL ALL JOINTS USING WATER BASED SEALANT. CAULK ALL SERVICE PENETRA-TIONS THROUGH AIR HANDLING EQUIPMENT WITH FIRE-RATED SEALANT.

8. FURNISH EXPANSION JOINTS AT ALL AIR HANDLING EQUIPMENT. FURNISH INSULATED EXPANSION JOINTS WHERE ADJACENT DUCTWORK IS ALSO INSULATED.

9. FLEXIBLE AIR DUCTS AND CONNECTORS SHALL COMPLY WITH UL181, CLASS 0 OR CLASS 1, AND HAVE A FLAME SPREAD RATING OF 25 OR LESS AND SMOKE DEVELOPED RATING OF 50 OR LESS. FLEXIBLE AIR DUCTS SHALL NOT BE LIMITED IN LENGTH. FLEXIBLE AIR CONNECTORS SHALL BE LIMITED TO 14 FEET IN LENGTH.

10. ALL TRANSITIONS SHALL BE MADE WITH 30 DEGREE INCLUDED ANGLE, OR LESS.

11. ALL RECTANGULAR ELBOWS SHALL BE FURNISHED WITH TURNING VANES.

12. FURNISH FABRICATED TAKEOFF/PERIMETER FITTING FOR EACH RUNOUT.

13. FURNISH VOLUME DAMPER AT TRUNK OUTLET FOR BALANCING ALL RUNOUTS.

DUCTWORK SUPPORTS

1. ROUND HORIZONTAL DUCTS SHALL BE SUPPORTED EVERY 8-FEET USING 2" WIDE GALV STL BAND WRAPPED AROUND DUCT, TWO 1/4" CONTINUOUS THREAD LENGTHS WITH COUPLING, ANCHORED INTO CONCRETE PLANK USING CINCH ANCHORS. (SMACNA DUCT STD 2006, FIG 5-2 & 5-5)

2. RECTANGULAR DUCT RISER SHALL BE SUPPORTED BY 1-1/2" x 1-1/2" x 1/8" STL ANGLE ATTACHED ON OPPOSITE WIDE SIDES OF DUCT, EACH END BEARING ON FLOOR AT LEAST 2". (SMACNA DUCT STD 1985, FIG 4-6A)

DUCT SEALING

1. ALL NEW DUCTWORK SHALL BE SEALED EXTERNALLY USING UL181 WATER-BASED DUCT SEALANT, DP1030, OR EQUAL.

DUCTWORK INSULATION SPECIFICATIONS

1. ALL SUPPLY AND RETURN DUCTS SHALL BE INSULATED EXTERNALLY PER ASHRAE STANDARD 90.1-2016, TABLE 6.8.2.

2. DUCT INSULATION R VALUES SHALL BE: R = 8 FOR EXTERIOR, R = 6 FOR UN-CONDITIONED SPACES AND BURIED, AND R = 1..9 FOR INDIRECTLY CONDITIONED SPACES.

3. DUCTS THAT OPERATE AT TEMPERATURES EXCEEDING 120F SHALL HAVE SUFFICIENT THERMAL INSULATION TO LIMIT THE EXPOSED SURFACE TEMPERATURE TO 120F.

4. COVERINGS AND LININGS SHALL HAVE A FLAME SPREAD INDEX NOT MORE THAN 25 AND A SMOKE INDEX NOT MORE THAN 50 PER ASTM E84 OR UL 723.

5. INSULATION EXPOSED TO WEATHER SHALL BE SUITABLE FOR OUTDOOR SERVICE, PROTECTED BY ALUMINUM, SHEET METAL, PAINTED CANVAS, OR PLASTIC COVERING.

6. MAKEUP AIR DUCTS SHALL BE INSULATED FOR SWEAT PROTECTION.

DUCT CLEANING

1. THE DUCT CLEANING CONTRACTOR SHALL CLEAN ALL DUCTWORK AFTER INITIAL INSTALLATION BY THE MECHAQNICAL CONTRACTOR. THE OWNER SHALL INSPECT DUCTWORK YEARLY TO DETERMINE, IF DUCT CLEANING IS REQUIRED, THEREAFTER.

2. FURNISH ADDITIONAL ACCESS PANELS, AS REQUIRED, NEAR MAJOR DUCT TRANSITIONS AND ALONG LONG SECTIONS OF STRAIGHT DUCTWORK BOTH HORIZONTAL AND VERTICAL, IN ADDITION TO ACCESS PANELS NEAR FIRE DAMPERS AND FANS.

3. DUCTWORK SHALL BE ASSESSED, CLEANED AND RESTORED IN ACCORDANCE WITH THE LATEST NATIONAL AIR DUCT CLEANERS ASSOCIATION (NADCA) STANDARD, ASSESSMENT, CLEANING, AND RESTORATION OF HVAC SYSTEMS (ACR).

4. THE CONTRACTOR SHALL BE NADCA CERTIFIED.

5. DUCTS SHALL BE CLEANED USING BRUSHING, HAND OR CONTACT VACUUMING AND HAND WASHING AS NEEDED.

MECHANICAL AS-BUILT DRAWINGS

1. THE MECHANICAL CONTRACTOR SHALL DOCUMENT THE MECHANICAL INSTALLATION ON A DAILY BASIS AS WORK PROGRESSES BY MARKING UP THE MECHANICAL PLANS.

2. DOCUMENT THE MANUFACTURER AND MODEL NUMBER OF ALL EQUIPMENT INSTALLED.

3. PLAN MARKUPS SHALL INCLUDE THE FINAL LOCATION OF ALL HVAC EQUIPMENT, CEILING DIFFUSERS, AND THERMOSTATS.

4. DOCUMENT THE FINAL ROUTING OF ALL DUCTWORK INCLUDING ALL DIMENSIONS.

5. THE MC SHALL HAVE ALL MARKUPS DIGITALLY SCANNED AND CONVERTED INTO PDFS.

6. TURN OVER ALL DRAWING MARKUPS AND PDF FILES TO THE OWNER IMMEDIATELY AFTER COMPLETION OF THE WORK.

ASHRAE-90.1-2016 MECHANICAL REQUIREMENTS

1. CONTRACTOR SHALL FURNISH THE FOLLOWING WITHIN 90 DAYS OF COMPLETION:
   A) AS-BUILT RECORD DRAWINGS.
   B) OPERATION MANUALS AND MAINTENANCE MANUALS.

OWNER AND USER INSTRUCTIONS

1. THE OWNER SHALL ESTABLISH RESPONSIBILITY FOR PERIODIC MAINTENANCE PER INSTRUCTIONS OF MANUFACTURERS OF EQUIPMENT INSTALLED, INCLUDING BUT NOT LIMITED TO:
   A) CONDENSATE PIPING OBSTRUCTIONS.
   B) CLEANING OF BURNER AND/OR HEATING ELEMENT ASSEMBLIES.
   C) FILTER REPLACEMENT.
   D) INTERIOR DUCTWORK INSPECTION AND CLEANING.
   E) SYSTEM AIR FLOW CHECKS.
   F) REFRIGERANT SUCTION AND DISCHARGE PRESSURE CHECKS.

2. FOR HEALTH CONSIDERATIONS, THE OWNER SHOULD CONSIDER INSTALLING UV LAMP ASSEMBLIES IN DUCTWORK NEAR ALL COOLING COILS.

3. FOR COMFORT CONTROL, THE USER SHALL ENSURE SUPPLY AIR FANS ARE OPER-ATING DURING OCCUPIED HOURS BY PROPERLY PROGRAMMING THE THERMOSTATS.

HUMIDITY CONTROL

1. ALL HVAC SYSTEMS MUST BE DESIGNED FOR MAXIMUM OCCUPANCY AND OUTDOOR CONDITIONS AS REQUIRED BY CODE. WHEN THESE CONDITIONS ARE NOT IMPOSED ON THE SYSTEM, TEMPERATURES WILL BE SATISFIED, BUT HUMIDITY CONDITIONS MAY INCREASE UNCONTROLLABLY. IF HUMIDITY IS FOUND TO EXCEED 50% RH, IT WILL BE NECESSARY TO INSTALL LOAD MODULATION AND HUMIDITY CONTROL DEVICES IN THOSE SYSTEMS. TO ACCOMPLISH THESE REFRIGERATION CIRCUITRY MODIFICATIONS CONTACT RAWAL DEVICES INC., 128 F NEW BOSTON AVE., PO BOX 2058, WOBURN MA 01888-0058 (800-727-6447). EACH RAWAL SYSTEM SHALL BE CAPABLE OF FULL SYSTEM CAPACITY MODULATION WHILE PROVIDING CONTINUOUS DEHUMIDIFICATION.

START-UP CONSIDERATIONS

1. WITH INITIAL STARTUP OF THE AIR CONDITIONING SYSTEM, DIFFICULTY MAY BE ENCOUNTERED IN REDUCING HUMIDITY IN THE CONDITIONED SPACE. THIS IS DUE TO THE INHERENT MOISTURE THAT WILL BE RELEASED BY BUILDING CONSTRUCTION OR PRODUCT BROUGHT INTO THE SPACE BY THE OWNER. IT MAY TAKE DAYS OR WEEKS TO REDUCE AND STABILIZE THE HUMIDITY WITHIN THE CONDITIONED SPACE TO ACCEPTABLE LEVELS. THIS IS NORMAL AND UN-AVOIDABLE.

2. DURING INITIAL STARTUP OF THE HEATING SYSTEM, ODORS MAY BE RELEASED DUE TO BURNING OFF OF MACHINE OILS USED DURING THE MANUFACTURING PROCESS. THIS CONDITION IS NORMAL AND SHOULD DISAPPEAR WITHIN A FEW DAYS. THIS CONDITION MAY ALSO RE-OCCUR ON SUBSEQUENT SEASONAL STARTUPS.

STRUCTURAL SPECIFICATIONS

1. SECURE THE SERVICES OF A LICENSED STRUCTURAL ENGINEER TO ENSURE THE EQUIPMENT AND SYSTEMS BEING PROVIDED ARE ADEQUATELY SUPPORTED.

2. SUPPLEMENTARY STEEL SHALL BE FURNISHED AS REQUIRED TO INTERFACE AND SUPPORT THE EQUIPMENT AND MATERIAL BEING PROVIDED.

3. ALL EQUIPMENT AND MATERIAL SHALL BE PROPERLY SUPPORTED AT GRADE, FLOORS, WALLS AND/OR ROOFS USING CONCRETE PADS, STRUCTURAL STEEL FRAMING, AND MSS SP-69 STEEL HANGER ASSEMBLIES, AS REQUIRED.

SUBSTITUTIONS

1. SUBSTITUTION OF THE EQUIPMENT OR MATERIALS SPECIFIED WILL BE CON-SIDERED ONLY AFTER BIDDING ON THE BASE SPECIFICATIONS.

2. SUBSTITUTION OF SPECIFIED EQUIPMENT OR MATERIALS SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS, IF ANY. IN THE ABSENCE OF THESE DOCUMENTS, SUBSTITUTION OF SPECIFIED EQUIPMENT WITH INDUSTRY RECOGNIZED ALTERNATES IS PERMITTED, PROVIDED THE CAPACITY AND PERFORMANCE CHARACTERISTICS CALLED FOR ARE MAINTAINED.

3. THE COST FOR ANY RE-DESIGN OR COST IMPACT TO OTHER TRADES AS A RESULT OF THE SUBSTITUTION SHALL BE TO THE ACCOUNT OF THE CONTRACTOR MAKING THE SUBSTITUTION.

GENERAL SPECIFICATIONS

1. EACH SUB-CONTRACTOR IS ENTITLED TO AND SHALL INSIST UPON RECEIVING THE COMPLETE SET OF PLANS FOR THE PROJECT INCLUDING AS A MINIMUM ALL OTHER DISCIPLINES, THE ARCHITECTURAL PLANS, AND SITE ENGINEERING PLANS.

2. EACH SUB-CONTRACTOR SHALL REVIEW THE ENTIRE PROJECT SET OF PLANS AND BECOME FAMILIAR WITH ALL ASPECTS OF THE PROJECT REQUIREMENTS. IF THE CONTRACTOR DOES NOT UNDERSTAND ANY PORTION OF THE INTENT OF THESE PLANS, QUESTIONS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER FOR EXPLANATION PRIOR TO SUBMITTING BIDS OR PROCEEDING WITH ANY WORK.

3. EXAMINE ALL DRAWINGS AND SPECIFICATIONS AND VISIT THE SITE OF THE WORK PRIOR TO BIDDING. IF THEY ARE FOUND TO BE AT VARIANCE WITH CODE REQUIREMENTS, THE CODE REQUIREMENTS SHALL TAKE PRECEDENCE AND ANY ADJUSTMENT NECESSARY SHALL BE INCLUDED BY THE CONTRACTOR AT NO EXTRA COST.

4. THE PLANS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW EVERY DETAIL IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL THE DETAILS OF THE EQUIPMENT. EACH SUB-CONTRACTOR IS EXPECTED TO FURNISH ALL DETAILS REQUIRED BY CODES OR RECOGNIZED BY STANDARD INDUSTRY PRACTICES. THE CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO BE ASSURED THAT THE EQUIPMENT SPECIFIED WILL FIT IN THE SPACE PROPOSED WITH ADEQUATE CLEARANCE FOR MAINTENANCE.

5. THESE PLANS ARE FOR THE PURPOSE OF OBTAINING BIDS AND PERMITS. IF MINOR DEVIATIONS ARE REQUIRED, THEY SHALL BE DOCUMENTED AS THE "AS-BUILT" PLANS AND SUBMITTED TO THE AHJ UPON REQUEST AND TO THE OWNER FOR HIS RECORDS.

6. EMAIL A PDF OR SUBMIT SIX (6) COPIES OF SHOP DRAWINGS OR CATALOG CUTS OF MAJOR EQUIPMENT REQUIRING ELECTRIC POWER OR STRUCTURAL SUPPORT FOR REVIEW AND APPROVAL BEFORE COMMITING TO PURCHASE.

7. SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS. THE CONTRACTOR AGREES THAT IF DEVIATIONS, DISCREPANCIES, OR CONFLICTS BETWEEN SUBMITTALS AND CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER SUBMITTALS ARE PROCESSED BY THE ENGINEER, THE CONTRACT DOCUMENTS SHALL CONTROL AND SHALL BE FOLLOWED. THE SUPPLIER, BY SUBMITTING, CERTIFIES THAT THE EQUIPMENT BEING PROPOSED IS PROPER FOR THE APPLICATION INTENDED AND THAT IT HAS THE PERFORMANCE CHARAC-TERISTICS CALLED FOR.

LABOR AND MATERIAL SPECIFICATIONS

1. PROVIDE ALL MATERIALS, LABOR, TOOLS, PERMITS, INSPECTIONS, LICENSES, FEES, WARRANTIES, SERVICE CONTRACTS, TRAINING OF PERSONNEL, AND INCIDENTALS NECESSARY TO INSTALL AND MAKE READY FOR THE OWNER'S USE COMPLETE SYSTEMS AS INDICATED ON THE PLANS.

2. SUBMIT TO AND OBTAIN APPROVAL FROM THE ARCHITECT FOR OPTIONAL COLORS AND STYLES AVAILABLE ON ALL MATERIALS, SUCH AS, HVAC DIFFUSERS, PLUMBING FAUCETS, AND ELECTRICAL FACEPLATES. DO NOT ORDER MATERIALS UNTIL THESE APPROVALS ARE RECEIVED.

3. ALL PRODUCTS SHALL BE NEW, FIRST-LINE QUALITY, OF GRADE AND TYPE SHOWN IN THE DRAWINGS AND SPECIFICATIONS.

4. ALL EQUIPMENT FURNISHED SHALL BARE THE SEAL OF A RECOGNIZED TESTING AGENCY AND SHALL MEET THE ASHRAE 90.1-2007 ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS.

5. ALL EQUIPMENT SHALL BE PROPERLY SUPPORTED FOR THE SIZE AND LOAD REQUIRED FROM EITHER THE FLOOR BY 6-INCH HIGH REINFORCED CONCRETE PADS DESIGNED, OR SUSPENDED FROM WALLS OR THE BUILDING FRAMING SYSTEM BY MSS SP-69 STEEL HANGER ASSEMBLIES. EACH CONTRACTOR SHALL ENSURE THEIR EQUIPMENT SUPPORTS AND THE IMPACT ON THE BUILDING STRUCTURE ARE DESIGNED AND APPROVED BY A LICENSED STRUCTURAL ENGINEER.

6. ALL EQUIPMENT, MATERIALS, AND ACCESSORIES SHALL BE NEATLY INSTALLED, BY COMPETENT TECHNICIANS OR MECHANICS USING PROPER TOOLS FOLLOWING THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN
1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9806 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:

Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:

Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester
County NJ 08094

REVISIONS:

7/14/2021 - Progress Set

9/03/2024 - Progress Set

SHEET TITLE:

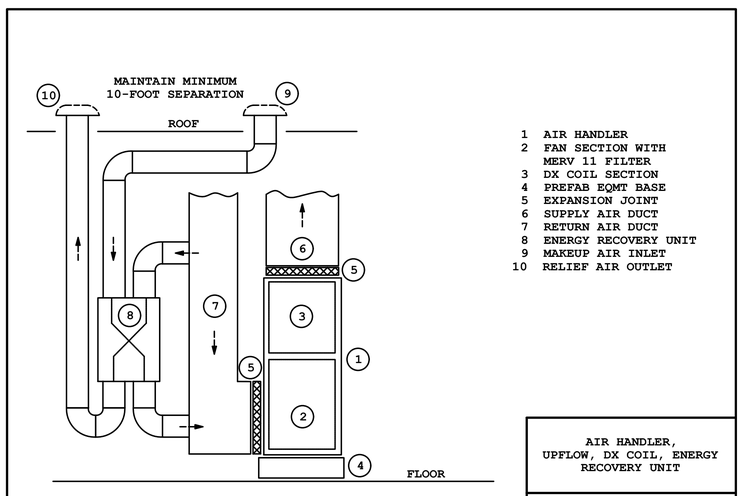
MECHANICAL SPECIFICATIONS

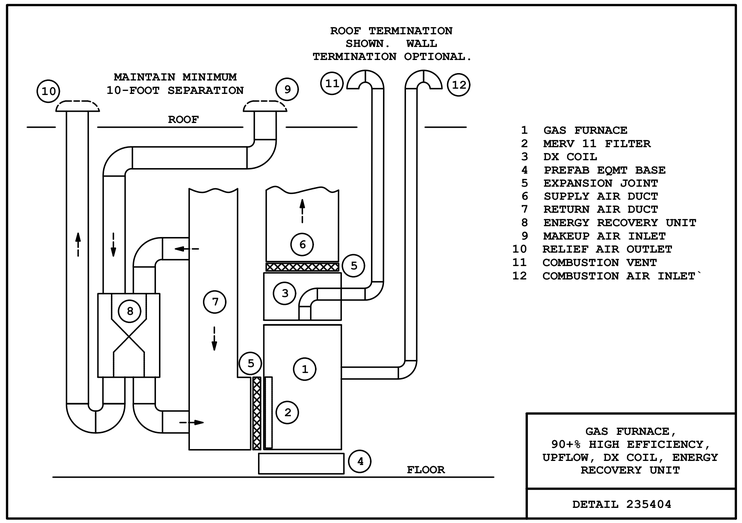
PROGRESS ISSUE 09-30-24

DRAWN BY:	CSO
CHECKED BY:	CSO
SCALE:	
DATE:	9-03-2024
PROJECT NUMBER:	24F04

DRAWING NUMBER:

M-5





RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN
1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9804 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:

Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:

Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester
County NJ 08094

REVISIONS:

7/14/2021 - Progress Set
9/03/2024 - Progress Set

SHEET TITLE:

MECHANICAL DETAILS

DRAWN BY: CSO
CHECKED BY: CSO
SCALE:
DATE: 9-03-2024
PROJECT NUMBER: 24F04

DRAWING NUMBER:

M-6

PROGRESS ISSUE 09-30-24

ELECTRICAL BONDING NOTES

1. FURNISH A BONDING JUMPER AT THE WATER HEATER BETWEEN THE HOT WATER DICHARGE PIPING AND COLD WATER INLET PIPING TO MAINTAIN GROUNDING CONTINUITY OF THE WATER PIPING SYSTEM TO THE ELECTRICAL SYSTEM AS REQUIRED BY NEC 250.104(A).

2. CORRUGATED STAINLESS STEEL TUBING (CSST) GAS PIPING SYSTEMS SHALL BE BONDED TO THE ELECTRIC SERVICE GROUNDING ELECTRODE SYSTEM AT THE POINT WHERE THE GAS SERVICE ENTERS THE BUILIDNG USING A #6 COPPER WIRE OR EQUIVALENT.

PLUMBING NOTES

1. REFER TO RISER DIAGRAMS FOR SIZING OF ALL SYSTEM PIPING.

2. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF ALL PLUMBING FIXTURES TO ASSURE COMPLIANCE WITH ICI/ANSI A117.1-2003 ACCESSIBILITY STANDARD.

3. WHERE POSSIBLE, PLUMBING SYSTEM PIPING SHALL NOT BE ROUTED OVER ELECTRICAL DISTRIBUTION EQUIPMENT. WHERE ALLOWED BY THE AHJ, FURNISH DRIP SHIELDS AS REQUIRED TO PREVENT LEAKS FROM PLUMBING SYSTEM PIPING THAT MUST BE ROUTED OVER ELECTRICAL EQUIPMENT.

4. FURNISH PREFABRICATED STEEL ACCESS DOORS AS REQUIRED FOR ANY VALVES OR FIX-TURES WHICH ARE PERMANENTLY COVERED BY FINISHES.

5. FOR LAVATORIES: (A) INSULATE CW/HW/DRAIN PIPING WITH 1/2" ARMSTRONG CLOSED CELL INSULATION AND FINISH WITH PRE-MOLDED PVC COVERS, OR (B) FURNISH LAVATORY TAMPER RESISTANT, PROTECTIVE ENCLOSURE, ONE-PIECE VINYL AS MANUFACTURED BY TRUEBRO.

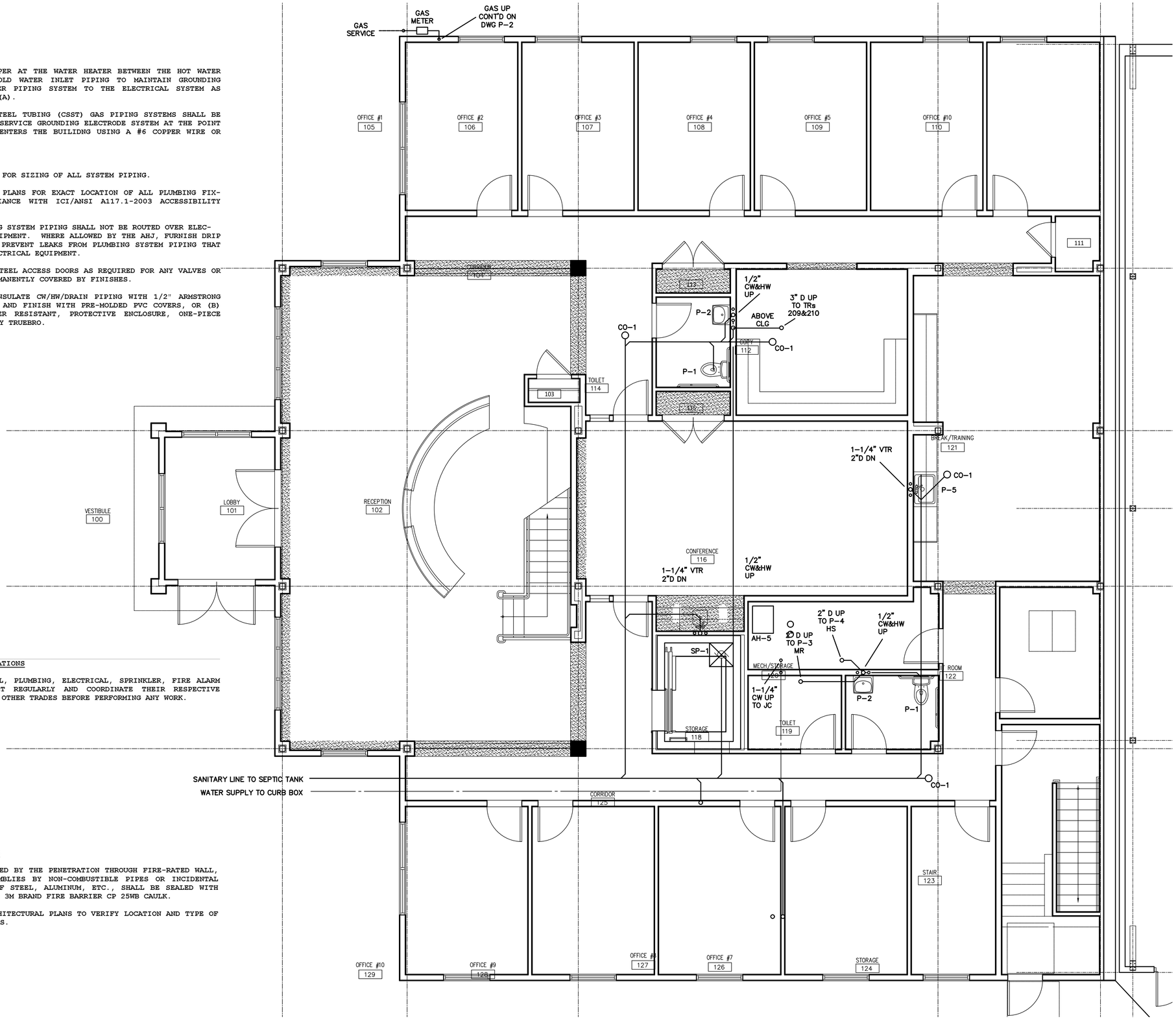
TRADE COORDINATION SPECIFICATIONS

1. THE GENERAL, MECHANICAL, PLUMBING, ELECTRICAL, SPRINKLER, FIRE ALARM CONTRACTORS SHALL MEET REGULARLY AND COORDINATE THEIR RESPECTIVE SCOPE OF WORK WITH ALL OTHER TRADES BEFORE PERFORMING ANY WORK.

FIRE STOPPING SPECIFICATIONS

1. THE ANNULAR SPACE CREATED BY THE PENETRATION THROUGH FIRE-RATED WALL, FLOORS OR CEILING ASSEMBLIES BY NON-COMBUSTIBLE PIPES OR INCIDENTAL SUPPORT ELEMENTS MADE OF STEEL, ALUMINUM, ETC., SHALL BE SEALED WITH APPROVED SEALANT SUCH AS 3M BRAND FIRE BARRIER CP 25WB CAULK.

2. REFER TO THE LATEST ARCHITECTURAL PLANS TO VERIFY LOCATION AND TYPE OF ALL FIRE RATED ASSEMBLIES.



Plan N.

1 PLUMBING PLAN - FIRST FLOOR
1/4" = 1'-0"

RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN
1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9804 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:
Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:
Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester County NJ 08094

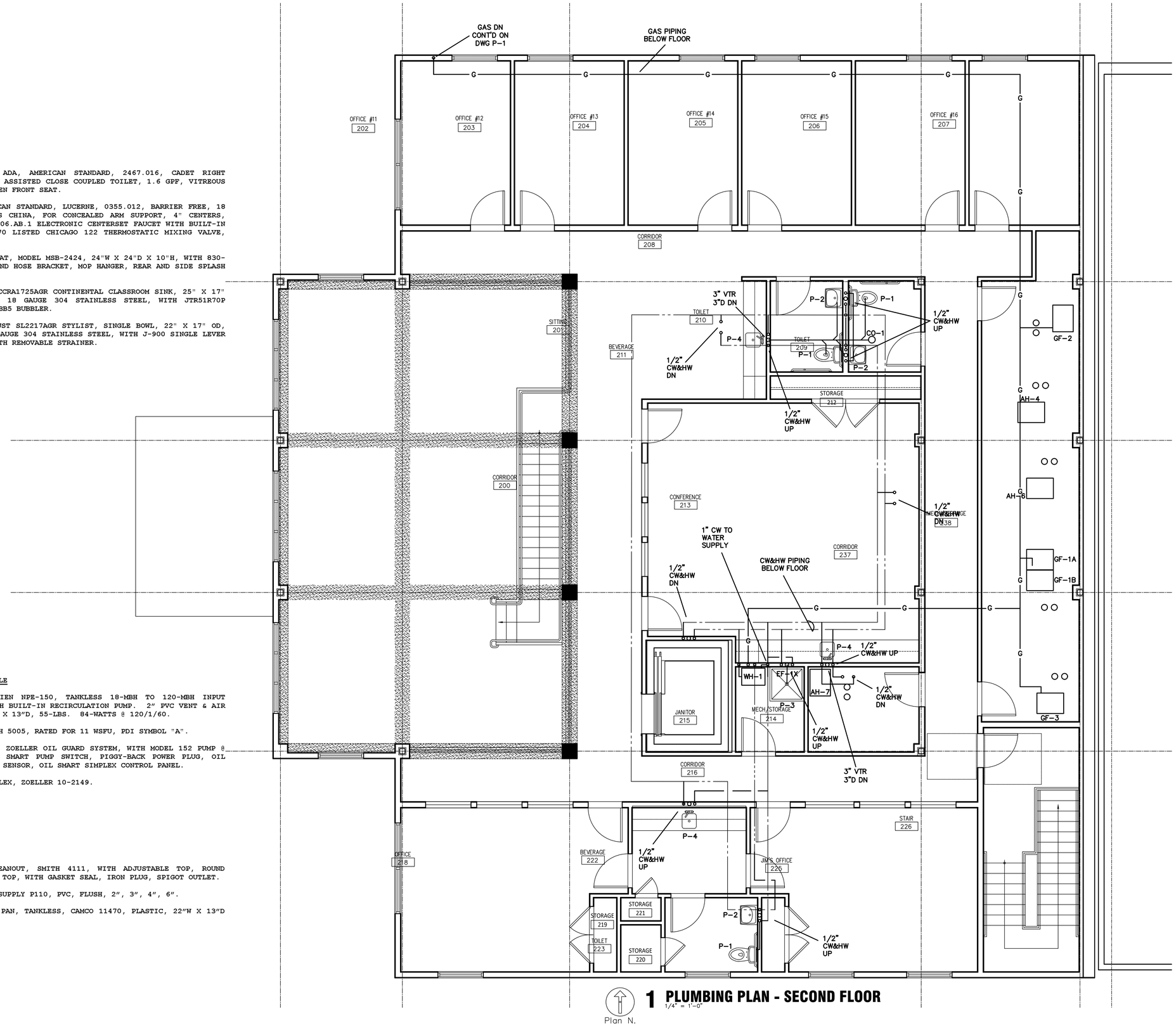
REVISIONS:
7/14/2021 - Progress Set
9/03/2024 - Progress Set

SHEET TITLE:
PLUMBING PLAN FIRST FLOOR

DRAWN BY: CSO
CHECKED BY: CSO
SCALE:
DATE: 9-03-2024
PROJECT NUMBER: 24F04

DRAWING NUMBER:
P-1

PROGRESS ISSUE 09-30-24



PLUMBING FIXTURE SCHEDULE

P-1, WC, WATER CLOSET, ADA, AMERICAN STANDARD, 2467.016, CADET RIGHT HEIGHT ELONGATED PRESSURE ASSISTED CLOSE COUPLED TOILET, 1.6 GPF, VITREOUS CHINA, WITH SUPPLY AND OPEN FRONT SEAT.

P-2, LV, LAVATORY, AMERICAN STANDARD, LUCERNE, 0355.012, BARRIER FREE, 18 x 20 WALL HUNG, VITREOUS CHINA, FOR CONCEALED ARM SUPPORT, 4" CENTERS, WITH STOPS, CHICAGO 116.606.AB.1 ELECTRONIC CENTERSET FAUCET WITH BUILT-IN LITHIUM BATTERY, ASSE-1070 LISTED CHICAGO 122 THERMOSTATIC MIXING VALVE, STRAINER.

P-3, MR, MOP RECEPTOR, FIAT, MODEL MSB-2424, 24"W X 24"D X 10"H, WITH 830-AA SERVICE FAUCET, HOSE AND HOSE BRACKET, MOP HANGER, REAR AND SIDE SPLASH GUARDS.

P-4, BS, BAR SINK, JUST CCRA1725AGR CONTINENTAL CLASSROOM SINK, 25" X 17" OD, 16" X 14" ID, 7"D, 18 GAUGE 304 STAINLESS STEEL, WITH JTR51R70P FAUCET, JB99 DRAIN, AND JBB5 BUBBLER.

P-5, KS, KITCHEN SINK, JUST SL2217AGR STYLIST, SINGLE BOWL, 22" X 17" OD, 16" X 14" ID, 7.5"D, 18 GAUGE 304 STAINLESS STEEL, WITH J-900 SINGLE LEVER FAUCET AND JB-99 DRAIN WITH REMOVABLE STRAINER.

PLUMBING EQUIPMENT SCHEDULE

WH-1, WATER HEATER, NAVIEN NPE-150, TANKLESS 18-MBH TO 120-MBH INPUT NATURAL GAS, 6.8-GPM, WITH BUILT-IN RECIRCULATION PUMP. 2" PVC VENT & AIR CONNECTIONS. 17"W X 27"H X 13"D, 55-LBS. 84-WATTS @ 120/1/60.

SS-1, SHOCK STOPPER, SMITH 5005, RATED FOR 11 WSFU, PDI SYMBOL "A".

SP-1, ELEVATOR SUMP PUMP, ZOELLER OIL GUARD SYSTEM, WITH MODEL 152 PUMP @ 23-GPM & 30-FT TDH, OIL SMART PUMP SWITCH, PIGGY-BACK POWER PLUG, OIL SMART ALARM, LIQUID SMART SENSOR, OIL SMART SIMPLEX CONTROL PANEL.

CP-1, CONTROL PANEL, SIMPLEX, ZOELLER 10-2149.

PLUMBING TRIM SCHEDULE

CO-1, FINISHED FLOOR CLEANOUT, SMITH 4111, WITH ADJUSTABLE TOP, ROUND HEAVY DUTY, NICKEL BRONZE TOP, WITH GASKET SEAL, IRON PLUG, SPIGOT OUTLET.

CO-2, GRADE CLEANOUT, PEXSUPPLY P110, PVC, FLUSH, 2", 3", 4", 6".

DP-1, WATER HEATER DRAIN PAN, TANKLESS, CAMCO 11470, PLASTIC, 22"W X 13"D X 16"H, WITH 1.5" DRAIN.

RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN
1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9804 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:
Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:
Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester County NJ 08094

REVISIONS:
7/14/2021 - Progress Set
9/03/2024 - Progress Set

SHEET TITLE:
PLUMBING PLAN SECOND FLOOR

DRAWN BY:	CSO
CHECKED BY:	CSO
SCALE:	
DATE:	9-03-2024
PROJECT NUMBER:	24F04

DRAWING NUMBER:
P-2

PROGRESS ISSUE 09-30-24

SANITARY DRAIN/WASTE/VENT SYSTEM SPECIFICATIONS

1. CONTRACTOR SHALL ACCURATELY LOCATE THE SEWER SYSTEM. EXISTING LOCATIONS AND INVERTS ARE APPROXIMATE AND MUST BE VERIFIED BEFORE STARTING WORK. WORK FROM SEWER BACK TOWARD BUILDING.

2. BASE BID FOR SANITARY DWV PIPING SHALL BE SCHEDULE 40 PVC. EXCEPTION: SCH 80 REQUIRED FOR TRAFFIC AREAS OUTSIDE BUILDING.

3. DITCHES FOR UNDERGROUND PIPE SHALL BE STRAIGHT AND UNIFORM IN DEPTH AND NO LESS THAN 42" DEEP. INSTALL 6" DEEP SUPPORTING BED OF SAND. BACKFILL SHALL BE CLEAN SOIL AND COMPACTED TO PREVENT SETTLEMENT. DITCHES NEAR FOOTINGS OR UNDER PAVED AREAS SHALL BE TAMPED WITH A MECHANICAL TEMPER TO 90% COMPACTION.

4. ALL PIPING IN FINISHED AREAS SHALL BE RUN CONCEALED IN BUILDING CONSTRUCTION UNLESS OTHERWISE INDICATED.

5. SANITARY DRAINS SHALL BE SIZED AND SLOPED FOR THE TOTAL CONNECTED DRAINAGE FIXTURE UNIT VALUES FOR FIXTURES INDICATED ON RISER DIAGRAM.

6. USE "Y" BRANCHES AND 1/8 BENDS FOR DIRECTION CHANGES OF UNDERGROUND PIPE.

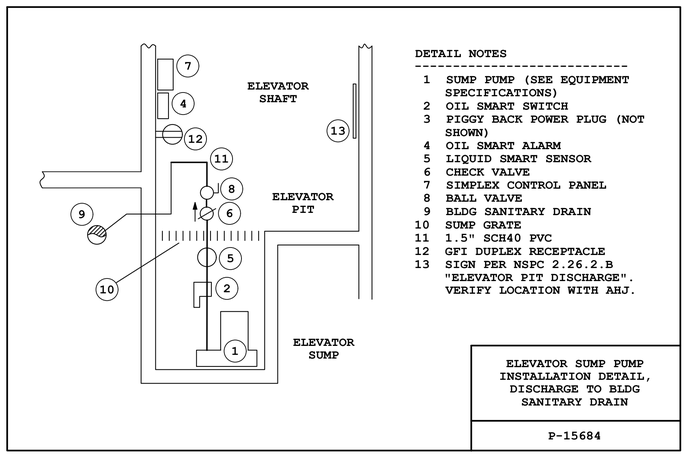
7. PROVIDE CLEANOUTS AT END OF "Y" BRANCH FITTINGS, THE BASE OF EACH STACK, 3 FEET FROM THE BUILDING WALL, EVERY 75 FEET OF HORIZONTAL RUN (100 FEET, IF LARGER THAN 4"), AND AT CHANGES IN DIRECTION OF MORE THAN 45 DEGREES, DOWNSTREAM OF FLOOR DRAINS WITH NON-REMOVABLE STRAINERS.

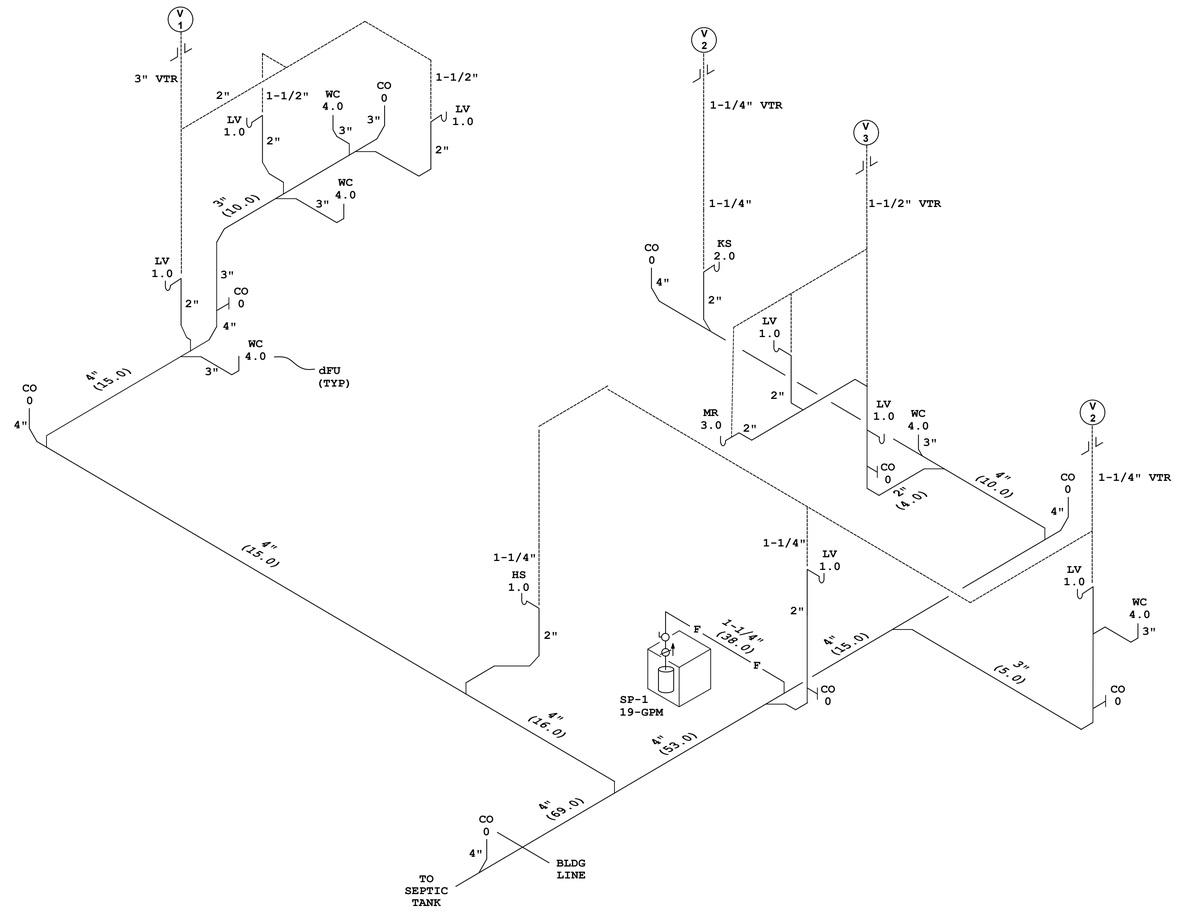
8. VENT ALL TRAPPED PLUMBING FIXTURES USING 1.25" OR ONE HALF OF DRAIN LINE SIZE, WHICHEVER IS GREATER. PROVIDE TRAP PRIMERS ON ALL INACCESSIBLE OR INFREQUENTLY USED TRAPS. SLOPE VENTS BACK TOWARD WASTE PIPING. EXTEND WASTE AND VENT STACKS 6" MINIMUM ABOVE ROOF STRUCTURE. SUPPORT ALL STACKS WITH CONCEALED PIPE CLAMPS OR HANGERS AS REQUIRED. VENTS FOR FLOOR DRAINS SHALL CONNECT AT 45-DEGREES FROM HORIZONTAL AND CONTINUE UP AT LEAST 6-INCHES ABOVE TRAP BEFORE CONTINUING HORIZONTALLY TO NEAREST WALL OR COLUMN.

9. INSTALL INDUSTRY ACCEPTABLE CONCRETE INSERTS, BEAM CLAMPS, OR OTHER FIXTURES TO SUPPORT THE PIPE HANGERS. PROVIDE HANGER RODS AND LOOPS, OR CLEVISES, TO SUPPORT THE PIPE AT THE HEIGHT AND GRADE REQUIRED FOR PROPER DRAINAGE AND AIR ELIMINATION. PROVIDE PIPING CLEARANCES ON LATERAL RUNOUTS TO PREVENT STRESSES BEING PUT ON PIPING FROM BUILDING SHRINKAGE.

10. FURNISH AIR GAP/BREAK FOR INDIRECT WASTE PIPING INCLUDING EQUIPMENT IN COMMERCIAL KITCHENS/BARS, A/C CONDENSATE, SWIMMING POOL DRAINS, ETC.

11. TEST ENTIRE SYSTEM WITH AIR, WATER, OR SMOKE AS REQUIRED BY AHJ.





1 SANITARY DWV RISER

RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN
1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9804 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:

Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:

Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester County NJ 08094

REVISIONS:

7/14/2021 - Progress Set
9/03/2024 - Progress Set

SHEET TITLE:

SANITARY DWV RISER DIAGRAM

DRAWN BY:	CSO
CHECKED BY:	CSO
SCALE:	
DATE:	9-03-2024
PROJECT NUMBER:	24F04

DRAWING NUMBER:

P-3

PROGRESS ISSUE 09-30-24

PLUMBING SPECIFICATIONS

1. ALL PLUMBING WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE 2021 NATIONAL STANDARD PLUMBING CODE.

2. ALL EQUIPMENT FURNISHED SHALL BE NEW, CERTIFIED BY A RECOGNIZED TESTING AGENCY, AND COMPLY WITH THE INTERNATIONAL ENERGY CONSERVATION CODE.

3. ALL PIPING, EQUIPMENT, VALVES AND FITTINGS SHALL BE DESIGNED FOR 150 PSIG DESIGN PRESSURE, UNLESS NOTED OTHERWISE.

4. ALL PLUMBING FIXTURES SHALL BE PROVIDED WITH MEDIUM QUALITY FAUCETS, STOPS, DRAINS, CARRIERS AND ALL OTHER NECESSARY, CUSTOMARY ACCESSORIES.

5. ALL SYSTEMS SHALL BE MADE FULLY OPERATIONAL, LEAK TIGHT AND PROVIDE SATISFACTORY PERFORMANCE, BEFORE BEING TURNED OVER TO THE OWNER.

6. PRIOR TO FINAL ACCEPTANCE OF THE WORK BY THE OWNER, SUBMIT A WRITTEN STATEMENT GUARANTEEING ALL EQUIPMENT AND SYSTEMS AGAINST DEFECTIVE MATERIALS AND WORKMANSHIP FOR ONE (1) YEAR FROM THE DATE OF ACCEPTANCE. UPON WRITTEN NOTICE AND AT NO EXPENSE TO THE OWNER, PROMPTLY REPAIR ALL DEFECTIVE MATERIALS.

7. A #12 TRACER WIRE SHALL BE INSTALLED 4" ABOVE OR BELOW BUT NOT DIRECTLY OVER OR INSTALLED ON ALL PLASTIC PIPING INSTALLED UNDERGROUND.

8. THE PLUMBING CONTRACTOR SHALL INCLUDE IN HIS BID THE SERVICES OF THE ELECTRICAL OR GENERAL CONTRACTOR TO PREVENT FREEZING OF ALL WATER PIPING INSTALLED IN UNHEATED SPACES SUCH AS ATTICS OR CRAWLSPACES. THIS SHALL BE DONE BY EITHER (A) INSULATING AND HEAT TRACING ALL PIPING OR (B) BUILDING A FRAMED GWB ENCLOSURE WITH A 6" THICK FIBERGLASS INSULATED BARRIER TO ALL UNHEATED SIDES WITH PIPING FACING HEATED SIDE.

FIRE PROTECTION SPECIFICATIONS

1. INFORMATION SHOWN ON PRELIMINARY PLANS IS THAT REQUIRED BY NFPA-13 FOR REVIEW BY THE AUTHORITY. THE INFORMATION IS ONLY A GUIDE AND DOES NOT ATTEMPT TO CONVEY ALL DETAILS THAT MAY BE REQUIRED FOR CONSTRUCTION. THIS INFORMATION IS ONLY SUPPLEMENTARY TO THE CODE REQUIREMENTS WHICH MUST BE INCLUDED BY THIS CONTRACTOR IN THE BID.

2. THE INFORMATION IS BEST ESTIMATE OF THE SCOPE OF WORK, WITHOUT INPUT FROM OWNER'S INSURER OR THE AUTHORITY. THIS CONTRACTOR SHALL CONTACT OWNER AND HIS INSURER, TO VERIFY SYSTEM CLASS, AREA COVERAGE, DENSITY, DURATION, ETC.

3. THE SPRINKLER CONTRACTOR SHALL BE A CERTIFIED MEMBER OF THE NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES.

4. CONTACT LOCAL WATER COMPANY TO VERIFY STATIC PRESSURE, AND RESIDUAL FLOW AND PRESSURE IN AREA. VERIFY DESIGN BEING IN CONFORMANCE WITH THEIR REGULATIONS. COORDINATE SERVICE ENTRANCE PIPING FROM STREET TO BUILDING WITH PLUMBING CONTRACTOR AND WATER COMPANY. FURNISH METER PIT, DETECTOR CHECK ASSEMBLY, AND/OR ANY OTHER APPURTENANCES REQUIRED BY THE WATER COMPANY. PAY ALL FEES REQUIRED IN THE NAME OF THE OWNER.

5. PROVIDE COMPLETE HYDRAULICALLY DESIGNED AUTOMATIC SPRINKLER SYSTEM, WITH FIRE SERVICE ENTRANCE, FIRE DEPARTMENT CONNECTION, FIRE PUMP, JOCKEY PUMP WITH CONTROLLER, HOSE CABINETS, AND ALL APPURTENANCES REQUIRED BY NFPA CODES AND/OR INSURER.

6. PROVIDE COMPLETE HYDRAULICALLY DESIGNED DRY TYPE SPRINKLER SYSTEM, INCLUDING AIR COMPRESSOR, RECEIVER, DRYER, AND ALL APPURTENANCES REQUIRED BY NFPA CODES AND/OR INSURER.

7. PROVIDE WORKING DRAWINGS FOR REVIEW AND APPROVAL BY THE AUTHORITY PRIOR TO SUBMITTING TO THE ARCHITECT.

8. PROVIDE SIGNED AND SEALED WORKING DRAWINGS AS REQUIRED BY NFPA-13 FOR REVIEW BY THE AUTHORITY, AND THREE (3) SIGNED AND SEALED DRAWING SETS AND HYDRAULIC CALCULATIONS FOR THE OWNER AFTER APPROVAL BY THE AUTHORITY.

9. THIS CONTRACTOR SHALL INCLUDE IN THE BID ALL LABOR AND MATERIAL, INCLUDING PUMPS, CONTROLS, TANKS, PIPING, FITTINGS AND ACCESSORIES REQUIRED TO FURNISH A COMPLETE AND CERTIFIABLE SYSTEM.

10. BASE BID FOR SPRINKLER HEADS REQUIRED IN OFFICE OR FINISHED AREAS SHALL BE STAR RECESSED FLUSH PENDENT WITH OPTION ON PHANTOM OR UNSPOILER MODEL.

WATER DISTRIBUTION SYSTEM SPECIFICATIONS

1. BASE BID FOR DISTRIBUTION PIPING ABOVE GROUND SHALL BE TYPE L COPPER. BASE BID FOR BURIED PIPING SHALL BE TYPE K COPPER. FITTINGS SHALL BE WROUGHT COPPER. JOINT COMPOUNDS SHALL BE NON-LEAD BEARING ALLOYS.

2. VELOCITY FOR COLD WATER SHALL BE 8 FEET/SECOND MAXIMUM (4 FPS FOR HOT WATER). FLOWING PRESSURE AT REMOTEST USER SHALL BE 25 PSIG, MINIMUM. BRANCH SIZING SHALL BE 1/2" MINIMUM, 1" TO ALL FLUSH VALVE TYPE TOILETS.

3. FURNISH SHUTOFF VALVES AT EVERY FIXTURE AND AT THE BASE OF EVERY RISER.

4. FURNISH REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER ON SUPPLY BEFORE WATER METER, NON-REMOVABLE BFP AT SERVICE SINKS, AND AT ALL HOSE BIBBS.

5. FURNISH WATER HAMMER ARRESTERS IN ALL LONG PIPING RUNS AND ALL PIPING RUNS WITH FAST CLOSURE VALVES, SUCH AS, FLUSHOMETERS.

6. FILL ENTIRE SYSTEM WITH WATER AND TEST PER CODE. FLUSH ALL PIPING CLEAN AFTER ASSEMBLY IS COMPLETE. DISINFECT SYSTEM PER CODE.

7. INSULATE ALL PIPING WITH ARMSTRONG 1/2" ARMAFLEX PREMOLDED PIPE INSULATION INSTALLED PER MFRS INSTRUCTIONS (NO TAPE PERMITTED). FOR LAVATORIES AND SINKS WITH EXPOSED PIPING, INSULATE CW/HW/DRAIN PIPING WITH 1/2" ARMSTRONG CLOSED CELL INSULATION AND FINISH WITH PRE-MOLDED PVC COVERS, OR FURNISH TAMPER RESISTANT, PROTECTIVE ENCLOSURE, ONE-PIECE VINYL AS MANUFACTURED BY TRUEBRO.

8. PIPING INSTALLED IN UNHEATED SPACES SUCH AS ATTICS SHALL BE HEAT TRACED AND INSULATED. COORDINATE THIS REQUIREMENT WITH THE ELECTRICAL CONTRACTOR AND INCLUDE IN THE PLUMBING BID.

DOMESTIC HOT WATER SYSTEM SPECIFICATIONS

1. FOR HOT WATER SCOLD PROTECTION, ALL PUBLIC LAVATORY AND HAND WASHING SINK HOT WATER SUPPLIES SHALL BE FURNISHED WITH THERMOSTATIC FAUCETS, INDIVIDUAL POWERS LFLM495 OR EQUAL ASSE 1070 LISTED MIXING VALVE, OR MASTER TEMPERING VALVES FOR MULTIPLE SINK INSTALLATIONS MEETING THE REQUIREMENTS OF ASSE 1070.

2. FURNISH WIDE SWEEP ELBOWS IN HOT WATER PIPING LOOP BETWEEN WATER HEATER HOT WATER DISCHARGE AND HOT WATER RECIRCULATION PUMP INLET.

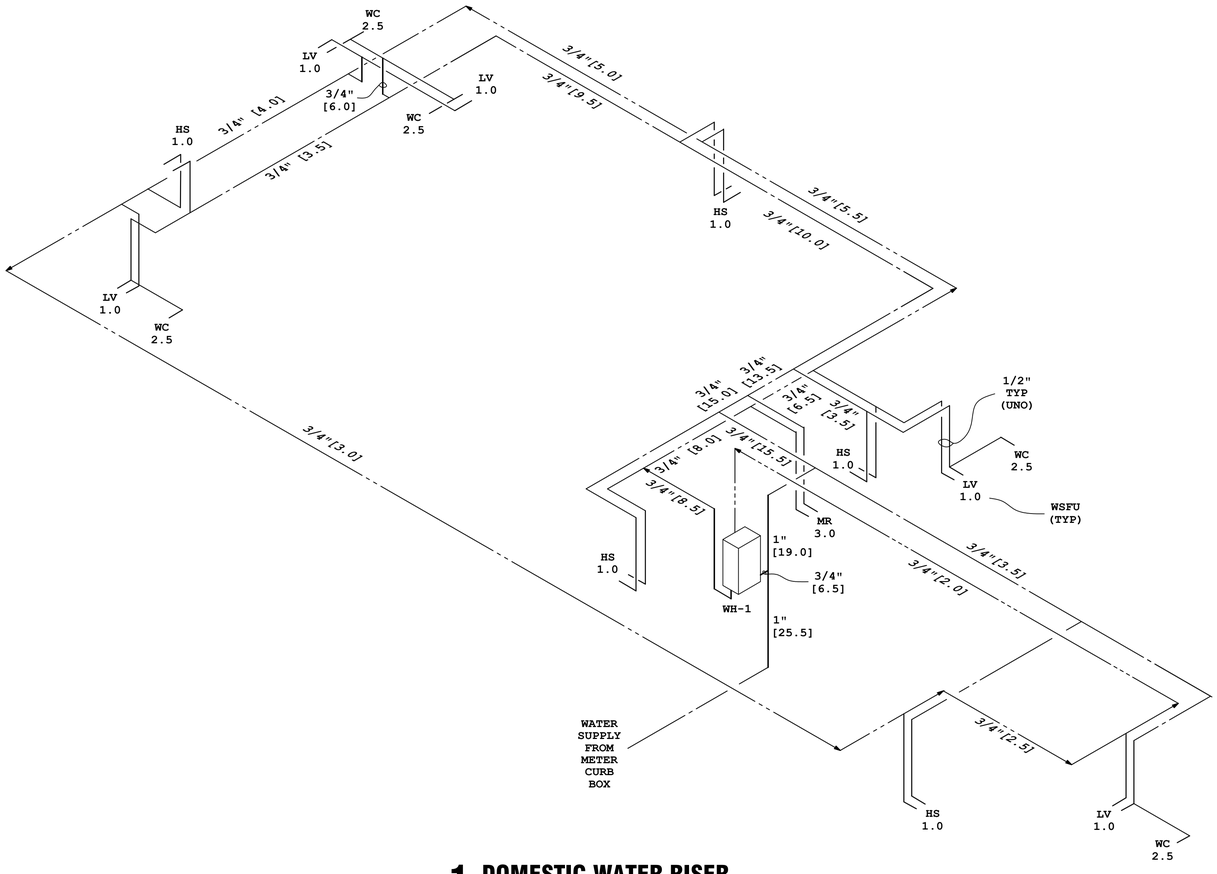
3. FURNISH DRAIN PAN UNDERNEATH WATER HEATER AND PIPE OVERFLOW DRAIN TO ADJACENT MOP RECEPTOR.

4. FURNISH FULL SIZE T&P RELIEF VALVE DISCHARGE PIPING FOR WATER HEATER TO WITHIN 4" OF TOP OF DRAIN PAN.

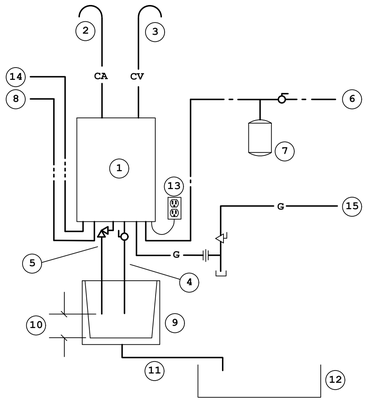
5. FURNISH 2-GALLON EXPANSION TANK BETWEEN INLET COLD WATER SHUTOFF VALVE AND WATER HEATERS.

6. SET WATER HEATER TO 105 DEGF MAXIMUM.

7. FURNISH HEAT TRAP AT INLET AND OUTLET OF WATER HEATER.



1 DOMESTIC WATER RISER



1	TANKLESS WATER HEATER
2	COMBUSTION AIR INLET
3	COMBUSTION VENT OUTLET
4	DRAIN VALVE & PIPING
5	T&P VALVE & PIPING
6	COLD WATER INLET
7	EXPANSION TANK
8	HOT WATER OUTLET
9	DRAIN PAN, CAMCO 11470
10	6" AIR GAP TO OPEN RIM
11	1" PVC DRAIN PIPING
12	MOP RECEPTOR
13	ELECTRIC CORDED SUPPLY
14	RECIRCULATION PIPING
15	GAS PIPING

TANKLESS WATER HEATER DETAIL, INTERNAL RECIRCULATION PUMP, 1-ZONE, CONDENSING, DRAIN TO MOP RECEPTOR

WH-TL-1G9CMY

RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN
1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9804 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:

Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:

Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester
County NJ 08094

REVISIONS:

7/14/2021 - Progress Set

9/03/2024 - Progress Set

SHEET TITLE:

DOMESTIC WATER RISER DIAGRAM

DRAWN BY:	CSO
CHECKED BY:	CSO
SCALE:	
DATE:	9-03-2024
PROJECT NUMBER:	24F04

DRAWING NUMBER:

P-4

PROGRESS ISSUE 09-30-24

GENERAL SPECIFICATIONS

1. EACH SUB-CONTRACTOR IS ENTITLED TO AND SHALL INSIST UPON RECEIVING THE COMPLETE SET OF PLANS FOR THE PROJECT INCLUDING AS A MINIMUM ALL OTHER DISCIPLINES, THE ARCHITECTURAL PLANS, AND SITE ENGINEERING PLANS.

2. EACH SUB-CONTRACTOR SHALL REVIEW THE ENTIRE PROJECT SET OF PLANS AND BECOME FAMILIAR WITH ALL ASPECTS OF THE PROJECT REQUIREMENTS. IF THE CONTRACTOR DOES NOT UNDERSTAND ANY PORTION OF THE INTENT OF THESE PLANS, QUESTIONS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER FOR EXPLANATION PRIOR TO SUBMITTING BIDS OR PROCEEDING WITH ANY WORK.

3. EXAMINE ALL DRAWINGS AND SPECIFICATIONS AND VISIT THE SITE OF THE WORK PRIOR TO BIDDING. IF THEY ARE FOUND TO BE AT VARIANCE WITH CODE REQUIREMENTS, THE CODE REQUIREMENTS SHALL TAKE PRECEDENCE AND ANY ADJUSTMENT NECESSARY SHALL BE INCLUDED BY THE CONTRACTOR AT NO EXTRA COST.

4. THE PLANS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW EVERY DETAIL IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL THE DETAILS OF THE EQUIPMENT. EACH SUB-CONTRACTOR IS EXPECTED TO FURNISH ALL DETAILS REQUIRED BY CODES OR RECOGNIZED BY STANDARD INDUSTRY PRACTICES. THE CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO BE ASSURED THAT THE EQUIPMENT SPECIFIED WILL FIT IN THE SPACE PROPOSED WITH ADEQUATE CLEARANCE FOR MAINTENANCE.

5. THESE PLANS ARE FOR THE PURPOSE OF OBTAINING BIDS AND PERMITS. IF MINOR DEVIATIONS ARE REQUIRED, THEY SHALL BE DOCUMENTED AS THE "AS-BUILT" PLANS AND SUBMITTED TO THE AHJ UPON REQUEST AND TO THE OWNER FOR HIS RECORDS.

6. EMAIL A PDF OR SUBMIT SIX (6) COPIES OF SHOP DRAWINGS OR CATALOG CUTS OF MAJOR EQUIPMENT REQUIRING ELECTRIC POWER OR STRUCTURAL SUPPORT FOR REVIEW AND APPROVAL BEFORE COMMITING TO PURCHASE.

7. SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS. THE CONTRACTOR AGREES THAT IF DEVIATIONS, DISCREPANCIES, OR CONFLICTS BETWEEN SUBMITTALS AND CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER SUBMITTALS ARE PROCESSED BY THE ENGINEER, THE CONTRACT DOCUMENTS SHALL CONTROL AND SHALL BE FOLLOWED. THE SUPPLIER, BY SUBMITTING, CERTIFIES THAT THE EQUIPMENT BEING PROPOSED IS PROPER FOR THE APPLICATION INTENDED AND THAT IT HAS THE PERFORMANCE CHARACTERISTICS CALLED FOR.

LABOR AND MATERIAL SPECIFICATIONS

1. PROVIDE ALL MATERIALS, LABOR, TOOLS, PERMITS, INSPECTIONS, LICENSES, FEES, WARRANTIES, SERVICE CONTRACTS, TRAINING OF PERSONNEL, AND INCIDENTALS NECESSARY TO INSTALL AND MAKE READY FOR THE OWNER'S USE COMPLETE SYSTEMS AS INDICATED ON THE PLANS.

2. SUBMIT TO AND OBTAIN APPROVAL FROM THE ARCHITECT FOR OPTIONAL COLORS AND STYLES AVAILABLE ON ALL MATERIALS, SUCH AS, HVAC DIFFUSERS, PLUMBING FAUCETS, AND ELECTRICAL FACEPLATES. DO NOT ORDER MATERIALS UNTIL THESE APPROVALS ARE RECEIVED.

3. ALL PRODUCTS SHALL BE NEW, FIRST-LINE QUALITY, OF GRADE AND TYPE SHOWN IN THE DRAWINGS AND SPECIFICATIONS.

4. ALL EQUIPMENT FURNISHED SHALL BARE THE SEAL OF A RECOGNIZED TESTING AGENCY AND SHALL MEET THE ASHRAE 90.1-2007 ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS.

5. ALL EQUIPMENT SHALL BE PROPERLY SUPPORTED FOR THE SIZE AND LOAD REQUIRED FROM EITHER THE FLOOR BY 6-INCH HIGH REINFORCED CONCRETE PADS DESIGNED, OR SUSPENDED FROM WALLS OR THE BUILDING FRAMING SYSTEM BY MSS SP-69 STEEL HANGER ASSEMBLIES. EACH CONTRACTOR SHALL ENSURE THEIR EQUIPMENT SUPPORTS AND THE IMPACT ON THE BUILDING STRUCTURE ARE DESIGNED AND APPROVED BY A LICENSED STRUCTURAL ENGINEER.

6. ALL EQUIPMENT, MATERIALS, AND ACCESSORIES SHALL BE NEATLY INSTALLED, BY COMPETENT TECHNICIANS OR MECHANICS USING PROPER TOOLS FOLLOWING THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

PIPING SUPPORT SPECIFICATIONS

1. FURNISH A COMPLETE PIPING SUPPORT SYSTEM TO ADEQUATELY SUPPORT ALL PIPING SHOWN ON THE PLANS, OR AS REQUIRED BY THE INSTALLATION.

2. SUPPORTS SHALL USE STANDARD SUPPORT TYPES AS SHOWN IN MANUFACTURERS STANDARDIZATION SOCIETY PUBLICATION MSS SP-69. REFER TO THE PLANS FOR THE TYPES, QUANTITIES AND LOCATIONS.

3. PIPES AND TUBES SHALL BE SUPPORTED AT THE FOOT INTERVALS RECOMMENDED BY MANUFACTURERS OR AS SHOWN IN THE FOLLOWING TABLE, WHICHEVER INTERVAL IS SMALLER: PLASTIC PIPE = PER MFRS INSTRUCTIONS, CPVC <= 1" = 3, CPVC > 1" = 4, CU TUBE <= 1.25" = 6, CU TUBE > 1.25" = 10, STEEL PIPE <= ¾" = 10, >+ 1" = 12.

PIPING INSULATION SPECIFICATIONS

1. FURNISH A COMPLETE PIPING INSULATION SYSTEM COMPLYING WI STANDARD 90.1-2016.

2. ALL STRAIGHT LENGTHS OF PIPING, VALVES AND FITTINGS SHALL BE I

3. INSULATION MATERIALS SHALL BE SELECTED TO WITHSTAND THE TEMPE EACH SERVICE REQUIRED PER THE TABLE BELOW. ARMAFLEX OR EQU USED ON SYSTEMS OPERATING UP TO 200F MAXIMUM. FIBERGLASS SUITABLE MATERIAL SHALL BE USED FOR SYSTEMS OPERATING ABOVE 20

4. FURNISH A PROTECTIVE ALL SERVICE JACKET (ASJ) OF ALUMINUM OR THE INSULATION IS INSTALLED. A COMBINATION SNAP ON ASJ WITH I IS PERMITTED.

5. FURNISH SETON SNAP-AROUND PIPE MARKERS BETWEEN EVERY JUN EVERY 10-FEET.

PLUMBING AS-BUILT DRAWINGS

1. THE PLUMBING CONTRACTOR SHALL DOCUMENT THE PLUMBING INSTALLATION ON A DAILY BASIS AS WORK PROGRESSES BY MARKING UP THE PLUMBING PLANS.

2. DOCUMENT THE MANUFACTURER AND MODEL NUMBER OF ALL FIXTURES AND EQUIPMENT INSTALLED.

3. PLAN MARKUPS SHALL INCLUDE THE FINAL LOCATION OF ALL PLUMBING FIXTURES AND EQUIPMENT.

4. DOCUMENT THE FINAL ROUTING OF ALL PIPING INCLUDING ALL DIMENSIONS.

5. THE PC SHALL HAVE ALL MARKUPS DIGITALLY SCANNED AND CONVERTED INTO PDFS.

6. TURN OVER ALL DRAWING MARKUPS AND PDF FILES TO THE OWNER IMMEDIATELY AFTER COMPLETION OF THE WORK.

STRUCTURAL SPECIFICATIONS

1. EACH CONTRACTOR SHALL SECURE THE SERVICES OF A LICENSED STRUCTURAL ENGINEER TO ENSURE THE EQUIPMENT AND SYSTEMS BEING PROVIDED ARE ADEQUATELY SUPPORTED.

2. SUPPLEMENTARY STEEL SHALL BE FURNISHED AS REQUIRED BY EACH CONTRACTOR TO INTERFACE AND SUPPORT THE EQUIPMENT AND MATERIAL BEING PROVIDED.

3. ALL EQUIPMENT AND MATERIAL SHALL BE PROPERLY SUPPORTED AT GRADE, FLOORS, WALLS AND/OR ROOFS USING CONCRETE PADS, STRUCTURAL STEEL FRAMING, AND MSS SP-69 STEEL HANGER ASSEMBLIES, AS REQUIRED.

SUBSTITUTIONS

1. SUBSTITUTION OF THE EQUIPMENT OR MATERIALS SPECIFIED WILL BE CONSIDERED ONLY AFTER BIDDING ON THE BASE SPECIFICATIONS.

2. SUBSTITUTION OF SPECIFIED EQUIPMENT OR MATERIALS SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS, IF ANY. IN THE ABSENCE OF THESE DOCUMENTS, SUBSTITUTION OF SPECIFIED EQUIPMENT WITH INDUSTRY RECOGNIZED ALTERNATES IS PERMITTED, PROVIDED THE CAPACITY AND PERFORMANCE CHARACTERISTICS CALLED FOR ARE MAINTAINED.

3. THE COST FOR ANY RE-DESIGN OR COST IMPACT TO OTHER TRADES AS A RESULT OF THE SUBSTITUTION SHALL BE TO THE ACCOUNT OF THE CONTRACTOR MAKING THE SUBSTITUTION.

PLUMBING SYMBOLS LEGEND

⊕	TIE IN TO SERVICE
———	SANITARY DRAIN
——— F ———	FORCED SANITARY
- - - - - - - - - -	SANITARY VENT
——— - ———	DOMESTIC COLD WATER
——— - - ———	DOMESTIC HOT WATER
——— - - - ———	HOT WATER RECIRCULATION
——— T ———	TEMPERED (H+C) WATER
——— G ———	NATURAL GAS
▨	FLOOR DRAIN
○	CLEANOUT
▭	BACKFLOW PREVENTER
Ⓦ	WATER METER
▭—	WATER HAMMER ARRESTER
◨	PUMP
⊘	BALL VALVE
⊘	CHECK VALVE

*	EXISTING
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
AHJ	AUTHORITY HAVING JURSIDICTION
BL	BUILDING LINE
dFU	DRAINAGE FIXTURE UNIT
WSFU	WATER SUPPLY FIXTURE UNIT
AFF	ABOVE FINISHED FLOOR
NIC	NOT IN CONTRACT

NATURAL GAS SPECIFICATIONS

1. ARRANGE FOR GAS SERVICE AND BEAR ALL COSTS OF METER AND REGULATOR, TAP FEES, SERVICE LINE EXTENSION, ETC. IF ANY DEPOSITS ARE INVOLVED, THEY SHALL BE INCLUDED AND SHALL BE MADE IN THE OWNER'S NAME.

2. REQUIRED SUPPLY PRESSURE FROM METER SHALL BE 7 INCHES WATER COLUMN. IF 2 PSIG HIGH PRESSURE GAS, PROVIDE PRESSURE REGULATOR(S). VENT REGULATORS TO OUTDOORS.

3. ALL GAS PIPING, FITTINGS AND ACCESSORIES TO BE FURNISHED IN ACCORDANCE WITH THE 2021 INTERNATIONAL FUEL GAS CODE.

4. ABOVEGROUND PIPING SHALL BE A-53, A-106, OR A-120 BLACK STEEL. MINIMUM PIPE SIZE SHALL BE 1/2". FITTINGS SHALL BE 150 # SCREWED MALLEABLE IRON.

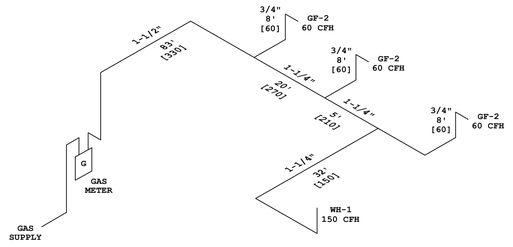
5. CORRUGATED STAINLESS STEEL TUBING (CSST) THOUGH PERMITTED BY CODE, IS NOT RECOMMENDED, BECAUSE OF ITS INFERIOR ABILITY TO WITHSTAND MECHANICAL DAMAGE. IN THE EVENT CSST IS SELECTED, IT SHALL BE OF THE TYPE COATED TO PREVENT LIGHTNING INDUCED DAMAGE, SUCH AS TRACPIPE COUNTERSTRIKE OR EQUAL, SHALL BE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND SHALL BE PROPERLY BONDED TO THE BUILDING'S GROUNDING ELECTRODE SYSTEM.

6. SLOPE HORIZONTAL PIPING AT NOT LESS THAN 1/4" IN 15 FEET TOWARD METER. PROVIDE ACCESSIBLE DRIP LEGS AT LOW POINTS IN AREAS NOT SUBJECT TO FREEZING.

7. THREADED JOINTS SHALL CONFORM TO ASME B1.20. JOINT COMPOUND OR TAPE SHALL BE USED, AND ON MALE ENDS ONLY.

8. PROVIDE APPROVED SHUTOFF VALVE, UNION AND 6" DIRT LEG AT EACH GAS APPLIANCE. PROVIDE SHUTOFF OUTSIDE THE BUILDING.

9. TEST SYSTEM WITH AIR OR INERT GAS TO 1.5 TIMES WORKING PRESSURE, BUT NOT LESS THAN 3 PSIG. TEST PRESSURE SHALL BE MAINTAINED FOR 10 MINUTES.



1 NATURAL GAS RISER

RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN

1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9804 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:

Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:

Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester County NJ 08094

REVISIONS:

7/14/2021 - Progress Set
9/03/2024 - Progress Set

SHEET TITLE:

NATURAL GAS RISER DIAGRAM

DRAWN BY:	CSO
CHECKED BY:	CSO
SCALE:	
DATE:	9-03-2024
PROJECT NUMBER:	24F04

DRAWING NUMBER:

P-5

PROGRESS ISSUE 09-30-24

BARRIER FREE REACH RANGE SPECIFICATIONS

1. INSTALLATION OF SWITCHES, RECEPTACLES AND OPERABLE DEVICES SHALL COMPLY WITH ICC/ANSI A117.1, SECTIONS 308 AND 309.

2. UNOBSTRUCTED HIGH SIDE AND FORWARD REACH MAXIMUM SHALL BE 48″ AND MINIMUM LOW FORWARD OR SIDE REACH SHALL BE 15″ MINIMUM ABOVE THE FLOOR.

3. OBSTRUCTED HIGH REACH WITH COUNTERS 20″ OR LESS IN DEPTH SHALL BE 48″ MAXIMUM, WITH COUNTERS GREATER THAN 20-25″ IN DEPTH SHALL BE 44″ OR LESS.

LIGHTING CONTROL SPECIFICATIONS

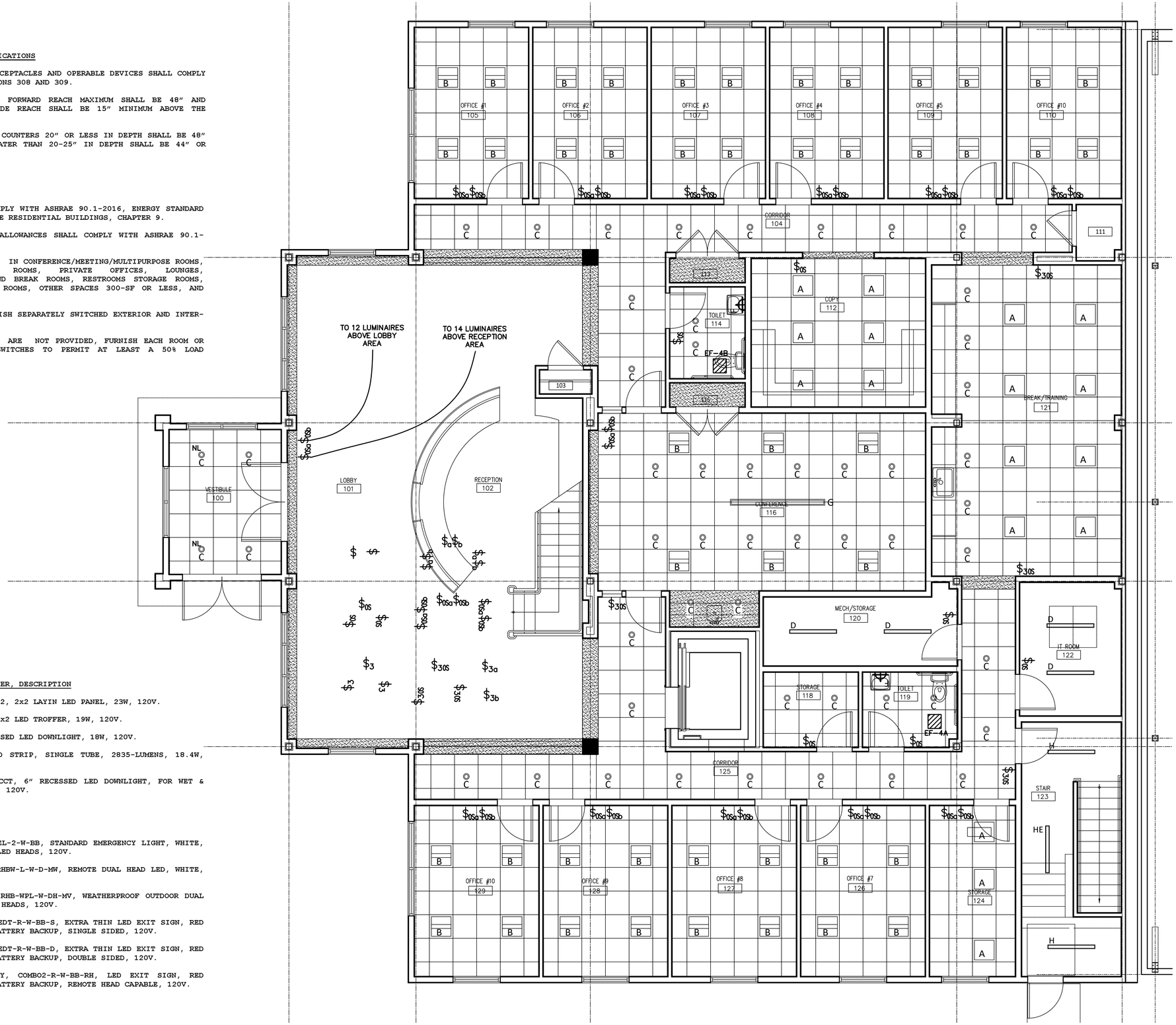
1. LIGHTING CONTROLS SHALL COMPLY WITH ASHRAE 90.1-2016, ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS, CHAPTER 9.

2. LIGHTING POWER DENSITY ALLOWANCES SHALL COMPLY WITH ASHRAE 90.1-2016, TABLE 9.5.1.

3. FURNISH OCCUPANCY SENSORS IN CONFERENCE/MEETING/MULTIPURPOSE ROOMS, CLASSROOMS/LECTURE/TRAINING ROOMS, PRIVATE OFFICES, LOUNGES, COPY/PRINT ROOMS, LUNCH AND BREAK ROOMS, RESTROOMS STORAGE ROOMS, JANITORIAL CLOSETS, LOCKER ROOMS, OTHER SPACES 300-SF OR LESS, AND WAREHOUSES.

4. IN ROOMS WITH WINDOWS, FURNISH SEPARATELY SWITCHED EXTERIOR AND INTERIOR ZONES.

5. WHERE OCCUPANCY SENSORS ARE NOT PROVIDED, FURNISH EACH ROOM OR AREA WITH AT LEAST TWO SWITCHES TO PERMIT AT LEAST A 50% LOAD REDUCTION.



LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER, CATALOG NUMBER, DESCRIPTION
A	RAB EZPANHE 2x2 23YN/D10/E2, 2x2 LAYIN LED PANEL, 23W, 120V.
B	RAB SWISH34 2x2 19YN/E2, 2x2 LED TROFFER, 19W, 120V.
C	RAB C6R18930UNVW, 6″ RECESSED LED DOWNLIGHT, 18W, 120V.
D	RAB STRP420840U, 4′ LED STRIP, SINGLE TUBE, 2835-LUMENS, 18.4W, 120V.
E	RAB CRLEDFA/060/R/024S/9CCT, 6″ RECESSED LED DOWNLIGHT, FOR WET & DAMP LOCATIONS, 24/19/15W, 120V.
F	2′ LINEAR WALL SCONCE,
G	8′ LINEAR PENDANT,
Y	THE EXIT LIGHT COMPANY, EL-2-W-BB, STANDARD EMERGENCY LIGHT, WHITE, BATTERY BACKUP, (2) 1.8W LED HEADS, 120V.
Y2	THE EXIT LIGHT COMPANY, RHBW-L-W-D-MW, REMOTE DUAL HEAD LED, WHITE, MULTI-VOLT 3-12V.
Y3	THE EXIT LIGHT COMPANY, RHB-WPL-W-DH-MV, WEATHERPROOF OUTDOOR DUAL REMOTE HEAD, (2) 1.8W LED HEADS, 120V.
Z1	THE EXIT LIGHT COMPANY, LEDT-R-W-BB-S, EXTRA THIN LED EXIT SIGN, RED LETTERS, WHITE HOUSING, BATTERY BACKUP, SINGLE SIDED, 120V.
Z2	THE EXIT LIGHT COMPANY, LEDT-R-W-BB-D, EXTRA THIN LED EXIT SIGN, RED LETTERS, WHITE HOUSING, BATTERY BACKUP, DOUBLE SIDED, 120V.
Z3	THE EXIT LIGHT COMPANY, COMBO2-R-W-BB-RH, LED EXIT SIGN, RED LETTERS, WHITE HOUSING, BATTERY BACKUP, REMOTE HEAD CAPABLE, 120V.

Plan N.

1 LIGHTING PLAN - FIRST FLOOR
1/4″ = 1′-0″

RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN
1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9804 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:
Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:
Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester County NJ 08094

REVISIONS:
7/14/2021 - Progress Set
9/03/2024 - Progress Set

SHEET TITLE:
LIGHTING PLAN FIRST FLOOR

DRAWN BY:	CSO
CHECKED BY:	CSO
SCALE:	
DATE:	9-03-2024
PROJECT NUMBER:	24F04

DRAWING NUMBER:
E-1L

PROGRESS ISSUE 09-30-24

CARBON MONOXIDE (CO) DETECTION

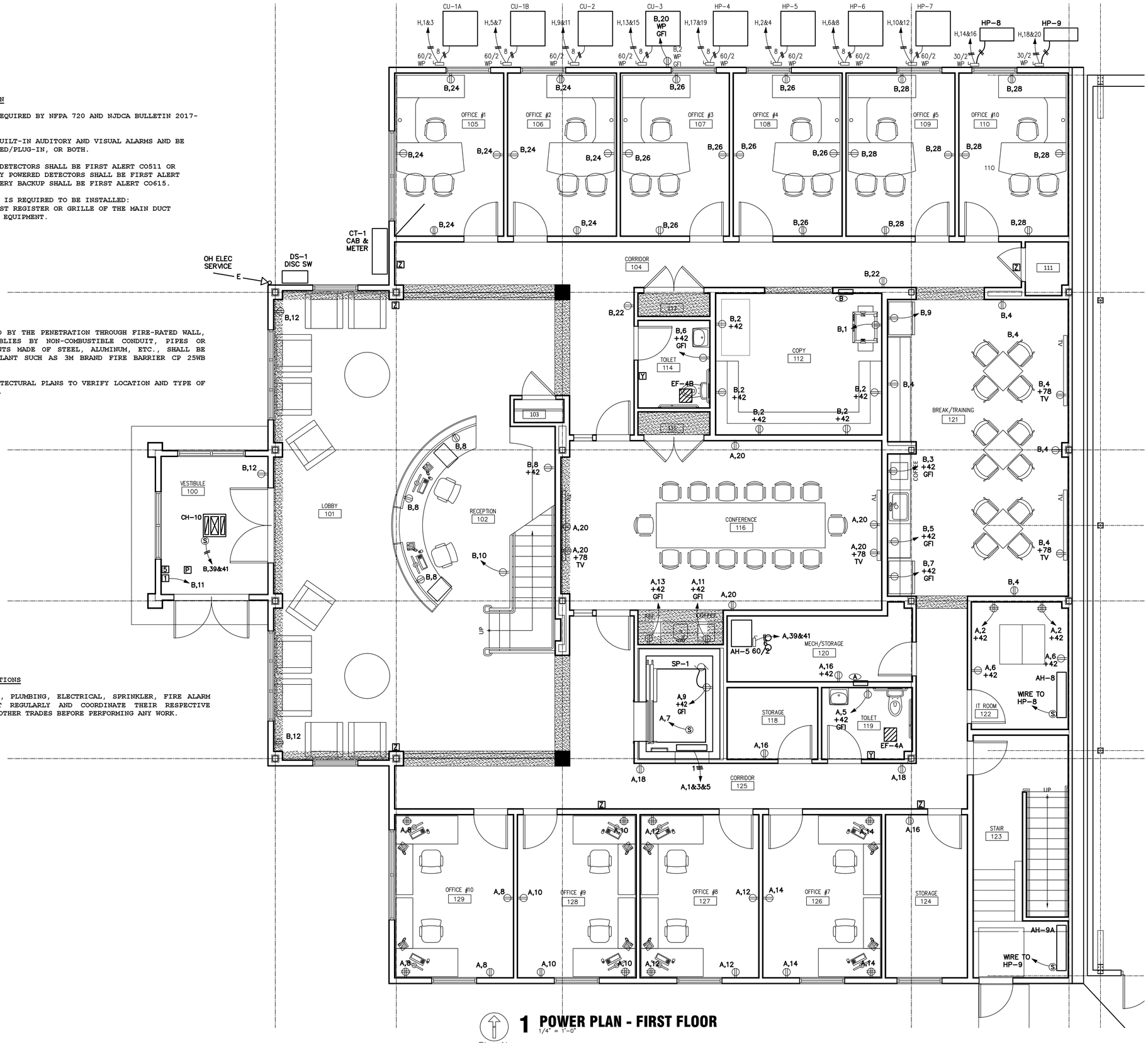
1. FURNISH CO DETECTORS AS REQUIRED BY NFPA 720 AND NJDCA BULLETIN 2017-1.
2. CO DETECTORS SHALL HAVE BUILT-IN AUDITORY AND VISUAL ALARMS AND BE BATTERY OPERATED, HARDWIRED/PLUG-IN, OR BOTH.
3. INTERCONNECTED HARDWIRED DETECTORS SHALL BE FIRST ALERT CO511 OR EQUAL. STANDALONE BATTERY POWERED DETECTORS SHALL BE FIRST ALERT CO250. PLUG-IN WITH BATTERY BACKUP SHALL BE FIRST ALERT CO615.
4. CO DETECTION AND ALARMING IS REQUIRED TO BE INSTALLED:
   A) IN THE ROOM AT THE FIRST REGISTER OR GRILLE OF THE MAIN DUCT TRUNK(S) FROM THE HVAC EQUIPMENT.

FIRE STOPPING SPECIFICATIONS

1. THE ANNULAR SPACE CREATED BY THE PENETRATION THROUGH FIRE-RATED WALL, FLOORS OR CEILING ASSEMBLIES BY NON-COMBUSTIBLE CONDUIT, PIPES OR INCIDENTAL SUPPORT ELEMENTS MADE OF STEEL, ALUMINUM, ETC., SHALL BE SEALED WITH APPROVED SEALANT SUCH AS 3M BRAND FIRE BARRIER CP 25WB CAULK.
2. REFER TO THE LATEST ARCHITECTURAL PLANS TO VERIFY LOCATION AND TYPE OF ALL FIRE RATED ASSEMBLIES.

TRADE COORDINATION SPECIFICATIONS

1. THE GENERAL, MECHANICAL, PLUMBING, ELECTRICAL, SPRINKLER, FIRE ALARM CONTRACTORS SHALL MEET REGULARLY AND COORDINATE THEIR RESPECTIVE SCOPE OF WORK WITH ALL OTHER TRADES BEFORE PERFORMING ANY WORK.



1 POWER PLAN - FIRST FLOOR
1/4" = 1'-0"

Plan N.

RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN

1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9804 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:

Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:

Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester County NJ 08094

REVISIONS:

7/14/2021 - Progress Set
9/03/2024 - Progress Set

SHEET TITLE:

POWER PLAN
FIRST FLOOR

DRAWN BY:	CSO
CHECKED BY:	CSO
SCALE:	
DATE:	9-03-2024
PROJECT NUMBER:	24F04

DRAWING NUMBER:

E-1P

PROGRESS ISSUE 09-30-24

INTERIOR LIGHTING SPECIFICATIONS

1. LUMINAIRES SHALL BE LED WHEREVER POSSIBLE INSTEAD OF FLUORESCENT OR INCANDESCENT, UNLESS NOTED OTHERWISE. FLUORESCENT FIXTURES SHALL BE FURNISHED WITH ENERGY SAVING LAMPS AND ELECTRONIC BALLASTS.

2. VERIFY PART NUMBERS OF LUMINAIRES SHOWN WITH DESCRIPTION OF ITEM REQUIRED. WHERE A QUESTION OR CONFLICT EXISTS, NOTIFY THE ARCHITECT BEFORE ORDERING LUMINAIRES. SUBMIT CATALOG CUTS OF LUMINAIRES INDICATING ITEM NUMBER, COLOR, MOUNTING METHOD, ACCESSORIES, ETC.

3. UNLESS NOTED OTHERWISE, ATTICS SHALL BE FURNISHED WITH 10 FOOTCANDLE MINIMUM LIGHTING.

4. SWITCHES SHALL BE COMMERCIAL GRADE. EVERY ROOM/SPACE SHALL BE PROVIDED WITH SWITCHING TO CONTROL LIGHTS WHETHER SHOWN ON THE PLANS OR NOT. LED, FLUORESCENT, DOWN, SCONCE, ETC., LIGHTS SHALL BE SEPARATELY SWITCHED. DOWNLIGHTS SHALL BE ON DIMMERS, UNLESS NOTED OTHERWISE. PROVIDE 3-WAY SWITCHING FOR STAIRWAYS OR ROOMS/SPACES HAVING TWO ENTRANCES. PROVIDE 4-WAY SWITCHING BETWEEN 3-WAY SWITCHES FOR ROOMS/SPACES HAVING THREE OR MORE ENTRANCES.

EXTERIOR LIGHTING SPECIFICATIONS

1. EXTERIOR LIGHTING SHALL HAVE A SOURCE EFFICACY OF AT LEAST 45 LUMENS PER WATT, EXCEPT FOR APPROVED HISTORICAL, SAFETY, SIGNAGE OR EMERGENCY CONSIDERATIONS.

2. FURNISH EXTERIOR LIGHTING WITH LOCAL CONTROL FOR MAINTENANCE OF ROOF AND/OR GROUND MOUNTED HVAC EQUIPMENT.

3. FOR 1 OR 2 CIRCUIT CONTROL, FURNISH TORK DIGITAL TIME SWITCH DZS200, 2 CHANNEL, ASTRONOMIC.

4. TIMERS SHALL BE TORK SERIES 7000 OR EQUAL.

5. PHOTOCELL CONTROLS SHALL BE TORK SERIES 2100 OR EQUAL.

6. ALL OTHER EXTERIOR FIXTURES TO BE CONTROLLED BY TORK 2100 SERIES OR 2001/2002 PHOTOELECTRIC CONTROL FURNISHED AND INSTALLED BY THE E.C.

EMERGENCY LIGHTING SPECIFICATIONS

1. FURNISH EMERGENCY LIGHTING IN ACCORDANCE WITH 2021 INTERNATIONAL BUILD-ING CODE – NEW JERSEY EDITION.

2. BATTERY POWERED UNITS SHALL BE RATED FOR CONNECTED LOAD FOR 1.5 HOURS WITHOUT FALLING BELOW 87.5% OF APPLIED VOLTAGE.

3. THE CONTRACTOR SHALL ARRANGE WITH THE SUPPLIER TO VERIFY THE ARRANGE-MENT SHOWN WILL PROVIDE THE ILLUMINATION REQUIRED BY THE NEC. THE SUPPLIER SHALL HAVE THE MANUFACTURER SUBMIT PHOTOMETRIC DRAWINGS TO DEMONSTRATE THAT AT LEAST 1 FOOTCANDLE AVERAGE, AND 0.1 FOOTCANDLE MINIMUM, ALONG THE ENTIRE EGRESS PATH IS BEING PROVIDED.

4. BATTERY POWERED UNITS WITHOUT HEADS, IF FURNISHED, SALL BE INSTALLED IN NON-PUBLIC ROOMS.

5. CONNECT REMOTE Y2 FIXTURES TO NEAREST AVAILABLE BATTERY POWERED UNIT.

6. FURNISH REMOTE Y3 DUAL HEAD FIXTURE AT EXTERIOR OF EVERY BUILDING EXIT.

7. FURNISH BATTERY POWERED DUAL HEAD EMERGENCY LIGHTING FIXTURE IN EACH TOILET ROOM.

8. PROVIDE LOW VOLTAGE WIRING WITH VOLTAGE DROPS AS RECOMMENDED BY THE MANUFACTURER.

9. CONNECT ALL BATTERY POWERED UNITS TO UNSWITCHED SIDE OF NORMAL LIGHTING CIRCUIT.

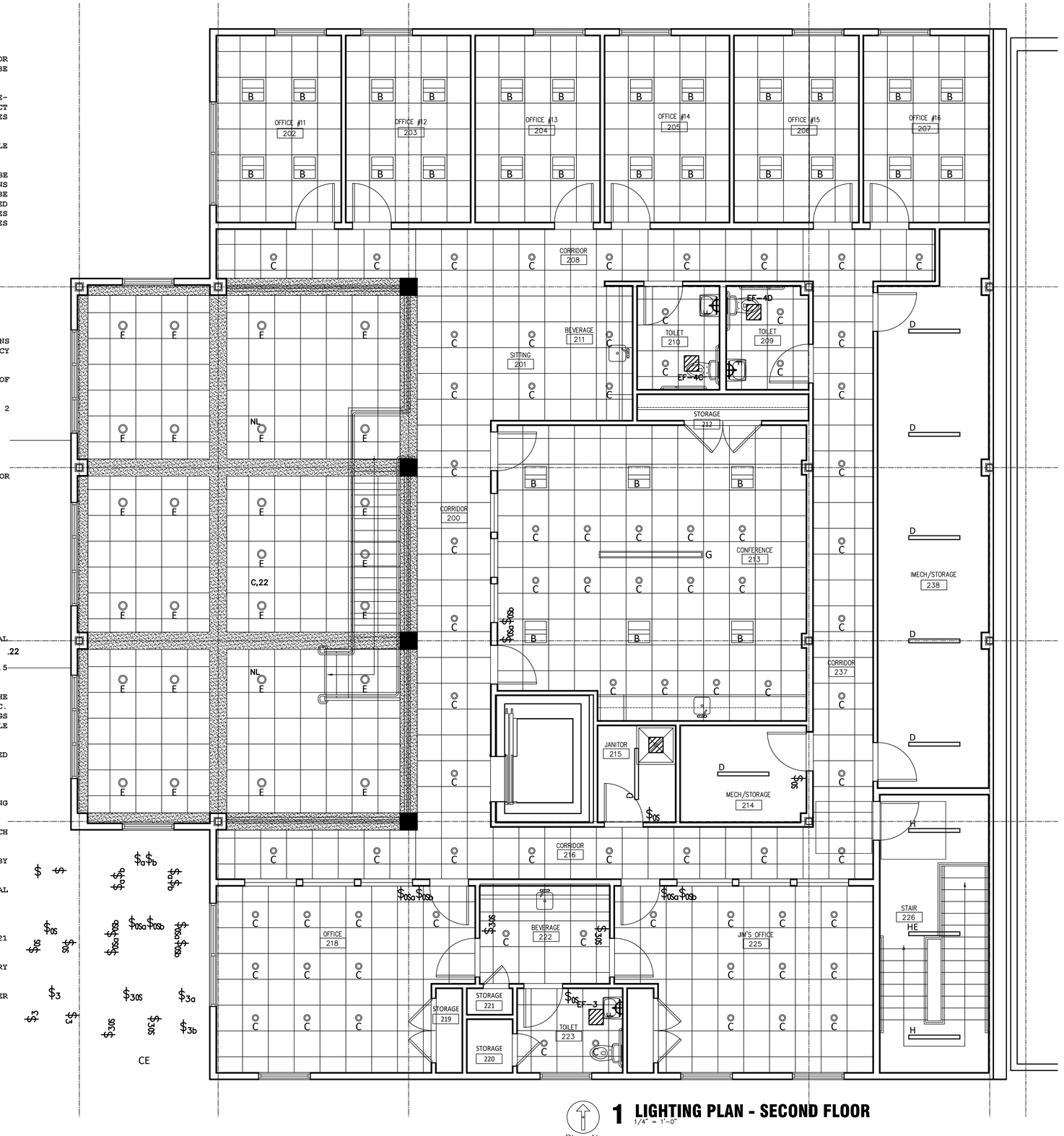
ILLUMINATED SIGNAGE SPECIFICATIONS

1. FURNISH ILLUMINATED EXIT SIGNS IN ACCORDANCE WITH 2021 INTERNATIONAL BUILDING CODE – NEW JERSEY EDITION.

2. SIGNS SHALL BE FURNISHED WITH LED LAMPS AND BACKUP BATTERY OPERATION FOR 90 MINUTES.

3. SIGNS AT EXTERIOR DOORS SHALL BE FURNISHED WITH CAPABILITY TO POWER TWO EXTERIOR REMOTE HEADS.

4. CONNECT EXIT SIGNS TO UNSWITCHED SIDE OF NORMAL LIGHTING CIRCUIT.



1 LIGHTING PLAN - SECOND FLOOR
1/4" = 1'-0"

Plan N.

RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN

1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9804 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:

Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:

Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester County NJ 08094

REVISIONS:

7/14/2021 - Progress Set
9/03/2024 - Progress Set

SHEET TITLE:

LIGHTING PLAN
SECOND FLOOR

DRAWN BY:	CSO
CHECKED BY:	CSO
SCALE:	
DATE:	9-03-2024
PROJECT NUMBER:	24F04

DRAWING NUMBER:

E-2L

PROGRESS ISSUE 09-30-24

POWER SPECIFICATIONS

1. ELECTRICAL EQUIPMENT LOCATED OUTDOORS SHALL BE WEATHERPROOF, NEMA 3R.

2. FURNISH DISCONNECT SWITCH FOR ANY EQUIPMENT NOT WITHIN SIGHT OF OR MORE THAN 25-FEET AWAY FROM ITS CONNECTING PANELBOARD, OR ATTIC OR BASEMENT ACCESS TO DE-ENERGIZE ALL FURNACES.

3. RECEPTACLES SHALL BE DUPLEX, COMMERCIAL GRADE. FURNISHED ADJACENT TO MAJOR HVAC EQUIPMENT FOR MAINTENANCE, FOR EVERY ROOM, CORRIDOR, OR ONE MINIMUM TO ANY OTHER SPACE OR ROOM. WIRE NO MORE THAN EIGHT (8) TO ANY ONE BRANCH CIRCUIT.

4. GFCI PROTECTION SHALL BE FURNISHED WITHIN 6 FEET OF A SINK OR SIMILAR POTENTIAL WET FLOOR AREAS, ALL COMMERCIAL 120V KITCHEN RECEPTACLES, COMMERCIAL GARAGE BAYS, AUTMOTIVE VACUUM MACHINES, DRINKING WATER COOLERS AND BOTTLE FILLING STATIONS, CORD-AND-PLUG HIGH PRESSURE SPRAY WASHING MACHINES, TIRE INFLATION MACHINES, VENDING MACHINES, SUMP PUMPS, AND DISWASHERS.

5. AT LEAST 50% OF RECEPTACLES IN OFFICES; CONFERENCE, BREAK, PRINTING OR CLASS ROOMS; AND INDIVIDUAL WORKSTATIONS SHALL BE CONTROLLED BY A TIME-OF-DAY TIMER OR OCCUPANCY SENSOR.

6. FURNISH NEMA STARTER FOR EVERY MOTOR LARGER THAN 1-HP. REFER TO http://www.emsco.net/starter-sizing.htm FOR HEATER PACK REQUIRED.

WIRING SPECIFICATIONS

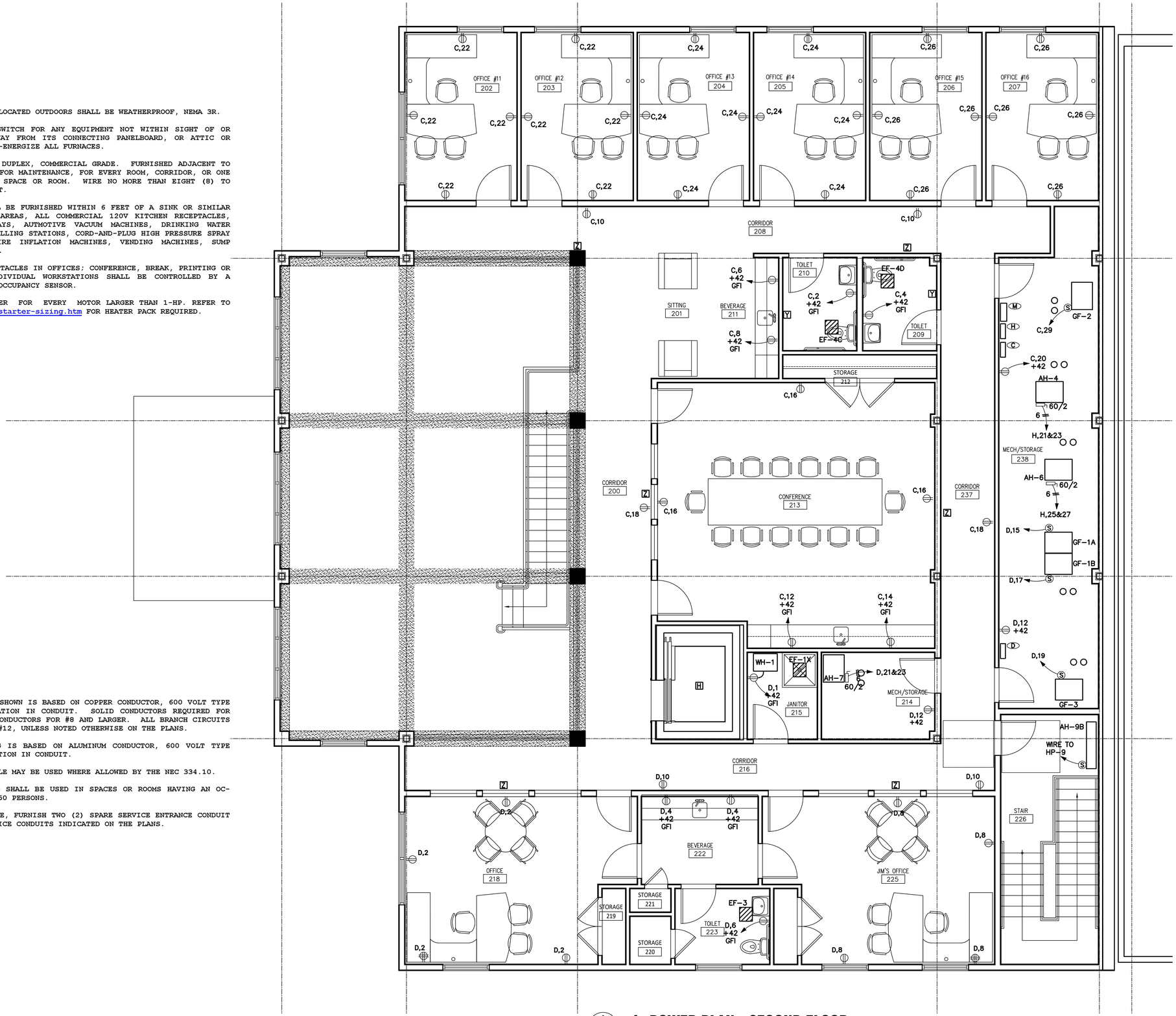
1. BRANCH WIRING SIZING SHOWN IS BASED ON COPPER CONDUCTOR, 600 VOLT TYPE THW/ THHN/THWN INSULATION IN CONDUIT. SOLID CONDUCTORS REQUIRED FOR #10 & #12; STRANDED CONDUCTORS FOR #8 AND LARGER. ALL BRANCH CIRCUITS AND FEEDERS SHALL BE #12, UNLESS NOTED OTHERWISE ON THE PLANS.

2. FEEDER WIRING SIZING IS BASED ON ALUMINUM CONDUCTOR, 600 VOLT TYPE THW/ THHN/THWN INSULATION IN CONDUIT.

3. TYPE "AC" OR "MC" CABLE MAY BE USED WHERE ALLOWED BY THE NEC 334.10.

4. TYPE AC OR MC WIRING SHALL BE USED IN SPACES OR ROOMS HAVING AN OCCUPANCY OF MORE THAN 50 PERSONS.

5. UNLESS NOTED OTHERWISE, FURNISH TWO (2) SPARE SERVICE ENTRANCE CONDUIT OF SIZE EQUAL TO SERVICE CONDUITS INDICATED ON THE PLANS.



Plan N.

1 POWER PLAN - SECOND FLOOR
1/4" = 1'-0"

RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN

1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9804 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:

Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:

Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester County NJ 08094

REVISIONS:

7/14/2021 - Progress Set
9/03/2024 - Progress Set

SHEET TITLE:

POWER PLAN
SECOND FLOOR

DRAWN BY:	CSO
CHECKED BY:	CSO
SCALE:	
DATE:	9-03-2024
PROJECT NUMBER:	24F04

DRAWING NUMBER:

E-2P

PROGRESS ISSUE 09-30-24

LOAD ANALYSIS SPECIFICATIONS

1. FEEDER, SERVICE AND DISTRIBUTION EQUIPMENT AMPACITY RATINGS SHALL MEET THE COMPUTED LOADS INDICATED IN THE ANALYSIS BELOW.

LOAD ANALYSIS

1. THE COMPUTED LOAD OF NEW EQUIPMENT IS AS FOLLOWS:

PNL	(1)(3) HVAC	LITES	(2) RCPTS	EQMT	TOTAL WATTS	VOLTS	PH	CONN AMPS	COMP AMPS
A	5828		7740	24328	37896	208	3	105	109
B	3000		7380	4428	14808	208	3	41	43
C	1100		6840		7940	208	3	22	23
D	9428		3060	84	12572	208	3	35	41
H	36857				36857	208	3	102	128
M						208	3	0	324
S/T	56213	0	25020	28840					
DF	1.25	1.25	0.70	1.00					
COMP	70266	0	17510	28840					

NOTES
(1) COOLING LOAD CHOOSEN OVER SMALLER HEATING LOAD, WITH MISCELLANEOUS VENTILATION LOADS ADDED.
(2) RECEPTACLE DF PER NEC TABLE 220-13: 1.00 FOR 1ST 10-KW PLUS 50% OF REMAINDER IN EXCESS OF 10-KW.
(3) LARGEST MOTOR IS 5-HP COMPRESSOR IN HEAT PUMP.

SHORT CIRCUIT SPECIFICATIONS

1. OBTAIN LETTER FROM THE ELECTRIC UTILITY ATTESTING TO THE AVAILABLE FAULT CURRENT OF THE NEW OR EXISTING TRANSFORMER.

2. FURNISH SERVICE ENTRANCE AND DISTRIBUTION EQUIPMENT WITH AN AMPERE INTERRUPTING CURRENT (AIC) RATING AT LEAST 20% GREATER THAN THE CALCULATED VALUES SHOWN IN THE SHORT CIRCUIT CALCULATIONS. IF THE UTILITY COMPANY LETTER JUSTIFIES AN AIC REDUCTION, COORDINATE THIS REDUCTION WITH THE ENGINEER AS REQD.

3. SERVICE EQUIPMENT IN OTHER THAN DWELLING UNITS SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM AVAILABLE FAULT CURRENT. THE FIELD MARKING(S) SHALL INCLUDE THE DATE THE FAULT CURRENT CALCULATION WAS PERFORMED AND BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED.

SHORT CIRCUIT CALCULATIONS

1. POINT-TO-POINT SHORT CIRCUIT CALCULATIONS BASED ON 2005 "ELECTRICAL PROTECTION HANDBOOK" OF THE BUSSMAN DIVISION, McGRAW EDISON COMPANY, ST. LOUIS, MO.

2. REFER TO ONE-LINE DIAGRAM FOR FAULT LOCATIONS.

3. THE WORST CASE LINE-TO-LINE SHORT CONDITION IS CALCULATED.

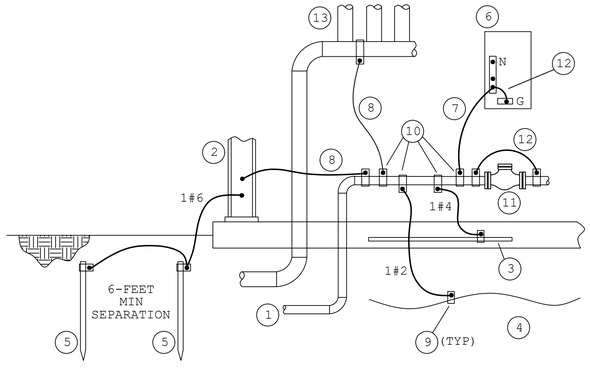
4. SUMMARY OF FAULT CALCULATIONS IS AS FOLLOWS:

FAULT	TYPE	Vp	E(L-L) or Vs	XFMR KVA	% Z	PH A	FT L	CM C	QTY n	I(SCA)
1	XFMR	XFMR	208	150	1.07					38912
2	LINE	PNL-M	208			3	100	10600	2	15390
3	LINE	PNL-A	208			3	38	3750	1	6695
4	LINE	PNL-B	208			3	18	3750	1	9529
5	LINE	PNL-C	208			3	8	3750	1	12086
6	LINE	PNL-D	208			3	39	3750	1	6597
7	LINE	PNL-H	208			3	4	10600	1	14680

EC SHALL DOCUMENT WHICH MEANS OF GROUNDING HAS BEEN INSTALLED FOR THIS INSTALLATION AS PRESCRIBED BY NEC 250.50 (1) THRU (8) AS FOLLOWS:

1) UNDERGROUND METAL WATER PIPE: YES ___ NO ___
2) BUILDING METAL FRAME: YES ___ NO ___
3) CONCRETE ENCASED ELECTRODE: YES ___ NO ___
4) GROUNDING RING: YES ___ NO ___
5) ROD OR PIPE ELECTRODES: YES ___ NO ___
6) OTHER LISTED ELECTRODES: YES ___ NO ___
7) PLATE ELECTRODES: YES ___ NO ___
8) OTHER LOCAL METAL UNDERGROUND SYSTEMS OR STRUCTURES: YES ___ NO ___

WHERE (1), (2) OR (3) ABOVE DO NOT EXIST, ONE OR MORE OF ITEMS (4) THRU (8) SHALL BE INSTALLED AND USED.



NEC TABLE 250.66

SERVICE CONDUCTOR SIZE	AWG SIZE OF GROUNDING ELECTRODE CONDUCTOR
UP TO 2/0	8
1 OR 1/0	6
2/0 OR 3/0	4
3/0 THRU 350	2
400 THRU 600	1/0
700 THRU 1100	2/0
OVER 1100	3/0

1 UNDERGROUND METAL WATER PIPE
2 BUILDING METAL FRAME
3 CONCRETE ENCASED ELECTRODE #4 BARE CU OR 1/2" REBAR 20' MIN,
4 GROUNDING RING, #2 20'L
5 GROUND RODS 8'L X 5/8"DIA GALV STL
6 SERVICE EQUIPMENT
7 GROUNDING ELECTRODE CONDUCTOR PER TABLE 250.66
8 BONDING JUMPER PER TABLE 250.66
9 CONNECTION LISTED FOR PURPOSE
10 CONNECTION MADE WITHIN 5' OF WATER ENTRANCE
11 WATER METER
12 BONDING JUMPER
13 SPRINKLER RISER MANIFOLD (IF BUILDING IS SPRINKLERED)

N = NEUTRAL. G = GROUND. ALL CONDUCTOR SIZES ARE CU. ALUMINUM CONDUCTORS OF EQUIVALENT AMPACITY MAY BE SUBSTITUTED.

BONDING AND GROUNDING DETAIL

E-16250.50

ELECTRICAL SPECIFICATIONS

1. ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE 2020 NATIONAL ELECTRICAL CODE.

2. ALL ELECTRICAL MATERIALS AND EQUIPMENT FURNISHED FOR THIS PROJECT SHALL BE NEW AND APPROVED BY UL.

3. OBTAIN ALL NECESSARY PERMITS, INSPECTIONS, LICENSES AND PAY ALL FEES.

4. SUBMIT CERTIFICATES OF INSPECTION FOR THE ELECTRICAL INSTALLATION FROM AN APPROVED INSPECTION AGENCY UPON COMPLETION OF WORK.

5. TEST THE ENTIRE ELECTRICAL SYSTEM FOR PROPER GROUNDING AND OPERATION. TESTS SHALL VERIFY THAT THE SYSTEM HAS NO SHORT CIRCUITS, OPENS, OVERLOADS, OR PANEL IMBALANCES.

6. PRIOR TO FINAL ACCEPTANCE OF THE ELECTRICAL WORK, SUBMIT A WRITTEN STATEMENT TO THE OWNER GUARANTEEING ALL EQUIPMENT, MATERIALS, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE PROJECT. UPON WRITTEN NOTICE TO THE ELECTRICAL CONTRACTOR DURING THE WARRANTY PERIOD THE ELECTRICAL CONTRACTOR SHALL AT NO EXPENSE TO THE OWNER REPAIR OR REPLACE ALL DEFECTIVE MATERIALS OR WORKMANSHIP.

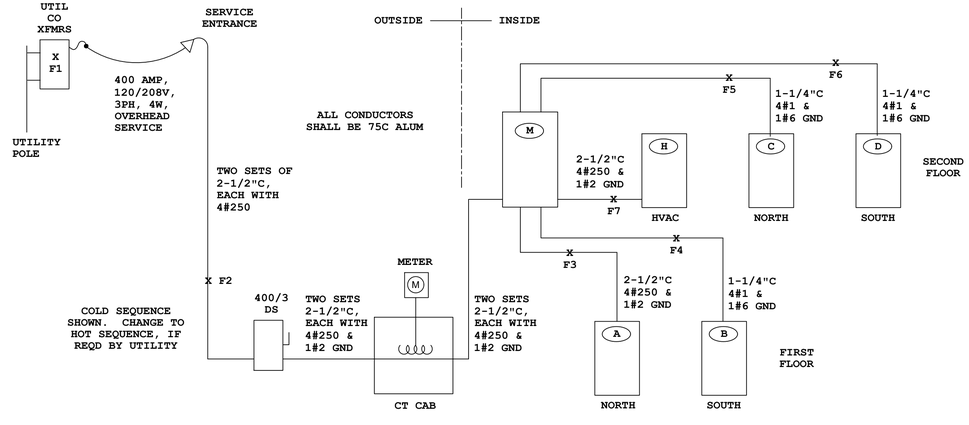
7. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC WITH ALL FIXTURES, DEVICES, ETC., SHOWN IN SYMBOL FORM. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT LOCATIONS AND CONSTRUCTION FEATURES PRIOR TO ROUGHIN OF THE ELECTRICAL WIRING SYSTEM.

8. THE ELECTRICAL CONTRACTOR SHALL SECURE FROM OTHER CONTRACTORS ON THE PROJECT SHOP DRAWINGS TO VERIFY CHARACTERISTICS OF ALL EQUIPMENT TO BE WIRED. IF THE ELECTRICAL CONTRACTOR FINDS DISCREPANCIES BETWEEN THE SHOP DRAWINGS AND THE ELECTRICAL PLANS, THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER PROMPTLY. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THIS DRAWING REVIEW PRIOR TO ANY ROUGHIN WORK AND SHALL BE RESPONSIBLE FOR CORRECTIONS TO THE ELECTRICAL INSTALLATION IF THE DRAWING REVIEW IS NOT COMPLETED BY THE ELECTRICAL CONTRACTOR.

9. PROPERLY TERMINATE ELECTRICAL CIRCUITS WITH MECHANICAL AND FIRE PROTECTION SYSTEMS AND EQUIPMENT FURNISHED BY OTHER TRADES.

ELECTRICAL EQUIPMENT SCHEDULE

CT-1, CURRENT TRANSFORMER CABINET, NEMA 3R, PENN PANEL, 400-AMP.
DS-1, DISCONNECT SWITCH, NEMA 3R, 400-AMP, 3-POLE, 208-VOLT.



1 ONE-LINE DIAGRAM

RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN
1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9804 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:
Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:
Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester County NJ 08094

REVISIONS:
7/14/2021 - Progress Set
9/03/2024 - Progress Set

SHEET TITLE:
ONE-LINE & PANEL SCHEDULE

DRAWN BY:	CSO
CHECKED BY:	CSO
SCALE:	
DATE:	9-03-2024
PROJECT NUMBER:	24F04

DRAWING NUMBER:
E-3

PROGRESS ISSUE 09-30-24

PANEL NO.: A — VOLTAGE: 120/208
MAIN BREAKER: NONE AMPS — PHASE: 3
MAIN LUGS: 225 AMPS — WIRES: 4
AIC RATING: 22000 AMPS — LOCATION: MECH/STOR 120

CKT	DESCRIPTION	WATTS	CB	PH	CB	WATTS	DESCRIPTION	CKT
1		7133		A	20/1	360	IT 122 QUAD	2
3	ELEVATOR MACHINE	7133	100/3	B	20/1	360	IT 122 QUAD	4
5		7133		C	20/1	360	IT RCPTS	6
7	ELEVATOR CAB	400	20/1	A	20/1	1080	OFF 129 RCPTS	8
9	ELEV SUMP PMP SP-1	828	20/1	B	20/1	1080	OFF 128 RCPTS	10
11	COFFEE RCPT 116	1100	20/1	C	20/1	1080	OFF 127 RCPTS	12
13	REFRIG RCPT 116	600	20/1	A	20/1	1080	OFF 126 RCPTS	14
15				B	20/1	540	STOR RCPT	16
17				C	20/1	360	CORR RCPTS	18
19				A	20/1	1080	CONF 116 RCPTS	20
21				B	20/1	180	CONF 116 DED RCPT	22
23				C	20/1	180	CONF 116 DED RCPT	24
25				A				26
27				B				28
29				C				30
31				A				32
33				B				34
35				C				36
37				A				38
39		2914		B				40
AIR HANDLER AH-5		2914	35/2					
41		2914		C	20/1		LIGHTS	42
	TOTALS:	30156	WATTS			7740	WATTS	
TOTAL CONNECTED LOAD:		37896	WATTS					
TOTAL CONNECTED LOAD:		105	AMPS					

REMARKS: SEE LOAD ANALYSIS FOR COMPUTED LOAD
= PHOTOCELL ON/OFF WITH TIMER OFF OVERRIDE.

PANEL NO.: D — VOLTAGE: 120/208
MAIN BREAKER: NONE AMPS — PHASE: 3
MAIN LUGS: 100 AMPS — WIRES: 4
AIC RATING: 22000 AMPS — LOCATION: MECH/STOR 238

CKT	DESCRIPTION	WATTS	CB	PH	CB	WATTS	DESCRIPTION	CKT
1	WATER HEATER WH-1	84	20/1	A	20/1	900	OFF 218 RCPTS	2
3				B	20/1	360	BEV 222 RCPTS	4
5				C	20/1	180	TR 223 RCPT	6
7				A	20/1	900	JIMS OFF 225 RCPTS	8
9				B	20/1	360	CORR 216 RCPTS	10
11				C	20/1	360	MEH/STOR RCPT	12
13				A				14
15				B				16
17				C				18
19				A				20
21	GAS FURN GF-1A	1100	20/1	B				22
23	GAS FURN GF-1B	1100	20/1	C				24
25	GAS FURN GF-3	1400	20/1	A				26
27		2914		B				28
29	AIR HANDLER AH-7	2914	35/2	C				30
	TOTALS:	9512	WATTS			3060	WATTS	
TOTAL CONNECTED LOAD:		12572	WATTS					
TOTAL CONNECTED LOAD:		35	AMPS					

REMARKS: SEE LOAD ANALYSIS FOR COMPUTED LOAD
= PHOTOCELL ON/OFF WITH TIMER OFF OVERRIDE.

PANEL NO.: B — VOLTAGE: 120/208
MAIN BREAKER: NONE AMPS — PHASE: 3
MAIN LUGS: 100 AMPS — WIRES: 4
AIC RATING: 22000 AMPS — LOCATION: COPY 112

CKT	DESCRIPTION	WATTS	CB	PH	CB	WATTS	DESCRIPTION	CKT
1	COPIER 112	600	20/1	A	20/1	900	COPY 112 RCPTS	2
3	COFFEE 121 RCPT	1100	20/1	B	20/1	1080	BREAK 121 RCPTS	4
5	MICROWAVE 121 RCPT	1100	20/1	C	20/1	180	TR114 RCPT	6
7	SM REFRIG 121 RCPT	600	20/1	A	20/1	720	RECEPT 102 RCPTS	8
9	LG REFRIG 121 RCPT	828	20/1	B	20/1	180	RECEPTION DED RCPT	10
11	FIRE ALARM SYSTEM	200	20/1	C	20/1	540	LOBBY/VEST RCPTS	12
13				A	20/1	1080	OFF 105/106 RCPTS	14
15				B	20/1	1080	OFF 107/108 RCPTS	16
17				C	20/1	1080	OFF 109/110 RCPTS	18
19				A	20/1	180	OUTSIDE HVAC RCPT	20
21				B	20/1	360	CORR 104 RCPTS	22
23				C				24
25				A				26
27		1500		B				28
CAB HTR CH-10			20/2					
29		1500		C				30
	TOTALS:	7428	WATTS			7380	WATTS	
TOTAL CONNECTED LOAD:		14808	WATTS					
TOTAL CONNECTED LOAD:		41	AMPS					

REMARKS: SEE LOAD ANALYSIS FOR COMPUTED LOAD
= PHOTOCELL ON/OFF WITH TIMER OFF OVERRIDE.

PANEL NO.: H — VOLTAGE: 120/208
MAIN BREAKER: NONE AMPS — PHASE: 3
MAIN LUGS: 200 AMPS — WIRES: 4
AIC RATING: 22000 AMPS — LOCATION: MECH/STOR RM 238

CKT	DESCRIPTION	WATTS	CB	PH	CB	WATTS	DESCRIPTION	CKT
1		1286		A		857		2
COND UNIT CU-1A			45/2		35/2		HEAT PUMP HP-5	
3		1286		B		857		4
5		1286		C		857		6
COND UNIT CU-1B			45/2		35/2		HEAT PUMP HP-6	
7		1286		A		857		8
9		1286		B		857		10
COND UNIT CU-2			45/2		35/2		HEAT PUMP HP-7	
11		1286		C		857		12
13		1286		A		710		14
COND UNIT CU-3			45/2		20/2		HEAT PUMP HP-8	
15		1286		B		710		16
17		857		C		821		18
HEAT PUMP HP-4			35/2		20/2		HEAT PUMP HP-9	
19		857		A		821		20
21		5414		B				22
AIR HANDLER AH-4			60/2					
23		5414		C				24
25		2914		A				26
AIR HANDLER AH-6			20/2					
27		2914		B				28
29				C				30
31				A				32
33				B				34
35				C				36
37				A				38
39				B				40
41				C				42
	TOTALS:	28654	WATTS			8203	WATTS	
TOTAL CONNECTED LOAD:		36857	WATTS					
TOTAL CONNECTED LOAD:		102	AMPS					

REMARKS: SEE LOAD ANALYSIS FOR COMPUTED LOAD
= PHOTOCELL ON/OFF WITH TIMER OFF OVERRIDE.

PANEL NO.: C — VOLTAGE: 120/208
MAIN BREAKER: NONE AMPS — PHASE: 3
MAIN LUGS: 100 AMPS — WIRES: 4
AIC RATING: 22000 AMPS — LOCATION: MECH/STOR 238

CKT	DESCRIPTION	WATTS	CB	PH	CB	WATTS	DESCRIPTION	CKT
1	LIGHTS		20/1	A	20/1	180	TR210 RCPT	2
3				B	20/1	180	TR209 RCPT	4
5				C	20/1	180	BEV 211 DED RCPT	6
7				A	20/1	180	BEV 211 DED RCPT	8
9				B	20/1	360	CORR 210 RCPTS	10
11				C	20/1	180	CONF 213 DED RCPT	12
13				A	20/1	180	CONF 213 DED RCPT	14
15				B	20/1	540	CONF 213 RCPTS	16
17				C	20/1	360	CORR 200/237 RCPTS	18
19				A	20/1	180	MECH/STOR 238 RCPT	20
21				B	20/1	1440	OFF 202/203 RCPTS	22
23				C	20/1	1440	OFF 204/205 RCPTS	24
25				A	20/1	1440	OFF 206/207 RCPTS	26
27				B				28
29	GAS FURN GF-2	1100	20/1	C				30
	TOTALS:	1100	WATTS			6840	WATTS	
TOTAL CONNECTED LOAD:		7940	WATTS					
TOTAL CONNECTED LOAD:		22	AMPS					

REMARKS: SEE LOAD ANALYSIS FOR COMPUTED LOAD
= PHOTOCELL ON/OFF WITH TIMER OFF OVERRIDE.

PANEL NO.: M — VOLTAGE: 120/208
MAIN BREAKER: NONE AMPS — PHASE: 3
MAIN LUGS: 600 AMPS — WIRES: 4
AIC RATING: 65000 AMPS — LOCATION: MECH/STOR 238

CKT	DESCRIPTION	WATTS	CB	PH	CB	WATTS	DESCRIPTION	CKT
1		12632		A		4936		2
FEED TO PANEL A		12632	100/3	B	100/3	4936	FEED TO PANEL B	4
5		12632		C		4936		6
7		2647		A		4191		8
FEED TO PANEL C		2647	100/3	B	100/3	4191	FEED TO PANEL D	10
11		2647		C		4191		12
13		12286		A				14
FEED TO PANEL H		12286	300/3	B				16
17		12286		C				18
	TOTALS:	82693	WATTS			27380	WATTS	
TOTAL CONNECTED LOAD:		110073	WATTS					
TOTAL CONNECTED LOAD:		306	AMPS					

REMARKS: SEE LOAD ANALYSIS FOR COMPUTED LOAD

RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN
1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9804 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:

Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:

Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester County NJ 08094

REVISIONS:

7/14/2021 - Progress Set

9/03/2024 - Progress Set

SHEET TITLE:

PANEL SCHEDULES

DRAWN BY: CSO

CHECKED BY: CSO

SCALE:

DATE: 9-03-2024

PROJECT NUMBER: 24F04

DRAWING NUMBER:

E-4

PROGRESS ISSUE 09-30-24

GENERAL SPECIFICATIONS

1. EACH SUB-CONTRACTOR IS ENTITLED TO AND SHALL INSIST UPON RECEIVING THE COMPLETE SET OF PLANS FOR THE PROJECT INCLUDING AS A MINIMUM ALL OTHER DISCIPLINES, THE ARCHITECTURAL PLANS, AND SITE ENGINEERING PLANS.

2. EACH SUB-CONTRACTOR SHALL REVIEW THE ENTIRE PROJECT SET OF PLANS AND BECOME FAMILIAR WITH ALL ASPECTS OF THE PROJECT REQUIREMENTS. IF THE CONTRACTOR DOES NOT UNDERSTAND ANY PORTION OF THE INTENT OF THESE PLANS, QUESTIONS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER FOR EXPLANATION PRIOR TO SUBMITTING BIDS OR PROCEEDING WITH ANY WORK.

3. EXAMINE ALL DRAWINGS AND SPECIFICATIONS AND VISIT THE SITE OF THE WORK PRIOR TO BIDDING. IF THEY ARE FOUND TO BE AT VARIANCE WITH CODE REQUIREMENTS, THE CODE REQUIREMENTS SHALL TAKE PRECEDENCE AND ANY ADJUSTMENT NECESSARY SHALL BE INCLUDED BY THE CONTRACTOR AT NO EXTRA COST.

4. THE PLANS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW EVERY DETAIL IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL THE DETAILS OF THE EQUIPMENT. EACH SUB-CONTRACTOR IS EXPECTED TO FURNISH ALL DETAILS REQUIRED BY CODES OR RECOGNIZED BY STANDARD INDUSTRY PRACTICES. THE CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO BE ASSURED THAT THE EQUIPMENT SPECIFIED WILL FIT IN THE SPACE PROPOSED WITH ADEQUATE CLEARANCE FOR MAINTENANCE.

5. THESE PLANS ARE FOR THE PURPOSE OF OBTAINING BIDS AND PERMITS. IF MINOR DEVIATIONS ARE REQUIRED, THEY SHALL BE DOCUMENTED AS THE "AS-BUILT" PLANS AND SUBMITTED TO THE AHJ UPON REQUEST AND TO THE OWNER FOR HIS RECORDS.

6. EMAIL A PDF OR SUBMIT SIX (6) COPIES OF SHOP DRAWINGS OR CATALOG CUTS OF MAJOR EQUIPMENT REQUIRING ELECTRIC POWER OR STRUCTURAL SUPPORT FOR REVIEW AND APPROVAL BEFORE COMMITING TO PURCHASE.

7. SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS. THE CONTRACTOR AGREES THAT IF DEVIATIONS, DISCREPANCIES, OR CONFLICTS BETWEEN SUBMITTALS AND CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER SUBMITTALS ARE PROCESSED BY THE ENGINEER, THE CONTRACT DOCUMENTS SHALL CONTROL AND SHALL BE FOLLOWED. THE SUPPLIER, BY SUBMITTING, CERTIFIES THAT THE EQUIPMENT BEING PROPOSED IS PROPER FOR THE APPLICATION INTENDED AND THAT IT HAS THE PERFORMANCE CHARACTERISTICS CALLED FOR.

LABOR AND MATERIAL SPECIFICATIONS

1. PROVIDE ALL MATERIALS, LABOR, TOOLS, PERMITS, INSPECTIONS, LICENSES, FEES, WARRANTIES, SERVICE CONTRACTS, TRAINING OF PERSONNEL, AND INCIDENTALS NECESSARY TO INSTALL AND MAKE READY FOR THE OWNER'S USE COMPLETE SYSTEMS AS INDICATED ON THE PLANS.

2. SUBMIT TO AND OBTAIN APPROVAL FROM THE ARCHITECT FOR OPTIONAL COLORS AND STYLES AVAILABLE ON ALL MATERIALS, SUCH AS, HVAC DIFFUSERS, PLUMBING FAUCETS, AND ELECTRICAL FACEPLATES. DO NOT ORDER MATERIALS UNTIL THESE APPROVALS ARE RECEIVED.

3. ALL PRODUCTS SHALL BE NEW, FIRST-LINE QUALITY, OF GRADE AND TYPE SHOWN IN THE DRAWINGS AND SPECIFICATIONS.

4. ALL EQUIPMENT FURNISHED SHALL BARE THE SEAL OF A RECOGNIZED TESTING AGENCY AND SHALL MEET THE ASHRAE 90.1-2007 ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS.

5. ALL EQUIPMENT SHALL BE PROPERLY SUPPORTED FOR THE SIZE AND LOAD REQUIRED FROM EITHER THE FLOOR BY 6-INCH HIGH REINFORCED CONCRETE PADS DESIGNED, OR SUSPENDED FROM WALLS OR THE BUILDING FRAMING SYSTEM BY MSS SP-69 STEEL HANGER ASSEMBLIES. EACH CONTRACTOR SHALL ENSURE THEIR EQUIPMENT SUPPORTS AND THE IMPACT ON THE BUILDING STRUCTURE ARE DESIGNED AND APPROVED BY A LICENSED STRUCTURAL ENGINEER.

6. ALL EQUIPMENT, MATERIALS, AND ACCESSORIES SHALL BE NEATLY INSTALLED, BY COMPETENT TECHNICIANS OR MECHANICS USING PROPER TOOLS FOLLOWING THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

FIRE ALARM EQUIPMENT SCHEDULE

DEVICE SYMBOL	DESCRIPTION
1	CONTROL PANEL (EXISTING
2	MANUAL PULL STATION
C	CARBON MONOXIDE DETECTOR
P	PHOTOELECTRIC DETECTOR
Y	STROBE
Z	HORN/STROBE

FIRE ALARM SYSTEM SPECIFICATIONS

1. FURNISH SUPERVISORY AND NOTIFICATION DEVICES AS SHOWN ON THE PLANS. THE DEVICES SHALL BE COMPATIBLE WITH THE EXISTING FIRE ALARM SYSTEM.

2. CONNECT NEW DEVCES TO THE EXISTING FIRE ALARM SYSTEM.

3. ALL EQUIPMENT SHALL BE INSTALLING PER MANUFACTURERS INSTALLATION INSTRUCTIONS AND IN A FIRST-CLASS OPERATING CONDITION.

4. THE EQUIPMENT SHALL INCLUDE SUPERVISORY AND DEVICES COMPLYING WITH ADA & UL, AND ALL WIRING, CONNECTIONS TO DEVICES, OUTLET BOXES, JUNCTION BOXES, AND ALL NECESSARY MATERIALS AND LABOR TO EFFECT A COMPLETE OPERATING SYSTEM.

5. PROVIDE PDF INCLUDING CATALOG CUTS OF ALL EQUIPMENT AND DEVICES BEING FURNISHED AND INFORMATION ON CLEANING AND MAINTENANCE. CATALOG CUTS FOR EACH DEVICE SHALL INCLUDE INFORMATION ON CURRENT DRAW, QUANTITY OF CONSECUTIVE DEVICES ALLOWED ON EACH CIRCUIT, RECOMMENDED WIRING METHODS, AND UL LISTING REFERENCES.

6. FURNISH "AS-BUILT" DRAWINGS OF CIRCUITS INSTALLED, INCLUDING COLOR CODING AND WIRE TAG NOTATIONS, SPECIFIC INTERCONNECTION BETWEEN ALL EQUIPMENT AND WIRING/CONDUIT SIZE IN A POINT-TO-POINT SEQUENCE.

7. FURNISH COMPLETED "CERTIFICATE OF COMPLIANCE" FORM AS REQUIRED BY NFPA 72-2.2.2 DENOTING COMPLIANCE AND DEVIATIONS.

8. SUBMIT BATTERY SIZING CALCULATIONS TO AUTHORITY FOR REVIEW AND APPROVAL.

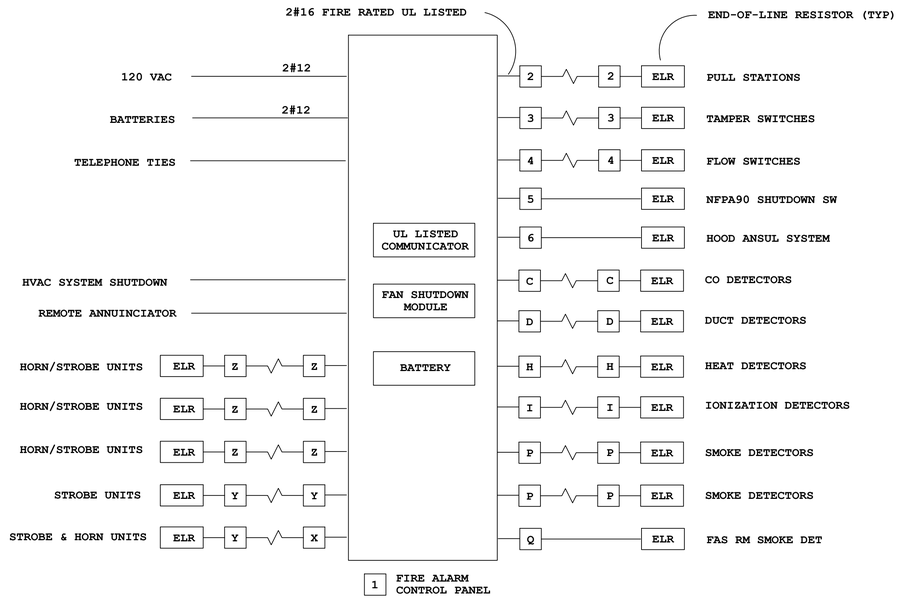
FIRE ALARM SYSTEM OPERATION

1. THE EXISTING FIRE ALARM PANEL PERFORMS A SUPERVISORY FUNCTION BY MONITORING ALL INPUTS FROM:
   A) AREA SMOKE DETECTORS
   B) PULL STATIONS

2. THE EXISTING FIRE ALARM PANEL PERFORMS A NOTIFICATION FUNCTION BY ALERTING OCCUPANTS AND AGENCIES USING:
   A) HORN AND STROBES IN PUBLIC AREAS
   B) STROBES IN PUBLIC TOILET ROOMS AND AT FIRE DEPARTMENT CONNECTION.
   C) A REMOTE ANNUNCIATOR
   D) A TELEPHONE DIALER TO ALERT THE MUNICIPALITY OR FIRE DEPARTMENT, THE OWNER, AND THE CENTRAL MONITORING AGENCY

3. THE EXISTING FIRE ALARM PANEL PERFORMS THE CONTROLLING FUNCTION OF THE SHUTTING-DOWN OF ALL HVAC FANS

4. A GLOBAL HVAC SYSTEM SHUTDOWN SHALL BE INITIATED FROM THE LOSS OF ANY ONE SMOKE DETECTOR.



Plan N.

1 EXISTING FIRE ALARM RISER DIAGRAM
N.T.S.

ELECTRICAL SYMBOLS LEGEND

A / C / NL / B,1	LIGHT FIXTURE: "A" = TYPE LISTED IN FIXTURE SCHEDULE, "B,1" = CIRCUIT NUMBER, LOWER CASE "c" = CONTROLLING SWITCH, NL = NITE LIGHT, DIAGONAL = SPLIT WIRED.
YA	EMERGENCY LIGHTING FIXTURE, BATTERY POWERED, WITH RESERVE FOR POWERING REMOTE FIXTURES (WITH OR WITHOUT HEADS)
Y2 / YA	REMOTE EMERGENCY LIGHTING FIXTURE, SINGLE OR DUAL HEAD. FURNISH 2#12 HOMERUN TO NEAREST BATTERY POWERED FIXTURE OR BATTERY POWERED FIXTURE INDICATED.
Z2	ILLUMINATED EXIT SIGN (WITH OR WITHOUT EMERGENCY LIGHTING HEADS). FURNISH LEFT AND/OR RIGHT ARROWS AS NEEDED. DUAL FACE SHOWN. Z1 = SINGLE FACE.
$ 3c	SWITCH, +48" AFF UNO. SUBSCRIPTS: NONE = SPDT, OS = OCCUPANCY SENSOR, 3 = 3-WAY, 4 = 4-WAY, D = 1800W DIMMER, T = TIME DELAY OFF, S = SPEED CONTROL, P = PILOT LIT. a,b,c, ETC = DEVICE OR FIXTURE CONTROLLED.
B,6	DUPLEX RECEPTACLE, +18" UNO. B,6 = CIRCUIT NUMBER
J	JUNCTION BOX
T	THERMOSTAT
S	SINGLE POLE DISCONNECT SWITCH, 1-HP, 120V.
XX/Y	DISCONNECT SWITCH, "XX" AMP, "Y" POLE. 30/2 UNO.
A	PANELBOARD OR LOAD CENTER, BOTTOM +42". A, B, C, etc, INDICATES PANEL ID NUMBER.
2/0	OVERHEAD WIRING/RACEWAY, CONCELAED (UNO). HASH MARKS = CONDUCTOR QUANTITY, NUMER = CONDUCTOR AWG; 2#12 UNO. ARROW INDICATES HOMERUN OR DEDICATED CIRCUIT.
*	EXISTING
GFI	GROUND FAULT INTERRUPTING
WP	WEATHERPROOF
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
AHJ	AUTHORITY HAVING JURSIDICTION
AFF	ABOVE FINISHED FLOOR
NIC	NOT IN CONTRACT
+42"	INDICATES MOUNTING HEIGHT
1	FIRE ALARM DEVICE: SEE FIRE ALARM SPECS FOR DEVICE NUMBER LEGEND

ELECTRICAL AS-BUILT DRAWINGS

1. THE ELECTRICAL CONTRACTOR SHALL DOCUMENT ANY ELECTRICAL INSTALLATION CHANGES AS WORK PROGRESSES BY MARKING UP THE ELECTRICAL PLANS.

2. PLAN MARKUPS SHALL INCLUDE THE FINAL LOCATION OF ALL LIGHTING FIXTURES, RECEPTACLES, MOTORS AND ALL EQUIPMENT WIRED.

3. DOCUMENT THE MANUFACTURER AND MODEL NUMBER OF ALL EQUIPMENT INSTALLED IF DIFFERENT FROM THAT SPECIFIED ON THE PLANS.

4. DOCUMENT THE CIRCUIT NUMBERS OF ALL DEVICES WIRED.

5. HAVE ALL MARKUPS DIGITALLY SCANNED AND CONVERTED INTO PDFS.

6. TURN OVER ALL DRAWING MARKUPS AND PDF FILES TO THE OWNER IMMEDIATELY AFTER COMPLETION OF THE WORK.

SUBSTITUTIONS

1. SUBSTITUTION OF THE EQUIPMENT OR MATERIALS SPECIFIED WILL BE CONSIDERED ONLY AFTER BIDDING ON THE BASE SPECIFICATIONS.

2. SUBSTITUTION OF SPECIFIED EQUIPMENT OR MATERIALS SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS, IF ANY. IN THE ABSENCE OF THESE DOCUMENTS, SUBSTITUTION OF SPECIFIED EQUIPMENT WITH INDUSTRY RECOGNIZED ALTERNATES IS PERMITTED, PROVIDED THE CAPACITY AND PERFORMANCE CHARACTERISTICS CALLED FOR ARE MAINTAINED.

3. THE COST FOR ANY RE-DESIGN OR COST IMPACT TO OTHER TRADES AS A RESULT OF THE SUBSTITUTION SHALL BE TO THE ACCOUNT OF THE CONTRACTOR MAKING THE SUBSTITUTION.

RUGGIERI & PARTNERS
ARCHITECTURE · PLANNING · INTERIOR DESIGN
1225 NORTH BROAD STREET SUITE 4
WEST DEPTFORD NJ 08096
t: 856.384.1225
e-mail: info@ruggieriandpartners.com
website: www.ruggieriandpartners.com

Opalek Engineering LLC
Mechanical and Electrical Consulting
152 Roberts Drive Somerdale NJ 08083
www.opalek.net e-mail: opalek@verizon.net
Tel: 856-346-9804 Fax: 856-346-9837
Charles Stuart Opalek, Professional Engineer NJ 20958
Certificate of Authorization No. 24GA28217300

CLIENT:

Allied Painting

4 Larwin Road
Cherry Hill, NJ 08034

PROJECT:

Proposed Warehouse Facility

2174 South Black Horse Pike
Block 3901, Lot 29
Monroe Township, Gloucester County NJ 08094

REVISIONS:
7/14/2021 - Progress Set
9/03/2024 - Progress Set

SHEET TITLE:

ELECTRICAL SPECIFICATIONS

DRAWN BY:	CSO
CHECKED BY:	CSO
SCALE:	
DATE:	9-03-2024
PROJECT NUMBER:	24F04

DRAWING NUMBER:

E-5

PROGRESS ISSUE 09-30-24