

DESIGNER / BUILDER

ARCO

DESIGN/BUILD

44 SOUTH BROADWAY, SUITE 1003
WHITE PLAINS, NY 10601

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PROJECT TITLE
**ROCKLAND
LOGISTICS
CENTER BLDG 1**

OWNER
BROOKFIELD PROPERTIES
1 MEADOWLANDS PLAZA, SUITE 802
EAST RUTHERFORD, NJ 07073

ARCHITECT
ADB / DESIGN SERVICES LLC
44 SOUTH BROADWAY, SUITE 1003
WHITE PLAINS, NY 10601

CIVIL ENGINEER
DYNAMIC ENGINEERING CONSULTANTS
1904 MAIN STREET
LAKE COMO, NJ 07719

STRUCTURAL ENGINEER
ADB STRUCTURAL ENGINEERING
325 S. ALABAMA ST., SUITE 200
INDIANAPOLIS, IN 46204

MECHANICAL ENGINEER
NATIONAL DESIGN BUILD SERVICES
11840 BORMAN DRIVE
MARYLAND HEIGHTS, MO 63146

ELECTRICAL ENGINEER
FXB ENGINEERING
5 CHRISTY DRIVE, SUITE 307
CHADDS FORD, PA 19317

PLUMBING ENGINEER
MCCARTHY ENGINEERING
2500 E HIGH STREET, SUITE 630
POTTSTOWN, PA 19464

FIRE PROTECTION ENGINEER
S.A. COMUNALE
2900 NEWPARK DRIVE
BARBERTON, OH 44203

KEY PLAN

The key plan shows a rectangular area defined by four points: 1 (top-left), 28 (top-right), A (bottom-left), and IV (bottom-right). A compass rose is located below the rectangle, with an arrow pointing towards the top-right corner, labeled 'N' for North.

SUBMITTALS

REV	Date	Description
A	01/12/2024	70% PROGRESS SET
B	02/02/2024	85% PROGRESS SET
C	02/09/2024	PERMIT SET

PROJECT NO. J23289	DRAWN BY AML
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SHEET TITLE

COVER SHEET

SHEET NO.

SPECIFICATIONS:

SECTION 1 – HVAC CRITERIA

1.0 GENERAL

- A. THESE DOCUMENTS ARE INTENDED TO PROVIDE ALL DRAWINGS, NOTATIONS, DETAILS, AND SCHEDULES NECESSARY FOR THE INSTALLATION OF A COMPLETE HVAC SYSTEM. THESE DOCUMENTS ARE PREPARED TO EXCLUDE ALL WORK NOT SPECIFICALLY INCLUDED IN THE SET.
- B. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY LABOR AND MATERIALS FOR A COMPLETE SYSTEM TO MEET THE INTENT OF THE DESIGN AND AS INDICATED IN THE DESIGN DOCUMENTS. ANY ACCESSORIES OR MATERIALS OBVIOUSLY A PART OF THE SYSTEM AND INTEGRAL IN ITS OPERATION, ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN, SHALL BE FURNISHED AND INSTALLED AS IF CALLED FOR IN DETAIL.
- C. THIS CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING COMPLETE AND OPERATING SYSTEMS. THIS CONTRACTOR ACKNOWLEDGES AND UNDERSTANDS THAT THE CONTRACT DOCUMENTS ARE A TWO-DIMENSIONAL REPRESENTATION OF A THREE-DIMENSIONAL OBJECT, SUBJECT TO HUMAN INTERPRETATION. THIS REPRESENTATION MAY INCLUDE IMPERFECT DATA, INTERPRETED CODES, UTILITY GUIDELINES, THREE-DIMENSIONAL CONFLICTS, AND REQUIRED FIELD COORDINATION ITEMS. SUCH DEFICIENCIES CAN BE CORRECTED WHEN IDENTIFIED PRIOR TO ORDERING MATERIAL AND STARTING INSTALLATION. THIS CONTRACTOR AGREES TO CAREFULLY STUDY AND COMPARE THE INDIVIDUAL CONTRACT DOCUMENTS AND REPORT AT ONCE IN WRITING TO THE DESIGN TEAM ANY DEFICIENCIES THIS CONTRACTOR MAY DISCOVER. THIS CONTRACTOR FURTHER AGREES TO REQUIRE EACH SUBCONTRACTOR TO THOROUGHLY STUDY THE DOCUMENTS AND REPORT AT ONCE ANY DEFICIENCIES DISCOVERED.
- D. ALL MATERIAL AND EQUIPMENT USED SHALL BE NEW AND FREE FROM DEFECTS.
- E. PROVIDE MECHANICAL SYSTEMS IDENTIFICATION TO INDICATE THE TAG, TYPE, FLOW, TEMPERATURE RANGE, CAPACITY, ETC. OF EACH ITEM OF EQUIPMENT AND ALL CONVEYANCES (DUCTWORK AND PIPING SYSTEM). ALL MAJOR EQUIPMENT SHALL BE PROVIDED WITH LAMINATED PLASTIC NAME PLATES IDENTIFYING THE EQUIPMENT WITH NOMENCLATURE CORRESPONDING TO THE MARKINGS ON THE DRAWINGS. LETTERING SHALL BE 1/2" HIGH. PROVIDE ADHESIVE BACKED PLASTICIZED MARKERS FOR DUCTWORK. PIPING IDENTIFICATION TO FOLLOW ASME 13 STANDARDS. LOCATE LABELING AND TAGGING TO AVOID PIPING SENSITIVE TO CORROSION. PROVIDE IDENTIFICATION BRASS OR LAMINATED PLASTIC VALVE TAGS WITH STAINLESS STEEL BALL CHAIN FASTENER. PROVIDE VALVE TAG SCHEDULE WITH CLOSURE DOCUMENTS.
- F. THIS CONTRACTOR SHALL PERFORM WORK IN A SAFE MANNER. COMPLY WITH ALL APPLICABLE OSHA SAFETY GUIDELINES IN ACCORDANCE WITH 29 CFR 1926 OSHA CONSTRUCTION INDUSTRY REGULATIONS DURING THE COURSE OF COMPLETING THE WORK DESCRIBED IN THESE DOCUMENTS.
- G. THIS CONTRACTOR SHALL KEEP AND MAINTAIN ON SITE A COPY OF ALL SAFETY DATA SHEETS FOR ALL PRODUCTS AND MATERIALS ON SITE WHICH COMPLY WITH THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELING OF CHEMICALS. THIS INCLUDES:
1. MAINTAINING A HAZARD COMMUNICATION PROGRAM DETAILING THE PLANS IN PLACE FOR THE SAFE HANDLING OF CHEMICALS
 2. MAINTAINING A WRITTEN CHEMICAL INVENTORY OF EVERY HAZARD CHEMICAL IN THE FACILITY TO WHICH EMPLOYEES ARE EXPOSED
 3. MAINTAINING PROPER LABELS AND WARNING SIGNS ASSOCIATED WITH SAID CHEMICALS
 4. TRAINING EMPLOYEES ON CHEMICAL HAZARDS AND NECESSARY PRECAUTIONS
- H. NO CHEMICALS MAY BE STORED IN ANY CONTAINERS OTHER THAN THE ORIGINAL MANUFACTURER'S CONTAINERS.
1. INSTALL ALL ITEMS PER THE MANUFACTURER'S INSTRUCTIONS AND PROVIDE PROPER ELECTRICAL AND MAINTENANCE CLEARANCES.

1.1 COORDINATION

- A. COORDINATE THE ROUTING OF ALL MECHANICAL SYSTEMS WITH THE OTHER TRADES TO AVOID CONFLICTS WITH DUCTS, PIPES, ETC. ITEMS REQUIRING PITCH MUST BE CONSIDERED FOR THEIR RIGHT-OF-WAY.
- B. GENERAL CONTRACTOR (G.C.) SHALL PROVIDE AND INSTALL ALL PRIMARY STRUCTURAL SUPPORT, UNIFORM LEVEL, FOR ALL FLOOR, CEILING, OR ROOF MOUNTED EQUIPMENT OR COMPONENTS AS DESIGNED BY ARCHITECT OR STRUCTURAL ENGINEER AND APPROVED BY THE JURISDICTION OF AUTHORITY.
- C. THIS CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES. ANY DISCREPANCIES SHALL BE RELAYED TO NDBS FOR COMMENT AND CORRECTIVE ACTION AS NEEDED.
- D. ALL LINTELS, FRAMING, FURRING, PATCHING, AND PAINTING REQUIRED WILL BE PROVIDED BY THE G.C.
- E. ALL GAS PIPING EXPOSED TO WEATHER SHALL BE PAINTED BY THE G.C.
- F. THE G.C. SHALL PROVIDE ALL PADS AS REQUIRED FOR THE INSTALLATION OF THE HVAC EQUIPMENT. PADS SHALL BE PROVIDED IN ACCORDANCE WITH THE STRUCTURAL ENGINEER'S DESIGN FOR SITE CONDITIONS, WEIGHT, SEISMIC AND WIND CONSIDERATIONS. HEIGHT OF THE PAD SHALL (FOR GRAVITY DRAIN EQUIPMENT) SHALL BE FIELD ADJUSTED BY G.C. BASED ON APPROVED EQUIPMENT SUBMITTALS.
- G. E.C. SHALL MOUNT AND WIRE/CONNECT ALL 460 volt and 120 volt COMPONENTS (RELAYS, FAN WIRING, HIGH LIMITS, SOLENOIDS, CONTROLLERS, ETC.) AND ALL OTHER ELECTRICAL COMPONENTS FURNISHED BY THIS CONTRACTOR. THIS CONTRACTOR IS RESPONSIBLE FOR ALL 24 VOLT THERMOSTAT WIRING.
- H. EQUIPMENT IS NOT INTENDED FOR TEMPORARY CONDITIONING UNLESS COORDINATED WITH NDBS AHEAD OF TIME. SHOULD NDBS APPROVE OF USE, FILTER AIR OPENINGS SHALL BE PROTECTED WITH FILTER MEDIA (MINIMUM MERV 8) WHILE EQUIPMENT IS OPERATED DURING CONSTRUCTION.

1.2 CONSTRUCTION

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|----|---|
| A. | ALL EQUIPMENT, PIPING SYSTEMS, AND DUCTWORK SUPPORTS SUSPENDED FROM ROOF JOISTS SHALL BE SUSPENDED FROM THE TOP CHORD OF THE JOIST UNLESS PRIOR APPROVAL FROM G.C. OR STRUCTURAL ENGINEER. |
| B. | PROVIDE DRAFT, PIPING AND HANGER PENETRATIONS THROUGH NON-RATED ENCLOSURES WITH DRAFT STOPPING OR SMOKE BARRIER INSTALLATIONS. INSTALL PENETRATION SEALANT SYSTEMS IN STRICT ACCORDANCE TO MANUFACTURER'S APPLICATION DETAILS AND INSTRUCTIONS. |
| C. | LOCATE AND PROVIDE SCHEDULE 40 STEEL SLEEVES AT ALL CONCRETE PENETRATIONS THROUGH WALLS AND FLOORS PRIOR TO CONCRETE BEING POURED. THIS SUBCONTRACTOR WILL BE RESPONSIBLE TO CORE DRILL ANY HOLE THAT IS NOT LOCATED PRIOR TO CONCRETE POURING IN WHICH CASE A SLEEVE IS NOT REQUIRED. CORE DRILL HOLE OR SLEEVE SHALL PROVIDE MINIMUM 1" CLEARANCE AROUND ENTIRE CIRCUMFERENCE OF PIPE. CALCUL ANKUR SPACE WATER TIGHT. PROVIDE A LINK SEAL AT ALL PENETRATIONS LOCATED BELOW GRADE. |
| D. | PROTECT ALL EQUIPMENT, PIPING AND DUCTWORK OPENINGS DURING CONSTRUCTION WITH PLASTIC OR OTHER NON-POROUS MATERIAL TO PREVENT DAMAGE TO EQUIPMENT, PIPING AND OTHER CONSTRUCTION DEBRIS. MATERIAL AND EQUIPMENT SHALL BE ELEVATED OFF FLOOR AND PROTECTED WHEN STORED ON SITE. |

1.3 ACTION SUBMITTALS

- A. PRODUCT DATA:
1. FOR ALL EQUIPMENT FURNISHED BY THIS CONTRACTOR
 - (1) SHOP DRAWINGS INCLUDING AT A MINIMUM: CAPACITIES, DIMENSIONS, WEIGHTS, ELECTRICAL REQUIREMENTS, FAN AND PUMP CURVES
 2. METAL DUCTS
 - (1) LINERS AND ADHESIVES
 - (2) SEALANTS AND GASKETS
 3. PIPING
 - (1) PIPING SPECIALTIES
 - (2) VALVES
 - (3) PRESSURE REGULATORS
 - (4) PIPING SPECIALTIES ITEMS\

1.4 INFORMATIONAL SUBMITTALS

- A. BRAZING AND WELDING CERTIFICATES
- B. FIELD QUALITY-CONTROL REPORTS

SECTION 2 - FIELD QUALITY CONTROL

2.0 GENERAL

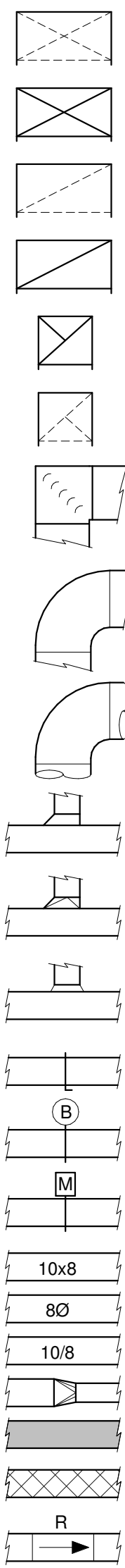
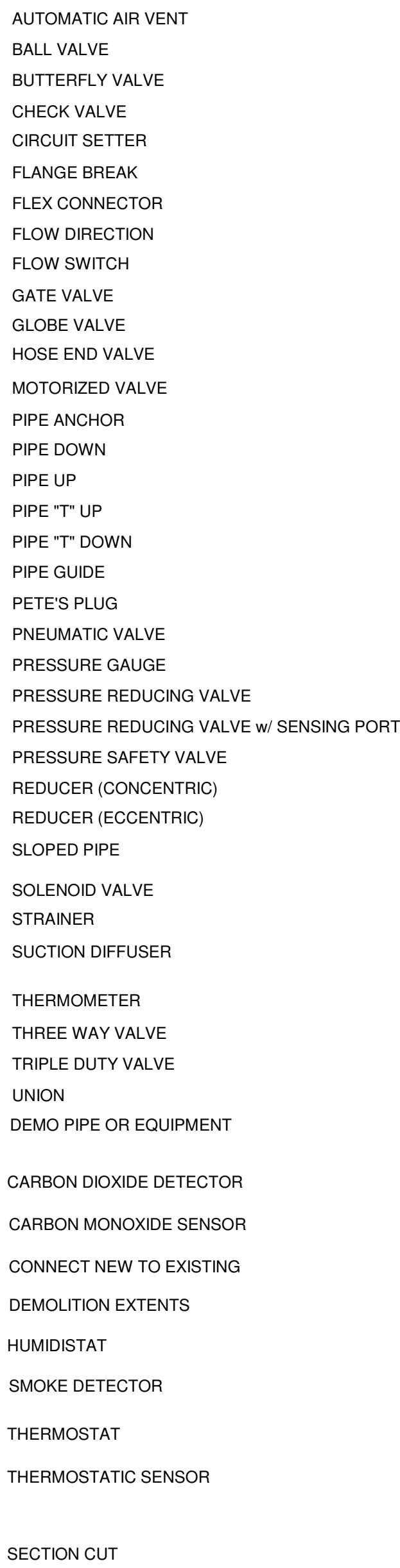
- A. EQUIPMENT THAT IS NOT INTENDED TO BE SUBJECT TO THE TEST PRESSURE SHALL BE ISOLATED FROM THE PIPING. IF A VALVE IS USED TO ISOLATE THE EQUIPMENT, IT SHALL BE CLOSED AND BLED OF SEASIDE WATER. THE TEST PRESSURE WITHOUT DAMAGE TO THE VALVE, FLANGED JOINTS AT WHICH BLINDS ARE INSERTED TO ISOLATE EQUIPMENT NEED NOT BE TESTED.
- C. PIPE PRESSURE TEST REPORTS ARE REQUIRED AS PART OF THE PROJECT CLOSE OUT DOCUMENTS AND ARE TO INCLUDE WITNESS SIGNATURES. A WRITTEN FIELD PRESSURE TEST DECLARATION SHALL BE PREPARED DOCUMENTING THE FIELD TEST PROCEDURE AS REQUIRED BY APPLICABLE CODE AND PROVIDE TO NDBS AND THE BUILDING INSPECTOR PRIOR TO FINAL APPROVAL.
- D. DURING PRESSURE TESTING, VERIFY THAT STRESS DUE TO PRESSURE AT BOTTOM OF VERTICAL RISERS DOES NOT EXCEED 90% OF SPECIFIED MINIMUM YIELD STRENGTH OR 1.7 TIMES "SE" VALUE AS LISTED IN ASME B31.9.

SECTION 3 – EQUIPMENT TESTING AND START-UP

3.0 GENERAL

- A. SUBMITTALS SHALL BE COMPARED TO ALL INSTALLED EQUIPMENT AND VERIFICATION MADE THAT EACH DOCUMENT MATCHES THE FINAL INSTALLATION. THE FOLLOWING ITEMS SHALL BE SPECIFICALLY VERIFIED:
1. TAGGING OF EQUIPMENT AND MODEL NUMBER IS CONSISTENT WITH DOCUMENTS, SUBMITTALS AND NAMEPLATE DATA.
 2. PHYSICAL DIMENSIONS COINCIDE WITH INSTALLATION INCLUDING SERVICE CLEARANCES.
 3. SHIPPED LOOSE ACCESSORIES ARE PROPERLY INSTALLED.
- C. THIS CONTRACTOR SHALL FILL OUT ALL MANUFACTURER START-UP SHEETS AS A CLOSE OUT DOCUMENT

ABBREVIATIONS



SUPPLY AIR DOWN

SUPPLY AIR UP

RETURN AIR DOWN

RETURN AIR UP

EXHAUST AIR / OUTSIDE AIR UP

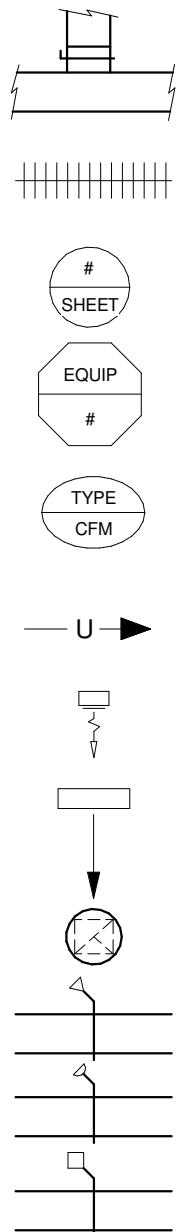
EXHAUST AIR / OUTSIDE AIR DN

RECTANGULAR VANED ELBOW

RECTANGULAR RADIUS ELBOW

ROUND ELBOW

SQUARE TO SQUARE 45° TAP



SPIN-IN FITTING WITH DAMPER
(SIDE OF DUCT)

ROUND FLEXIBLE DUCT

DETAIL REFERENCE TAG

EQUIPMENT TAG

DIFFUSER TAG

UNDERCUT DOOR

UNIT HEATER

CABINET UNIT HEATER

EXHAUST FAN

FIRE DAMPER

SMOKE DAMPER

FIRE / SMOKE DAMPER

CWS	CHILLED WATER SUPPLY
CWR	CHILLED WATER RETURN
CA	COMPRESSED AIR
CD	CONDENSATE DRAIN PIPING
CS	CONDENSER WATER SUPPLY
CR	CONDENSER WATER RETURN
FO	FUEL OIL
G	GAS PIPING
HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
HG	REFRIGERANT HOT GAS
LP	LIQUID PETROLEUM GAS
LPS	LOW PRESSURE STEAM
LPC	LOW PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
MPC	MEDIUM PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
HPC	HIGH PRESSURE CONDENSATE
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTON

NOTE: NOT ALL PIPING LINE TYPES, SYMBOLS, OR ABBREVIATIONS ARE UTILIZED ON EVERY PROJECT

PROJECT DESIGN CONDITIONS										
OUTDOOR DESIGN CONDITIONS	LOCATION		ZONE	SUMMER 1% (F DB / F WB)		WINTER 99% (F DB)		SEISMIC		WIND
	SUFFERN, NY		5A	89.5 / 73.4		12.8		DESIGN CAT	SITE CLASS	(MPH)
ENVELOPE CONDITIONS	AREA	LOWER WALL R-VALUE	UPPER WALL R-VALUE	ROOF R-VALUE	GLASS U-VALUE		GLASS SC	PARTITION U-VALUE		
	WAREHOUSE	1.5	13	20	0.5		N/A	N/A		
	UTILITY ROOMS	1.5	13	20	N/A		N/A	N/A		
APPLICABLE CODES	2020 BUILDING CODE OF NEW YORK STATE									
	2020 MECHANICAL CODE OF NEW YORK STATE									
	2020 ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE									
	2020 FUEL GAS CODE OF NEW YORK STATE									
LOAD ASSUMPTIONS										
ROOM DESIGN PARAMETERS	SPACE TYPE	COOLING	HEATING	PEOPLE		LIGHTING	MISC	OUTDOOR AIR		
		F / MAX RH	F / MIN RH	SOFT / PERSON	SENS. GAIN / PERSON (BTUH)	LATENT GAIN / PERSON (BTUH)	W / SOFT	W / SOFT	CFM / PERSON	CFM / SOFT
	WAREHOUSE	N/A	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	UTILITY ROOMS	N/A	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NOTES:										
1) INCLUDES ALL LOCAL CODES AND AMENDMENTS.										
2) LOWER WALL IS UNINSULATED FROM FINISHED FLOOR TO 13' ABOVE FINISHED FLOOR. UPPER WALL IS INSULATED WITH R-13 FROM 13' ABOVE FINISHED FLOOR TO BELOW METAL DECK.										

HVAC SHEET LIST			
SHEET NUMBER	SHEET NAME	CURRENT REVISION	CURRENT REVISION DESCRIPTION
M000	COVER SHEET	02/09/2024	PERMIT SET
M100	OVERALL FLOOR PLAN	02/09/2024	PERMIT SET
M200	OVERALL ROOF PLAN	02/09/2024	PERMIT SET
M300	ENLARGED FRAMING PLANS	02/09/2024	PERMIT SET
M400	SCHEDULES	02/09/2024	PERMIT SET
M500	DETAILS	02/09/2024	PERMIT SET

NOT FOR CONSTRUCTION

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