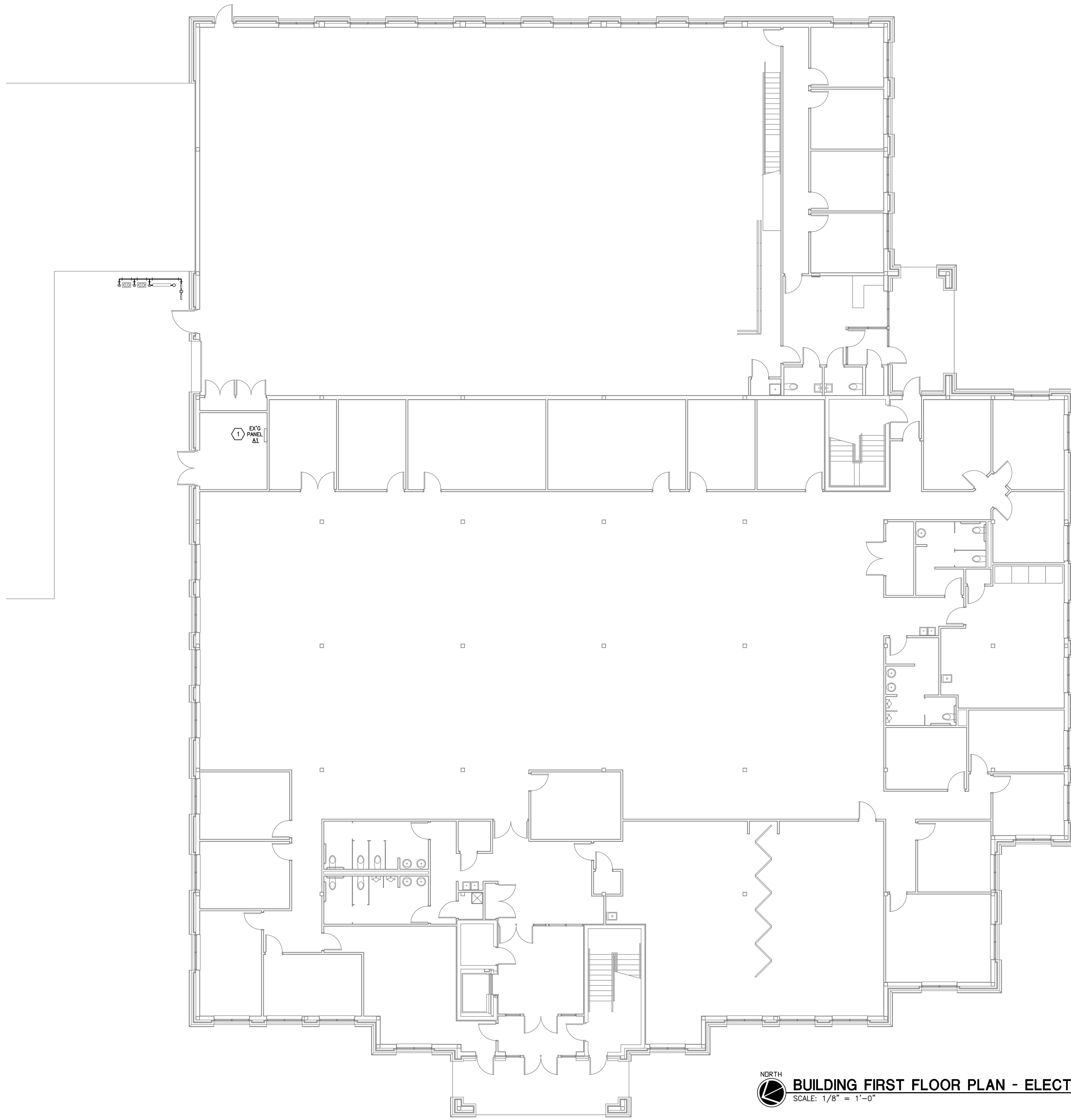

BUILDING FIRST FLOOR PLAN - ELECTRICAL

SCALE: 1/8" = 1'-0"

LOAD CALCS - PANEL A1

A LOAD STUDY WAS PERFORMED ON PANELBOARD A1 (277/480V, 3ϕ) TO CONFIRM CAPACITY FOR REPLACEMENT OF RTU ON THIS PANELBOARD (RTU REPLACEMENT ELECTRICAL LOAD IS LARGER).

THE FOLLOWING ARE THE CALCS:

PANEL A1 (600A MCB) PEAK DEMAND @ 480V:	124 AMPS
NEC FACTOR (x1.25%):	157 AMPS
CURRENT PEAK DEMAND @ 480V:	157 AMPS
EXISTING RTU #2 BEING REMOVED @ 480V:	146 AMPS (MCA)
NEW RTU #2 BEING INSTALLED @ 480V:	177 AMPS (MCA)
NET INCREASE @ 480V:	31 AMPS
NEW CALCULATED DEMAND @ 480V:	188 AMPS

WHICH IS LESS THAN THE 600A MAIN BREAKER CAPACITY.

CODED NOTES

1. EXISTING PANELBOARD TO REMAIN. REPLACE 175A/3P BREAKER FOR RTU#2 w/ NEW 200A/3P BREAKER TO FEED REPLACEMENT RTU #2 ON ROOF. NEW WIRING SHALL BE (4) #3/0 (CU) & (1) #6 (CU) GROUND IN 2" CONDUIT.

ELECTRICAL GENERAL NOTES

A. COORDINATE ALL WORK WITH OTHER TRADES.

B. FIELD VERIFY EXISTING CONDITIONS AS SHOWN ON DRAWINGS. ALL OBVIOUS WORK ITEMS REQUIRED FOR OPERABLE SYSTEMS SHALL BE INCLUDED EVEN IF NOT SPECIFICALLY SHOWN OR NOTED.

C. THIS CONTRACTOR SHALL FILE ALL DRAWINGS, PAY ALL FEES, AND OBTAIN ALL PERMITS AND CERTIFICATES OF INSPECTION RELATIVE TO ALL ELECTRICAL WORK.

D. THIS CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, TOOLS, TRANSPORTATION, INCIDENTALS AND APPURTENANCES TO COMPLETE IN EVERY DETAIL AND ALL ITEMS OF WORK SHOWN ON DRAWINGS.

E. ALL MATERIALS FURNISHED BY THIS CONTRACTOR SHALL BE NEW AND UNDETERIORATED AND OF A QUALITY NOT LESS THAN THE MINIMUM SPECIFIED. ALL MATERIALS, FIXTURES AND EQUIPMENT SHALL BE U.L. APPROVED AND LABELED.

F. CONTRACTOR TO PROVIDE ELECTRONICALLY, COPIES OF SHOP DRAWINGS OF ALL NEW EQUIPMENT TO ARCHITECT FOR REVIEW PRIOR TO PURCHASING.

G. ALL WORK SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, CODES AND ORDINANCES INCLUDING, BUT NOT LIMITED TO, THE NATIONAL ELECTRIC CODE, LIFE SAFETY CODE, STATE BUILDING CODE, OSHA, ADA, AND THE STATE ENERGY CODE.

H. THE DRAWINGS ARE SCHEMATIC AND SHOW APPROXIMATE LOCATIONS OF CONDUIT AND EQUIPMENT. EXACT LOCATIONS SHALL BE COORDINATED BY THE CONTRACTOR AND VERIFIED IN THE FIELD.

I. ALL WIRING SHALL BE INSTALLED IN CONDUIT. CONDUIT SHALL BE 'EMT' WHEN INSTALLED CONCEALED IN WALLS OR ABOVE CEILING OR EXPOSED ABOVE 8'-0" ABOVE THE FINISHED FLOOR. USE RIGID GALVANIZED CONDUIT WHEN EXPOSED BELOW 8'-0" ABOVE FINISHED FLOOR.

J. USE 'MC' CABLE ONLY IF APPROVED BY LOCAL CODE JURISDICTION FOR 20 AMP BRANCH CIRCUITS OF #10 OR #12 CONDUCTOR AND IN INTERIOR DRY LOCATIONS CONCEALED. DO NOT EXPOSE ANY 'MC' CABLE. INSTALLATION AND SUPPORT OF 'MC' CABLE SHALL BE PER CODE REQUIREMENTS.

K. ALL CONDUCTORS SHALL BE STRANDED AND OF AWG SIZE AS SHOWN ON DRAWINGS. WHERE NO SIZE OR TYPE IS SHOWN, CONDUCTORS SHALL NOT BE LESS THAN #12 TYPE THHN OR XHHW AND SHALL BE SIZED FOR THE OVERCURRENT DEVICE AMPERE RATING PER N.E.C. ARTICLE 310. ALL CONDUCTORS SHALL BE COPPER AND HAVE 600 VOLT 90 DEGREES C RATED INSULATION.

L. ALL SAFETY SWITCHES SHALL BE HEAVY DUTY TYPE WITH NUMBER OF POLES AS INDICATED. WHERE OUTSIDE THE SAFETY SWITCHES SHALL BE NEMA 3R. ALL SWITCHES SHALL BE LOCKABLE.

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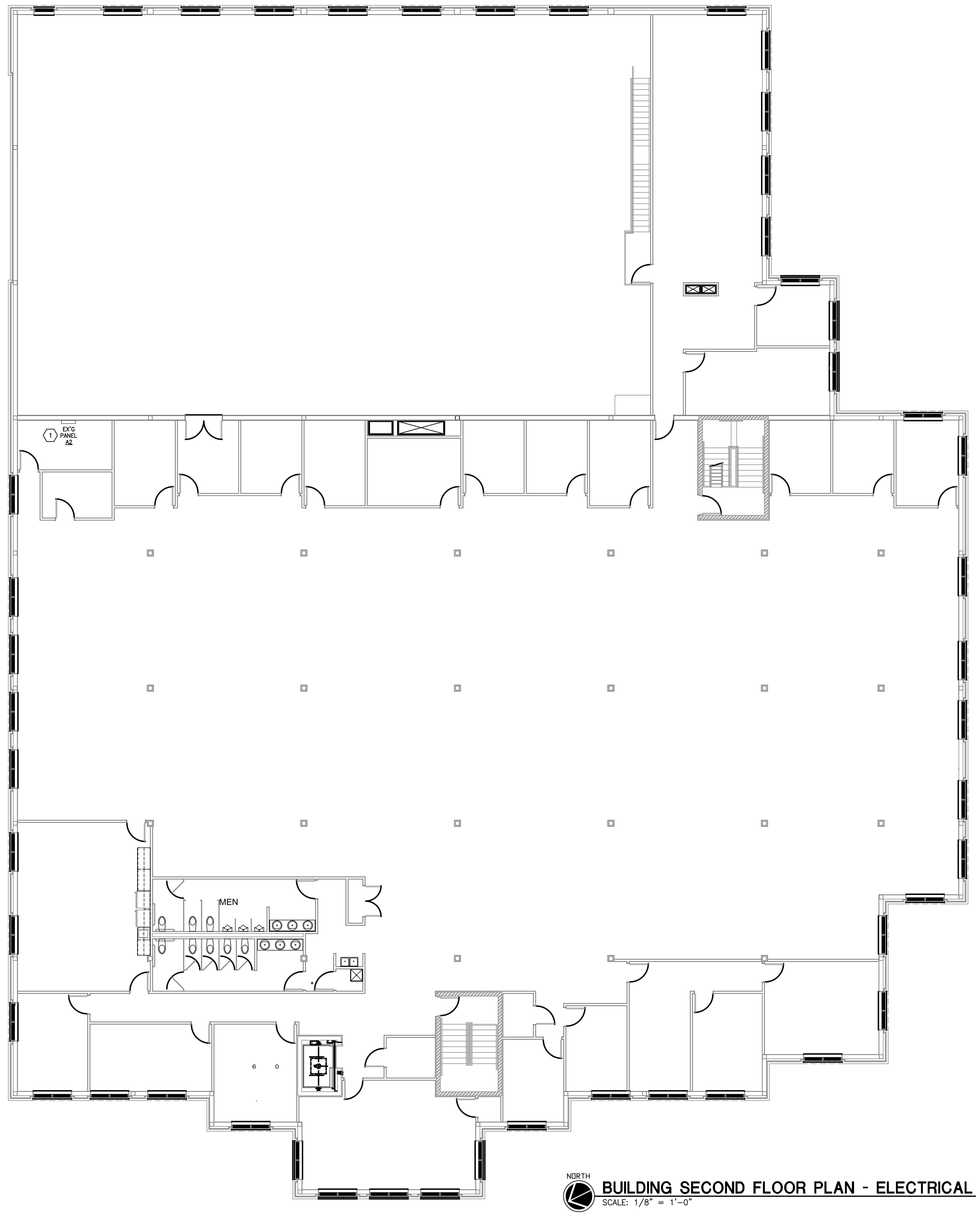

BUILDING SECOND FLOOR PLAN - ELECTRICAL

SCALE: 1/8" = 1'-0"

LOAD CALCS - PANEL A2

A LOAD STUDY WAS PERFORMED ON PANELBOARD A2 (277/480V, 3φ) TO CONFIRM CAPACITY FOR REPLACEMENT OF RTU ON THIS PANELBOARD (RTU REPLACEMENT ELECTRICAL LOAD IS LARGER).

THE FOLLOWING ARE THE CALCS:

PANEL A2 (600A MCB) PEAK DEMAND @ 480V:	145 AMPS
NEC FACTOR (x1.25%):	182 AMPS
CURRENT PEAK DEMAND @ 480V:	182 AMPS
EXISTING RTU #1 BEING REMOVED @ 480V:	146 AMPS (MCA)
NEW RTU #1 BEING INSTALLED @ 480V:	177 AMPS (MCA)
NET INCREASE @ 480V:	31 AMPS
NEW CALCULATED DEMAND @ 480V:	213 AMPS

WHICH IS LESS THAN THE 600A MAIN BREAKER CAPACITY.

CODED NOTES

1. EXISTING PANELBOARD TO REMAIN. REPLACE 175A/3P BREAKER FOR RTU#1 w/ NEW 200A/3P BREAKER TO FEED REPLACEMENT RTU #1 ON ROOF. NEW WIRING SHALL BE (4) #3/0 (CU) & (1) #6 (CU) GROUND IN 2" CONDUIT.

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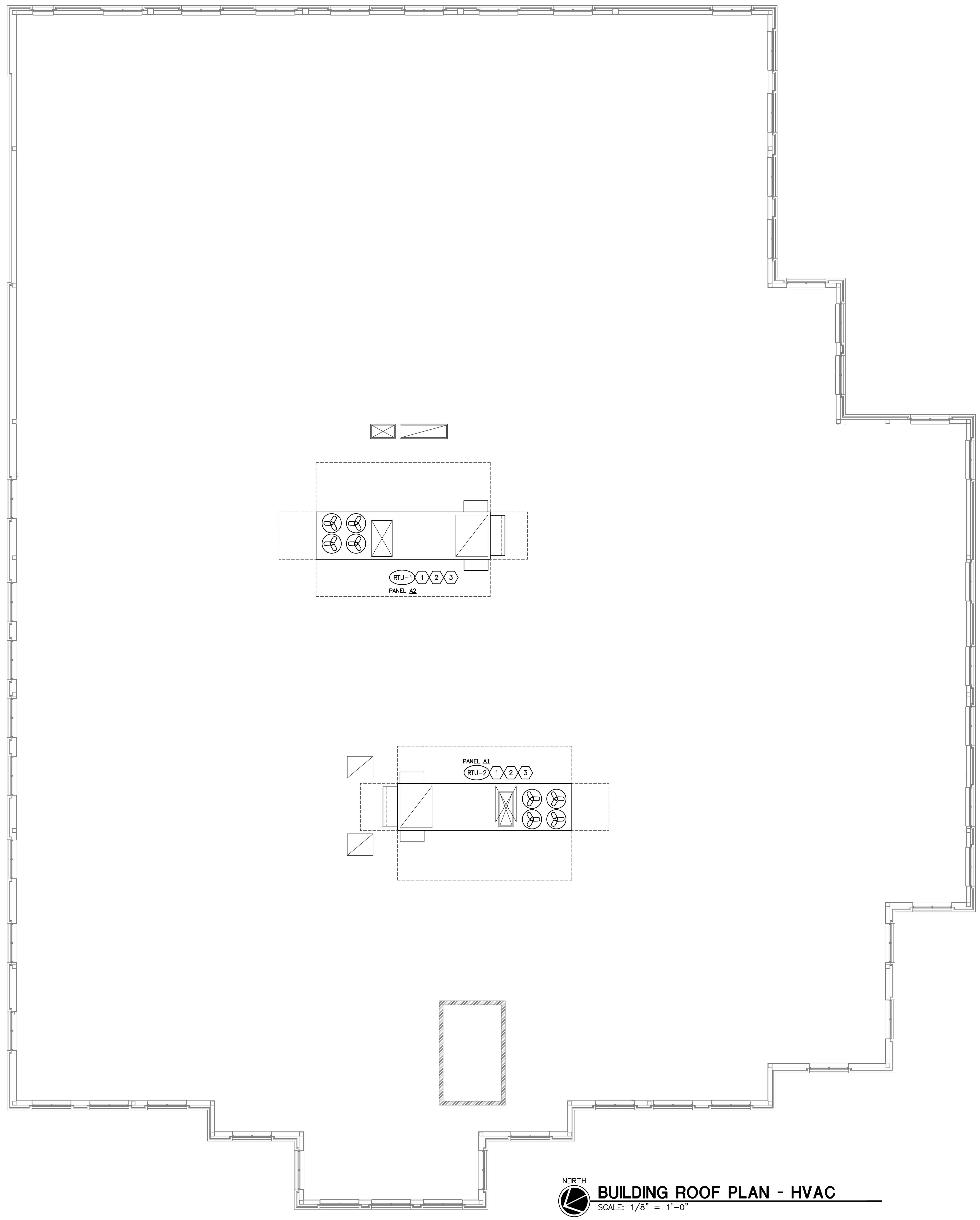

BUILDING ROOF PLAN - HVAC

SCALE: 1/8" = 1'-0"

CODED NOTES

1. EXISTING RTU TO BE REPLACED w/ NEW. IF UNIT DOES NOT HAVE INTERGRAL DISCONNECT, PROVIDE NEW NEMA 3R DISCONNECT. CIRCUIT TO NEW 200A/3P BREAKER IN REPSECTIVE PANELBOARD DENOTED (SOUREC FEED FOR UNIT BEING REPLACED).
2. RECONNECT/MOUNT ANY/ALL EXISTING SERVICE LIGHTING AND RECEPTACLES ASSOCIATED w/ REPLACEMENT UNIT. MAINTAIN EXISTING CIRCUITS.
3. RE-INSTALL/INSTALL NEW DUCT MOUNTED SMOKE DETECTORS FROM REPLACEMENT UNITS IN NEW/MODIFIED DUCTWORK. RECONNECT TO BUILDING ALARM SYSTEM.

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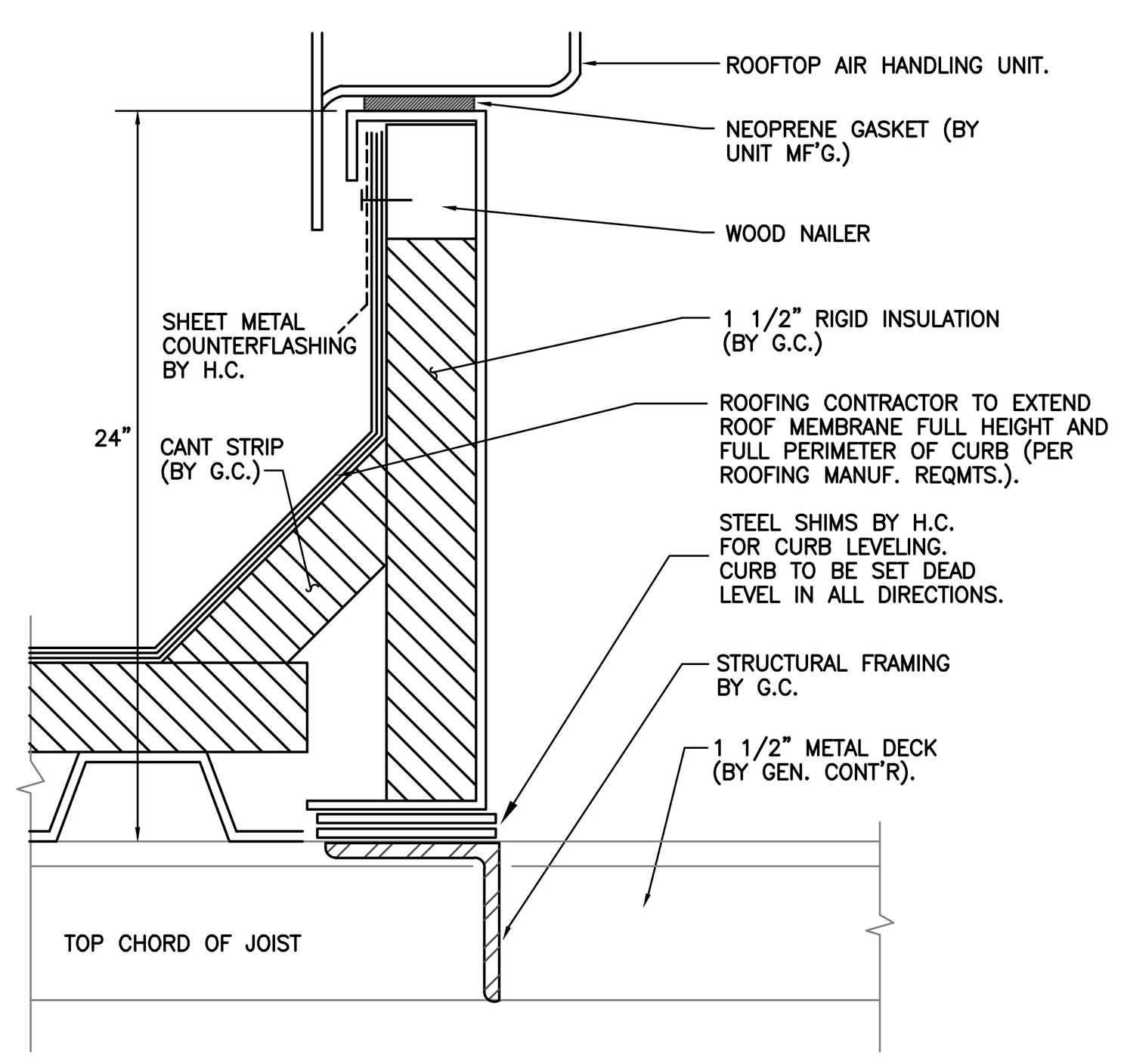
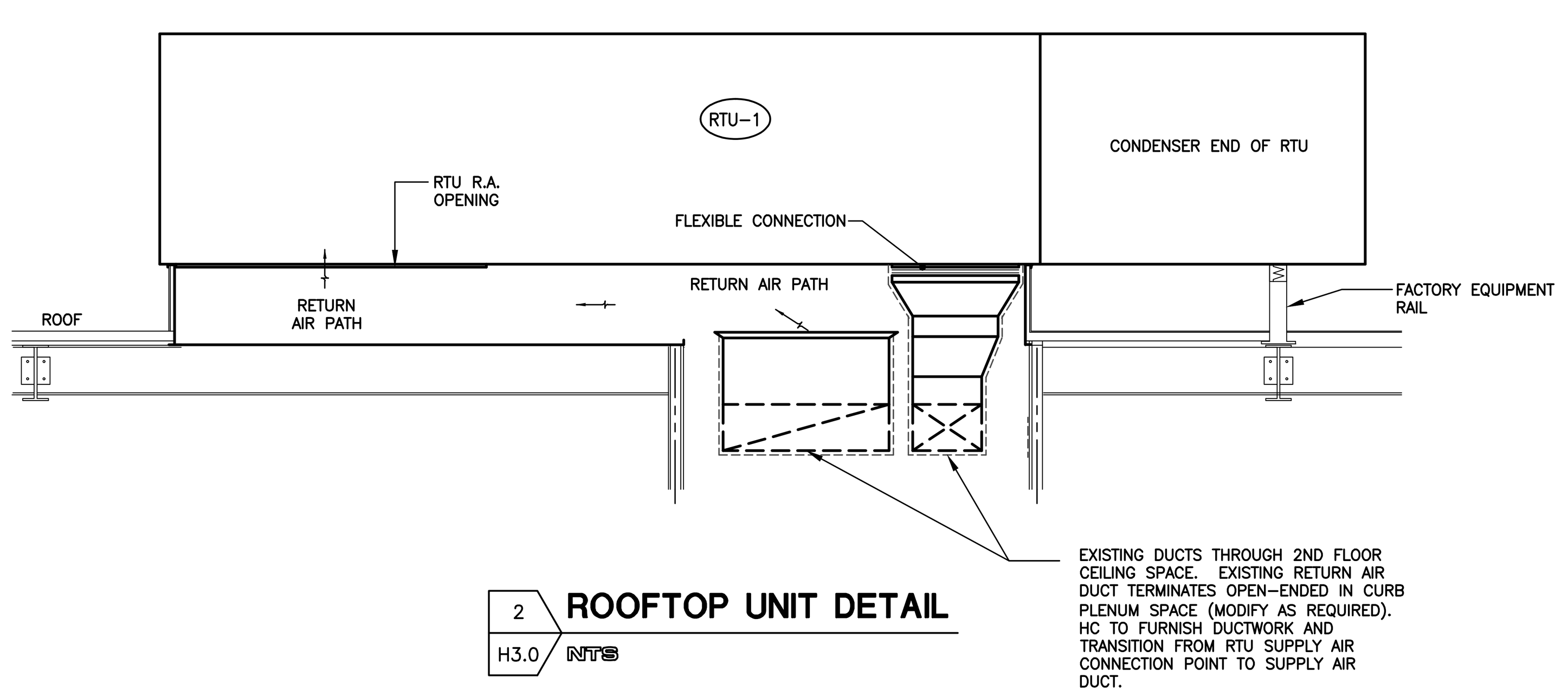
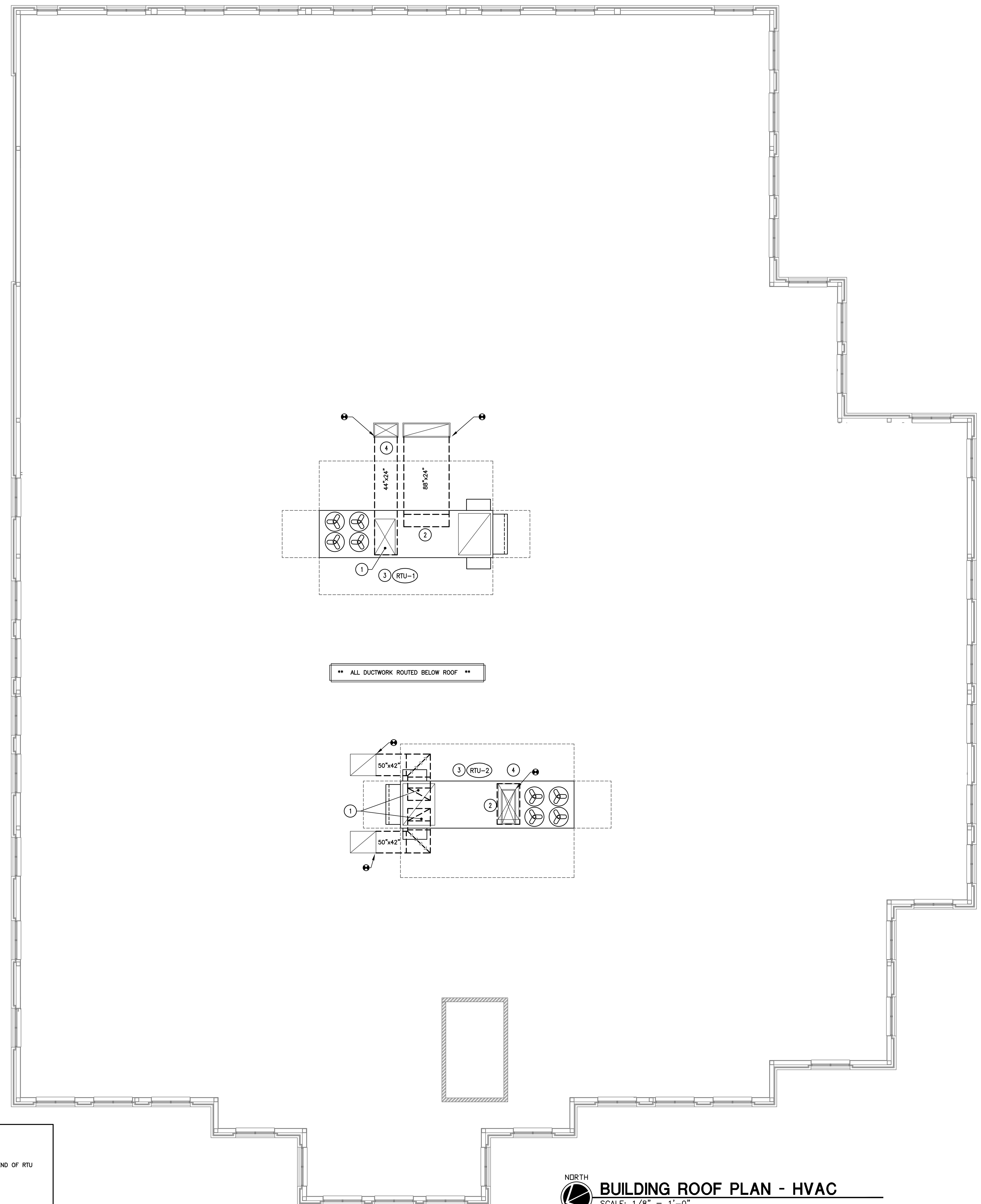


1 / H3.0 **ROOF CURB MOUNTING DETAIL**
NO SCALE



2 / H3.0 **ROOFTOP UNIT DETAIL**
NTS



NORTH
BUILDING ROOF PLAN - HVAC
SCALE: 1/8" = 1'-0"

ROOFTOP UNIT EQUIPMENT SCHEDULE

TAG	MANUFACTURER	MODEL	AIRFLOW CFM	SUPPLY EXT. S.P.	SUPPLY TOT. S.P.	BLOWER HP	COOLING DATA NET TTL MBH	COOLING DATA NET S.H. MBH	HEATING DATA INPUT MBH	HEATING DATA OUTPUT MBH	HEATING DATA STAGES	HEATING DATA AFUE	EXHAUST/ RETURN CFM	APPROX. RET. S.P.	RETURN HP	ELECTRICAL VOLT/PHASE	ELECTRICAL MCA	ELECTRICAL MOCP	NOTES
RTU-1	YORK	VV50N3DG4S1AAA12A1	16,000	--	2.35	20.0	455.8	425.5	1250	1025	6	82%	14,000	0.5	7.5	480/3	177	200	1-6
RTU-2	YORK	VV50N3DG4S1AAA12A1	16,000	--	2.35	20.0	455.8	425.5	1250	1025	6	82%	14,000	0.5	7.5	480/3	177	200	1-6

NOTES:
1. FURNISH WITH 24" HIGH RETURN AIR PLENUM ROOF CURB. THYBAR TC-3, BUILT TO MATCH RTU SUPPLIED. TO BE INSTALLED BY G.C.
2. FURNISH WITH TWO SETS OF 2" PLEATED FILTERS.
3. FURNISH UNIT WITH DDC CONTROLS. CONTROL SYSTEM TO INCLUDE CENTRAL SYSTEM CONTROLLER/PC WORKSTATION.
4. FURNISH WITH MODULATING GAS HEAT, 24;1 TURNDOWN RATIO.
5. FURNISH & INSTALL ECONOMIZER WITH POWER EXHAUST AND VFD.
6. FURNISH UNIT WITH MORNING WARMUP.

HVAC LEGEND

	RECTANGULAR OR ROUND DUCTWORK ABOVE TRUSS LEVEL (THRU OR BETWEEN TRUSSES). INSIDE DIMENSION NOTED ON PLAN.
	RECTANGULAR OR ROUND DUCTWORK BELOW TRUSS LEVEL. INSIDE DIMENSION NOTED ON PLAN.
	EXISTING DUCTWORK
	ITEM TO BE RELOCATED TO THIS POSITION.
	ELBOW WITH TURNING VANES
	TRANSITION
MBD / MBD	MANUAL BALANCING DAMPER
	SPIN-IN-FITTING WITH AIR SCOOP AND VOLUME DAMPER
	DUCT RISE
	ELBOW, TURNED UP
	ELBOW, TURNED DOWN
	SUPPLY AIR
	RETURN AIR
	EXHAUST AIR
Ø	DIAMETER (ROUND)
(S)	SENSOR
(T)	THERMOSTAT
(A) 150	AIR DEVICE SYMBOL WITH CFM
	CODED NOTE SYMBOL
	EQUIPMENT NOTE SYMBOL; SEE SCHEDULES AND/OR NOTES.
A.F.F.	ABOVE FINISHED FLOOR
AB.	ABOVE
CLG.	CEILING
FLR.	FLOOR
G.C.	GENERAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
H.C.	HVAC CONTRACTOR
E.C.	ELECTRICAL CONTRACTOR
S.A.	SUPPLY AIR
R.A.	RETURN AIR
O.A.	OUTSIDE AIR
EXH.	EXHAUST
EX.	EXISTING
MT.	MOUNT, (MTD.), MOUNTED, (MTG.), MOUNTING.

HVAC GENERAL NOTES

A. SCOPE OF WORK IS TO INCLUDE REPLACEMENT OF EXISTING ROOFTOP EQUIPMENT WITH NEW ROOFTOP EQUIPMENT.

B. COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND GENERAL CONTRACTOR.

C. ALL DUCT SIZES ARE INSIDE DIMENSIONS. COMPENSATE FOR INTERNAL LINING WHERE APPLICABLE.

D. UNDER BUILDING SHELL PHASE THE FOLLOWING WORK SHALL BE PERFORMED.

1) H.C. FURNISHED ROOFTOP UNIT CURBS SHALL BE SET BY THE STEEL CONTRACTOR, & FLASHED BY THE ROOFING CONTRACTOR. COORDINATE WITH THE GENERAL CONTRACTOR.

2) SUPPLY AIR DUCT STUBS (SAME SIZE AS UNIT CONNECTIONS) SHALL BE FURNISHED AND INSTALLED BY THE H.C.

3) H.C. FURNISHED EQUIPMENT COMPATIBLE THERMOSTATS SHALL REPLACE EXISTING THERMOSTATS ON FIRST AND SECOND FLOORS. H.C. TO CONFIRM IF EXISTING CONTROL WIRING CAN BE REUSED.

4) H.C. SHALL TEST UNITS RECEIVING UTILITY CONNECTIONS FOR PROPER OPERATION

E. LINE ALL NEW DUCTWORK WITH 1" DUCT LINER, 1-1/2" LB. DENSITY.

F. COORDINATE EXACT LOCATION OF ROOFTOP EQUIPMENT WITH STRUCTURALS PRIOR TO SETTING OF CURBS.

G. ROOF OPENINGS BY THE STEEL CONTRACTOR. COORDINATE WITH THE GENERAL CONTRACTOR.

H. COORDINATE LOCATION AND SUPPORT OF ALL ROOFTOP EQUIPMENT WITH STRUCTURAL DRAWINGS. SECURE BY BOLTING OR SPOT WELDING ALL CURB MOUNTED EQUIPMENT.

J. P.C. TO MAKE GAS CONNECTIONS TO ROOFTOP UNITS SHOWN TO RECEIVE UTILITY CONNECTIONS ON THE PLUMBING AND ELECTRICAL DRAWINGS.

K. E.C. TO MAKE ELECTRICAL CONNECTIONS TO ROOFTOP UNITS SHOWN TO RECEIVE UTILITY CONNECTIONS ON THE PLUMBING AND ELECTRICAL DRAWINGS.

L. NEW ROOFTOP UNIT CONTROL SYSTEMS TO INTEGRATE WITH EXISTING BUILDING VAV SYSTEM. SYSTEM TO BE CONFIGURED SO THAT GAS HEAT PROVIDES PRIMARY HEAT TO THE AIRSTREAM AND EXISTING VAV BOX UNITS PROVIDE SUPPLEMENTAL HEAT AS REQUIRED. SYSTEM TO HAVE INTERLOCKS SO THAT VAV BOXES DO NOT PROVIDE REHEATING TO AIR THAT IS BEING COOLED BY ROOFTOP UNITS.

HVAC CODED NOTES

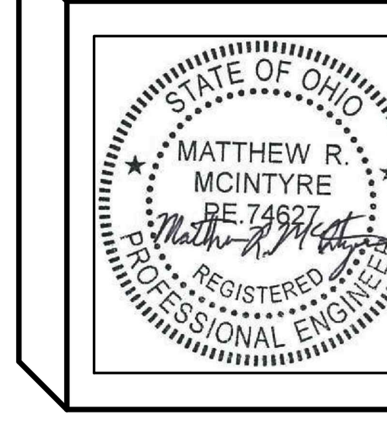
1. EXISTING SUPPLY AIR DUCTS ARE ROUTED ABOVE SECOND FLOOR CEILING BENEATH ROOF AND PENETRATE UP INTO ROOFTOP UNIT CURB INTERIOR. TRANSITION DUCT TO SUPPLY AIR OUTLET OF NEW ROOFTOP UNIT. FURNISH WITH FLEXIBLE DUCT CONNECTION.

2. EXISTING RETURN AIR DUCTS ARE ROUTED ABOVE SECOND FLOOR CEILING BENEATH ROOF AND PENETRATE UP INTO ROOFTOP UNIT CURB INTERIOR. DUCT(/S) TERMINATE OPEN-ENDED AND USE THE INTERIOR SPACE OF THE CURB AS A PLENUM SPACE.

3. NEW 50 TON ROOFTOP UNITS WITH GAS HEAT. EXISTING ROOFTOP UNITS TO BE DEMOLISHED. NEW ROOFTOP UNITS TO HAVE INSULATED CURB MOUNTED FLUSH TO ROOF AND SEALED AIR-TIGHT. CURB TO ENCOMPASS AIR HANDLER PORTION ONLY. CONDENSER SECTION OF ROOFTOP UNIT TO BE SUPPORTED WITH FACTORY SUPPLIED SUPPORT FRAME WITH VIBRATION ISOLATORS. HVAC CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR FOR ANY REQUIRED MODIFICATIONS TO THE ROOF STRUCTURE FOR THE NEW CURB SIZE.

4. EXISTING ELECTRICAL DUCT HEATERS TO REMAIN AS EMERGENCY USE HEATERS SHOULD TEMPORARY LOSS OF GAS HEAT OCCUR WITH THE ROOFTOP UNITS.

REVISIONS



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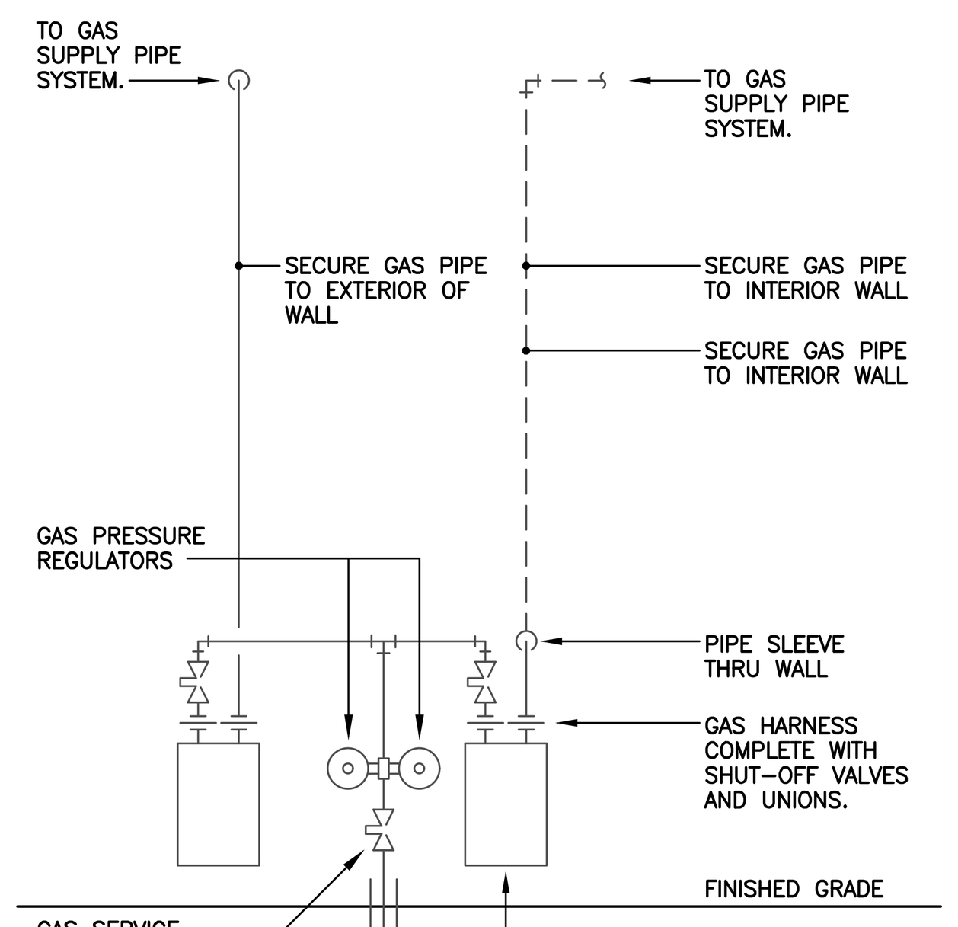
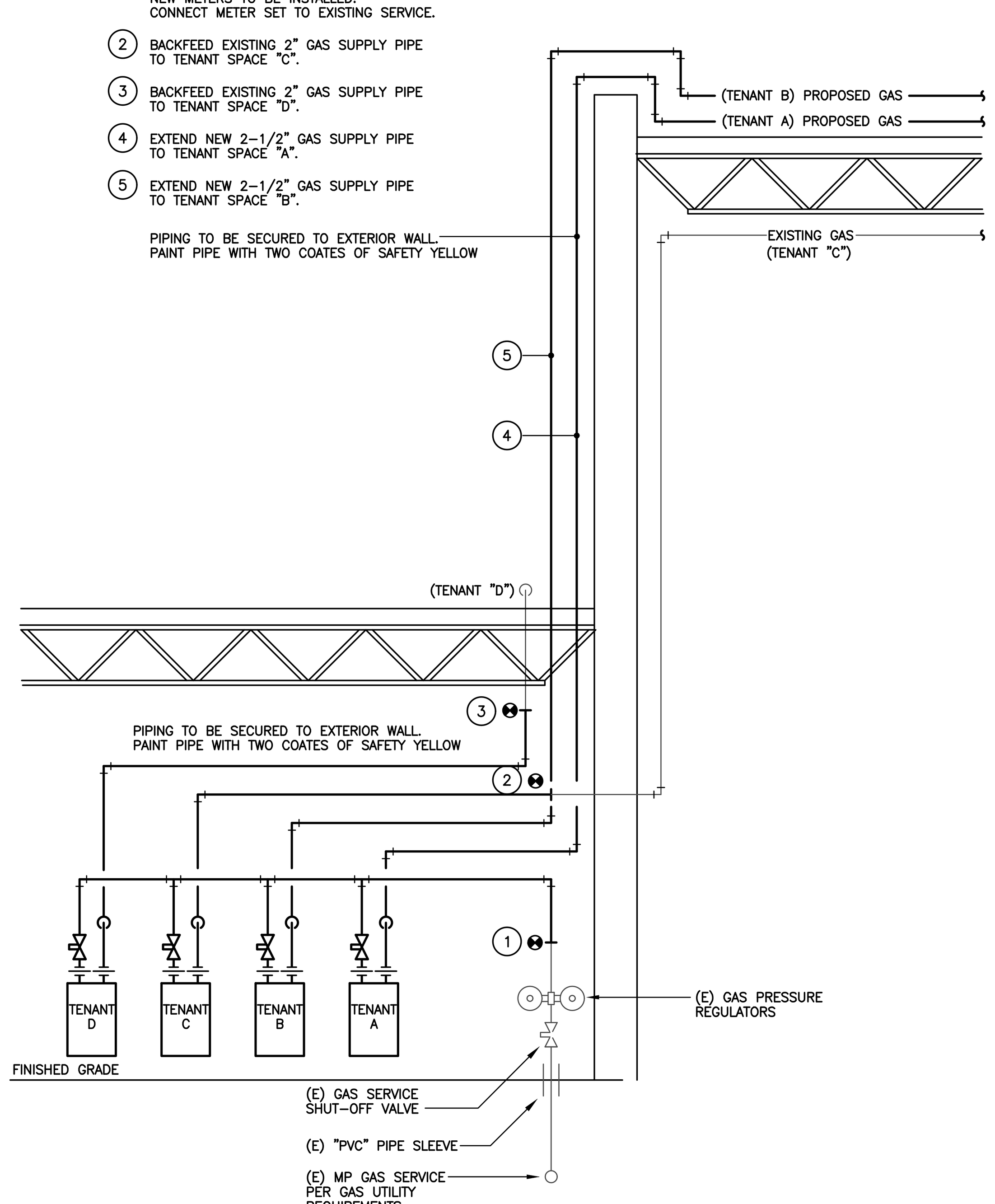


NOTE:
GAS SERVICE SIZE AND LOCATION SHOWN FOR CONTRACTOR PRICING ONLY.
P.C. TO COORDINATE EXACT GAS PRESSURE AVAILABLE, LINE SIZE AND LOCATION OF SERVICE AND METER SETTING WITH LOCAL GAS UTILITY PRIOR TO START OF WORK.
CONTRACTOR SHALL COORDINATE ON SITE GAS CONSULT WITH GAS COMPANY.

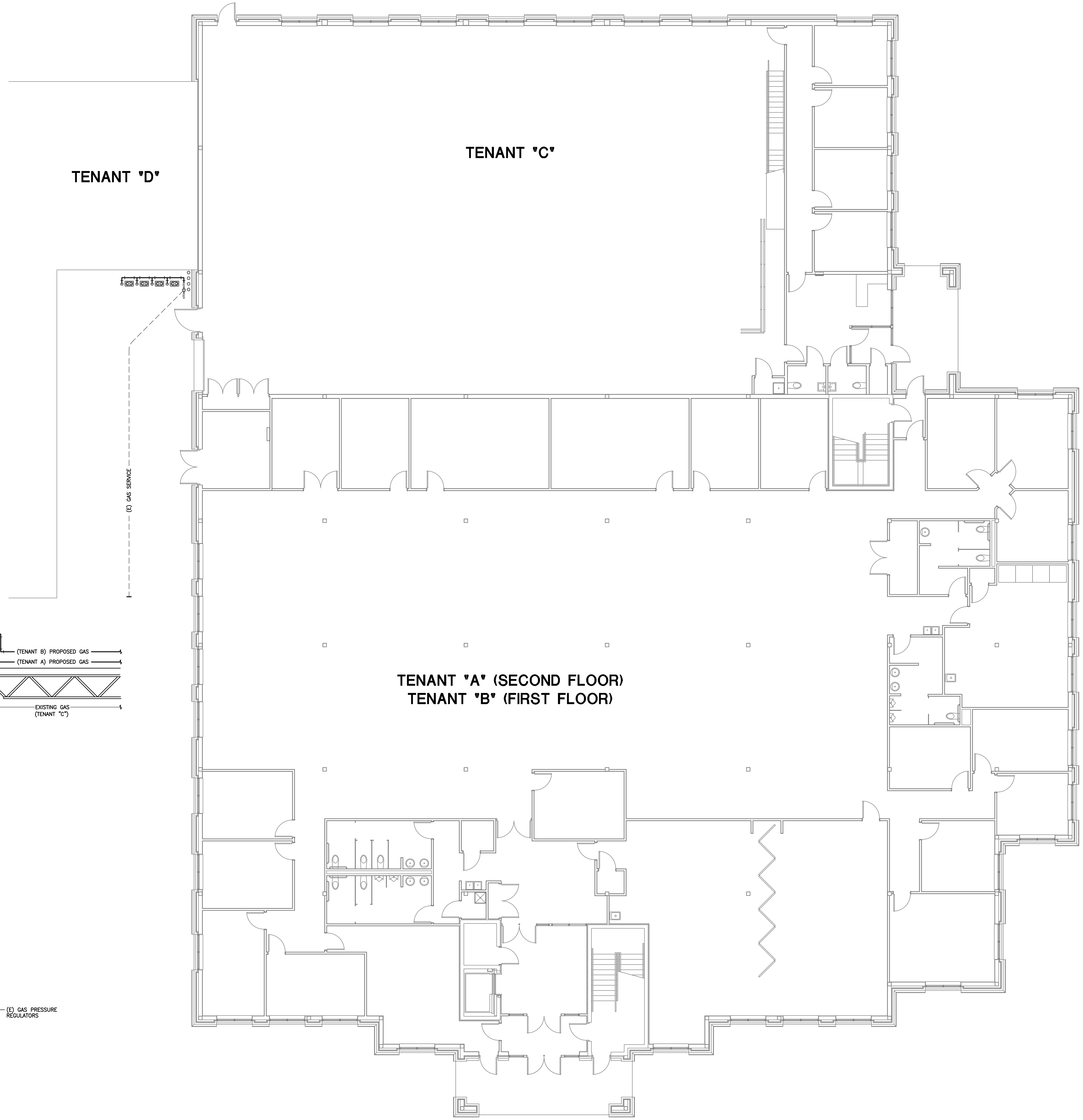
1 P1.0 EXISTING GAS METER DETAIL
NTS

1. EXISTNG GAS METER SET TO BE MODIFIED. EXISTING METERS TO BE REMOVED AND NEW METERS TO BE INSTALLED. CONNECT METER SET TO EXISTING SERVICE.
2. BACKFEED EXISTING 2" GAS SUPPLY PIPE TO TENANT SPACE "C".
3. BACKFEED EXISTING 2" GAS SUPPLY PIPE TO TENANT SPACE "D".
4. EXTEND NEW 2–1/2" GAS SUPPLY PIPE TO TENANT SPACE "A".
5. EXTEND NEW 2–1/2" GAS SUPPLY PIPE TO TENANT SPACE "B".



NOTE:
GAS SERVICE SIZE AND LOCATION SHOWN FOR CONTRACTOR PRICING ONLY.
P.C. TO COORDINATE EXACT GAS PRESSURE AVAILABLE, LINE SIZE AND LOCATION OF SERVICE AND METER SETTING WITH LOCAL GAS UTILITY PRIOR TO START OF WORK.
CONTRACTOR SHALL COORDINATE ON SITE GAS CONSULT WITH GAS COMPANY.

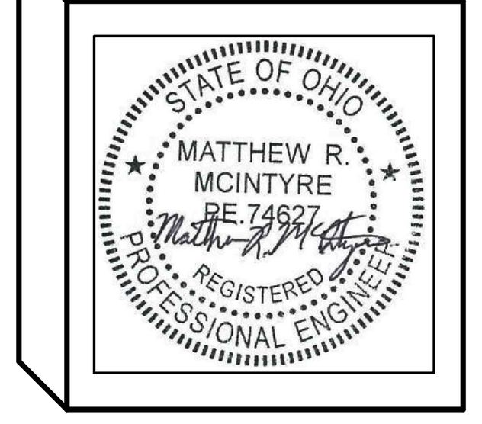
2 P1.0 NEW GAS METER DETAIL
NTS



NORTH

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

REVISIONS



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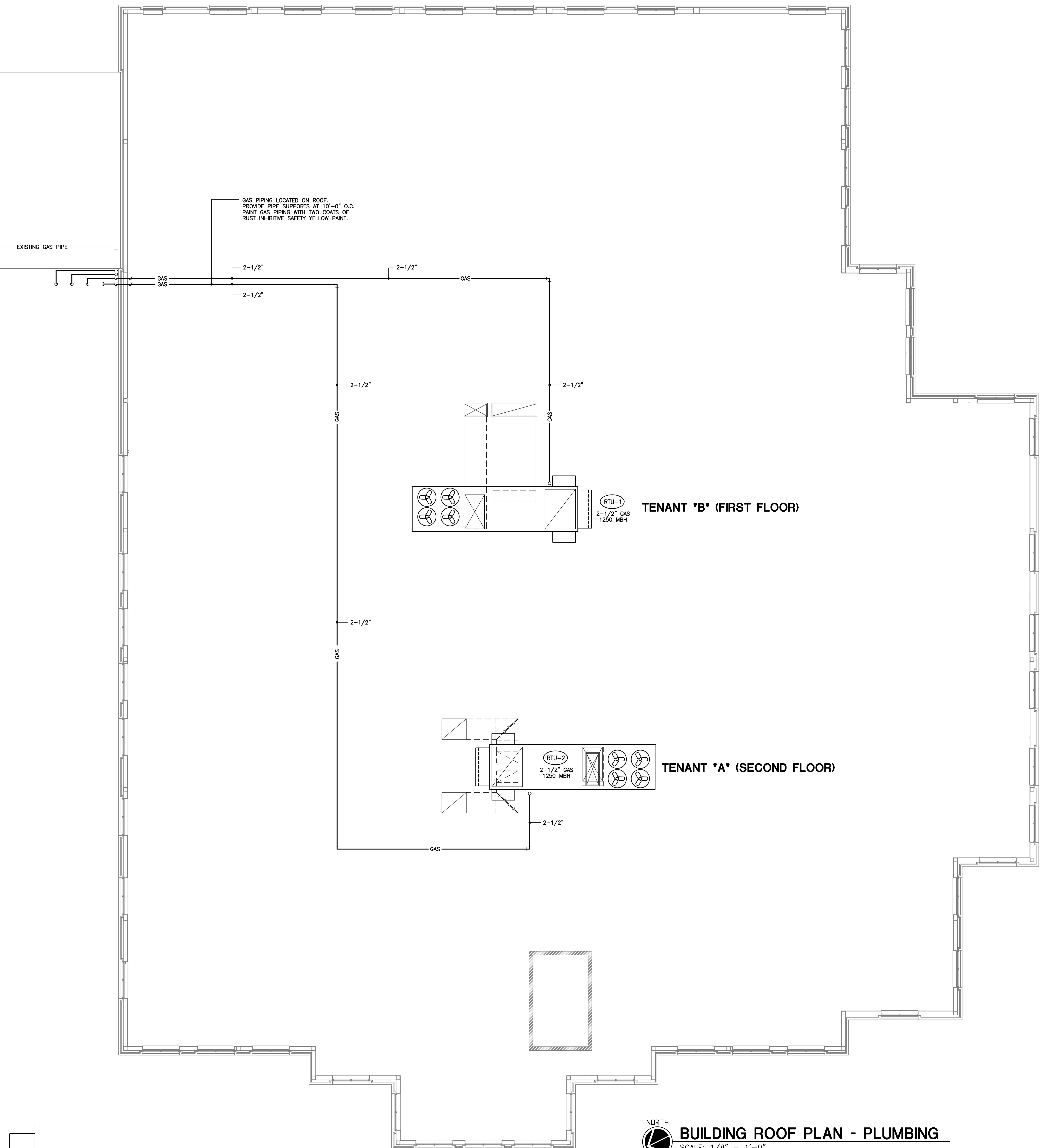
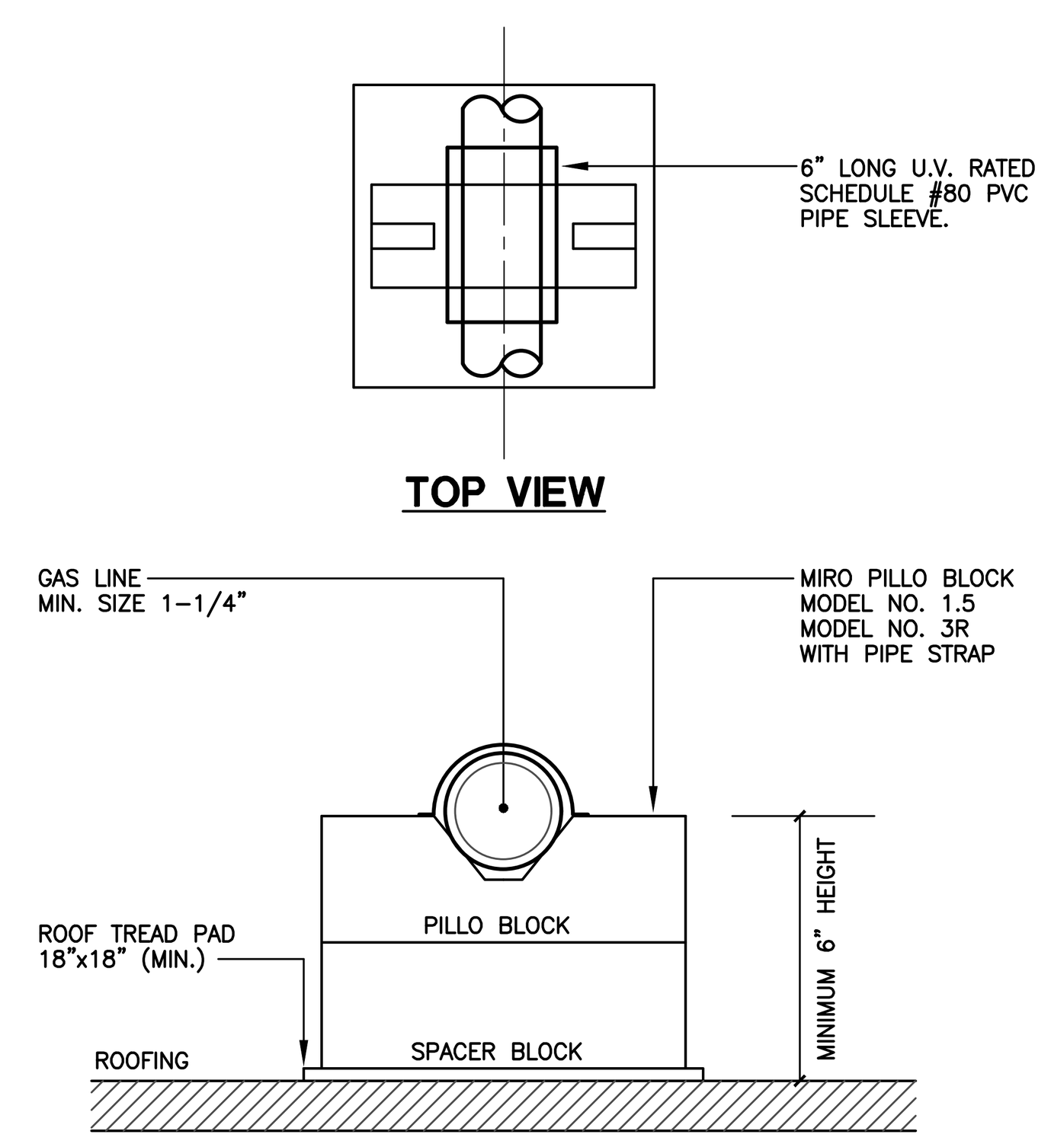


BUILDING ROOF PLAN - PLUMBING

SCALE: 1/8" = 1'-0"

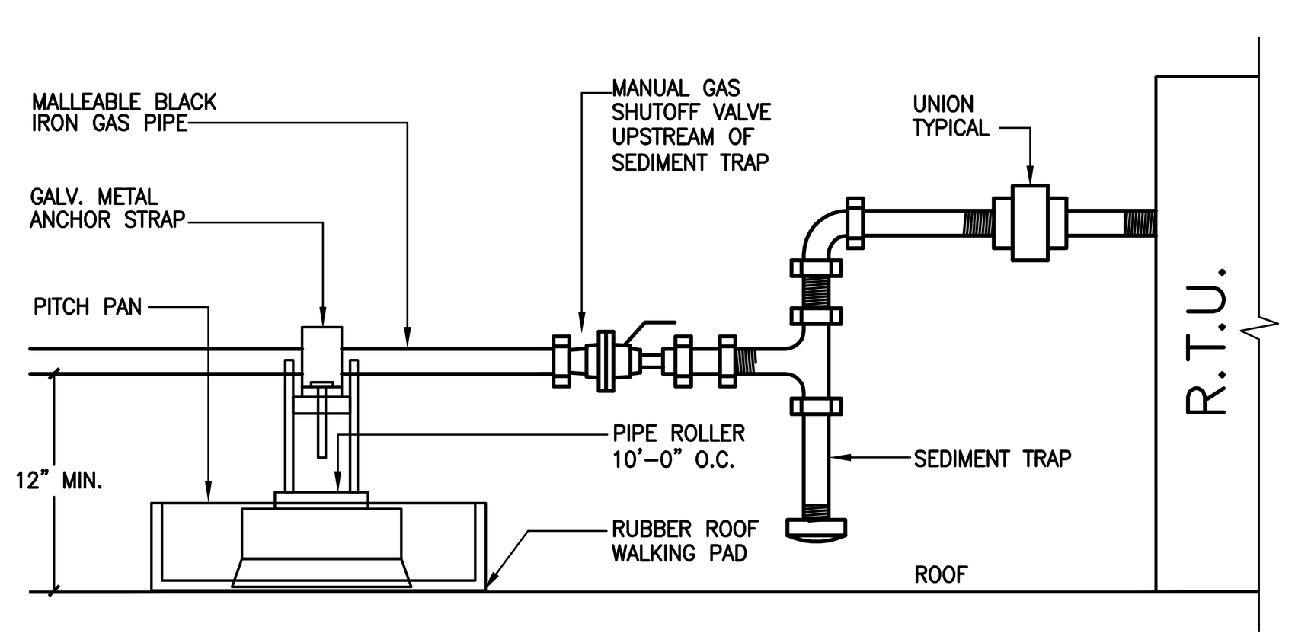


NOTES:

1. SUPPORT REQUIRED 10'-0" O.C. AND AT ALL CHANGES IN DIRECTION.
2. INCREASE IN HEIGHT AS REQUIRED FOR ROUTING ABOVE ROOF MOUNTED ACCESSORIES SUCH AS EXPANSION JOINTS.
3. PAINT GAS PIPE WITH MINIMUM (2) COATS OF SAFETY YELLOW RUST INHIBITIVE PAINT.

1 / P3.0 GAS LINE SUPPORT DETAIL

NTS



1 / P3.0 GAS CONNECTION @ RTU DETAIL

NTS

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