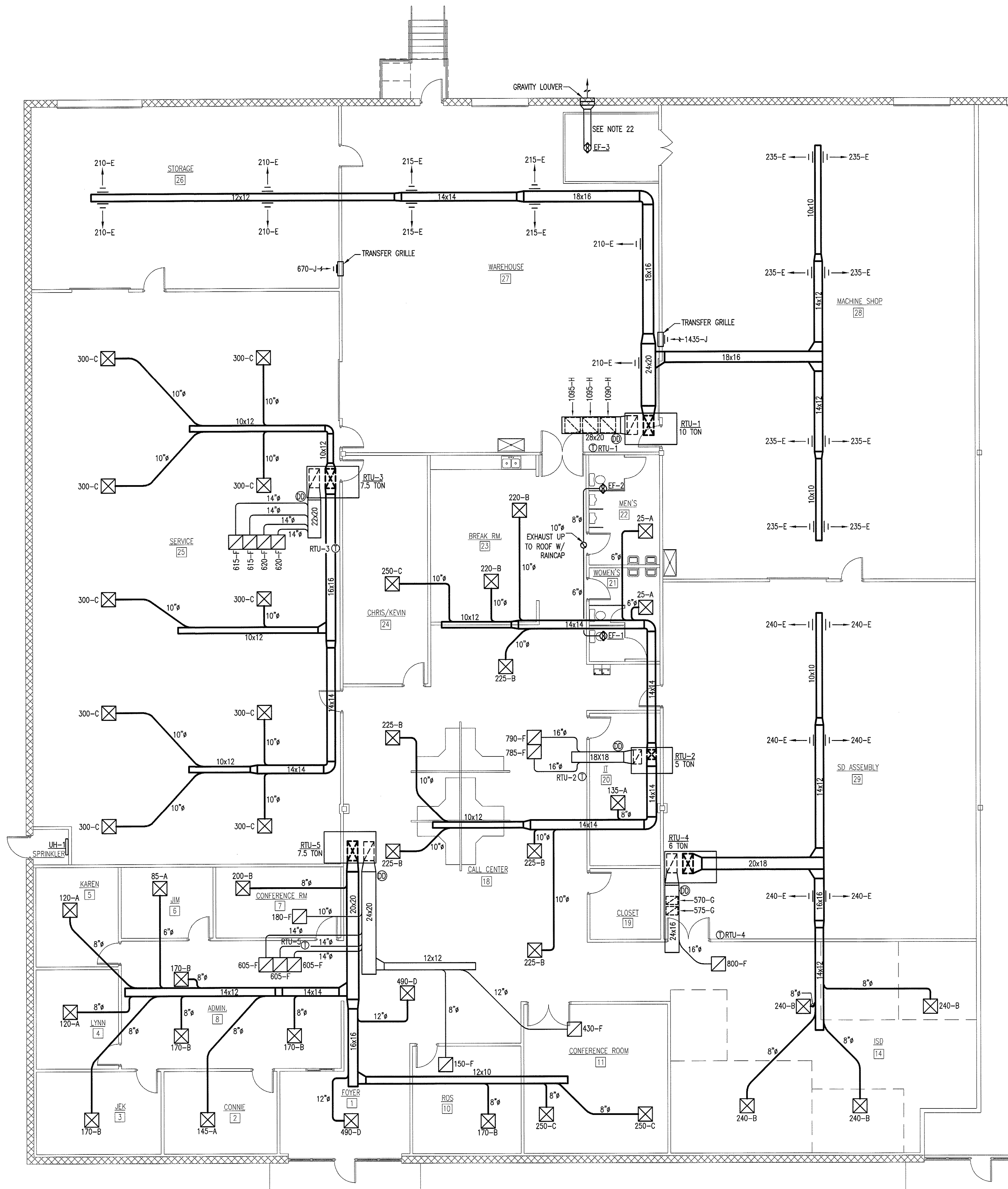


MECHANICAL NOTES:

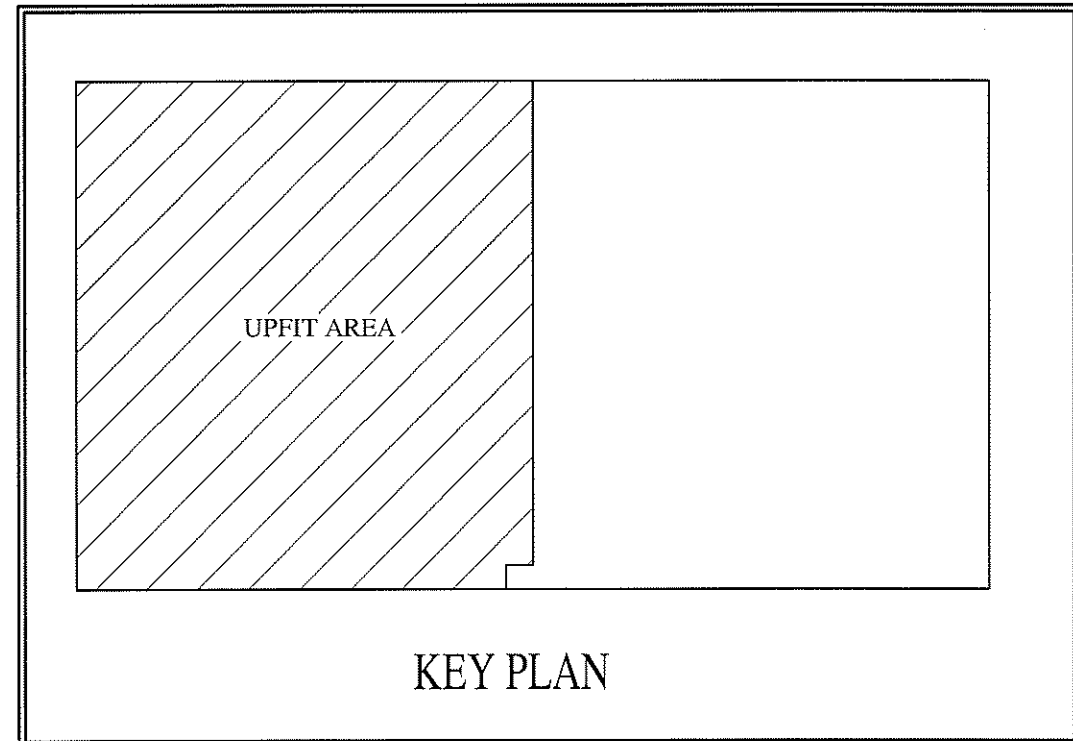
- ALL HVAC EQUIPMENT AND DUCTWORK TO BE INSTALLED IN ACCORDANCE WITH STATE AND LOCAL CODES.
- THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL DUCTWORK, PIPING, AND ELECTRICAL REQUIREMENTS WITH ALL OTHER TRADES PRIOR TO BEGINNING INSTALLATION TO AVOID CONFLICTS AND INTERFERENCE WITH OTHER TRADES.
- ALL EQUIPMENT TO BE INSTALLED AS SUGGESTED BY MANUFACTURER.
- INSULATE SUPPLY AND RETURN DUCTWORK LOCATED IN UNCONDITIONED SPACES BY WRAPPING WITH INSULATION WITH A MINIMUM INSTALLED R-VALUE OF 5.0. DIMENSIONS SHOWN ARE INSIDE CLEAR AREA DIMENSIONS.
- FIRST 10' FROM THE HVAC UNIT OF EXPOSED INTERIOR DUCTWORK MUST BE INSULATED WITH 1" DUCT LINER.
- EQUIP RETURN AIR GRILLES WITH FILTERS. INSTALL WASHABLE SCREEN FILTER ON OUTSIDE AIR INTAKE OF ROOF TOP UNITS.
- MECHANICAL SYSTEM TO BE BALANCED AND TESTED AFTER INSTALLATION TO ASSURE PROPER OPERATION.
- COORDINATE EXACT LOCATION OF THERMOSTATS WITH OWNER.
- BATHROOM EXHAUST FANS ARE TO BE FURNISHED, INSTALLED AND DUCTED TO OUTDOORS BY THE MECHANICAL CONTRACTOR. EXHAUST FAN TO BE WIRED BY THE ELECTRICAL CONTRACTOR.
- SMOKE DETECTORS ARE TO BE PROVIDED IN RETURN AIR DUCT OF EACH UNIT AHEAD OF MAKE-UP AIR CONNECTIONS TO SHUT DOWN THE UNIT IN CASE OF FIRE.
- DUCT SMOKE DETECTORS ARE TO BE CONNECTED TO FIRE ALARM.
- EXHAUST FAN DISCHARGE TO BE AT LEAST TEN FEET AWAY FROM HVAC FRESH AIR IN-TAKE.
- GAS PIPING BASED ON 2 PSI GAS PRESSURE. VERIFY ALL GAS LINES SIZES WITH GAS COMPANY.
- ALL GAS PIPING TO BE BLACK STEEL PIPING WITH PROTECTIVE PAINT.
- GAS REGULATORS FOR HVAC EQUIPMENT TO BE PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR.
- FINAL UTILITY CONNECTIONS (GAS, ELECTRIC, ETC.) TO EQUIPMENT SHALL BE MADE BY THE CONTRACTOR INSTALLING THE EQUIPMENT REQUIRING THE UTILITIES.
- DUCT DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW THE INTENT OF THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY ADDITIONAL TRANSITIONS, OFFSETS, OR TURNS, IN THE DUCTWORK AND/OR PIPING, NOT SHOWN BUT REQUIRED FOR A COMPLETE AND OPERATING SYSTEM.
- ALL DUCTWORK SHALL BE INSTALLED TIGHT AGAINST THE STRUCTURE UNLESS OTHERWISE NOTED OR SHOWN.
- AIR DISTRIBUTION LOCATIONS SHOWN ON MECHANICAL PLANS ARE APPROXIMATE. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR ACTUAL LOCATIONS.
- REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATIONS OF WALLS AND PARTITIONS AND FOR PARTITION THICKNESS AND CONSTRUCTION MATERIALS.
- ELECTRICAL POWER REQUIREMENTS ARE BASED ON MANUFACTURER'S PUBLISHED DATA. IF ACTUAL UNIT IS A DIFFERENT MANUFACTURER OR THE ACTUAL PURCHASED UNIT(S) OTHERWISE HAVE DIFFERENT ELECTRICAL LOAD (MCA) OR CIRCUIT BREAKER (MCB) REQUIREMENTS THAN WHAT IS PUBLISHED ON THE DRAWING SCHEDULE, THE MECHANICAL CONTRACTOR MUST SUBMIT THE CORRECT DATA IN WRITING TO THE GENERAL CONTRACTOR AND ELECTRICAL CONTRACTOR (IF KNOWN). IT IS THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE GC AND ELECTRICAL CONTRACTOR ARE NOTIFIED OF CHANGES IN THE MECHANICAL EQUIPMENT, WHICH WILL CHANGE THE ELECTRICAL WIRING, BREAKER SIZES OR QUANTITY OF CIRCUITS.
- OWNER TO SUPPLY FAN AND STAIGHT DUCTWORK FOR PAINT BOOTH EXHAUST. COORDINATE DUCT AND WALL OPENING SIZE WITH OWNER PRIOR TO CONSTRUCTION

| SYMBOLS & ABBREVIATIONS LEGEND | |
|--------------------------------|-----------------------------------|
| ⊖ | THERMOSTAT |
| ⊗ | CEILING SUPPLY DIFFUSER |
| ⊘ | CEILING RETURN GRILLE |
| ⊖ | SIDEWALL SUPPLY DIFFUSER |
| ⊗ | SIDEWALL RETURN OR EXHAUST GRILLE |
| — | SUPPLY DUCT SECTION |
| — | RETURN DUCT SECTION |
| CFM | CUBIC FEET PER MINUTE |
| — | NATURAL GAS |
| | UNION |
| # | DIAMETER OR POWER PHASE |
| O.A. | OUTSIDE AIR |
| R.A. | RETURN AIR |
| S.A. | SUPPLY AIR |
| A.F.F. | ABOVE FINISHED FLOOR |
| ⊖ | EXHAUST FAN |
| ⊖ | DUCT MOUNTED SMOKE DETECTOR |

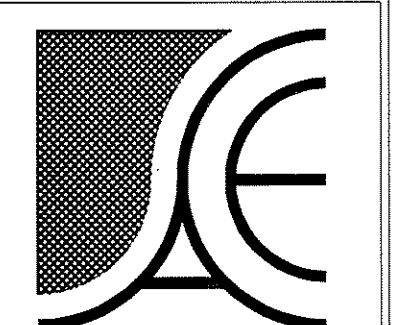


MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

| MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE | |
|--|---|
| PRESCRIPTIVE <input checked="" type="checkbox"/> | ENERGY COST BUDGET <input type="checkbox"/> |
| THERMAL ZONE 8 | |
| EXTERIOR DESIGN CONDITIONS | |
| WINTER DRY BULB | 15 °F |
| SUMMER DRY BULB | 90 °F |
| INTERIOR DESIGN CONDITIONS | |
| WINTER DRY BULB | 68 °F |
| SUMMER DRY BULB | 78 °F |
| RELATIVE HUMIDITY | 50 % |
| BUILDING HEATING LOAD | 407,168 BTU/HR |
| BUILDING COOLING LOAD | 33,56 TONS |
| MECHANICAL SPACING CONDITIONING SYSTEM | |
| UNITARY | GAS PACKAGE UNITS |
| DESCRIPTION OF UNIT | |
| HEATING EFFICIENCY | |
| COOLING EFFICIENCY | |
| HEATING OUTPUT OF UNITS | 569,000 BTU/HR |
| COOLING OUTPUT OF UNITS | 36 TONS |
| LIST EQUIPMENT EFFICIENCIES | |
| EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEM) | |
| MOTOR HORSEPOWER | HP |
| NUMBER OF PHASES | Φ |
| MINIMUM EFFICIENCY | % |
| MOTOR TYPE | |
| # OF POLES | |
| DESIGNER STATEMENT: | |
| TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT REQUIREMENTS OF NORTH CAROLINA STATE BUILDING CODES. | |



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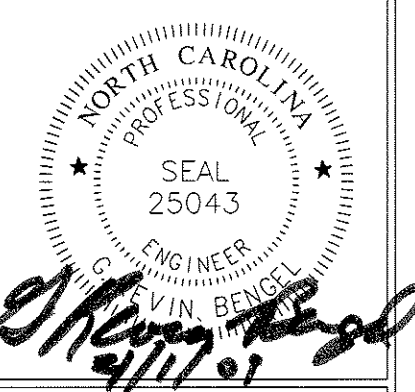
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DRAWING NAME
MECHANICAL PLAN



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MJW
CHECKED
DATE 4/1/09
SCALE
AS NOTED
JOB NO.
9024
SHEET

M-1

| OUTSIDE AIR CALCULATIONS (RTU-1) | | | | | | | |
|--|----------------------------|---------------------------------------|------------------------|---------------------------------------|-------------------------------------|----------------------------|----------------------------|
| OCCUPANCY CLASSIFICATION (PER TABLE 403.3) | NET (GROSS) SQUARE FOOTAGE | OCCUPANCY LOAD PERSONS PER 1,000 S.F. | CALCULATED # OF PEOPLE | OUTSIDE AIR REQUIRED PER PERSON (CFM) | OUTSIDE AIR REQUIRED PER S.F. (CFM) | OUTSIDE AIR REQUIRED (CFM) | OUTSIDE AIR PROVIDED (CFM) |
| MACHINE SHOP 28 | (2954) | - | - | - | .15 | 443 | 445 |
| STORAGE 26 | (1116) | - | - | - | .15 | 167 | 170 |
| WAREHOUSE 27 | (2054) | - | - | - | .05 | 103 | 105 |
| TOTAL OUTSIDE AIR | | | | | | 713 | 720 |

| OUTSIDE AIR CALCULATIONS (RTU-2) | | | | | | | |
|--|----------------------------|---------------------------------------|------------------------|---------------------------------------|-------------------------------------|----------------------------|----------------------------|
| OCCUPANCY CLASSIFICATION (PER TABLE 403.3) | NET (GROSS) SQUARE FOOTAGE | OCCUPANCY LOAD PERSONS PER 1,000 S.F. | CALCULATED # OF PEOPLE | OUTSIDE AIR REQUIRED PER PERSON (CFM) | OUTSIDE AIR REQUIRED PER S.F. (CFM) | OUTSIDE AIR REQUIRED (CFM) | OUTSIDE AIR PROVIDED (CFM) |
| CALL CENTER 18 | (1897) | - | - | - | .05 | 107 | 110 |
| OPEN OFFICE | 221 | 7 | 6 | 20 | - | 120 | 120 |
| OFFICE 24 | 290 | 7 | 2 | 20 | - | 40 | 40 |
| IT 20 | (215) | - | - | - | .15 | 32 | 35 |
| BREAK ROOM 23 | 263 | 30 | 8 | 15 | - | 120 | 120 |
| TOTAL OUTSIDE AIR | | | | | | 419 | 425 |

| OUTSIDE AIR CALCULATIONS (RTU-3) | | | | | | | |
|--|----------------------------|---------------------------------------|------------------------|---------------------------------------|-------------------------------------|----------------------------|----------------------------|
| OCCUPANCY CLASSIFICATION (PER TABLE 403.3) | NET (GROSS) SQUARE FOOTAGE | OCCUPANCY LOAD PERSONS PER 1,000 S.F. | CALCULATED # OF PEOPLE | OUTSIDE AIR REQUIRED PER PERSON (CFM) | OUTSIDE AIR REQUIRED PER S.F. (CFM) | OUTSIDE AIR REQUIRED (CFM) | OUTSIDE AIR PROVIDED (CFM) |
| SERVICE 25 | (3510) | - | - | - | .15 | 527 | 530 |
| TOTAL OUTSIDE AIR | | | | | | 527 | 530 |

| OUTSIDE AIR CALCULATIONS (RTU-4) | | | | | | | |
|--|----------------------------|---------------------------------------|------------------------|---------------------------------------|-------------------------------------|----------------------------|----------------------------|
| OCCUPANCY CLASSIFICATION (PER TABLE 403.3) | NET (GROSS) SQUARE FOOTAGE | OCCUPANCY LOAD PERSONS PER 1,000 S.F. | CALCULATED # OF PEOPLE | OUTSIDE AIR REQUIRED PER PERSON (CFM) | OUTSIDE AIR REQUIRED PER S.F. (CFM) | OUTSIDE AIR REQUIRED (CFM) | OUTSIDE AIR PROVIDED (CFM) |
| SD ASSEMBLY 29 | (2227) | - | - | - | .15 | 334 | 335 |
| OPEN OFFICE (ISD) | 929 | 7 | 6 | 20 | - | 120 | 120 |
| TOTAL OUTSIDE AIR | | | | | | 454 | 455 |

| OUTSIDE AIR CALCULATIONS (RTU-5) | | | | | | | |
|--|----------------------------|---------------------------------------|------------------------|---------------------------------------|-------------------------------------|----------------------------|----------------------------|
| OCCUPANCY CLASSIFICATION (PER TABLE 403.3) | NET (GROSS) SQUARE FOOTAGE | OCCUPANCY LOAD PERSONS PER 1,000 S.F. | CALCULATED # OF PEOPLE | OUTSIDE AIR REQUIRED PER PERSON (CFM) | OUTSIDE AIR REQUIRED PER S.F. (CFM) | OUTSIDE AIR REQUIRED (CFM) | OUTSIDE AIR PROVIDED (CFM) |
| OFFICE 2 | 140 | 7 | 1 | 20 | - | 20 | 20 |
| OFFICE 3 | 155 | 7 | 1 | 20 | - | 20 | 20 |
| OFFICE 4 | 122 | 7 | 1 | 20 | - | 20 | 20 |
| OFFICE 5 | 122 | 7 | 1 | 20 | - | 20 | 20 |
| OFFICE 6 | 98 | 7 | 1 | 20 | - | 20 | 20 |
| ADMINISTRATION 8 | 420 | 7 | 3 | 20 | - | 60 | 60 |
| OFFICE 10 | 175 | 7 | 1 | 20 | - | 20 | 20 |
| CONFERENCE ROOM 11 | 320 | 50 | 16 | 10* | - | 160 | 160 |
| CONFERENCE ROOM 7 | 133 | 50 | 7 | 10* | - | 70 | 70 |
| ENTRY/FOYER | (251) | - | - | - | .05 | 13 | 15 |
| TOTAL OUTSIDE AIR | | | | | | 423 | 425 |

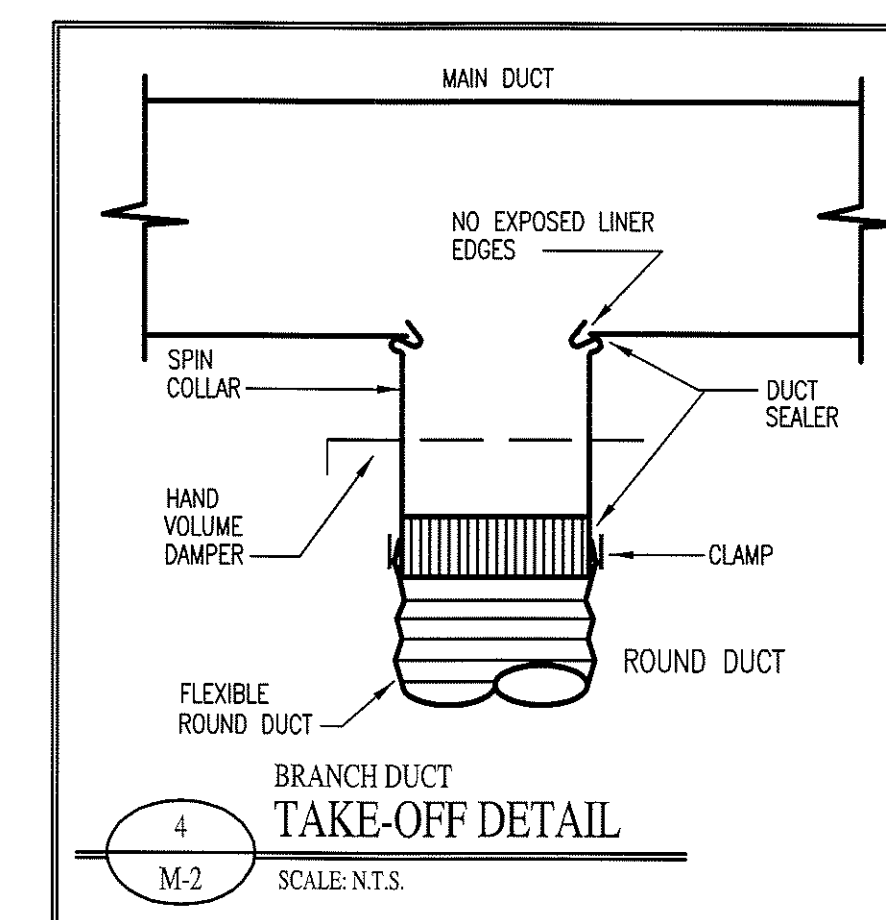
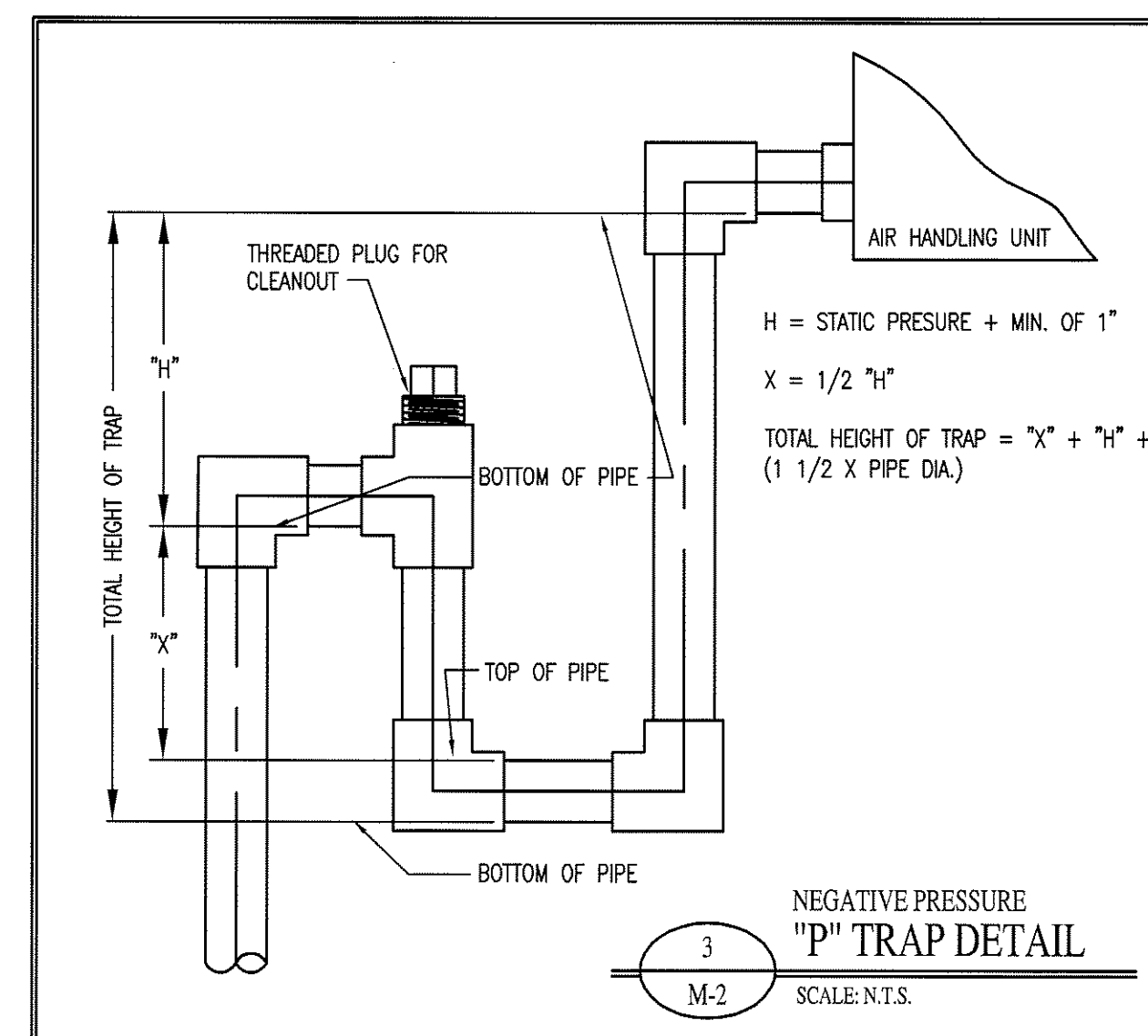
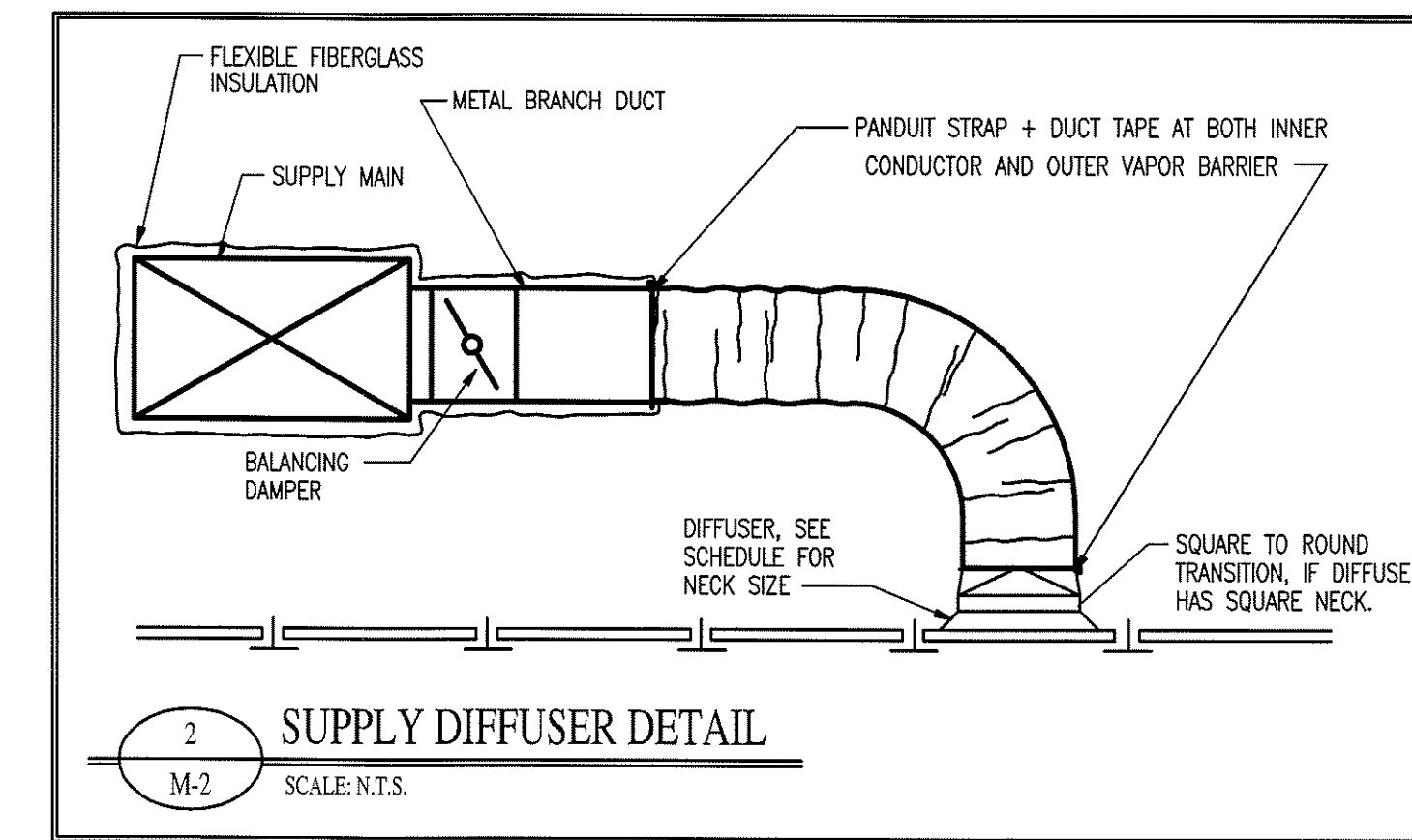
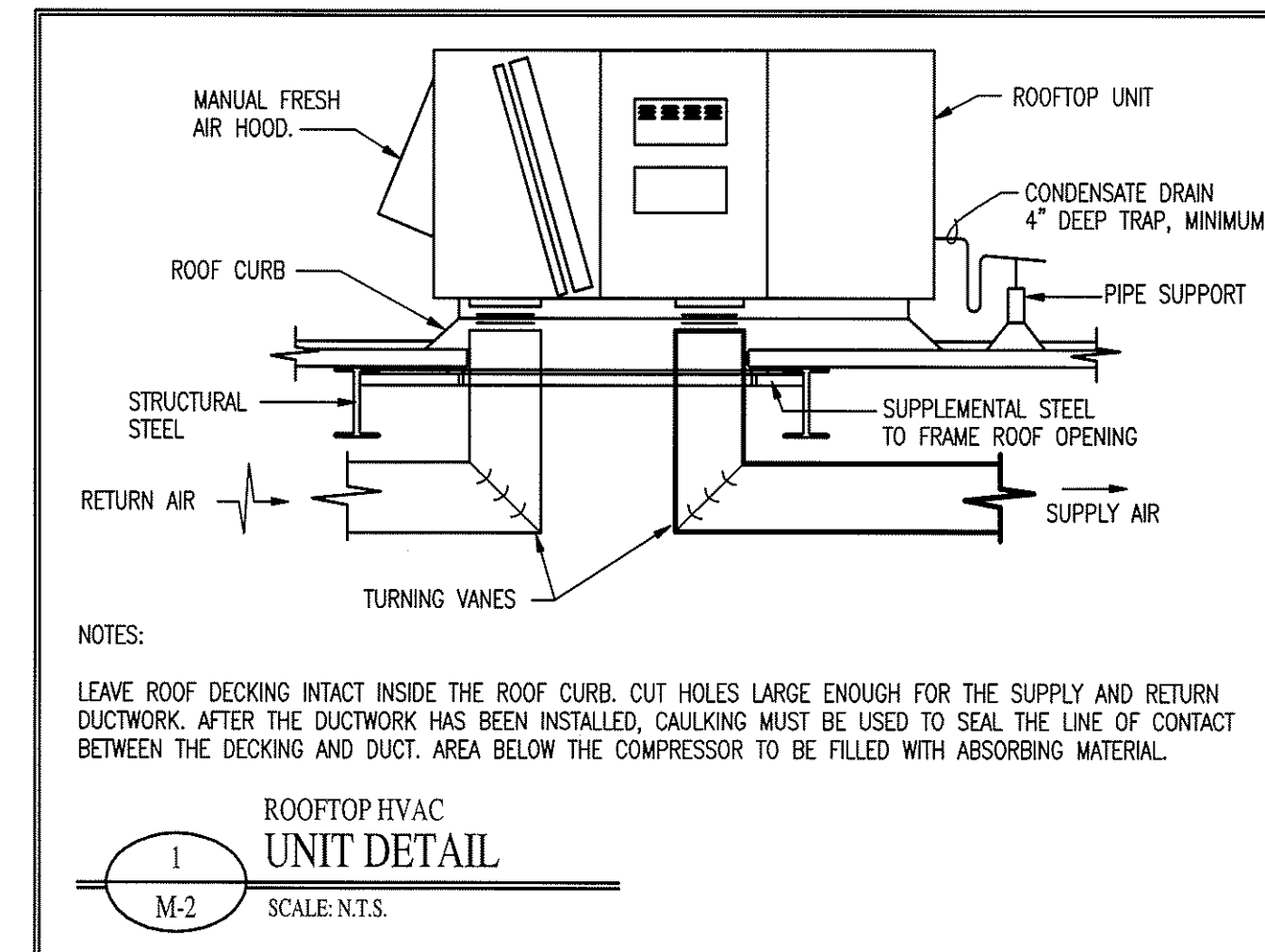
| EXHAUST FAN SCHEDULE | | | | | | | | | | |
|----------------------|--------------|---------|-----------------|-----|-------------|-------|---------|-------|-------|-------------|
| MARK | MANUFACTURER | MODEL | TYPE | CFM | SP | MOTOR | POWER | SONES | WATTS | CONTROL |
| EF-1 | GREENHECK | SP-A190 | CEILING EXHAUST | 150 | 0.125" W.G. | FHP | 120V/1φ | 2.9 | 113 | WALL SWITCH |
| EF-2 | GREENHECK | SP-A250 | CEILING EXHAUST | 225 | 0.125" W.G. | FHP | 120V/1φ | 3.0 | 83 | WALL SWITCH |
| EF-3 | * | * | EXHAUST | * | * | * | 208/3φ | * | * | WALL SWITCH |

* OWNER TO FURNISH AND INSTALL

| PACKAGED GAS UNIT SCHEDULE | | | | | | | | | | | | | | | | | |
|----------------------------|--------------|-----------|------|---------|------|-----|----------------|-----------------|-----------------|-------------------|-------------------|------------------|--------------|-----------|------------------|---------------|-----------|
| MARK | MANUFACTURER | MODEL NO. | TONS | POWER | MCA | MCB | FAN DATA | | | | | COOLING CAPACITY | | | HEATING CAPACITY | | |
| | | | | | | | AIR FLOW (CFM) | R.A. FLOW (CFM) | O.A. FLOW (CFM) | E.S.P. (IN. W.G.) | MOTOR SIZE (H.P.) | SENSIBLE (BTUH) | TOTAL (BTUH) | MIN. EFF. | INPUT (BTUH) | OUTPUT (BTUH) | MIN. EFF. |
| RTU-1 | TRANE | YSC120A3 | 10 | 208V/3φ | 52.6 | 60 | 4000 | 3280 | 720 | 0.50 | 5.0 | 111,400 | 124,200 | 10.2 SEER | 175,000 | 141,800 | 81% |
| RTU-2 | TRANE | YSC060E3 | 5 | 208V/3φ | 29.5 | 45 | 2000 | 1575 | 425 | 0.50 | 1.0 | 61,800 | 67,200 | 13.0 SEER | 130,000 | 104,000 | 80% |
| RTU-3 | TRANE | YSC090A3 | 7.5 | 208V/3φ | 42.7 | 60 | 3000 | 2470 | 530 | 0.50 | 3.0 | 84,400 | 98,500 | 10.1 SEER | 140,000 | 113,000 | 81% |
| RTU-4 | TRANE | YSC072A3 | 6 | 208V/3φ | 32.7 | 50 | 2400 | 1945 | 455 | 0.50 | 1.0 | 53,600 | 72,000 | 10.3 SEER | 120,000 | 97,200 | 81% |
| RTU-5 | TRANE | YSC090A3 | 7.5 | 208V/3φ | 42.7 | 60 | 3000 | 2575 | 425 | 0.50 | 3.0 | 84,400 | 98,500 | 10.1 SEER | 140,000 | 113,000 | 81% |

* UNITS TO BE EQUIPPED WITH ON-BOARD BREAKER OR FUSED DISCONNECT

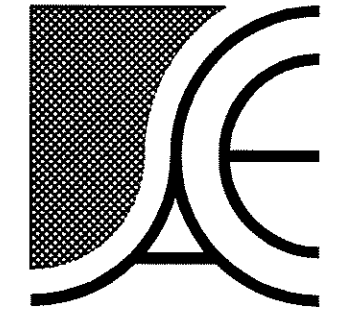
** UNITS TO BE EQUIPPED WITH ON-BOARD CONVENIENCE RECEPTACLES, FACTORY ROOF CURBS, AND OUTSIDE AIR DAMPERS



| AIR DISTRIBUTION SCHEDULE | | | | | | | | | | |
|---------------------------|--------------|-----------|------------|-----------|--------|----------------------------|-------|----------|-------------|--|
| MARK | MANUFACTURER | NECK SIZE | PANEL SIZE | CFM RANGE | USE | TYPE | MODEL | MATERIAL | FILTER SIZE | |
| A | E.H. PRICE | 6" | 24x24 | 0-150 | SUPPLY | STAMPED LOUVER FACE | SCD | STEEL | - | |
| B | E.H. PRICE | 8" | 24x24 | 151-250 | SUPPLY | STAMPED LOUVER FACE | SCD | STEEL | - | |
| C | E.H. PRICE | 10" | 24x24 | 251-375 | SUPPLY | STAMPED LOUVER FACE | SCD | STEEL | - | |
| D | E.H. PRICE | 12" | 24x24 | 376-500 | SUPPLY | STAMPED LOUVER FACE | SCD | STEEL | - | |
| E | E.H. PRICE | - | 16x6 | 201-300 | SUPPLY | SIDEWALL REGISTER | 520D | STEEL | - | |
| F | E.H. PRICE | 20x20 | 24x24 | 0-800 | RETURN | RETURN FILTER GRILLE | 530FF | STEEL | 20x20 | |
| G | E.H. PRICE | - | 20x14 | 0-790 | RETURN | RETURN FILTER GRILLE | 530FF | STEEL | 18x12 | |
| H | E.H. PRICE | - | 26x26 | 0-1150 | RETURN | RETURN FILTER GRILLE | 530FF | STEEL | 24x24 | |
| J | E.H. PRICE | 22x22 | 24x24 | 0-1600 | RETURN | NON-FILTERED RETURN GRILLE | 530 | STEEL | - | |

| UNIT HEATER SCHEDULE | | | | | | |
|----------------------|--------------|-----------|-------|-------|---------|------|
| MARK | MANUFACTURER | MODEL NO. | BTUH | WATTS | POWER | AMPS |
| UH-1 | QMARK | WHT-500 | 1,708 | 500 | 120V/1φ | 4.2 |

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TENANT UPFIT FOR:

J.A. KING

Greensboro, North Carolina

DRAWING NAME

MECHANICAL DETAILS



ENGINEER
NORTH CAROLINA
N. BECKETT

DRAWN
MJW

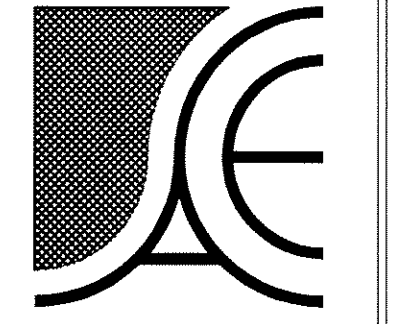
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JOB NO.
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SHEET

M-2

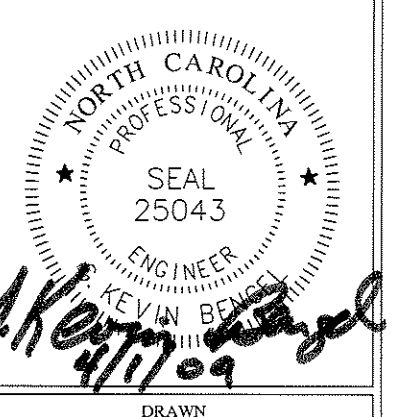


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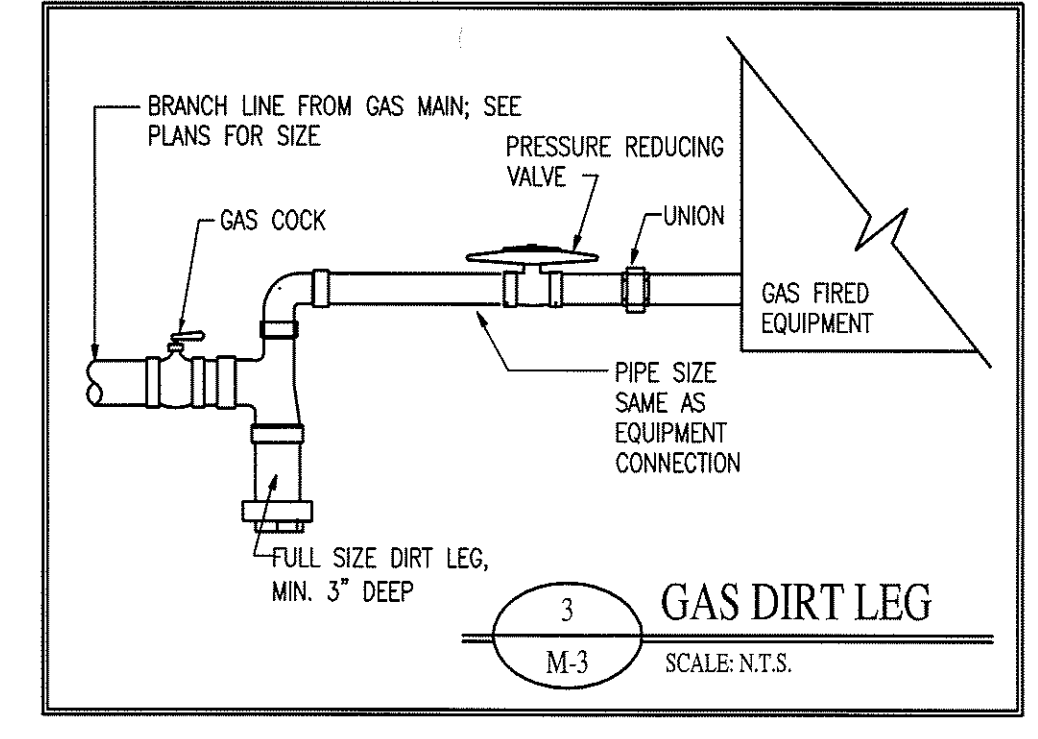
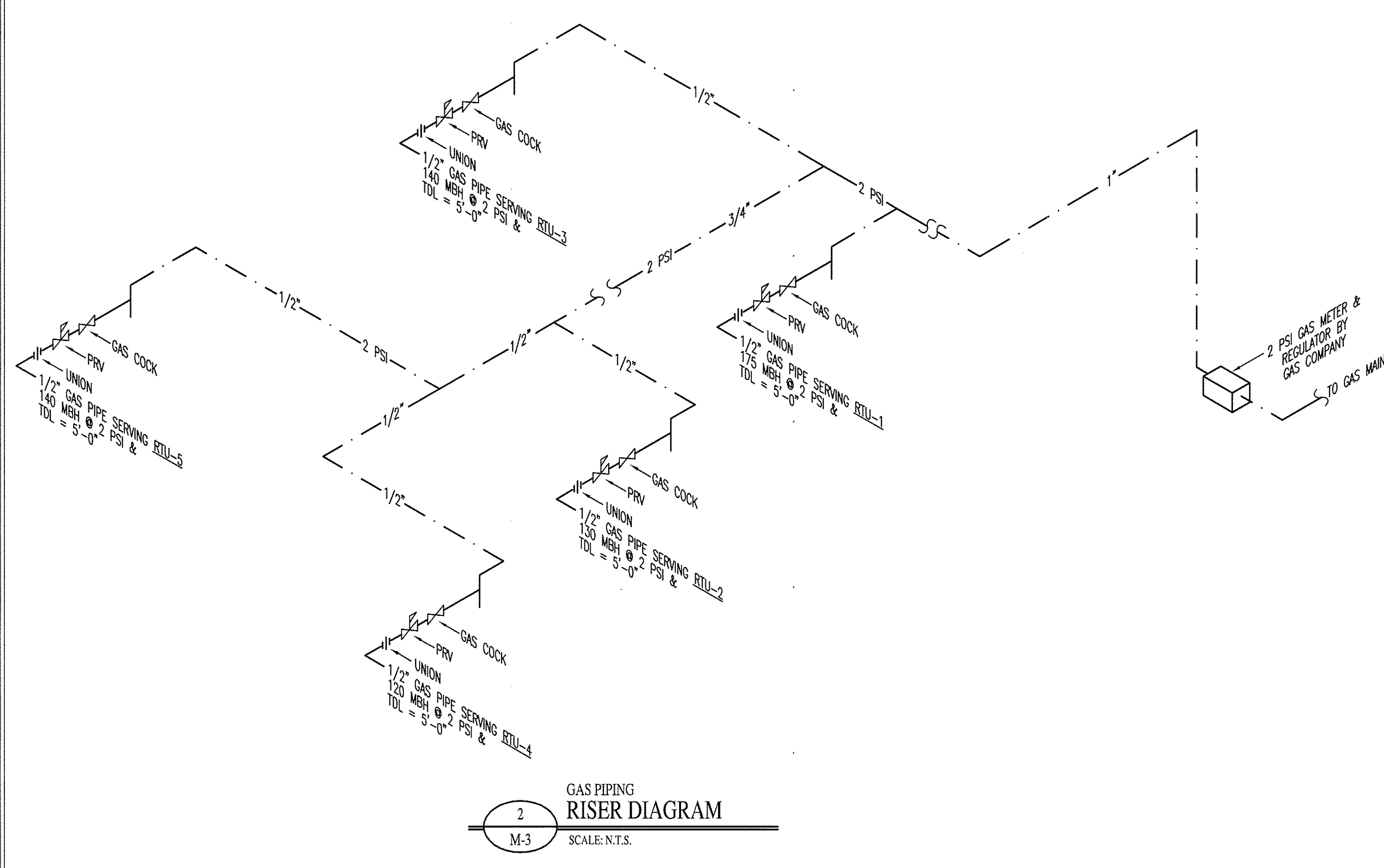
TENANT UPFIT FOR:
J.A. KING
 Greensboro, North Carolina

DRAWING NAME
GAS PIPING PLAN



DRAWN
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 DATE
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 JOB NO.
 9024
 SHEET

M-3



| GAS EQUIPMENT SCHEDULE | | |
|------------------------|---------------|-------------------------|
| MARK | DESCRIPTION | BTU/hr. INPUT |
| RTU-1 | ROOF TOP UNIT | 175,000 |
| RTU-2 | ROOF TOP UNIT | 130,000 |
| RTU-3 | ROOF TOP UNIT | 140,000 |
| RTU-4 | ROOF TOP UNIT | 120,000 |
| RTU-5 | ROOF TOP UNIT | 140,000 |
| TOTAL | | 705,000 @210° T.D.L. |

