

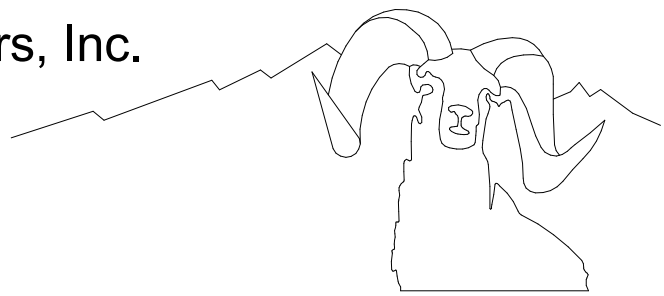
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ABBREVIATIONS

| | | | | | | | | | |
|-------|---------------------------|-------|----------------------------|--------|---------------------------|-------|------------------------------|-------|-------------------------|
| AAV | AUTOMATIC AIR VENT | DL | DOOR LOUVER | FT | FEET | NC | NORMALLY CLOSED | ROD | ROOF OVERFLOW DRAIN |
| ABV | ABOVE | DN | DOWN | FTR | FINNED TUBE RADIATION | NEG | NEGATIVE | RPM | REVOLUTIONS PER MINUTE |
| ADR | AREA DRAIN (SEE SYMBOLS) | DWG | DRAWING | FV | FACE VELOCITY | NIC | NOT IN CONTRACT | SA | SUPPLY AIR |
| AFF | ABOVE FINISHED FLOOR | DX | DIRECT EXPANSION | FXC | FLEXIBLE CONNECTION | NO | NUMBER | SAD | SUPPLY AIR DIFFUSER |
| ALUM | ALUMINUM | EA | EACH | GA | GAUGE | NOM | NORMALLY OPEN | SCH | SCHEDULE |
| AP | ACCESS PANEL | EAT | ENTERING AIR TEMPERATURE | GAL | GALLON | NTS | NOMINAL | SCHEM | SCHEMATIC |
| ATC | AUTOMATIC TEMP. CONTROL | EC | ELECTRICAL CONTRACTOR | GALV | GALVANIZED | OS | NOT TO SCALE | SH | SENSIBLE HEAT |
| AVER | AVERAGE | ECC | ECCENTRIC | GC | GENERAL CONTRACTOR | OA | OUTSIDE AIR | SP | STATIC PRESSURE |
| AWT | AVERAGE WATER TEMP. | EFF | EFFICIENCY | GPM | GALLONS PER MINUTE | OB | OFF BOTTOM | SPEC | SPECIFICATION |
| BDD | BACK DRAFT DAMPER | EJ | EXPANSION JOINT | GR | GRILLE | OD | OUTSIDE DIMENSION | SQ | SQUARE |
| BFP | BACK FLOW PREVENTOR | EL | ELEVATION | GRS/LB | GRAINS PER POUND | OC | ON CENTER | SS | STAINLESS STEEL |
| BLDG | BUILDING | ELEC | ELECTRIC | HT | HEIGHT | OCC | OCCUPIED | STD | STANDARD |
| BLW | BELOW | ELEV | ELEVATOR | H JO | WATER | OCH | OUTSIDE GROUND HYDRANT | STL | STEEL |
| BSMT | BASEMENT | ENT | ENTERING | HB | HOSE BIBB | OPG | OPENING | STM | STEAM |
| BTU | BRITISH THERMAL UNIT | EQ | EQUAL | HD | HEAD (SEE SCHEDULES) | OT | OFF TOP | STR | STRUCTURAL |
| CAP | CAPACITY | EQUIP | EQUIPMENT | HP | HORSEPOWER | OZ | OUNCE | SUCT | SUCTION |
| CBV | CIRCUIT BALANCING VALVE | EQUIV | EQUIVALENT | HR | HOUR | PART | PARTIAL | SYS | SYSTEM |
| CFH | CUBIC FEET PER HOUR | ER | EXHAUST REGISTER | HTR | HEATER | PDR | PLENUM DRAIN | TAD | TRANSFER AIR DUCT |
| CFM | CUBIC FEET PER MINUTE | ES | END SWITCH | HZ | HERTZ | PD | PRESSURE DROP (SEE SCHEDULE) | TDH | TOTAL DYNAMIC HEAD |
| CHP | CONCRETE HOUSEKEEPING PAD | EWT | ENTERING WATER TEMPERATURE | ID | INTERNAL DIAMETER | PERF | PERFORATED | TEMP | TEMPERATURE |
| CI | CAST IRON | EX | EXHAUST | IN | INCHES | PH | PHASE | THT | TOTAL HEAT |
| CL | CENTER LINE | EXPAN | EXPANSION | INCL | INCLUDING | PNEU | PNEUMATIC | TP | TOTAL PRESSURE |
| CLG | CEILING | EXT | EXTERNAL | INT | INTERNAL | POS | POSITIVE PRESS | TT | TEMPERATURE TRANSMITTER |
| CMU | CONCRETE MASONRY UNIT | F | DEGREES FAHRENHEIT | INV | INVERT | PRESS | PRESSURE | TYP | TYPICAL |
| CO | CLEAN OUT | FA | FROM ABOVE | KW | KILOWATT | PSI | PRESSURE SWITCH | UC | UNDERCUT |
| COL | COLUMN | FB | FROM BELOW | L | LENGTH | UNOCC | UNOCCUPIED | LD | LINEAR DIFFUSER |
| COMP | COMPRESSOR | FC | FAIL CLOSED | LAT | LEAVING AIR TEMPERATURE | PT | PRESSURE TRANSMITTER | V | VOLTS |
| CON | CONCENTRIC | FCV | FLOW CONTROL VALVE | LB | POUND | PV | PLUG VALVE | VA | VALVE |
| CONC | CONCRETE | FD | FLOOR DRAIN | LD | LINEAR DIFFUSER | PVC | POLYVINYL CHLORIDE | VB | VACUUM BREAKER |
| COND | CONDENSATE | F/D | FIRE DAMPER | LIN | LINEAR | QUAN | QUANTITY | VEL | VELOCITY |
| CONN | CONNECTION | FIN | FINISHED | LIQ | LIQUID | R | REGISTER | VI | VIBRATION ISOLATOR |
| CONTN | CONTINUATION | FL | FLANGE | LRA | LOCK ROTOR AMPS | RA | RETURN AIR | VLT | VOLTAGE |
| CONTR | CONTRACTOR | FLA | FULL LOAD AMPS | RD | ROOF DRAIN | RE | ROUNDED ENTRANCE/EXIT | W | WIDTH |
| DA | DIRECT ACTING | FLEX | FLEXIBLE | LVR | LOUVER | REL | RELIEF | W/ | WITH |
| DAMP | DAMPER | FLR | FLOOR | LWT | LEAVING WATER TEMPERATURE | REOD | REQUIRED | W/O | WITHOUT |
| DB | DRY BULB | FO | FAIL OPEN | MC | MECHANICAL CONTRACTOR | RET | RETURN | WB | WET BULB |
| DEPT | DEPARTMENT | FP | FIRE PROTECTION | MED | MEDIUM | RH | RELATIVE HUMIDITY | WC | WATER COLUMN |
| DIA | DIAMETER | FPM | FEET PER MINUTE | MFR | MANUFACTURER | RICW | RUN IN CASEWORK | WG | WATER GAUGE |
| DIAG | DIAGRAM | FPS | FEET PER SECOND | MH | MANHOLE | RIN | RUN IN ENCLOSURE | | |
| DIFF | DIFFERENTIAL | FS | FLOW SWITCH | MIN | MINIMUM | RIE | RISE IN WALL | | |
| DISCH | DISCHARGE | F/SID | WITH FIRE/SMOKE DAMPER | MISC | MISCELLANEOUS | RLA | RAISED LOAD AMPS | | |
| DIV | DIVISION | | | MTD | MOUNTED | RM | ROOM | | |
| DIW | DOWN IN WALL | | | | | | | | |

RESPONSIBLE DIVISION

UNLESS OTHERWISE INDICATED ALL HEATING, VENTILATING, AIR CONDITIONING, PLUMBING AND OTHER MECHANICAL EQUIPMENT, MOTORS, AND CONTROLS SHALL BE FURNISHED, SET IN PLACE AND WIRED AS FOLLOWS:

| ITEM | FURNISHED | SET | POWER- | CONTROL- |
|---|-----------|-------|--------|----------|
| EQUIPMENT | 23 | 23 | 26 | -- |
| COMBINATION MAGNETIC MOTOR STARTERS, MAGNETIC MOTOR STARTERS AND CONTACTORS | 23 | 26 | 26 | 23 |
| FUSED AND UNFUSED DISCONNECT SWITCHES, THERMAL OVERLOAD SWITCHES AND HEATERS, MANUAL MOTOR STARTERS | 26(1) | 26(1) | 26 | -- |
| MANUAL-OPERATING AND MULTI-SPEED SWITCHES | 23 | 26 | 26 | 26 |
| CONTROLS, RELAYS, TRANSFORMERS | 23 | 23 | 26 | 23 |
| THERMOSTATS (LOW VOLTAGE) AND TIME SWITCHES | 23 | 23 | 26 | 23 |
| THERMOSTATS(LINE VOLTAGE) | 23 | 23 | 26 | 26 |
| TEMPERATURE CONTROL PANELS | 23 | 23 | 26 | 23 |
| MOTOR AND SOLENOID VALVES, DAMPER MOTORS, PE & EP SWITCHES | 23 | 23(2) | -- | 23(2) |
| PUSH-BUTTON STATIONS AND PILOT LIGHTS | 23 | 23(2) | -- | 23(2) |
| HEATING, COOLING, VENTILATION AND AIR C ONDITONING CONTROLS | 23 | 23 | 26 | 23 |
| EXHAUST FAN SWITCHES | 23 | 26 | 26 | 23(2) |

SUBSCRIPT FOOTNOTES:
1) UNDER DIVISION 23 IF FURNISHED FACTORY-WIRED AS PART OF EQUIPMENT OR IF FURNISHED WITH COMBINATION STARTERS.
2) IF ITEM IS FOR LINE VOLTAGE, SET IN PLACE AND CONNECT UNDER DIVISION 26, WHERE FACTORY MOUNTED ON EQUIPMENT OR ATTACHED TO PIPING OR DUCTS AND USING LINE VOLTAGE FURNISH AND SET UNDER DIVISION 23, CONNECT UNDER DIVISION 26.

LINE DESIGNATION SYMBOLS

| | |
|-----|------------------------|
| CS | CONDENSER WATER SUPPLY |
| CR | CONDENSER WATER RETURN |
| RL | REFRIGERANT LIQUID |
| RS | REFRIGERANT SUCTION |
| RD | REFRIGERANT DISCHARGE |
| GS | GLYCOL SUPPLY |
| GR | GLYCOL RETURN |
| HWS | HOT WATER SUPPLY |
| HWR | HOT WATER RETURN |
| HPS | HEAT PUMP SUPPLY |
| HPR | HEAT PUMP RETURN |
| PC | PUMPED CONDENSATE |
| CF | CHEMICAL FEED |
| V | VENT PIPING |
| R | RELIEF PIPING |
| MU | MAKE-UP WATER |
| OF | OVERFLOW |
| D | DRAIN |
| FL | FILL LINE |
| G | NATURAL GAS |
| GV | GAS VENT |
| SW | SOFT WATER |
| SMS | SNOWMELT SUPPLY |
| SMR | SNOWMELT RETURN |

PIPING ELEMENTS/VALVING

| | | |
|---|--|---|
| EXISTING EQUIPMENT OR PIPE TO BE REMOVED. | RELIEF/SAFETY VALVE | ANCHOR |
| GATE VALVE | GAS COCK | GUIDE |
| GLOBE VALVE | FUSIBLE LINK VALVE- QUICK CLOSING | EXPANSION JOINT |
| PLUG VALVE | FUSIBLE LINK VALVE- QUICK OPENING | FLOW SWITCH |
| BUTTERFLY VALVE | AUTOMATIC FILL VALVE | TEMPERATURE TRANSMITTER |
| BALL VALVE | MANUAL AIR VENT | PRESSURE TRANSMITTER OR PRESSURE SWITCH |
| SWING CHECK VALVE | AUTOMATIC AIR VENT (EXTEND DISCHARGE TO DRAIN) | THERMOMETER |
| LIFT CHECK VALVE | FLOW METER-VENTURI | GAUGE WITH GAUGE COCK & SYPHON (STEAM) |
| GLOBE VALVE, ANGLE | FLOW METER-ORIFICE | AQUASTAT |
| DIAPHRAM VALVE | DIRECTION OF FLOW | GAS PRESSURE REGULATOR |
| BALANCING VALVE | DIRECTION OF PITCH-RISE OR DROP | FLOAT OPERATED CONTROL VALVE |
| STRAINER | STRAINER | BASKET STRAINER |
| STRAINER WITH BLOW OFF VALVE | PIPE RISING UP | STEAM TRAP |
| THREE WAY CONTROL VALVE | PIPE DROPPING DOWN | ELECTRICALLY TRACED PIPING |
| TWO WAY CONTROL VALVE | CONCENTRIC REDUCER | EXPANSION LOOP (WxH) |
| SOLENOID VALVE | ECCENTRIC REDUCER | VACUUM BREAKER |
| PRESSURE REDUCING VALVE (PRV) | UNION - SCREWED OR FLANGED | STEAM LEAK DETECTOR |
| TEMPERATURE/PRESSURE RELIEF VALVE | | |

HVAC & DUCTWORK SYMBOLS

| | |
|--|--|
| SECTION THROUGH RETURN OR EXHAUST AIR | |
| SECTION THROUGH SUPPLY OR OUTSIDE AIR DUCT | |
| SUPPLY OR OUTSIDE AIR DUCT | |
| ACCESS DOOR (BOTTOM OR SIDE) | |
| ACOUSTICALLY LINED DUCT | |
| DAMPER, FIRE | |
| DAMPER, MANUAL VOLUME | |
| INCLINED DROP IN DIRECTION OF ARROW | |
| INCLINED RISE IN DIRECTION OF ARROW | |
| TRANSITION, RECTANGULAR TO ROUND | |
| FLEXIBLE DUCT | |
| IN-LINE FAN | |
| TRANSITION, RECTANGULAR | |
| SPIN-IN COLLAR INTO ADAPTER ON TOP OF DUCT | |
| CEILING SUPPLY AIR DIFFUSER (CD) | |
| SIWALL SUPPLY AIR REGISTER (SR) | |
| ELBOW TURNED DOWN | |
| ELBOW TURNED UP | |
| ELBOW, RADIUS TYPE | |
| ELBOW, SQUARE OR RECTANGULAR TYPE WITH AIRFOIL TURNING VANES | |
| RETURN OR EXHAUST AIR DUCT | |
| CEILING RETURN AIR REGISTER (RR) | |
| SIWALL RETURN AIR REGISTER(RR) | |
| OPEN END DUCT | |
| FLEXIBLE CONNECTION | |
| CARBON MONOXIDE | |
| CARBON DIOXIDE | |
| THERMOSTAT | |
| FIRE SMOKE DAMPER | |

MECHANICAL KEYNOTE LEGEND

| Key Value | Keynote Text |
|-----------|--------------|
|-----------|--------------|

MECHANICAL SHEET LIST

| Sheet Number | Sheet Name | Sheet Issue Date |
|--------------|-------------------------|------------------|
| M0-1 | MECHANICAL COVER SHEET | 01/14/2020 |
| M1-1 | MECHANICAL - MAIN LEVEL | 09/14/20 |
| M1-2 | MECHANICAL - ROOF PLAN | 09/14/20 |
| M3-1 | MECHANICAL SCHEDULES | 10/29/19 |

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CMU

GOLF FACILITY

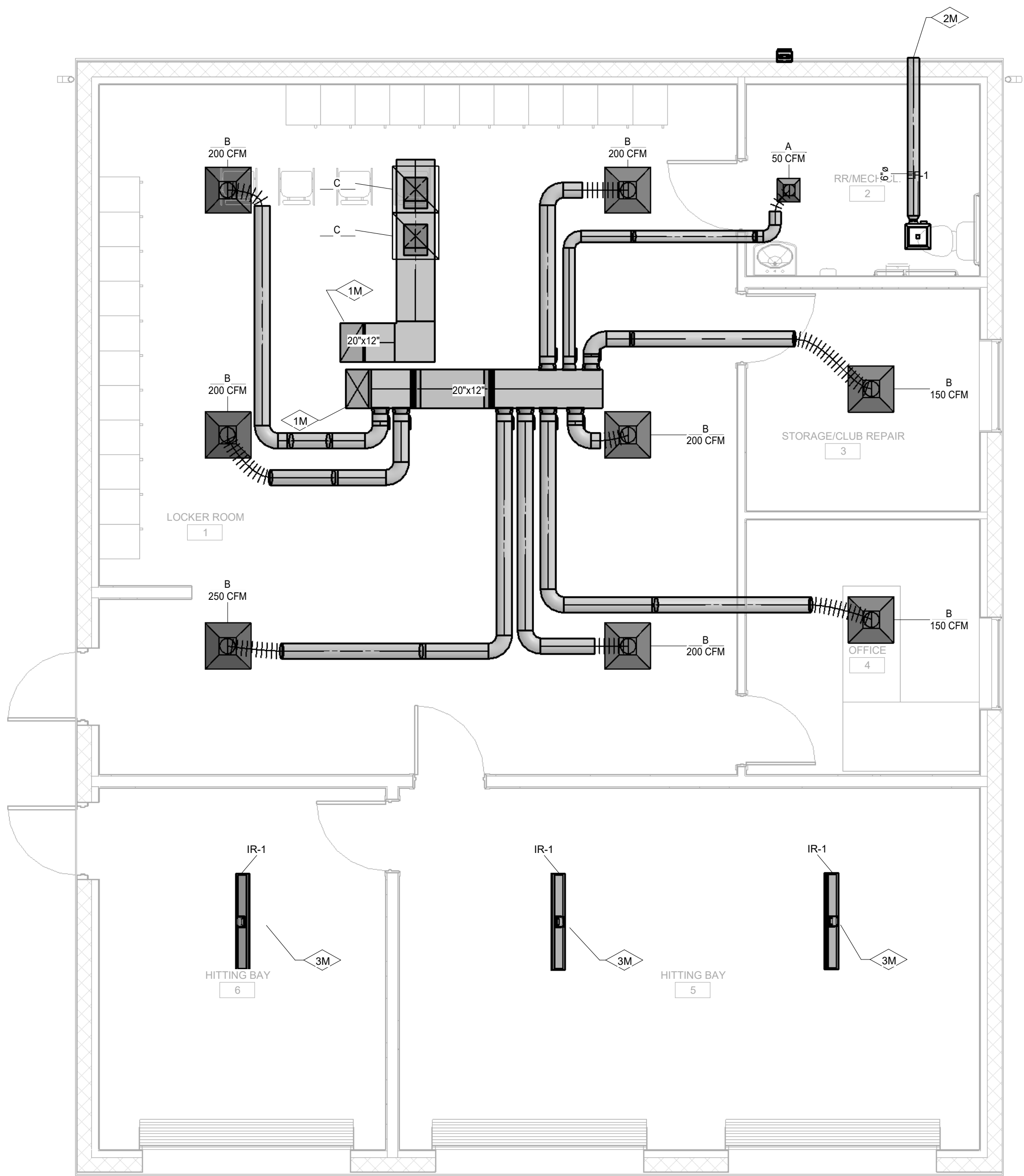
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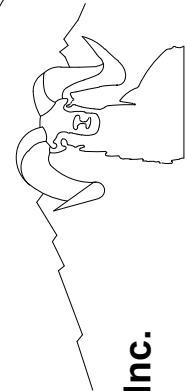
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JOB NO.: 20-132
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SCALE: As indicated
SHEET NO.:

M0-1



① MECHANICAL - MAIN LEVEL
1/4" = 1'-0"

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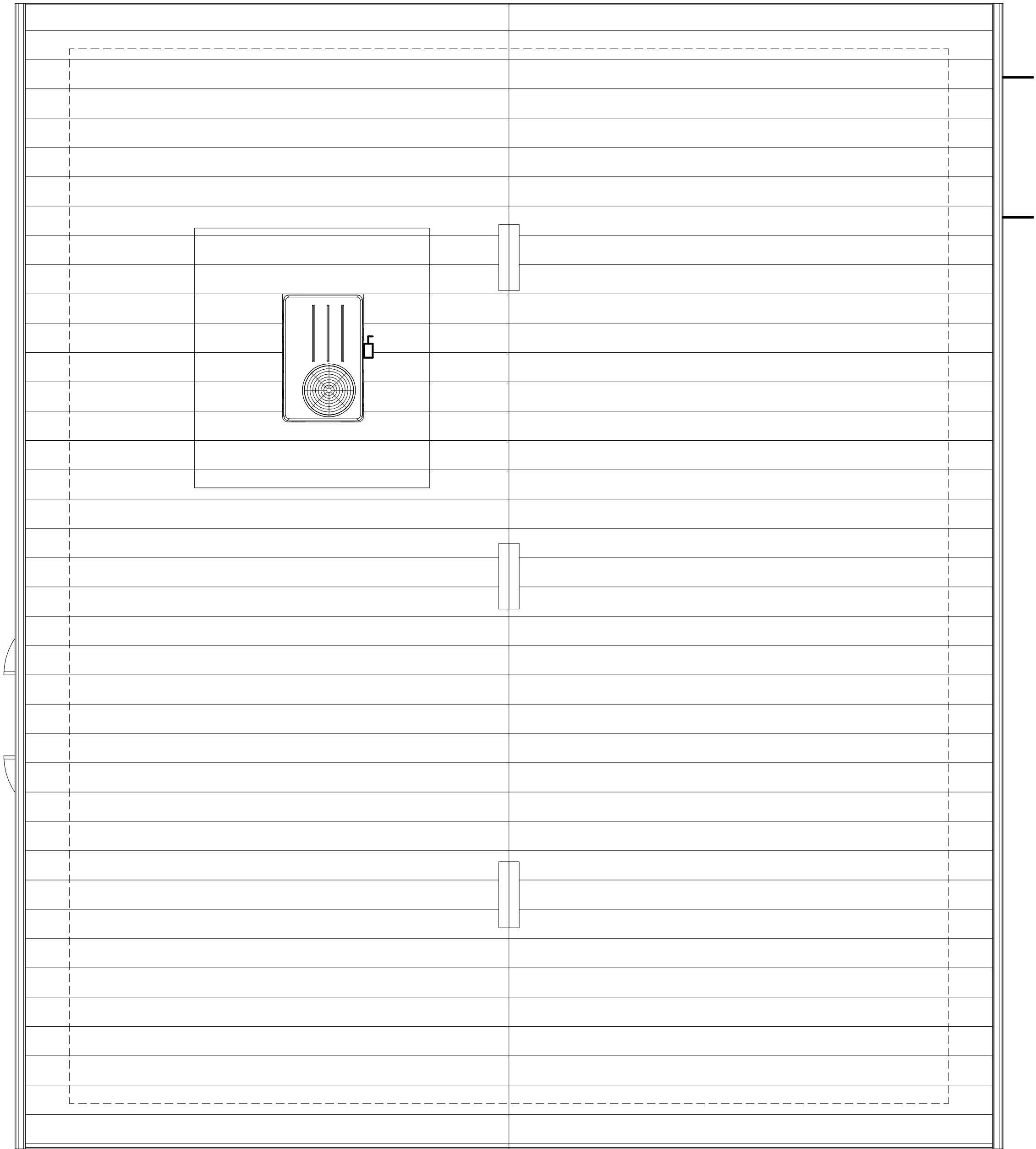
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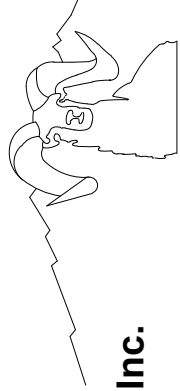
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DATE: 09/24/20
JOB NO.: 20-132
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SCALE: 1/4" = 1'-0"
SHEET NO.: M1-1

① MECHANICAL - ROOF LEVEL
1/4" = 1'-0"



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MECHANICAL PROVISIONS

1. SCOPE OF WORK

- A. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIALS, AND LABOR TO SATISFY A COMPLETE WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.
- B. ALL WORK IS TO BE PERFORMED IN STRICT COMPLIANCE WITH ALL LOCAL CODES AND ALL OTHER REGULATION GOVERNING WORK OF THIS NATURE.
- C. THE CONTRACTOR SHALL, BEFORE SUBMITTING ANY PROPOSAL, EXAMINE THE PROPOSED SITE AND SHALL DETERMINE FOR HIMSELF THE CONDITIONS THAT MAY EFFECT THE WORK. NO ALLOWANCE SHALL BE MADE IF THE CONTRACTOR FAILS TO MAKE SUCH EXAMINATIONS.
- D. ALL EQUIPMENT AND MATERIALS SHALL BE AS SPECIFIED OR "APPROVED EQUAL" BY THE ENGINEER OR ARCHITECT.

2. PERMITS

- A. THE CONTRACTOR SHALL SECURE ALL PERMITS OR APPLICATIONS AND PAY ANY AND ALL FEES.

3. SHOP DRAWINGS

- A. SUBMIT MATERIAL LIST AND SHOP DRAWINGS FOR MAJOR EQUIPMENT TO THE ARCHITECT/ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL SUBMIT FIVE SETS OF SHOP DRAWINGS AND THEY SHALL BE CLEARLY LABELED.

4. FLEXIBLE DUCT WORK

- A. FLEXIBLE TYPE DUCT SHALL BE OF TWO ELEMENT SPIRAL CONSTRUCTION COMPOSED OF A CORROSION RESISTANT METAL SUPPORTING SPIRAL AND COATED FABRIC WITH A MINERAL BASE. FLEXIBLE DUCT CONNECTORS SHALL BE LISTED BY U.L. CLASS 1 DUCTS, AND SHALL HAVE A FLAME SPREAD RATING NOT EXCEEDING 25 AND A SMOKE DEVELOPED RATING NOT EXCEEDING 50.
- B. USE OF FLEXIBLE DUCTWORK SHALL BE LIMITED TO NO MORE THAN 6 LINEAR FEET PER RUN.
- C. CONTRACTOR SHALL BE CAREFUL SO AS NOT TO KINK OR COLLAPSE FLEXIBLE DUCT.

5. REFRIGERANT

- A. PIPING CONTRACTOR SHALL PROVIDE AND INSTALL REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND IN SUCH A WAY AS TO BE INCONSPICUOUS AND FREE FROM ANY POSSIBLE CONDENSATION.
- B. INSULATE REFRIGERANT LINES WITH ARMOUR-FLEX TYPE INSULATION, SHALL BE TYPE "K" COPPER TUBING, WITH WROUGHT COPPER SOLDER TYPE FITTINGS SUITABLE FOR CONNECTION WITH SILVER SOLDER.

6. DUCTWORK

- A. THE DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "SMACNA" APPLICABLE MANUALS.
- B. ALL DUCTWORK SHALL BE THE LOW VELOCITY TYPE, UNLESS SPECIFIED OTHERWISE.
- C. CONTRACTOR SHALL PROVIDE AND INSTALL APPROVED FIRE DAMPERS AND ACCESS PANELS IN ANY AND ALL DUCTWORK WHICH PENETRATES A HORIZONTAL OR VERTICAL FIRE PARTITION, OR AS OTHERWISE SHOWN ON DRAWINGS.
- D. ALL BRANCH DUCTS TO HAVE VOLUME DAMPERS, SMOOTH TURN RADIUS DUCTWORK OR TURNING VANES SHALL BE USED THROUGHOUT WHERE FLOW EXCEEDS 150 CFM.
- E. ALL DUCT JOINTS TO BE SEALED IN ACCORDANCE WITH "SMACNA" STANDARDS AND ACCEPTED GOOD PRACTICE.
- F. ALL DUCT DIMENSIONS SHOWN ARE NET INSIDE VALUES. DIMENSIONS MAY BE CHANGED SO LONG AS THE NET FREE FACE AREA IS MAINTAINED.
- G. ALL CONCEALED DUCTWORK SHALL BE INSULATED WITH 1-1/2" FIBERGLASS INSULATING BLANKET WITH ALUMINUM FOIL FACING.
- H. ALL SUPPLY AND RETURN DUCTWORK 15 FEET DOWNSTREAM OF THE HVAC UNIT SHALL BE INTERNALLY LINED WITH A 1/2" ACOUSTICAL DUCT LINER UNLESS OTHERWISE NOTED ON THE DRAWINGS.

7. DRAINAGE PIPING

- A. (CONDENSATE) SHALL BE SCHEDULE 40 PVC PIPE WITH SOLVENT JOINTS. PITCH HORIZONTAL LINES 1" IN 10'-0". CONDENSATE DRAINS SHALL BE ROUTED TO FLOOR DRAIN, ROOF DRAIN OR INDIRECT WASTE DRAIN.

8. HVAC CONTROLS

- A. CONTRACTOR TO SUPPLY AND INSTALL ALL CONTROL WIRING AND THERMOSTATS AS REQUIRED.

9. ELECTRICAL

- A. CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR FOR LOCATION OF WIRING FOR EACH HVAC UNIT.

10. PIPE SUPPORTS

- A. ALL PIPE SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN A NEAT AND WORKMANLIKE MANNER. THE USE OF WIRE OR METAL STRAP TO SUPPORT PIPES WILL NOT BE PERMITTED. SPACING OF PIPE SUPPORTS SHALL NOT EXCEED 8 FEET FOR ALL PIPING. PLASTIC PIPING TO BE SUPPORTED EVERY 4 FEET.

11. GAS PIPING

- A. PIPING SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH MALLEABLE IRON FITTINGS. WHERE GAS PIPE CONNECTS TO EQUIPMENT, IT SHALL BE PROVIDED WITH A DRIP LEG THE FULL SIZE OF THE RUNOUT, A 100% SHUT-OFF VALVE AND A UNION. GAS PIPING CONTAINING PRESSURE GREATER THAN 9" W.G. SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH WELDED JOINTS.

12. MISCELLANEOUS

- A. ALL EXTERIOR OPENINGS TO BE PROPERLY CAULKED AND SEALED WITH A SEALANT OF HIGH QUALITY AND LONG LIFE, TO PREVENT INFILTRATION OF OUTSIDE AIR INTO CONDITIONED SPACE.
- B. COORDINATE INSTALLATION OF ALL ROOF FLASHING AT ROOF PENETRATION.
- C. DO NOT SCALE THIS DRAWING FOR EXACT DIMENSIONS.
- D. VERIFY ALL FIGURES, CONDITIONS, AND DIMENSIONS AT THE JOB SITE.
- E. THE MECHANICAL PLANS ARE INTENDED TO BE DIAGRAMMATIC AND ARE BASED ON ONE MANUFACTURER'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL THE DETAILS OF THE EQUIPMENT.
- F. THE CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO ENSURE THAT THE EQUIPMENT WILL FIT IN THE AVAILABLE SPACE.
- G. PEX TUBING, IF PEX TUBING IS USED AS AN APPROVED ALTERNATE FOR APPLICATIONS WHERE METALLIC PIPING IS THE BASIS OF DESIGN, THE PEX MANUFACTURER SHALL SUBMIT SHOP DRAWINGS CLEARLY INDICATING THAT THE DESIGN HAS BEEN ANALYZED AND MODIFIED, AS REQUIRED TO MAINTAIN SCHEDULED HYDRONIC SYSTEM PARAMETERS. ANY DESIGN RESULTING IN INCREASED SYSTEM PRESSURE DROP AS A RESULT OF IMPROPER PEX SIZING OR DESIGN SHALL NOT BE PERMITTED.

13. TESTING AND BALANCING

- A. THE HVAC SYSTEM SHALL BE TESTED AND AND BALANCED BY AN INDEPENDENT AGENCY, UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. A SEALED TYPE WRITTEN REPORT SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL.

14. GUARANTEE

- A. MATERIALS, EQUIPMENT AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE(1) YEAR FROM DATE OF ACCEPTANCE. DEFECTS WHICH APPEAR DURING THAT PERIOD SHALL BE CORRECTED AT THIS CONTRACTOR'S EXPENSE.
- B. FOR THE SAME PERIOD, THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO PREMISES CAUSED BY DEFECTS IN WORKMANSHIP OR IN THE WORK OR EQUIPMENT FURNISHED AND/OR INSTALLED BY HIM.

| PACKAGE ROOF TOP UNIT SCHEDULE | | | | | | | | | | | | | | | | | | | |
|--------------------------------|-----------------------------|----------------------|-----------------------|---------------|-----------------------|-------------|--------------|---------------------|-----------|----------------------|-------|-------|-----------|---------|--------------|--------------|---------|----------------|----------|
| TYPE MARK | SERVICE | SUPPLY AIRFLOW (CFM) | OUTSIDE AIRFLOW (CFM) | SUPPLY E.S.P. | NOM. COOLING CAPACITY | HEATING | | | | ELECTRICAL | | | | | WEIGHT (LBS) | MANUFACTURER | MODEL # | NOTES | |
| | | | | | | INPUT (MBH) | OUTPUT (MBH) | GAS FLOW RATE (CFH) | FILTERS | EVAP. FAN POWER (HP) | VOLTS | PHASE | FREQUENCY | MCA (A) | | | | | MOCp (A) |
| RTU-1 | GENERAL HEATING AND COOLING | 1600 | 400 | 75 | 4 TON | 115 | 92 | 130 | 2" MERV 8 | 1/6 | 240 | 2 | 60 Hz | 34 A | 50 A | 659.00 lbf | TRANE | 4YC26048C1115A | |

NOTES:

1. PROVIDE WITH VIBRATION ISOLATION ROOF CURB, 100% MODULATING ECONONMIZER, OUTSIDE AIR HOOD, LOW AMBIENT CONTROL, 7 DAY PROGRAMMABLE THERMOSTAT, POWER DISCONNECT, AND DIRECT DRIVE MOTOR.

| ELECTRIC INFARRED HEATER SCHEDULE | | | | | | | | | | | | | |
|-----------------------------------|--------------|-----------------|---------|----------------------|--------|--------|-------------|-------|-----------|--------------|------------------------------------|--------|----------------------|
| TYPE MARK | SERVICE | LOCATION | LENGTH | HEATING OUTPUT (BTU) | WATTS | AMPS | MOTOR VOLTS | PHASE | FREQUENCY | MANUFACTURER | MODEL # | FINISH | OPTIONS/ ACCESSORIES |
| IR-1 | HITTING BAYS | CEILING RECESED | 4' - 4" | 11950 | 3500 W | 14.2 A | 230 V | 1 | 60 Hz | BROMIC | PLATINUM SMART HEAT ELECTRIC 3500W | BLACK | NOTE-1 |

NOTES:

1. PROVIDE WITH RECESSED MOUNTING FRAME, STAINLESS STEEL ELEMENT, THERMOSTAT.

| EXHAUST FAN SCHEDULE | | | | | | | | | | | | | |
|----------------------|----------|----------|-----------------------|----------------|------------|-------|-------|--|-----------|--------------|-----------|------------|--------|
| TYPE MARK | SERVICE | LOCATION | EXHAUST AIRFLOW (CFM) | EXHAUST E.S.P. | ELECTRICAL | | | | FREQUENCY | MANUFACTURER | MODEL # | NOTES | |
| | | | | | FLA (A) | VOLTS | PHASE | | | | | | |
| EF-1 | RESTROOM | CEILING | 80 | 25 | 0.10 A | 120 V | 1 | | 60 Hz | | PANASONIC | FV-0511VK2 | NOTE-1 |

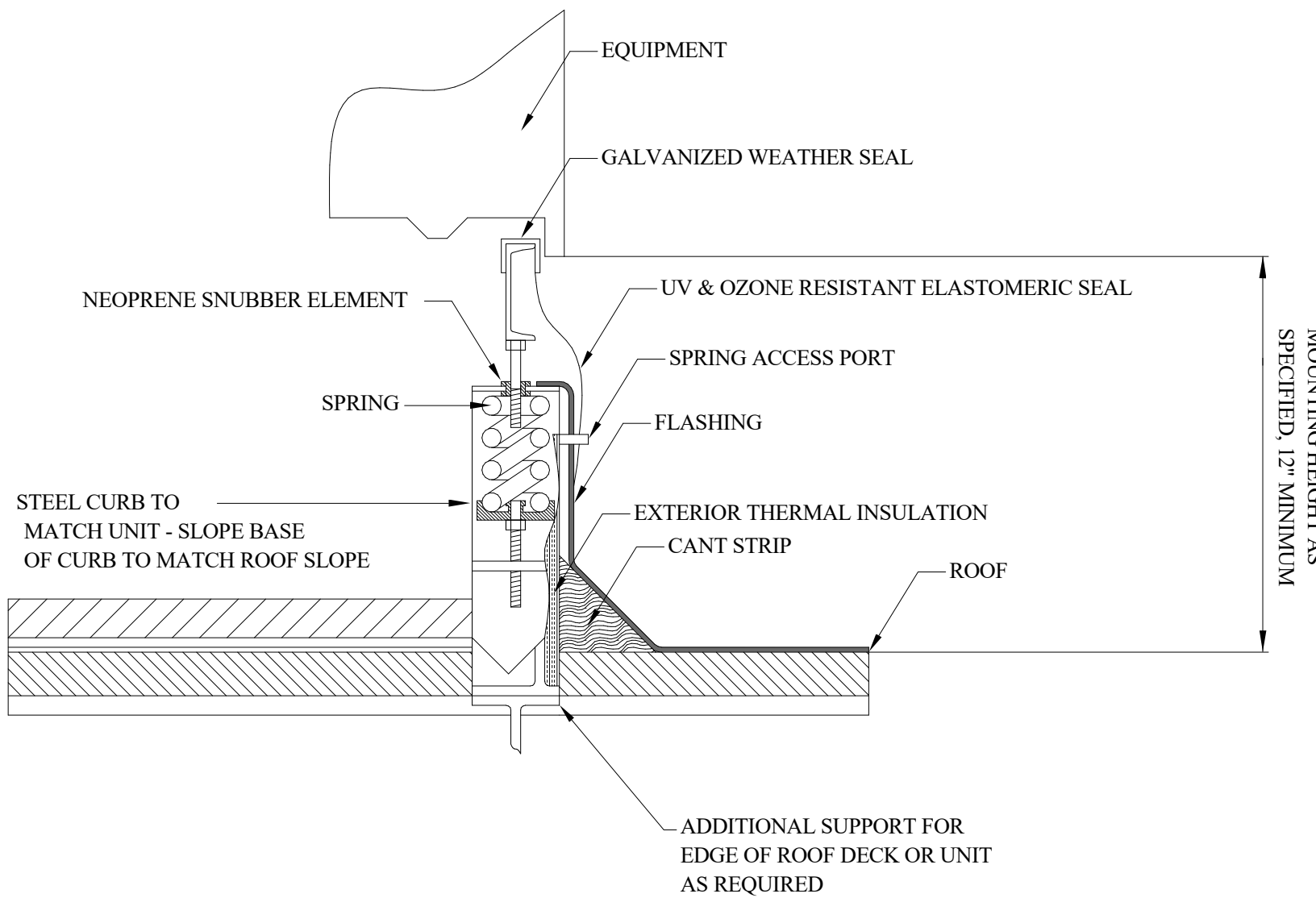
NOTES:

1. COORDINATE MOUNTING TYPE WITH CEILING. PROVIDE WITH POWER DISCONNECT, BIRD SCREEN, BACKDRAFT DAMPER, FAN TO INTERLOCK WITH LIGHTS.

| GRILLE-REGISTER-DIFFUSER SCHEDULE | | | | | |
|-----------------------------------|----------------------------------|--------|--------------|---------|--------|
| TYPE MARK | DIFFUSER DIMENSIONS OVERALL SIZE | FINISH | MANUFACTURER | MODEL # | NOTES |
| A | 12"x12" | WHITE | PRICE | SCD | NOTE-1 |
| B | 24"x24" | WHITE | PRICE | SCD | NOTE-1 |
| C | 24"x24" | WHITE | PRICE | 80 | NOTE-2 |

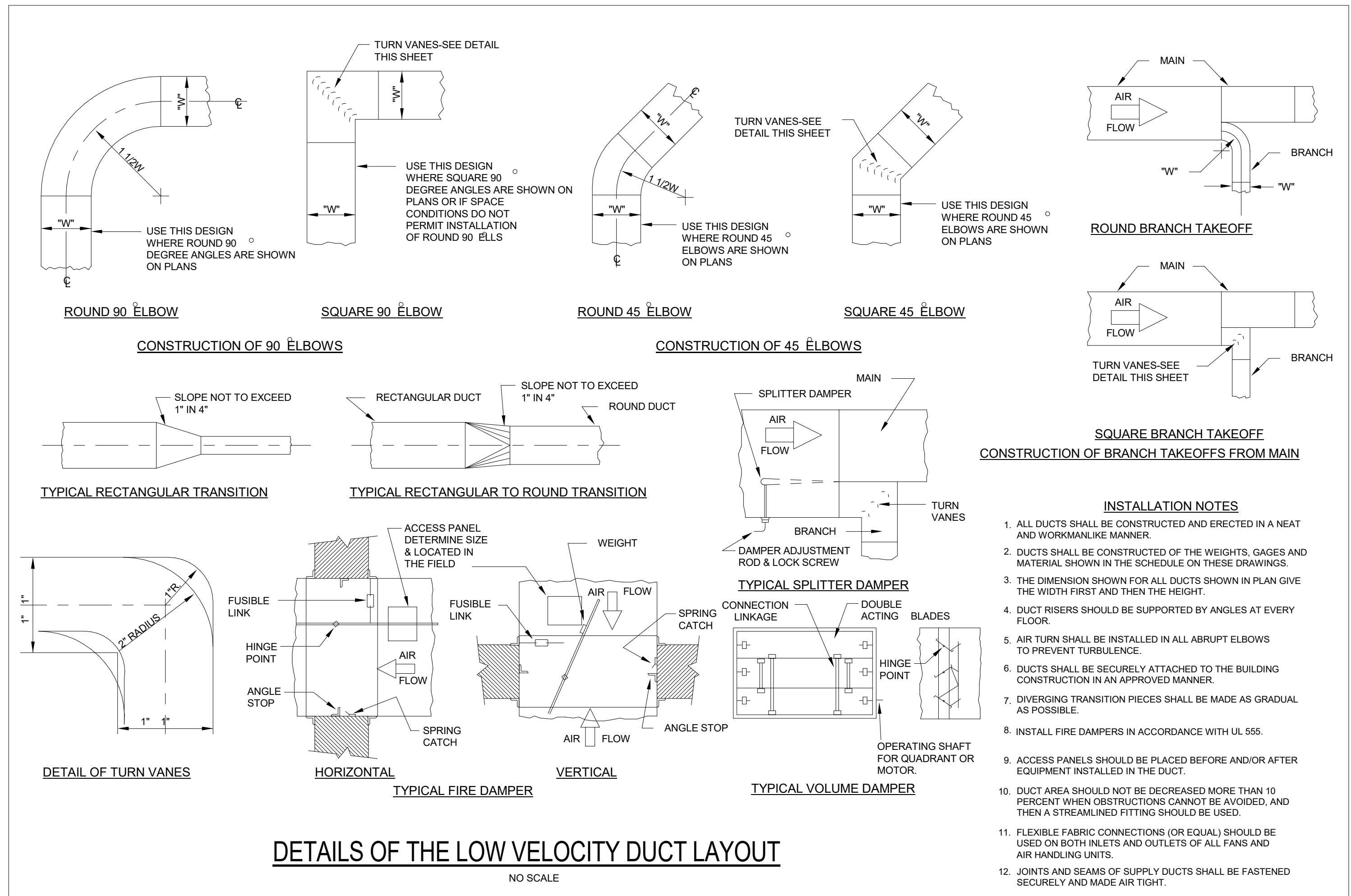
NOTES:

1. CEILING MOUNTED SUPPLY DIFFUSER. PROVIDE WITH OBD, CEILING MOUNT COORDINATED WITH CEILING TYPE. FINAL COLOR SELECTION BY OWNER/ARCHITECT.
2. CEILING MOUNTED RETURN GRILLE. COORDINATE MOUNTING TYPE WITH CEILING. FINAL COLOR SELECTION BY OWNER/ARCHITECT.



ROOFTOP EQUIPMENT ISOLATION CURB DETAIL

N.T.S.



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ABBREVIATIONS

| | | | | | | | | | | | | | | | |
|-------|---------------------------|-------|----------------------------|------------------|---------------------------|-------|------------------------------|-------|----------------------------|------|----------------------------|-----|------------------------------|-------------|--------------------------|
| AAV | AUTOMATIC AIR VENT | DL | DOOR LOUVER | FT | FEET | NC | NORMALLY CLOSED | ROD | ROOF OVERFLOW DRAIN | AC | AIR CONDITIONING UNIT | FX | FLEXIBLE CONNECTION | PTAC | PACKAGED TERMINAL AIR |
| ABV | ABOVE | DN | DOWN | FTR | FINNED TUBE RADIATION | NEG | NEGATIVE | RPM | REVOLUTIONS PER MINUTE | AD | ACCESS DOOR | FC | FAN COIL UNIT | CONDITIONER | |
| ADR | AREA DRAIN (SEE SYMBOLS) | DWG | DRAWING | FV | FACE VELOCITY | NIC | NOT IN CONTRACT | SA | SUPPLY AIR | AFF | ABOVE FINISHED FLOOR | FD | FIRE DAMPER | RA | RETURN AIR |
| AFF | ABOVE FINISHED FLOOR | DX | DIRECT EXPANSION | FXC | FLEXIBLE CONNECTION | No | NUMBER | SAD | SUPPLY AIR DIFFUSER | AH | AIR HANDLER (SPLIT REFRIG) | FLR | FLOOR | RAG | RETURN AIR GRILLE |
| ALUM | ALUMINUM | EA | EACH | GA | GAUGE | NO | NORMALLY OPEN | SCH | SCHEDULE | AHU | AIR HANDLING UNIT | FOB | FLAT ON BOTTOM | RAR | RETURN AIR REGISTER |
| AP | ACCESS PANEL | EAT | ENTERING AIR TEMPERATURE | GAL | GALLON | NOM | NOMINAL | SCHEM | SCHEMATIC | AL | ACOUSTICAL LINING | FOT | FLAT ON TOP | RCF | REFLECTED CEILING PLAN |
| ATC | AUTOMATIC TEMP. CONTROL | EC | ELECTRICAL CONTRACTOR | GALV | GALVANIZED | NTS | NOT TO SCALE | SH | SENSIBLE HEAT | AP | ACCESS PANEL | FOP | FUEL OIL PUMP | RHC | REHEAT COIL |
| AVER | AVERAGE | ECC | ECCENTRIC | GC | GENERAL CONTRACTOR | OA | OUTSIDE AIR | SP | STATIC PRESSURE | BB | ELECTRIC BASEBOARD | FP | FIRE FIGHTING PUMP | RF | RETURN FAN |
| AWT | AVERAGE WATER TEMP. | EFF | EFFICIENCY | GPM | GALLONS PER MINUTE | OB | OFF BOTTOM | SPEC | SPECIFICATION | B | BOILER | FBM | FEET PER MINUTE | SA | SUPPLY AIR |
| BDD | BACK DRAFT DAMPER | EJ | EXPANSION JOINT | GR | GRILLE | OD | OUTSIDE DIMENSION | SQ | SQUARE | BDD | BACK DRAFT DAMPER | FTR | FINNED TUBE RADIATION | SAR | SUPPLY AIR REGISTER |
| BFP | BACK FLOW PREVENTOR | EL | ELEVATION | GRSLB | GRAINS PER POUND | OC | ON CENTER | SS | STAINLESS STEEL | BFC | BELOW FINISHED CEILING | GC | GENERAL CONTRACTOR | SCG | SMOKE CONTROL GRILLE |
| BLDG | BUILDING | ELEC | ELECTRIC | HT | HEIGHT | OCC | OCCUPIED | STD | STANDARD | BOB | BOTTOM OF BEAM | GPH | GALLONS PER HOUR | SD | SMOKE DAMPER |
| BLW | BELOW | ELEV | ELEVATOR | H ₂ O | WATER | OGH | OUTSIDE GROUND HYDRANT | STL | STEEL | BOD | BOTTOM OF DUCT | GPM | GALLONS PER MINUTE | SEF | SMOKE EXHAUST FAN |
| BSMT | BASEMENT | ENT | ENTERING | HB | HOSE BIBB | OPG | OPENING | STM | STEAM | BOP | BOTTOM OF PIPE | HD | HAND DAMPER | SF | SUPPLY FAN |
| BTU | BRITISH THERMAL UNIT | EQ | EQUAL | HD | HEAD (SEE SCHEDULES) | OT | OFF TOP | STR | STRUCTURAL | C | CHILLER | HP | HEAT PUMP | SP | STATIC PRESSURE |
| CAP | CAPACITY | EQUIP | EQUIPMENT | HP | HORSEPOWER | OZ | OUNCE | SUCT | SUCTION | CD | CEILING DIFFUSER | HV | HEATING AND VENTILATING UNIT | TG | TRANSFER GRILLE |
| CBV | CIRCUIT BALANCING VALVE | EQUIV | EQUIVALENT | HR | HOUR | PART | PARTIAL | SYS | SYSTEM | CFM | CUBIC FEET PER MINUTE | HWC | HOT WATER CONVERTER | TYP | TYPICAL |
| CFH | CUBIC FEET PER HOUR | ER | EXHAUST REGISTER | HTR | HEATER | PDR | PLENUM DRAIN | TAD | TRANSFER AIR DUCT | CHWP | CHILLED WATER PUMP | HWP | HOT WATER PUMP | UH | UNIT HEATER |
| CFM | CUBIC FEET PER MINUTE | ES | END SWITCH | HZ | HERTZ | PD | PRESSURE DROP (SEE SCHEDULE) | TDH | TOTAL DYNAMIC HEAD | CHWR | CHILLED WATER RETURN | HWR | HEATING HOT WATER RETURN | UON | UNLESS OTHERWISE NOTED |
| CHP | CONCRETE HOUSEKEEPING PAD | EWT | ENTERING WATER TEMPERATURE | ID | INTERNAL DIAMETER | PERF | PERFORATED | TEMP | TEMPERATURE | CHWS | CHILLED WATER SUPPLY | HWS | HEATING HOT WATER SUPPLY | VAV | VARIABLE AIR VOLUME UNIT |
| CI | CAST IRON | EX | EXHAUST | IN | INCHES | PH | PHASE | THT | TOTAL HEAT | CO | CLEAN OUT | HX | HEAT EXCHANGER | VD | VOLUME DAMPER |
| CL | CENTER LINE | EXPAN | EXPANSION | INCL | INCLUDING | PNEU | PNEUMATIC | TP | TOTAL PRESSURE | CU | CONDENSATE PUMP | HZ | HERTZ | VTR | VENT THRU ROOF |
| CLG | CEILING | EXT | EXTERNAL | INT | INTERNAL | POS | POSITIVE PRESS | TT | TEMPERATURE TRANSMITTER | CW | CONDENSER WATER RETURN | ID | INSIDE DIAMETER | WB | WET BULB |
| CMU | CONCRETE MASONRY UNIT | INV | INVERT | INV | INVERT | PRESS | PRESSURE | TYT | TYPICAL | CWS | CONDENSER WATER SUPPLY | LAT | LEAVING AIR TEMPERATURE | WMS | WIRE MESH SCREEN |
| CN | CLEAN OUT | FA | FROM ABOVE | KW | KILOWATT | PS | PRESSURE SWITCH | UC | UNDERCUT | CT | COOLING TOWER | LWT | LEAVING WATER TEMPERATURE | | |
| COL | COLUMN | FB | FROM BELOW | L | LENGTH | PSI | POUNDS PER SQUARE INCH | UNOCC | UNOCCUPIED | CUH | CONDENSING UNIT | LD | LINEAR DIFFUSER | | |
| COMP | COMPRESSOR | FC | FAIL CLOSED | LAT | LEAVING AIR TEMPERATURE | PT | PRESSURE TRANSMITTER | V | VOLTS | CUB | CABINET UNIT HEATER | LF | LINEAR FEET | | |
| CON | CONCENTRIC | FCV | FLOW CONTROL VALVE | LB | POUND | PV | PLUG VALVE | VA | VALVE | CWB | CONSTANT VOLUME BOX | MC | MECHANICAL CONTRACTOR | | |
| CONC | CONCRETE | FV | FLOOR DRAIN | LB | LINEAR DIFFUSER | PVC | POLYVINYL CHLORIDE | VB | VACUUM BREAKER | CWP | CONDENSER WATER PUMP | MTD | MOUNTED | | |
| COND | CONDENSATE | F/D | FIRE DAMPER | LIN | LINEAR | QUAN | QUANTITY | VEL | VELOCITY | DB | DRY BULB | MOD | MOTOR OPERATED DAMPER | | |
| CONN | CONNECTION | FIN | FINISHED | LQ | LIQUID | R | REGISTER | V | VIBRATION ISOLATOR | DS | DUCT SILENCER | MJA | MAKE-UP AIR UNIT | | |
| CONTN | CONTINUATION | FL | FLANGE | LRA | LOCK ROTOR AMPS | RA | RETURN AIR | VOLT | VOLTAGE | DWP | DOMESTIC WATER PUMP | NC | NORMALLY CLOSED | | |
| CONTR | CONTRACTOR | FLA | FULL LOAD AMPS | LVG | LEAVING | RD | ROOF DRAIN | VTR | VENT THRU ROOF | EAT | ENTERING AIR TEMPERATURE | NO | NORMALLY OPEN | | |
| DA | DIRECT ACTING | FLEX | FLEXIBLE | LVR | LOUVER | RE | ROUNDED ENTRANCE/EXIT | W | WIDTH | EC | ELECTRICAL CONTRACTOR | NIC | NOT IN CONTRACT | | |
| DAMP | DAMPER | FLR | FLOOR | LWT | LEAVING WATER TEMPERATURE | REL | RELIEF | W/ | WITH | EJ | EXPANSION JOINT | NK | NECK | | |
| DB | DRY BULB | FO | FAIL OPEN | MC | MECHANICAL CONTRACTOR | REQD | REQUIRED | W/O | WITHOUT | ER | EXHAUST FAN | OA | OUTSIDE AIR | | |
| DEPT | DEPARTMENT | FP | FIRE PROTECTION | MBH | THOUSANDS OF BTU PER HOUR | RET | RETURN | WB | WET BULB | EF | EXHAUST REGISTER | OAI | OUTSIDE AIR INTAKE | | |
| DIA | DIAMETER | FM | FEET PER MINUTE | MED | MEDIUM | RH | RELATIVE HUMIDITY | WC | WATER COLUMN | ESP | EXTERNAL STATIC PRESSURE | OAT | OUTSIDE AIR TEMPERATURE | | |
| DIAG | DIAGRAM | FPS | FEET PER SECOND | MFR | MANUFACTURER | RICW | RUN IN CASEWORK | WG | WATER GAUGE | ET | EXPANSION TANK | OC | ON CENTER | | |
| DIFF | DIFFERENTIAL | FRIC | FRICTION | MH | MANHOLE | RIE | RUN IN ENCLOSURE | EWT | ENTERING WATER TEMPERATURE | EJ | EXPANSION JOINT | OD | OUTSIDE DIAMETER | | |
| DISCH | DISCHARGE | FS | FLOW SWITCH | MIN | MINIMUM | RIW | RISE IN WALL | | | EW | ELECTRIC WATER COOLER | OBD | OPPOSED BLADE DAMPER | | |
| DIV | DIVISION | F/S/D | WITH FIRE/SMOKE DAMPER | MISC | MISCELLANEOUS | RLA | RATED LOAD AMPS | | | FA | FREE AREA | PBD | PARALLEL BLADE DAMPER | | |
| DIW | DOWN IN WALL | | | MTD | MOUNTED | RM | ROOM | | | | | PRV | PRESSURE REDUCING VALVE | | |

RESPONSIBLE DIVISION

UNLESS OTHERWISE INDICATED ALL HEATING, VENTILATING, AIR CONDITIONING, PLUMBING AND OTHER MECHANICAL EQUIPMENT, MOTORS, AND CONTROLS SHALL BE FURNISHED, SET IN PLACE AND WIRED AS FOLLOWS:

| ITEM | FURNISHED | SET | POWER- | CONTROL- |
|---|-----------|-------|--------|----------|
| EQUIPMENT | 23 | 23 | 26 | -- |
| COMBINATION MAGNETIC MOTOR STARTERS, MAGNETIC MOTOR STARTERS AND CONTACTORS | 23 | 26 | 26 | 23 |
| FUSED AND UNFUSED DISCONNECT SWITCHES, THERMAL OVERLOAD SWITCHES AND HEATERS, MANUAL MOTOR STARTERS | 26(1) | 26(1) | 26 | -- |
| MANUAL-OPERATING AND MULTI-SPEED SWITCHES | 23 | 26 | 26 | 26 |
| CONTROLS, RELAYS, TRANSFORMERS | 23 | 23 | 26 | 23 |
| THERMOSTATS (LOW VOLTAGE) AND TIME SWITCHES | 23 | 23 | 26 | 23 |
| THERMOSTATS (LINE VOLTAGE) | 23 | 23 | 26 | 26 |
| TEMPERATURE CONTROL PANELS | 23 | 23 | 26 | 23 |
| MOTOR AND SOLENOID VALVES, DAMPER MOTORS, PE & EP SWITCHES | 23 | 23(2) | -- | 23(2) |
| PUSH-BUTTON STATIONS AND PILOT LIGHTS | 23 | 23(2) | -- | 23(2) |
| HEATING, COOLING, VENTILATION AND AIR CONDITIONING CONTROLS | 23 | 23 | 26 | 23 |
| EXHAUST FAN SWITCHES | 23 | 26 | 26 | 23(2) |

SUBSCRIPT FOOTNOTES:

- 1) UNDER DIVISION 23 IF FURNISHED FACTORY-WIRED AS PART OF EQUIPMENT OR IF FURNISHED WITH COMBINATION STARTERS.
- 2) IF ITEM IS FOR LINE VOLTAGE, SET IN PLACE AND CONNECT UNDER DIVISION 26. WHERE FACTORY MOUNTED ON EQUIPMENT OR ATTACHED TO PIPING OR DUCTS AND USING LINE VOLTAGE FURNISH AND SET UNDER DIVISION 23, CONNECT UNDER DIVISION 26.

PLUMBING SYMBOLS

| SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION |
|-----------|-----------------------------------|--------|-------------------------|
| — — — — — | SOIL OR WASTE PIPE (BELOW GROUND) | | VACUUM BREAKER |
| — — — — — | SOIL OR WASTE PIPE (ABOVE GROUND) | | ROOF DRAIN |
| - - - - - | VENT PIPE (V) | | PRESSURE GAGE |
| - - - - - | COLD WATER PIPE (W) | | TEMPERATURE GAGE |
| - - - - - | HOT WATER PIPE (HW) | | WATER METER |
| - - - - - | HOT WATER RETURN (HWR) | | PRESSURE REDUCING VALVE |
| — T — | TEMPERED HOT WATER LINE (THW) | | GAS COCK |
| — G — | NATURAL GAS PIPE | VTR | VENT THROUGH ROOF |
| — SD — | STORM DRAIN PIPE | LAV | LAVATORY |
| | FLOOR DRAIN | WC | WATER CLOSET |
| — O — | CLEAN-OUT (FLOOR) | URN | URINAL |
| — — | CLEAN-OUT (WALL) | DF | DRINKING FOUNTAIN |
| | HOT WATER HEATER | SH | SHOWER |
| | GATE VALVE | A.D. | ACCESS DOOR |
| | CHECK VALVE | SS | SAFETY SHOWER |
| | TEMP. PRESS. RELIEF VALVE | | |
| | FIXTURE ISOLATION VALVE | | |

PLUMBING LINE DESIGNATIONS

| | | | |
|------------------------|---------------------------------|----------|----------------------------|
| — (E)(NAME) — | EXISTING PIPING TO REMAIN | — G — | NATURAL GAS |
| — (NAME) — | EXISTING PIPING TO BE REMOVED | — PG — | PROPANE GAS |
| — — — — — | DOMESTIC COLD WATER (CW) | — DIS — | DISTILLED WATER SUPPLY |
| — — — — — | DOMESTIC HOT WATER (HW) | — DIR — | DISTILLED WATER RETURN |
| — — — — — | DOMESTIC HOT WATER RECIR. (HWR) | — DES — | DEIONIZED WATER SUPPLY |
| — — — — — | SANITARY DRAIN BELOW GRADE | — DER — | DEIONIZED WATER RETURN |
| — — — — — | SANITARY VENT | — WFIS — | WATER FOR INJECTION SUPPLY |
| — D — | EQUIPMENT DRAIN | — WFIR — | WATER FOR INJECTION RETURN |
| — LW — | LAB WASTE | — USPS — | USP PURIFIED WATER SUPPLY |
| — — — — — LV — — — — — | LAB VENT | — PHWR — | PROCESS HOT WATER RECIRC. |
| — F — | FIRE MAIN | — PW — | PUMPED WASTE |
| — PS — | PURE STEAM | — PV — | PROCESS VENT |
| — PSC — | PURE STEAM CONDENSATE | — HE — | HELIUM |
| — CA — | COMPRESSED AIR | — N2 — | NITROGEN |
| — SP — | SPRINKLER PIPE | — O2 — | OXYGEN |
| — ST — | STORM WATER | — H2 — | HYDROGEN |
| — OD — | OVERFLOW STORM WATER | — N2O — | NITROUS OXIDE |
| — HPS — | HIGH PRESSURE STEAM | — MA — | MEDICAL AIR |
| — HPC — | HIGH PRESSURE CONDENSATE | — VAC — | VACUUM |
| — LPS — | LOW PRESSURE STEAM | — DC — | DECONTAMINATION PIPING |
| — LPC — | LOW PRESSURE CONDENSATE | | |
| — TWS — | TOWER WATER SUPPLY | | |
| — TWR — | TOWER WATER RETURN | | |

PIPING ELEMENTS/VALVING

| | | | |
|--|---------------------------------------|--|--|
| | PRESSURE REDUCING VALVE (PRV) | | PIPE RISING UP |
| | GATE VALVE | | PIPE DROPPING DOWN |
| | GLOBE VALVE | | UNION - SCREWED OR FLANGED |
| | PLUG VALVE | | FLOW SWITCH |
| | BUTTERFLY VALVE | | TEMPERATURE TRANSMITTER |
| | VALVE IN RISE OR DROP | | PRESSURE TRANSMITTER OR PRESSURE SWITCH |
| | BALL VALVE | | THERMOMETER/TEMPERATURE INDICATOR |
| | SWING CHECK VALVE | | GAUGE WITH GAUGE COCK/ PRESSURE INDICATOR |
| | LIFT CHECK VALVE | | BACKFLOW PREVENTOR (REDUCED ZONE) |
| | GATE VALVE, ANGLE | | BACKFLOW PREVENTOR (DOUBLE CHECK VALVE ASSEMBLY) |
| | GLOBE VALVE, ANGLE | | WATER HAMMER ARRESTER |
| | THREE WAY CONTROL VALVE | | CIRCUIT SETTING BALANCING VALVE |
| | TWO WAY CONTROL VALVE | | HOSE BIBB |
| | SOLENOID VALVE | | ROOF DRAIN |
| | TEMPERATURE AND PRESSURE RELIEF VALVE | | OPEN SITE DRAIN |
| | RELIEF/SAFETY VALVE | | FLOOR DRAIN |
| | GAS COCK | | AREA DRAIN |
| | GAS PRESSURE REGULATOR | | CLEANOUT |
| | STRAINER | | WALL CLEAN OUT |
| | STRAINER WITH BLOW OFF VALVE | | |
| | FLEXIBLE-CONNECTION | | |
| | SPRINKLER HEAD | | |

PLUMBING SHEET LIST

| Sheet Number | Sheet Name | Sheet Issue Date |
|--------------|-----------------------|------------------|
| P0-1 | PLUMBING COVER SHEET | 01/14/20 |
| P1-1 | PLUMBING - MAIN LEVEL | 09/14/20 |
| P1-2 | PLUMBING - ROOF PLAN | 09/14/20 |
| P3-1 | PLUMBING SCHEDULES | 10/29/19 |

PLUMBING KEYNOTE LEGEND

| Key Value | Keynote Text |
|-----------|--------------|
|-----------|--------------|

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CMU

GOLF FACILITY

CD PRELIMINARY

1240 GUNNISON AVE

DATE: 09/24/2020

ISSUED FOR: 100% CDS

DATE: 09/24/20

JOB NO.: 20-132

DRAWN BY: BCE

CHECKED BY: BCE

SCALE: As indicated

SHEET NO.:

P0-1



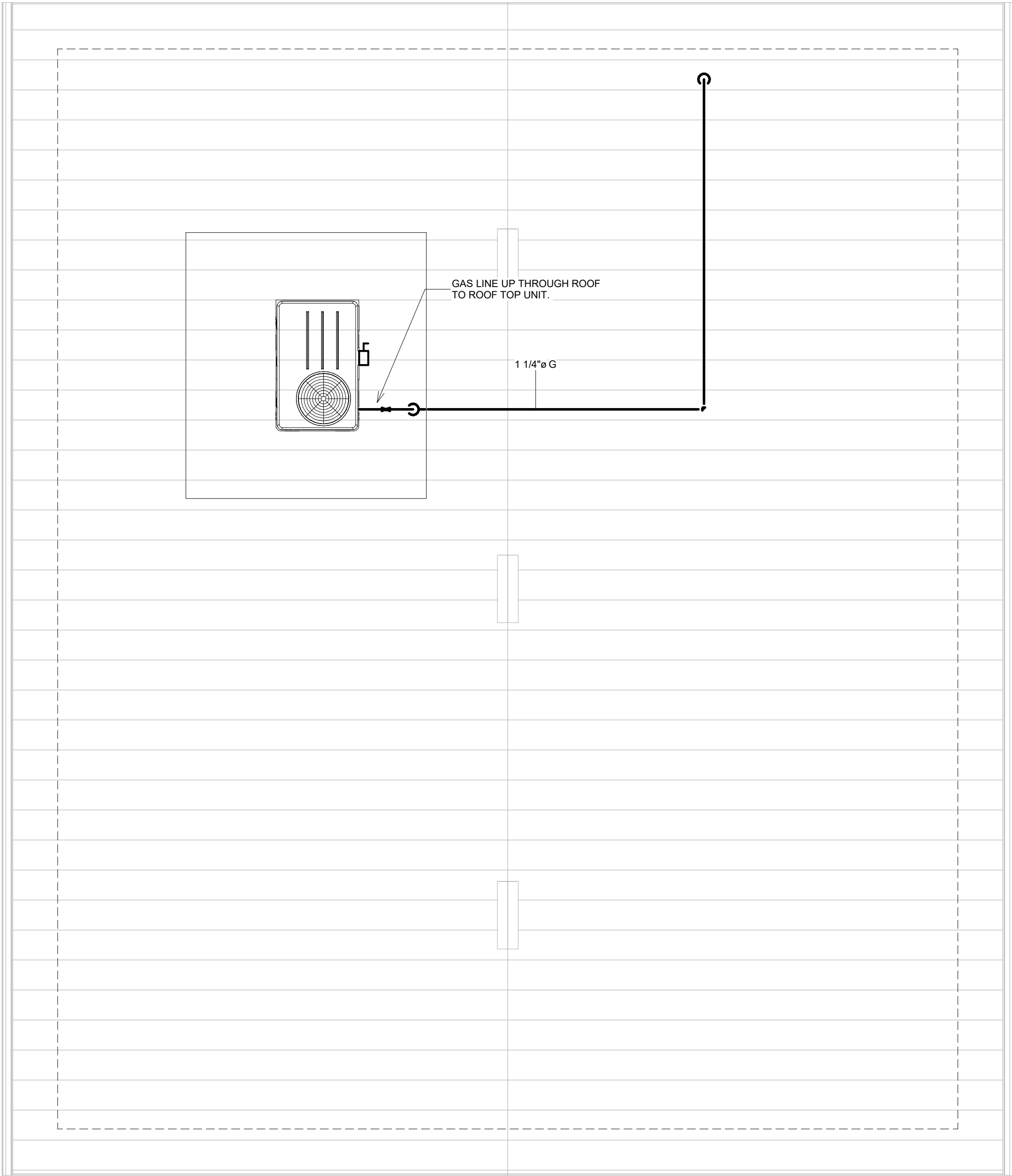
Inc.

CMU
GOLF FACILITY
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1240 GUNNISON AVE

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| JOB NO.: | 20-133 |
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| CHECKED BY: | BCF |
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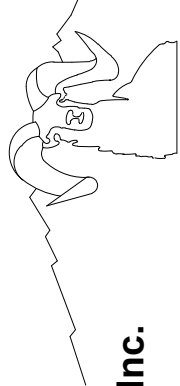
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① PLUMBING - ROOF LEVEL
1/4" = 1'-0"

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DATE: 09/24/20
JOB NO.: 20-132
DRAWN BY: BCE
CHECKED BY: BCE
SCALE: 1/4" = 1'-0"
SHEET NO.: P1-2

| PLUMBING FIXTURE SCHEDULE | | | | | | |
|---------------------------|-------------------|---------------|---|------------------|------|------|
| TYPE MARK | MANUFACTURER | MODEL # | TRIM | PIPE CONNECTIONS | | |
| | | | | S/W | VENT | HW |
| BF-1 | ELKAY | LZWSSM | WALL MOUNT, STAINLESS STEEL | 1 1/4" | 1" | 1/2" |
| FD-1 | ZURN | Z415 | BROZE GRID DRAIN | 3" | 2" | - |
| LV-1 | AMERICAN STANDARD | 0355.012 | ADA WALL MOUNT FAUCET HOLES ON 4" CENTER. FACUCET #7186.801 | 1 1/4" | 1" | 3/4" |
| WC-1 | AMERICAN STANDARD | 211AA.104.020 | FLOOR MOUNTED TANK TYPE, 1.28 GP | 2 1/2" | 2" | 3/4" |

| INSTANTANEOUS ELECTRIC WATER HEATER SCHEDULE | | | | | | | | | |
|--|--------------------------|-----------------|----|----------------------------------|------------|-------|-----------|--------------|---------|
| TYPE MARK | RECOVERY @ ? DEG. F RISE | MIN. WATER FLOW | KW | DOMESTIC CW PIPE CONNECTION SIZE | ELECTRICAL | | | MANUFACTURER | MODEL # |
| | | | | | VOLTS | PHASE | FREQUENCY | | |

INSTANT ELECTRIC WATER HEATER TO BE WALL MOUNTED DIRECTLY BELOW LV-1. PROVIDE WITH HIGH TEMPERATURE LIMIT SWITCH, VARIABLE FLOW WITH THERMOSTAT, WATER HEATER TO ACTIVATE WITH FLOW AS LOW AS 0.2 GPM.

PLUMBING SPECIFICATION

1. SCOPE OF WORK

A. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIALS, AND LABOR TO SATISFY A COMPLETE WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.

B. ALL WORK IS TO BE PERFORMED IN STRICT COMPLIANCE WITH THE INTERNATIONAL PLUMBING CODE (LATEST EDITION), ALL LOCAL CODES AND ALL OTHER REGULATION GOVERNING WORK OF THIS NATURE.

C. THE CONTRACTOR SHALL, BEFORE SUBMITTING ANY PROPOSAL, EXAMINE THE PROPOSED SITE AND SHALL DETERMINE FOR HIMSELF THE CONDITIONS THAT MAY AFFECT THE WORK. NO ALLOWANCE SHALL BE MADE IF THE CONTRACTOR FAILS TO MAKE SUCH EXAMINATIONS.

D. ALL EQUIPMENT AND MATERIALS SHALL BE AS SPECIFIED OR "APPROVED AS EQUAL" BY THE ENGINEER OR ARCHITECT.

2. PERMITS

A. THE CONTRACTOR SHALL SECURE ALL PERMITS OR APPLICATIONS AND PAY ANY AND ALL FEES.

3. SHOP DRAWINGS

A. SUBMIT MATERIAL LIST AND SHOP DRAWINGS FOR MAJOR EQUIPMENT TO THE ARCHITECT/ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL SUBMIT FIVE SETS OF SHOP DRAWINGS AND THEY SHALL BE CLEARLY LABELED.

4. DOMESTIC WATER SUPPLY PIPING

A. UNDERGROUND: PROVIDE TYPE "K" SOFT DRAWN COPPER TUBING WITH BRAZED CONNECTIONS.

B. ABOVE GROUND: PROVIDE TYPE "L" HARD DRAWN COPPER TUBING WITH 125 PSI SOLDER JOINTS, COPPER OR BRASS FITTINGS. ALL SOLDER TO BE "NO LEAD" TYPE.

C. ALL HOT WATER PIPING TO BE INSULATED WITH 1" FIBERGLASS INSULATION.

D. ALL COLD WATER PIPING TO BE INSULATED WITH ½" FOAM INSULATION.

5. SANITARY/STORM DRAINAGE AND VENT PIPING

A. ABOVE GRADE:

-2" BELOW: SCHEDULE 40 GALV. STEEL PIPE WITH SCREWED ENDS OR SOLID CORE SCHEDULE 40 PVC WITH SOLVENT JOINTS OR DWV COPPER WITH SOLDER JOINTS. ALL SOLDER TO BE "NO LEAD" TYPE.

-3" AND ABOVE: SERVICE WT. CAST IRON WITH NO-HUB OR BELL AND SPIGOT JOINTS, OR SOLID CORE SCHEDULE 40 PVC WITH SOLVENT JOINTS.

B. BELOW GRADE: SERVICE WT. CAST IRON WITH NO-HUB OR BELL AND SPIGOT JOINTS, OR SOLID CORE SCHEDULE 40 PVC WITH SOLVENT JOINTS.

C. PVC PIPING SHALL NOT BE USED IN AIR PLENUM CEILINGS AND SHALL NOT CROSS FIRE RATED WALLS, CEILINGS, OR FLOORS.

D. DRAINAGE PIPING SHALL BE RUN AS STRAIGHT AS POSSIBLE AND SHALL HAVE LONG TURN FITTINGS.

E. DRAINAGE PIPING 3" SIZE AND SMALLER SHALL RUN AT A UNIFORM GRADE OF AT LEAST ¼" PER FOOT. AND PIPING LARGER THAN 3" SHALL BE RUN AT A GRADE OF NO LESS THAN ⅛" PER FOOT.

F. ALL VENT PIPING SHALL BE SLOPED TO DRAIN BACK TO FIXTURES.

G. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER FLASHING OF THE VENT PIPING RUN THROUGH THE ROOF.

H. PVC USED TO BE SOLID CORE TYPE SCHEDULE 40 PVC.

7. PIPE SUPPORTS

A. ABOVE GRADE: ALL PIPE SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN A NEAT AND WORKMANLIKE MANNER. THE USE OF WIRE AND PERFORATED METAL TO SUPPORT PIPES WILL NOT BE PERMITTED. SPACING OF PIPE SUPPORTS SHALL BE AS SPECIFIED IN INTERNATIONAL PLUMBING CODE (LATEST EDITION).

B. BELOW GRADE: EARTH SHALL BE EXCAVATED TO A MINIMUM DEPTH WITH AN EVEN SURFACE TO INSURE SOLID BEARING OF PIPE FOR ITS ENTIRE LENGTH.

-INTERIOR: THE PIPE SHALL BE INSTALLED (UNLESS OTHERWISE SPECIFIED) A MINIMUM OF 4 INCHES BELOW THE BOTTOM OF THE SLAB AND SHALL NOT BE IN ANY DIRECT CONTACT WITH THE CONCRETE AT ANY POINT.

-EXTERIOR: THE WATER PIPE SHALL HAVE A MINIMUM OF 60" OF COVER AND THE SANITARY WASTE PIPE SHALL HAVE A MINIMUM OF 24" OF COVER.

8. MISCELLANEOUS

A. COORDINATE INSTALLATION OF ALL ROOFS FLASHING AT ROOF PENETRATIONS.

B. DO NOT SCALE THIS DRAWING FOR EXACT DIMENSIONS. VERIFY ALL FIGURES, CONDITIONS AND DIMENSIONS AT THE JOB SITE.

C. THE PLUMBING PLANS ARE INTENDED TO BE DIAGRAMMATIC AND ARE BASED ON ONE MANUFACTURER'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION. THE EXACT DIMENSIONS OR ALL THE DETAILS OF THE EQUIPMENT. THE CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO ENSURE THAT THE EQUIPMENT WILL FIT THE AVAILABLE SPACE.

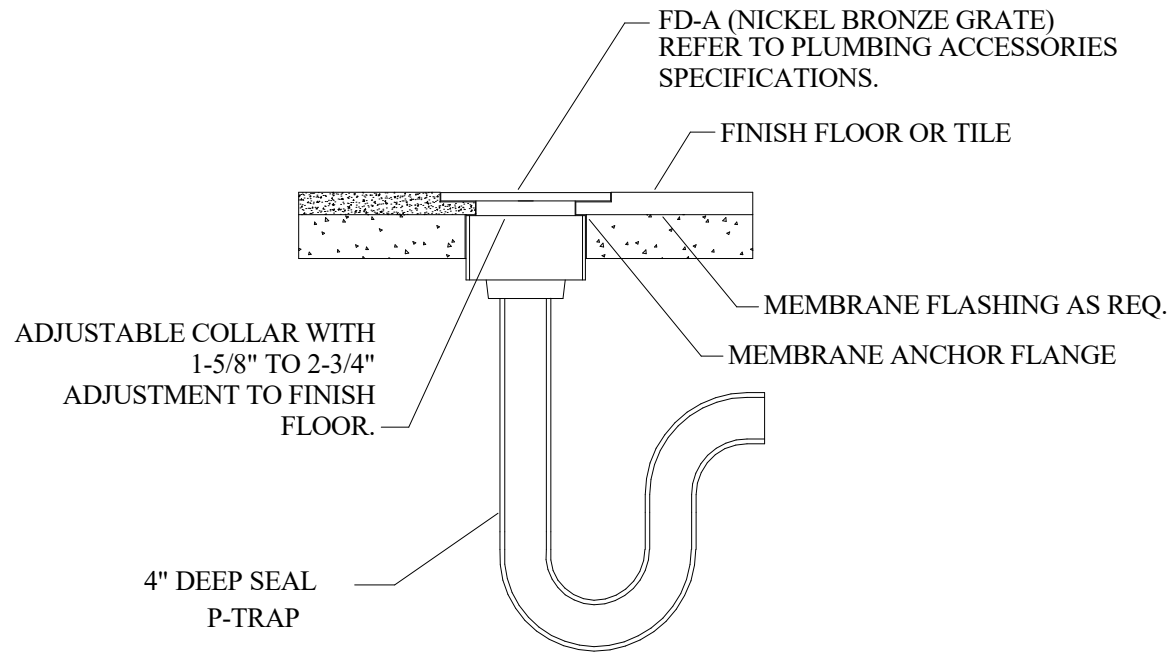
9. TESTING

A. PLUMBING SYSTEM SHALL BE FLOW AND PRESSURE TESTED IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE (LATEST EDITION).

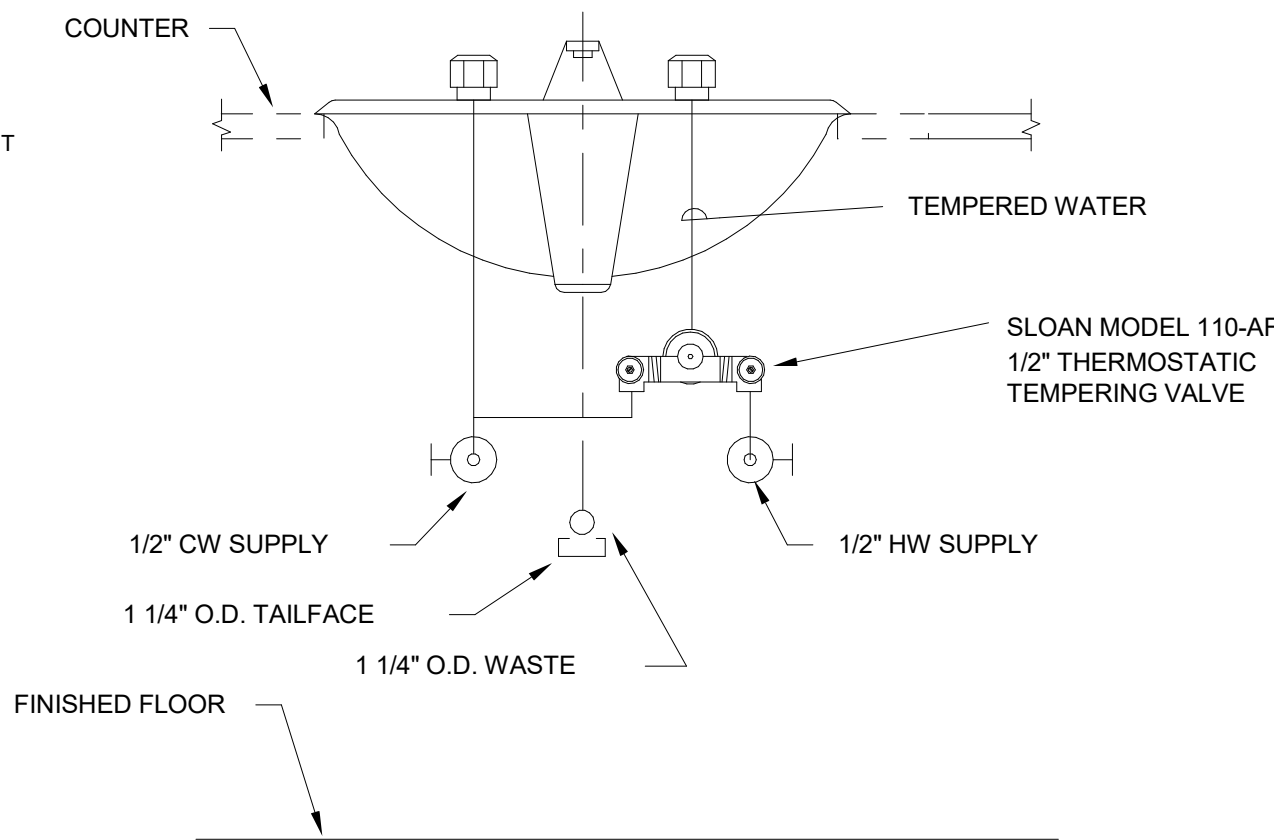
10. GUARANTEE

A. MATERIALS, EQUIPMENT AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE. DEFECTS WHICH APPEAR DURING THAT PERIOD SHALL BE CORRECTED AT THIS CONTRACTORS EXPENSE.

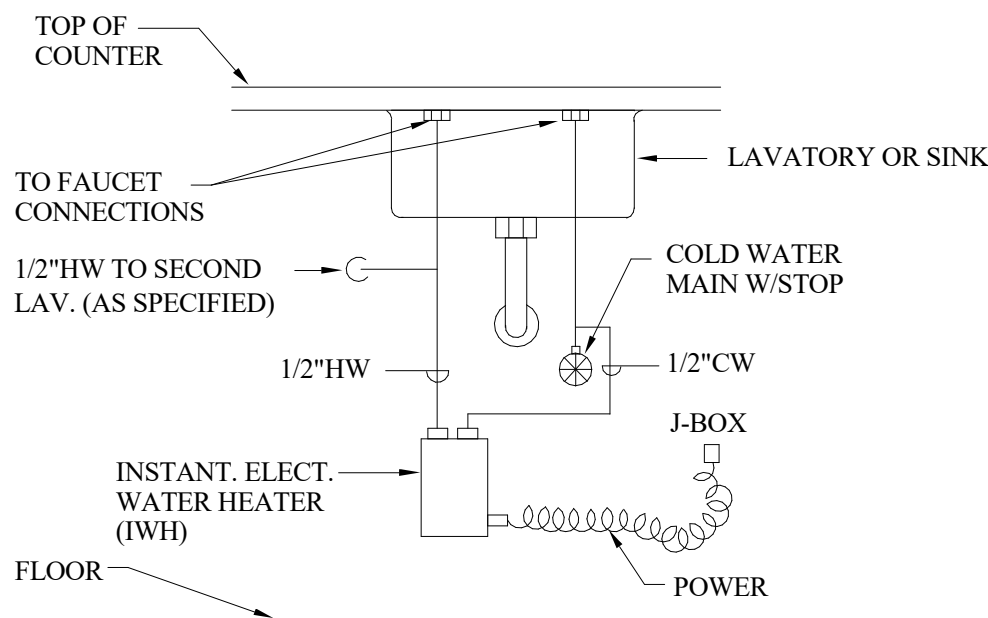
B. FOR THE SAME PERIOD THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO PREMISES CAUSED BY DEFECTS IN WORKMANSHIP OR IN THE WORK OR EQUIPMENT FURNISHED AND/OR INSTALLED BY HIM.



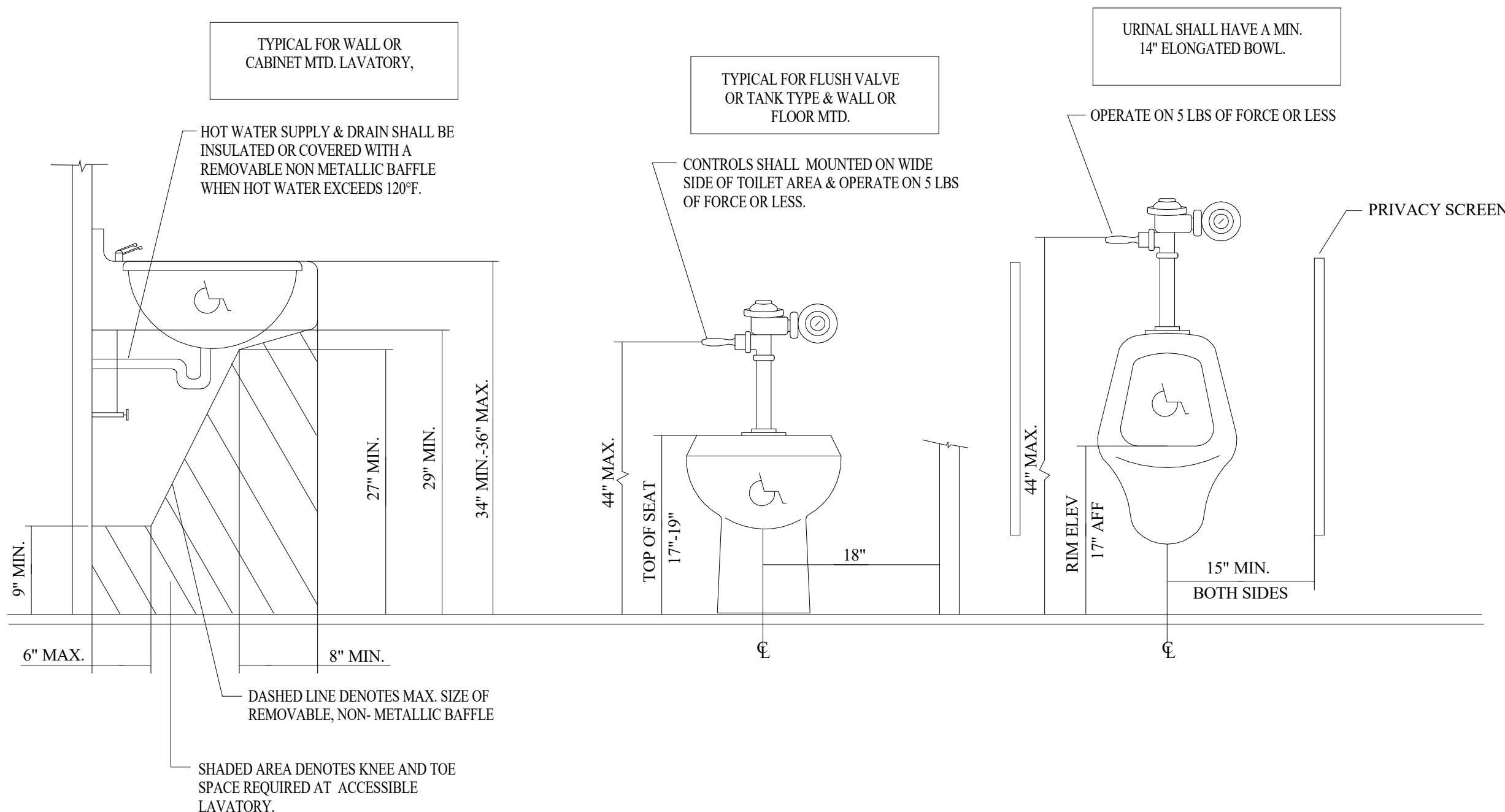
TOILET AREA FLOOR DRAIN
NOT TO SCALE



LOCAL MIXING VALVE DETAIL
NOT TO SCALE



INSTANTANEOUS WATER HEATER DETAIL
NOT TO SCALE



HANDICAP PLUMBING FIXTURE INSTALLATION
NOT TO SCALE

DO NOT REPRODUCE THESE DRAWINGS AND SPECIFICATIONS WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. THE DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER. WHATEVER THE PROJECT FOR WHICH THEY ARE MADE IS EXCLUDED FOR NOT. THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANYONE ON ANY OTHER PROJECTS FOR ADDRESS TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER.



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DATE: 09/24/2020 ISSUED FOR: 100% CDS

DATE: 09/24/20
JOB NO.: 20-132
DRAWN BY: BCE
CHECKED BY: BCE
SCALE: 1/4" = 1'-0"
SHEET NO.:

P3-1

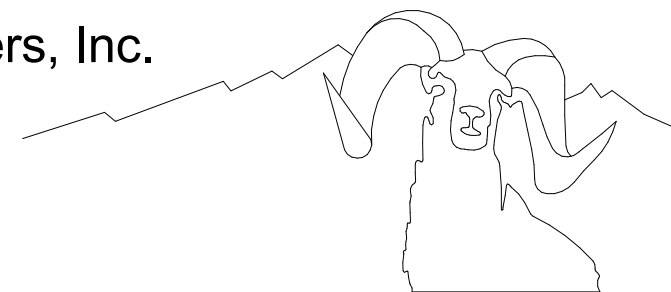
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ABBREVIATIONS

| | | | |
|-------|---------------------------|-------|----------------------------|
| AAV | AUTOMATIC AIR VENT | DL | DOOR LOUVER |
| ABV | ABOVE | DN | DOWN |
| ADR | AREA DRAIN (SEE SYMBOLS) | DWG | DRAWING |
| AFF | ABOVE FINISHED FLOOR | DX | DIRECT EXPANSION |
| ALUM | ALUMINUM | EA | EACH |
| AP | ACCESS PANEL | EAT | ENTERING AIR TEMPERATURE |
| ATC | AUTOMATIC TEMP. CONTROL | EC | ELECTRICAL CONTRACTOR |
| AVER | AVERAGE | ECC | ECCENTRIC |
| AWT | AVERAGE WATER TEMP. | EFF | EFFICIENCY |
| BDD | BACK DRAFT DAMPER | EJ | EXPANSION JOINT |
| BFP | BACK FLOW PREVENTOR | EL | ELEVATION |
| BLDG | BUILDING | ELEC | ELECTRIC |
| BLW | BELOW | ELEV | ELEVATOR |
| BSMT | BASEMENT | ENT | ENTERING |
| BTU | BRITISH THERMAL UNIT | EQ | EQUAL |
| CAP | CAPACITY | EQUIP | EQUIPMENT |
| CBV | CIRCUIT BALANCING VALVE | EQUIV | EQUIVALENT |
| CFH | CUBIC FEET PER HOUR | ER | EXHAUST REGISTER |
| CFM | CUBIC FEET PER MINUTE | ES | END SWITCH |
| CHP | CONCRETE HOUSEKEEPING PAD | EWT | ENTERING WATER TEMPERATURE |
| CI | CAST IRON | EX | EXHAUST |
| CL | CENTER LINE | EXPAN | EXPANSION |
| CLG | CEILING | EXT | EXTERNAL |
| CMU | CONCRETE MASONRY UNIT | INT | INTERNAL |
| CO | CLEAN OUT | IN | INCHES |
| COL | COLUMN | INCL | INCLUDING |
| COMP | COMPRESSOR | INV | INVERT |
| CONC | CONCRETE | INVT | INVERT |
| COND | CONDENSATE | IS | INCHES |
| CONN | CONNECTION | INT | INTERNAL |
| CONTN | CONTINUATION | INVT | INVERT |
| CONTR | CONTRACTOR | IS | INCHES |
| DA | DIRECT ACTING | IS | INCHES |
| DAMP | DAMPER | IS | INCHES |
| DB | DRY BULB | IS | INCHES |
| DEPT | DEPARTMENT | IS | INCHES |
| DIA | DIAMETER | IS | INCHES |
| DWG | DIAGRAM | IS | INCHES |
| DIFF | DIFFERENTIAL | IS | INCHES |
| DISCH | DISCHARGE | IS | INCHES |
| DIV | DIVISION | IS | INCHES |
| DW | DOWN IN WALL | IS | INCHES |

| | | | |
|--------|---------------------------|-------|------------------------------|
| FT | FEET | NC | NORMALLY CLOSED |
| FTR | FINNED TUBE RADIATION | NEG | NEGATIVE |
| FV | FACE VELOCITY | NO | NOT IN CONTRACT |
| FX | FLEXIBLE CONNECTION | NO | NORMALLY OPEN |
| GA | GAUGE | NOM | NOMINAL |
| GAL | GALLON | NTS | NOT TO SCALE |
| GALV | GALVANIZED | OA | OUTSIDE AIR |
| GC | GENERAL CONTRACTOR | OB | OFF BOTTOM |
| GPM | GALLONS PER MINUTE | OD | OUTSIDE DIMENSION |
| GR | GRILLE | OC | ON CENTER |
| GRS/LB | GRAINS PER POUND | OCC | OCCUPIED |
| H | HEIGHT | OGH | OUTSIDE GROUND HYDRANT |
| H 20 | WATER | OPG | OPENING |
| HB | HOSE BIBB | OT | OFF TOP |
| HD | HEAD (SEE SCHEDULES) | OZ | OUNCE |
| HP | HORSEPOWER | PART | PARTIAL |
| HR | HOOR | PDR | PLENUM DRAIN |
| HTR | HEATER | PD | PRESSURE DROP (SEE SCHEDULE) |
| HZ | HERTZ | PERF | PERFORATED |
| ID | INTERNAL DIAMETER | PH | PHASE |
| IN | INCHES | PNEU | PNEUMATIC |
| INCL | INCLUDING | POS | POSITIVE PRESS |
| INT | INTERNAL | PRESS | PRESSURE |
| INV | INVERT | PS | PRESSURE SWITCH |
| KW | KILOWATT | PSI | POUNDS PER SQUARE INCH |
| L | LENGTH | PT | PLUG VALVE |
| LAT | LEAVING AIR TEMPERATURE | PV | POLYVINYL CHLORIDE |
| LB | POUND | QUAN | QUANTITY |
| LD | LINEAR DIFFUSER | REG | REGISTER |
| LIN | LINEAR | R | RETURN AIR |
| LQ | LIQUID | RA | ROOF DRAIN |
| LRA | LOCK ROTOR AMPS | RE | ROUNDED ENTRANCE/EXIT |
| LVL | LEAVING | REL | RELIEF |
| LVR | LOUVER | REQD | REQUIRED |
| LWT | LEAVING WATER TEMPERATURE | RET | RETURN |
| MC | MECHANICAL CONTRACTOR | RH | RELATIVE HUMIDITY |
| MBH | THOUSANDS OF BTU PER HOUR | RICW | RUN IN CASEWORK |
| MED | MEDIUM | RIE | RUN IN ENCLOSURE |
| MFR | MANUFACTURER | RIR | RISE IN WALL |
| MH | MANHOLE | RLA | RATED LOAD AMPS |
| MIN | MINIMUM | RM | ROOM |
| MISC | MISCELLANEOUS | | |
| MTD | MOUNTED | | |

| | | | |
|-------|-------------------------|------|-----------------------------|
| ROD | ROOF OVERFLOW DRAIN | AC | AIR CONDITIONING UNIT |
| RPM | REVOLUTIONS PER MINUTE | AD | ACCESS DOOR |
| SA | SUPPLY AIR | AFF | ABOVE FINISHED FLOOR |
| SAD | SUPPLY AIR DIFFUSER | AH | AIR HANDLING (SPLIT REFRIG) |
| SCH | SCHEDULE | AHU | AIR HANDLING UNIT |
| SCHEM | SCHEMATIC | AL | ACOUSTICAL LINING |
| SH | SENSIBLE HEAT | AP | ACCESS PANEL |
| SP | STATIC PRESSURE | BB | ELECTRIC BASEBOARD |
| SPEC | SPECIFICATION | B | BOILER |
| SQ | SQUARE | BDD | BACK DRAFT DAMPER |
| SS | STAINLESS STEEL | BFC | BELOW FINISHED CEILING |
| STD | STANDARD | BOB | BOTTOM OF BEAM |
| STL | STEEL | BOD | BOTTOM OF DUCT |
| STM | STEAM | BOP | BOTTOM OF PIPE |
| STR | STRUCTURAL | C | CHILLER |
| SUCT | SUCTION | CD | CEILING DIFFUSER |
| SYS | SYSTEM | CFM | CUBIC FEET PER MINUTE |
| TAD | TRANSFER AIR DUCT | CHWP | CHILLED WATER PUMP |
| TDH | TOTAL DYNAMIC HEAD | CHWR | CHILLED WATER RETURN |
| TEMP | TEMPERATURE | CHWS | CHILLED WATER SUPPLY |
| THT | TOTAL HEAT | CO | CLEAN OUT |
| TP | TOTAL PRESSURE | CP | CONDENSATE PUMP |
| TT | TEMPERATURE TRANSMITTER | CWR | CONDENSER WATER RETURN |
| TYP | TYPICAL | CWS | CONDENSER WATER SUPPLY |
| UC | UNDERCUT | CT | COOLING TOWER |
| UNOCC | UNOCCUPIED | CU | CONDENSING UNIT |
| V | VOLTS | CUH | CABINET UNIT HEATER |
| VA | VALVE | CVB | CONSTANT VOLUME BOX |
| VB | VACUUM BREAKER | CWP | CONDENSER WATER PUMP |
| VEL | VELOCITY | DB | DRY BULB |
| VIB | VIBRATION ISOLATOR | DS | DUCT SILENCER |
| VOLT | VOLTAGE | DWP | DOMESTIC WATER PUMP |
| VTR | VENT THRU ROOF | EAT | ENTERING AIR TEMPERATURE |
| W | WIDTH | EC | ELECTRICAL CONTRACTOR |
| W/TH | WITH | EF | EXHAUST FAN |
| W/O | WITHOUT | EJ | EXPANSION JOINT |
| WB | WET BULB | ER | EXHAUST REGISTER |
| WC | WATER COLUMN | ESP | EXTERNAL STATIC PRESSURE |
| WG | WATER GAUGE | ET | EXPANSION TANK |
| | | EWT | ENTERING WATER TEMPERATURE |
| | | EW | ELECTRIC WATER COOLER |
| | | FA | FREE AREA |

| | | | |
|-----------------|------------------------------|------|-----------------------------------|
| FX | FLEXIBLE CONNECTION | PTAC | PACKAGED TERMINAL AIR CONDITIONER |
| FC | FAN COIL UNIT | RA | RETURN AIR |
| FD | FIRE DAMPER | RAG | RETURN AIR GRILLE |
| FLR | FLOOR | RAR | RETURN AIR REGISTER |
| FOB | FLAT ON BOTTOM | RCP | REFLECTED CEILING PLAN |
| FOT | FLAT ON TOP | RHC | REHEAT COIL |
| FOP | FUEL OIL PUMP | RF | RETURN FAN |
| FP | FIRE FAN | SA | SUPPLY AIR |
| FFM | FEET PER MINUTE | SAR | SUPPLY AIR REGISTER |
| FTR | FINNED TUBE RADIATION | SCG | SMOKE CONTROL GRILLE |
| GC | GENERAL CONTRACTOR | SD | SMOKE DAMPER |
| GPH | GALLONS PER HOUR | SEF | SMOKE EXHAUST FAN |
| GPM | GALLONS PER MINUTE | SF | SUPPLY FAN |
| HD | HAND DAMPER | SP | STATIC PRESSURE |
| HP | HEAT PUMP | TG | TRANSFER GRILLE |
| HV | HEATING AND VENTILATING UNIT | TYP | TYPICAL |
| HWC | HOT WATER CONVERTER | UH | UNIT HEATER |
| HWP | HOT WATER PUMP | UON | UNLESS OTHERWISE NOTED |
| HWR | HEATING HOT WATER RETURN | VAV | VARIABLE AIR VOLUME UNIT |
| HWS | HEATING HOT WATER SUPPLY | VD | VOLUME DAMPER |
| HX | HEAT EXCHANGER | VTR | VENT THRU ROOF |
| HZ | HERTZ | WB | WET BULB |
| ID | INSIDE DIAMETER | WMS | WIRE MESH SCREEN |
| LAT | LEAVING AIR TEMPERATURE | | |
| LWT | LEAVING WATER TEMPERATURE | | |
| LD | LINEAR DIFFUSER | | |
| LF | LINEAR FEET | | |
| MC | MECHANICAL CONTRACTOR | | |
| MTD | MOUNTED | | |
| MOD | MOTOR OPERATED DAMPER | | |
| MUA | MAKE-UP AIR UNIT | | |
| NC | NORMALLY CLOSED | | |
| NO | NORMALLY OPEN | | |
| NOT IN CONTRACT | | | |
| OA | OUTSIDE AIR | | |
| OAI | OUTSIDE AIR INTAKE | | |
| OAT | OUTSIDE AIR TEMPERATURE | | |
| ON CENTER | | | |
| OD | OUTSIDE DIAMETER | | |
| OBD | OPPOSED BLADE DAMPER | | |
| PBD | PARALLEL BLADE DAMPER | | |
| PRV | PRESSURE REDUCING VALVE | | |

RESPONSIBLE DIVISION

UNLESS OTHERWISE INDICATED ALL HEATING, VENTILATING, AIR CONDITIONING, PLUMBING AND OTHER MECHANICAL EQUIPMENT, MOTORS, AND CONTROLS SHALL BE FURNISHED, SET IN PLACE AND WIRED AS FOLLOWS:

| ITEM | FURNISHED | SET | POWER- | CONTROL- |
|---|-----------|-------|--------|----------|
| EQUIPMENT COMBINATION MAGNETIC MOTOR STARTERS, MAGNETIC MOTOR STARTERS AND CONTACTORS | 23 | 23 | 26 | -- |
| FUSED AND UNFUSED DISCONNECT SWITCHES, THERMAL OVERLOAD SWITCHES AND HEATERS, MANUAL MOTOR STARTERS | 23 | 26 | 26 | 23 |
| MANUAL-OPERATING AND MULTI-SPEED SWITCHES | 26(1) | 26(1) | 26 | -- |
| CONTROLS, RELAYS, TRANSFORMERS | 23 | 23 | 26 | 23 |
| THERMOSTATS (LOW VOLTAGE) AND TIME SWITCHES | 23 | 23 | 26 | 23 |
| THERMOSTATS(LINE VOLTAGE) | 23 | 23 | 26 | 26 |
| TEMPERATURE CONTROL PANELS | 23 | 23 | 26 | 23 |
| MOTOR AND SOLENOID VALVES, DAMPER MOTORS, PE & EP SWITCHES | 23 | 23(2) | -- | 23(2) |
| PUSH-BUTTON STATIONS AND PILOT LIGHTS | 23 | 23(2) | -- | 23(2) |
| HEATING, COOLING, VENTILATION AND AIR CONDITIONING CONTROLS | 23 | 23 | 26 | 23 |
| EXHAUST FAN SWITCHES | 23 | 26 | 26 | 23(2) |

SUBSCRIPT FOOTNOTES:

- 1) UNDER DIVISION 23 IF FURNISHED FACTORY-WIRED AS PART OF EQUIPMENT OR IF FURNISHED WITH COMBINATION STARTERS.
- 2) IF ITEM IS FOR LINE VOLTAGE, SET IN PLACE AND CONNECT UNDER DIVISION 26. WHERE FACTORY MOUNTED ON EQUIPMENT OR ATTACHED TO PIPING OR DUCTS AND USING LINE VOLTAGE FURNISH AND SET UNDER DIVISION 23, CONNECT UNDER DIVISION 26.

LIGHTING LEGEND

NOTES:
SYMBOLS SHOWN ARE STANDARD. VARIATION AND/OR COMBINATIONS MAY BE USED ON THE PLANS. THIS LIST SHOWS STANDARD SYMBOLS AND ALL MAY NOT APPEAR ON THE PROJECT DRAWINGS; HOWEVER, WHEREVER THE SYMBOL ON THE PROJECT DRAWINGS OCCUR, THE ITEM SHALL BE PROVIDED AND INSTALLED.

A LOWER CASE LETTER NEXT TO LIGHT FIXTURE OR SWITCH INDICATES A SWITCH DESIGNATION.

AN UPPER CASE LETTER NEXT TO A SWITCH INDICATES THE TYPE OF SWITCH. SEE THE LIST BELOW

AN UPPER CASE LETTER NEXT TO A LIGHT FIXTURE INDICATES THE TYPE OF FIXTURE. REFER TO THE LUMINAIRE SCHEDULE FOR FIXTURE SPECIFICATIONS.

SWITCHES

| | |
|------|--|
| I | SINGLE POLE SWITCH |
| I2 | TWO POLE SWITCH |
| I3 | THREE-WAY SWITCH |
| I4 | FOUR-WAY SWITCH |
| ID | DIMMER SWITCH |
| I3D | 3 WAY DIMMER SWITCH - (4D INDICATES A 4WAY DIMMER) |
| IDR | DOOR ACTIVATED SWITCH |
| IMA | WALL MOUNTED DUAL TECHNOLOGY MANUAL ON / AUTO OFF VACUITY SENSOR SWITCH |
| ILV | LOW VOLTAGE LIGHT SWITCH |
| ITO | MANUAL MOTOR STARTER |
| IP | PILOT LIGHT SWITCH |
| IOS | MANUAL ON / AUTO OFF LIGHT SWITCH |
| IMAD | MANUAL ON / AUTO OFF DIMMING LIGHT SWITCH |
| IK | KEY OPERATED LIGHT SWITCH |
| IT | TIMER SWITCH |
| IOS | CEILING MOUNTED DUAL TECHNOLOGY MANUAL ON / AUTO OFF VACUITY SENSOR SWITCH |
| ISC | SCENE CONTROL STATION |
| IMS | UNIT LIGHTING MANAGEMENT CONTROL STATION. |

LIGHT FIXTURES

ALL FIXTURES: THE UPPER CASE LETTER INDICATES FIXTURE TYPE RE: THE LUMINAIRE SCHEDULE FOR SPECIFICATIONS. THE LOWER CASE LETTER INDICATES WHICH SWITCH CONTROLS THE LIGHT.

ACTUAL FIXTURE ON PLANS MAY VARY FROM THE SYMBOL SHOWN HERE

| | |
|-----|--|
| A | 1"x4" LED TROFFER OR DIRECT/INDIREC TYPE FIXTURE GRID, FLANGE OR SURFACE MOUNTED |
| A | 2"x4" LED TROFFER OR DIRECT/INDIREC TYPE FIXTURE GRID, FLANGE OR SURFACE MOUNTED |
| A | 2"x2" LED TROFFER OR DIRECT/INDIREC TYPE FIXTURE GRID, FLANGE OR SURFACE MOUNTED |
| A | WALL BRACKET LIGHT FIXTURE |
| A | RECESSED DOWNLIGHT CAN FIXTURE |
| A | SURFACE CEILING OR PENDANT MOUNTED FIXTURE |
| EX2 | DOUBLE FACE EXIT SIGN, WALL AND CEILING MOUNTED |
| EX1 | SINGLE FACE EXIT SIGN, WALL AND CEILING MOUNTED |
| EM | WALL MOUNTED EMERGENCY LIGHT |
| EMR | EMERGENCY EXTERIOR EGRESS FIXTURE |

ELECTRICAL EQUIPMENT LEGEND

| | |
|------|--|
| — | BRANCH CIRCUIT PANELBOARD |
| — | TELEPHONE TERMINAL BOARD |
| ○ | ELECTRIC MOTOR |
| F | FUSED SAFETY SWITCH / DISCONNECT COMBINATION |
| ⊞ | MOTOR STARTER |
| ⊞ | CONTACTOR |
| LA-7 | CIRCUITRY HOMERUN: PANEL LA - CIR. #7 |
| — | CONDUIT OR WIRE CONCEALED IN WALL/CLG. |
| — | CONDUIT OR WIRE UNDERFLOOR/UNDERGND. |

MAIN DISTRIBUTION GEAR

| | |
|--------|--|
| — | CIRCUIT BREAKER IN A PANEL BOARD |
| — | PAD MOUNTED UTILITY TRANSFORMER |
| 100A | FUSED DISCONNECT 100A = AMP RATING 2P = NUMBER OF POLES |
| 2 POLE | FUSED DISCONNECT |
| M | ELECTRICAL METER SHOWN IN PLAN VIEW |
| PP1 | ELECTRICAL POWER PANEL WITH MAIN LUG OR MAIN BREAKER PP1 = PANEL NAME 225A MLO = MAIN LUG OR BREAKER SIZE 120/208V = PANEL VOLTAGE 3PH, 4 WIRE = PANEL PHASE AND WIRE SIZE |

ELECTRICAL DEVICE LEGEND

| | |
|---|--|
| □ | CEILING JUNCTION BOX - SURFACE/FLUSH |
| □ | WALL JUNCTION BOX - SURFACE/FLUSH |
| □ | DUPLEX RECEPTACLE |
| □ | FLOOR MOUNTED RECEPTACLE |
| □ | SPLIT WIRED DUPLEX RECEPTACLE |
| □ | CEILING MOUNTED DUPLEX RECEPTACLE |
| □ | FOURPLEX RECEPTACLE |
| □ | FLOOR MOUNTED FOURPLEX RECEPTACLE |
| □ | APPLIANCE RECEPTACLE - 3 WIRE |
| □ | GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE WITH USB CHARGING CAPABILITIES |
| □ | RECEPTACLE MOUNTED ABOVE COUNTER |
| □ | RECEPTACLE MOUNTED IN CASEWORK |
| □ | ELECTRIC HAND DRYER |
| □ | THERMOSTAT |
| □ | OPEN/CLOSE/STOP PUSH BUTTON |

FIRE ALARM EQUIPMENT LEGEND

| | |
|--------|-----------------------------|
| F | FIRE ALARM PULL STATION |
| ⊞ | FIRE ALARM HORN |
| ⊞ | FIRE ALARM STROBE |
| ⊞ | FIRE ALARM HORN/STROBE |
| ⊞ | CEILING MOUNTED SPEAKER |
| ⊞ | DUCT DETECTOR |
| ⊞ | REMOTE LAMP |
| ⊞ | SMOKE DETECTOR - STANDARD |
| H 135° | 135° STANDARD HEAT DETECTOR |
| M | PIR DETECTOR |
| ⊞ | FLOW SWITCH |
| ⊞ | TAMPER SWITCH |

COMMUNICATION LEGEND

| | |
|-----------|---|
| ⊞ | CLOCK ONLY |
| ⊞ | CLOCK / PA SPEAKER WALL MOUNTED |
| ⊞ | ROUND CEILING MOUNTED SPEAKER |
| ⊞ | SQUARE SPEAKER |
| ⊞ | INTERCOM PUSH TO CALL SWITCH |
| WAP | WIRELESS ACCESS POINT ABOVE THE CEILING |
| PROJECTOR | ABOVE THE CEILING PROJECTOR CONNECTION |
| ⊞ | HDMI WALL MOUNTED HDMI |
| ⊞ | PLAIN DATA OUTLET |
| ⊞ | PLAIN DATA OUTLET WITH MOUNTING HEIGHT |

SECURITY SYSTEM LEGEND

| | |
|----|-------------------------------|
| ⊞ | SECURITY CAMERA |
| HC | ADA DOOR OPERATOR PUSH BUTTON |

GENERAL NOTES:

SYMBOLS SHOWN ARE STANDARD. VARIATION AND/OR COMBINATION MAY BE USED ON THE PLANS. THIS LIST SHOWS STANDARD SYMBOLS AND ALL MAY NOT APPEAR ON THE PROJECT DRAWINGS; HOWEVER, WHEREVER THE SYMBOL ON THE PROJECT DRAWINGS OCCUR, THE ITEM SHALL BE PROVIDED AND INSTALLED.

VARIATION AND/OR COMBINATION MAY BE USED ON THE PLANS SUCH AS A LOWER CASE LETTER NEXT TO A SWITCH INDICATES THE SWITCH DESIGNATION. A NUMBER NEXT TO A DEVICE INDICATES A CIRCUIT NUMBER.

1. FIELD COORDINATION DURING CONSTRUCTION IS IMPERATIVE. CONTRACTORS BIDDING THIS WORK MUST MAKE REASONABLE ALLOWANCES FOR UNFORESEEN CONTINGENCIES
2. ELECTRIC UTILITY TO ADVISE OWNER AND/OR THE ELECTRICAL ENGINEER, PRIOR TO SERVICE MODIFICATION REQUIRING COST TO THE OWNER.
3. COORDINATE THE LOCATION OF LIGHTING EQUIPMENT INCLUDING BUT NOT LIMITED TO THE LUMINAIRES AND SWITCHES WITH THE ARCHITECTURAL STRUCTURAL AND MECHANICAL DRAWINGS AND ALL OTHER TRADES AS REQUIRED.
4. ALL WIRE TO BE #12 UNLESS NOTED OTHERWISE.
5. COORDINATE THE MOUNTING HEIGHTS OF ALL RECEPTACLES MOUNTED ABOVE COUNTERS, CASEWORK AND APPLIANCE RECEPTACLES WITH ARCHITECTURAL ELEVATIONS.
6. ALL BRANCH CIRCUITS WITH HOME RUNS OVER 50 FEET, WILL BE SIZED ONE SIZE LARGER.
7. ALL ELECTRICAL WORK TO COMPLY WITH LATEST EDITION OF NEC AND ALL APPLICABLE LOCAL CODES.
8. ALL WIRING IS SHOWN DIAGRAMMATICALLY ON DRAWING. FIELD VERIFY ALL CONDITIONS PRIOR TO ROUGH-IN.
9. COORDINATE LUMINAIRE MOUNTING REQUIREMENTS PRIOR TO PLACING ORDER.
10. ALL STAIRWELLS AND PATHS OF EGRESS TO THE EXTERIOR DOORS, AND THE EXTERIOR PATH OF EGRESS AWAY FROM THE BUILDING SHALL RECEIVE EMERGENCY LIGHTING PER CODE.
11. THE LIGHTS IN ALL RESTROOMS, STORAGE CLOSETS, JANITORS CLOSETS AND STAIRWELLS ARE TO BE SWITCHED WITH A MOTION SENSOR ON/OFF SWITCH WITH A TIME DELAY. THE TIME DELAY LENGTH AS DIRECTED BY THE OWNER. EXCEPT IN AREA WHERE THE SWITCH IS LOCATED OUTSIDE THE AREA WHERE THE LIGHT IS LOCATED.
12. VERIFY THE OVERALL HEIGHT OF ALL PENDANT MOUNTED FIXTURES PRIOR TO ORDERING.
13. THE LIGHTING PACKAGE SHALL BE APPROVED BY BOTH ARCHITECTS AND ENGINEERS AS APPROVED EQUAL BEFORE BID

ABBREVIATIONS LEGEND

| | |
|--------|---|
| AA | DRAWING KEYED NOTES |
| ROOM | ROOM DESIGNATION |
| 100 | |
| NL | NIGHT/SECURITY LIGHT - DO NOT SWITCH |
| WP | WEATHERPROOF |
| A.F.F. | ABOVE FINISHED FLOOR |
| AC | ABOVE COUNTER |
| GFCI | GROUND FAULT CIRCUIT INTERRUPTER |
| CW | COORDINATE MOUNTING HEIGHT W/ CASEWORK |
| EM | EMERGENCY FUNCTION |
| 44" | MOUNTING HEIGHT - A.F.F. OR A.F.G. TO C.L. HIGH |
| GFCI | GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE WITH A WEATHER PROOF COVER |
| WP | |
| GFCI | GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE MOUNTED AT 44" ABOVE FINISHED FLOOR |
| 44" | |

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CD PRELIMINARY

1240 GUNNISON AVE

DATE: 09/24/2020 ISSUED FOR: 100% CDS

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DATE: 09/24/20

JOB NO.: 20-132

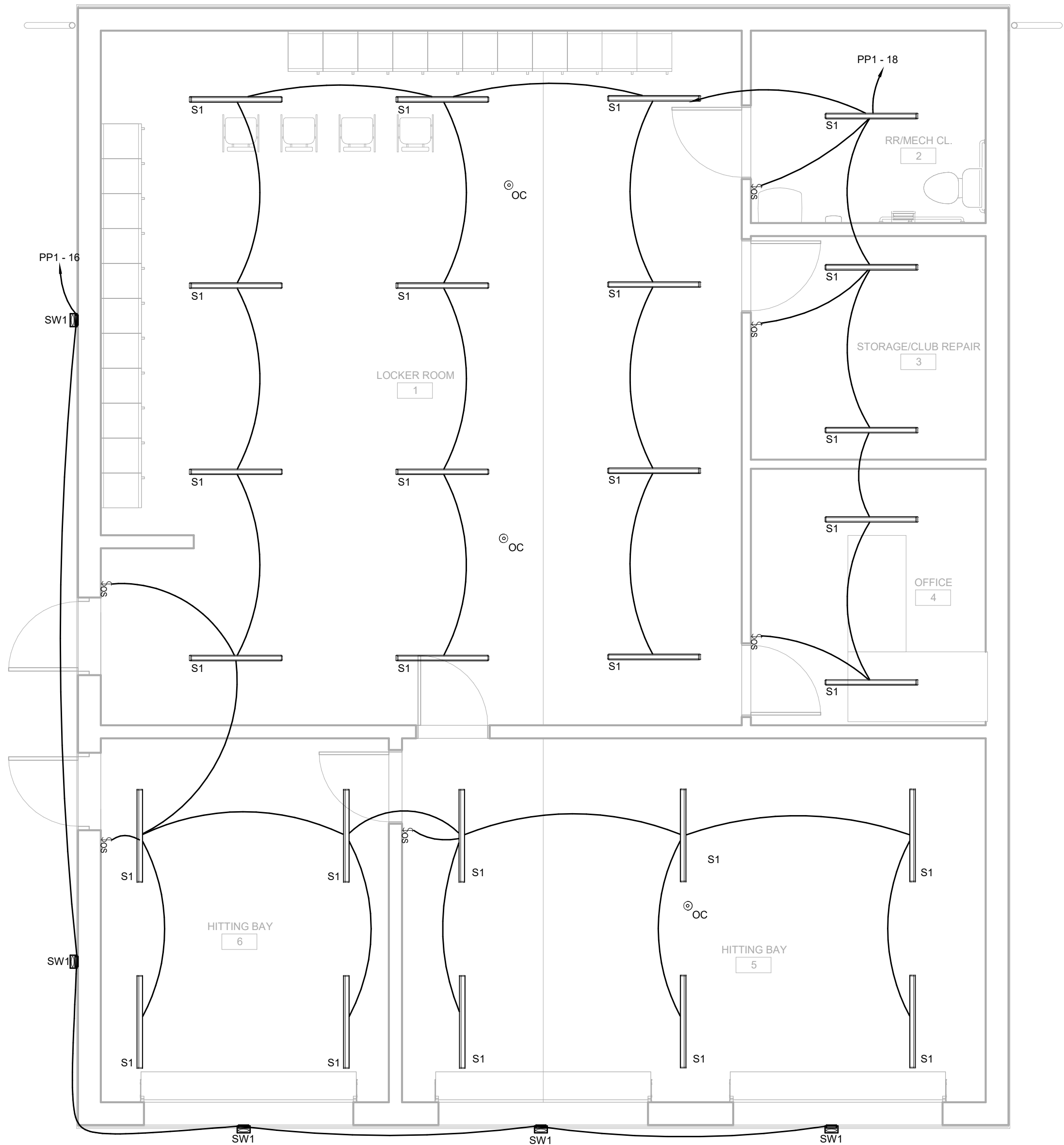
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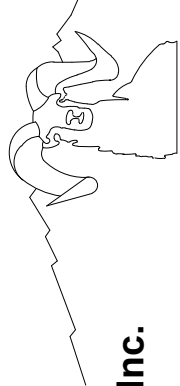


1 LIGHTING -MAIN LEVEL
1/4" = 1'-0"

- LIGHTING FIXTURE NOTES:
- CHAIN MOUNT THE LIGHT THE TYPE S1 LIGHT FIXTURES WITH THE BOTTOM OF THE FIXTURES AT 11'-6" ABOVE THE FINISHED FLOOR.
 - MOUNT THE TYPE SW1 LIGHTS AT 10'-3" ABOVE THE FINISHED FLOOR OR CENTERED IN THE COURSE OF BRICKS, MAKE ADJUSTMENT AS NECESSARY.

| LIGHTING FIXTURE SCHEDULE | | | | |
|---------------------------|-----------------|--------------------------------------|--|---|
| TYPE MARK | Manufacturer | Model | Lamp | DESCRIPTION |
| S1 | METALUX | 4LBLED-LD4-6-SYMF-UNV-L850-CD1-U-AYC | 6000LM, 4000K, 44W, 0-10V LED DIMMING DRIVER | 4' LOW BAY LINEAR SERIES SYMMETRIC DISTRIBUTION WITH FROST OPTICS,CHAIN HUNG FIXTURE. |
| SW1 | LUMARK LIGHTING | XTOR1B-W-PC1 | 1418LM, 4000K, 12W, 70CRI, LED DRIVER | CROSSTOUR LED EXTERIOR WALL PACK, BRONZE FINISH, DARK SKIES, PHOTOCCELL CONTROL |

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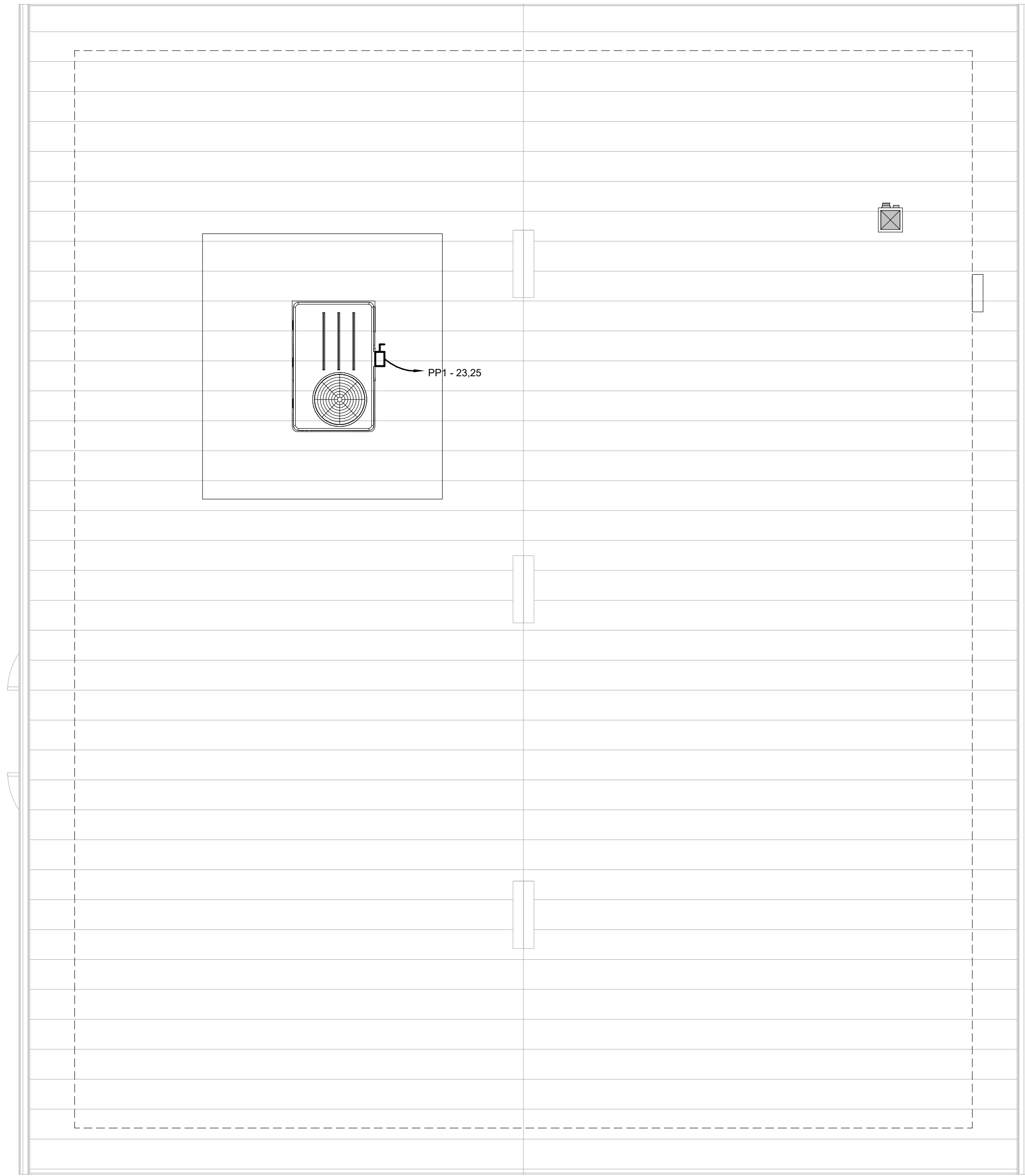
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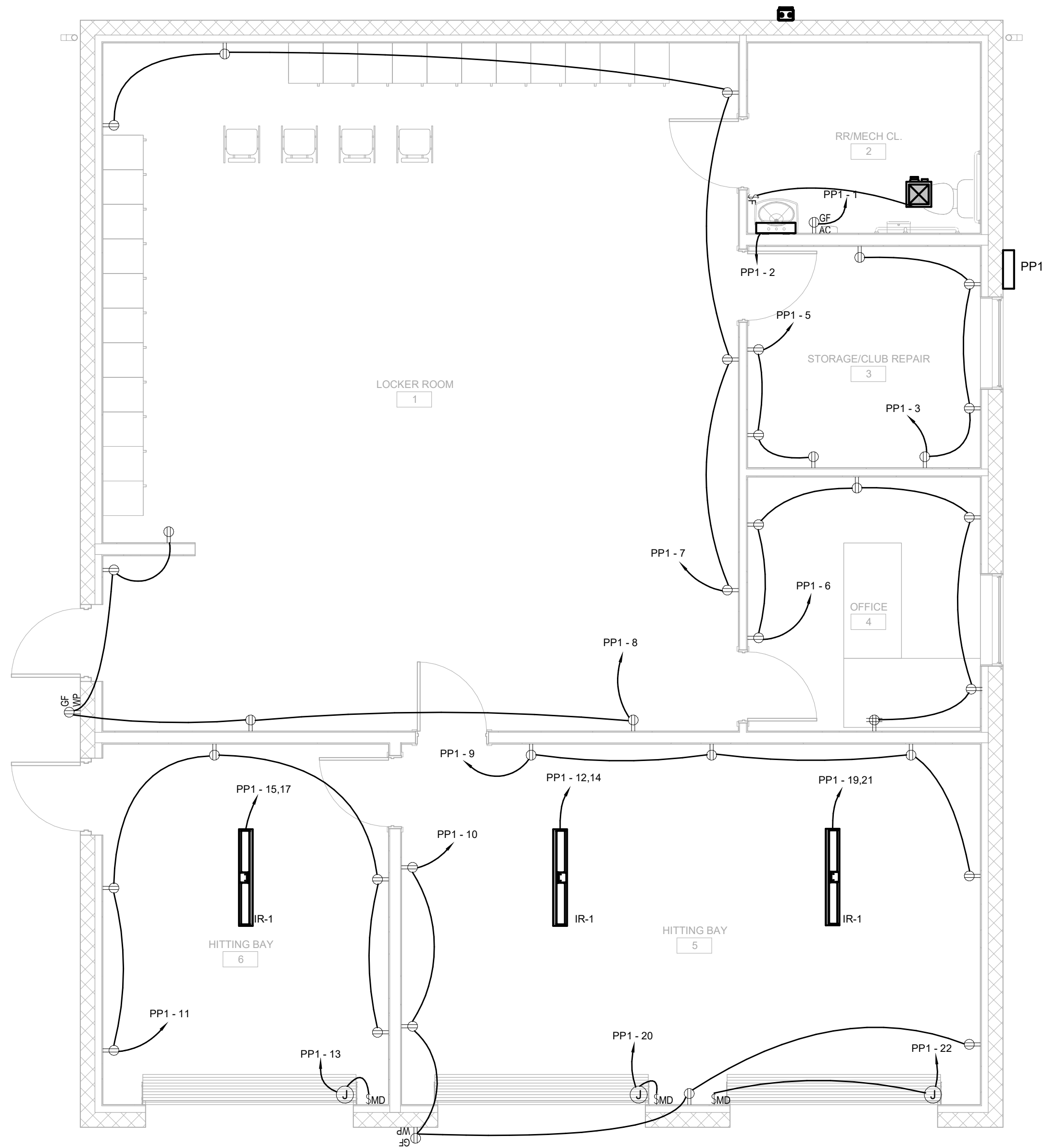
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② ELECTRICAL - ROOF LEVEL
1/4" = 1'-0"



① ELECTRICAL - MAIN LEVEL
1/4" = 1'-0"

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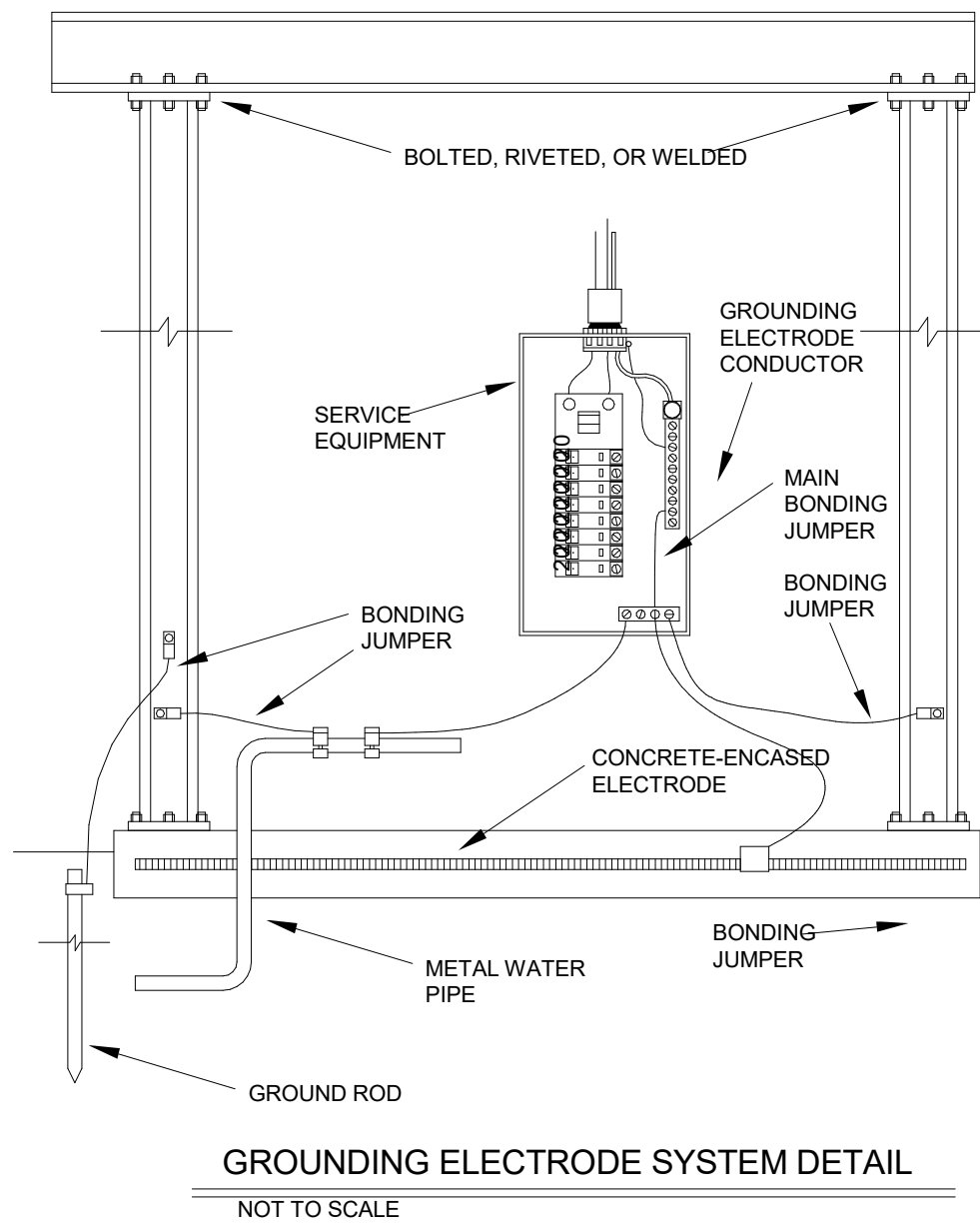
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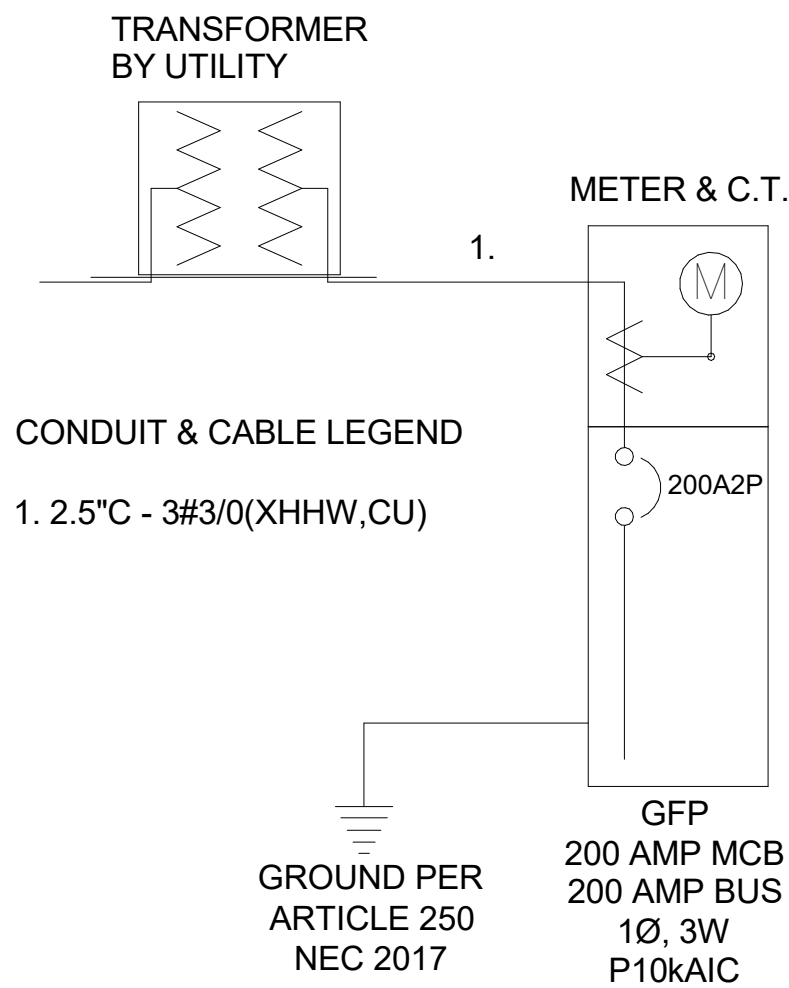
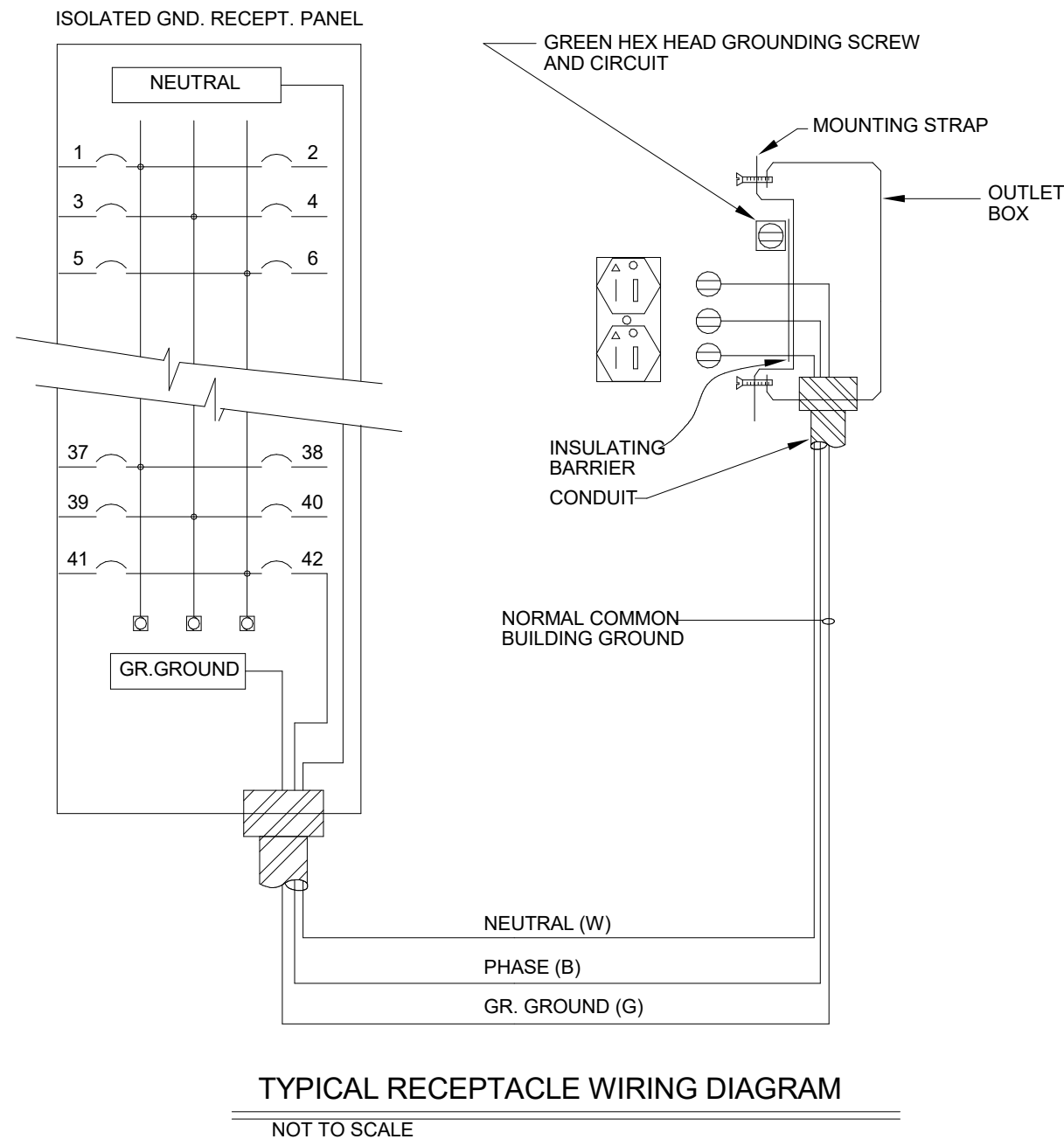
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E2-1



NOTES:
1. SEE ONE LINE DIAGRAM FOR GROUNDING CONDUCTOR SIZES REQUIRED.
2. PROVIDE A MINIMUM OF TWO SEPARATE GROUND SOURCES, U.O.N. ON ONE LINE DIAGRAM.

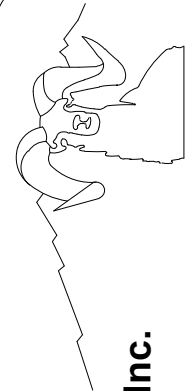


ONE LINE DIAGRAM

| Branch Panel: PP1 | | | | | | | | | | | |
|---------------------------------|---------------------------------|----------------|-------|---------------|---------|-----------------------|---------|-----------------------------|---------------------|-----------------------------|-----|
| Location: STORAGE/CLUB REPAIR 3 | | | | | | Volts: 120/240 Single | | | A.I.C. Rating: | | |
| Supply From: | | | | | | Phases: 1 | | | Mains Type: | | |
| Mounting: Recessed | | | | | | Wires: 3 | | | Mains Rating: 200 A | | |
| Enclosure: | | | | | | | | | MCB Rating: 200 A | | |
| Notes: | | | | | | | | | | | |
| | | | | | | | | | | | |
| CKT | Circuit Description | Trip | Poles | A | | B | | Poles | Trip | Circuit Description | CKT |
| 1 | Receptacle RR/MECH CL. 2 | 20 A | 1 | 1500 VA | 2400 VA | | | 1 | 30 A | INSTA-HOT RR/MECH CL. 2 | 2 |
| 3 | Receptacle STORAG/CLUB REPAIR 3 | 20 A | 1 | | | 720 VA | | | | | 4 |
| 5 | Receptacle STORAG/CLUB REPAIR 3 | 20 A | 1 | 540 VA | 1260 VA | | | 1 | 20 A | Receptacle OFFICE 4 | 6 |
| 7 | Receptacle LOCKER ROOM 1 | 20 A | 1 | | | 900 VA | 900 VA | 1 | 20 A | Receptacle LOCKER ROOM 1 | 8 |
| 9 | Receptacle HITTING BAY 5 | 20 A | 1 | 720 VA | 900 VA | | | 1 | 20 A | Receptacle HITTING BAY 5 | 10 |
| 11 | Receptacle HITTING BAY 6 | 20 A | 1 | | | 900 VA | 1700 VA | 2 | 20 A | IR-1 INFARED HEATER | 12 |
| 13 | OVERHEAD DOOR HITTING BAY 6 | 20 A | 1 | 864 VA | 1700 VA | | | -- | -- | -- | 14 |
| 15 | IR-1 INFARED HEATER | 20 A | 2 | | | 1700 VA | 60 VA | 1 | 20 A | Lighting | 16 |
| 17 | -- | -- | -- | 1700 VA | 1188 VA | | | 1 | 20 A | Lighting LOCKER ROOM 1 | 18 |
| 19 | IR-1 INFARED HEATER | 20 A | 2 | | | 1700 VA | 864 VA | 1 | 20 A | OVERHEAD DOOR HITTING BAY 5 | 20 |
| 21 | -- | -- | -- | 1700 VA | 864 VA | | | 1 | 20 A | OVERHEAD DOOR HITTING BAY 5 | 22 |
| 23 | RTU-1 ROOFTOP UNIT | 50 A | 2 | | | 4092 VA | | | | | 24 |
| 25 | -- | -- | -- | 4092 VA | | | | | | | 26 |
| 27 | | | | | | | | | | | 28 |
| 29 | | | | | | | | | | | 30 |
| 31 | | | | | | | | | | | 32 |
| 33 | | | | | | | | | | | 34 |
| 35 | | | | | | | | | | | 36 |
| 37 | | | | | | | | | | | 38 |
| 39 | | | | | | | | | | | 40 |
| 41 | | | | | | | | | | | 42 |
| Total Load: | | | | 19102 VA | | 13247 VA | | | | | |
| Total Amps: | | | | 159 A | | 110 A | | | | | |
| Legend: | | | | | | | | | | | |
| | | | | | | | | | | | |
| Load Classification | | Connected Load | | Demand Factor | | Estimated Demand | | Panel Totals | | | |
| HVAC | | 8184 VA | | 100.00% | | 8184 VA | | | | | |
| Lighting | | 1248 VA | | 100.00% | | 1248 VA | | Total Conn. Load: 32343 VA | | | |
| Other | | 2400 VA | | 100.00% | | 2400 VA | | Total Est. Demand: 32343 VA | | | |
| Power | | 12792 VA | | 100.00% | | 12792 VA | | Total Conn.: 135 A | | | |
| Receptacle | | 8340 VA | | 100.00% | | 8340 VA | | Total Est. Demand: 135 A | | | |
| Notes: | | | | | | | | | | | |

| POWER FOR PACKAGE ROOF TOP UNIT SCHEDULE | | | | | | | | | | | |
|--|-----------------------------|-----------------------|----------------------|------------|-------|-----------|---------|----------|--------------|----------------|----------------|
| TYPE MARK | SERVICE | NOM. COOLING CAPACITY | EVAP. FAN POWER (HP) | ELECTRICAL | | | | | | | |
| | | | | VOLTS | PHASE | FREQUENCY | MCA (A) | MOCP (A) | MANUFACTURER | MODEL # | Circuit Number |
| RTU-1 | GENERAL HEATING AND COOLING | 4 TON | 1/8 | 240 | 2 | 60 Hz | 34 A | 50 A | TRANE | 4YC28048C1115A | PP1 |

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