

**SCHEDULE OF PIPE AND FITTING MATERIAL**

| SERVICE   | MATERIAL  | JOINTS             | FITTINGS                      | NOTES |
|---|---|--------------------|-------------------------------|-------|
| VENTS AND WASTE LINES (ABOVE GROUND)            | SERVICE WEIGHT CAST IRON (CI) (PVC WHEN APPROVED BY CITY) | LEAD OR TYSEAL     | CAST IRON-PVC APPROVED        | ①     |
| SOIL LINES (BELOW GROUND) - UNDER SLAB          | CAST IRON (CI) (PVC WHEN APPROVED BY CITY)                | LEAD OR TYSEAL     | CAST IRON-PVC APPROVED        | ②     |
| DOMESTIC WATER PIPE (ABOVE GROUND)              | COPPER 1/2" HARD ASTM C-200                               | SOLDERED OR BRAZED | WROUGHT COPPER OR CAST BRONZE | ③     |
| SEWER LINE PIPING (BELOW GROUND) NOT UNDER SLAB | PVC   | ASTM C-425         | ASTM C-200                    | ① ②   |
| GAS PIPE (BELOW GROUND)                         | SCHEDULE 40, BLACK STEEL-X-TRUE COATED AND WRAPPED        | CAST IRON          | CAST IRON MALLEABLE IRON      | ④ ⑤   |
| GAS PIPE (ABOVE GROUND)                         | SCHEDULE 40 BLACK STEEL                                   | SCREWED            | CAST IRON MALLEABLE IRON      | ④ ⑥   |

- NOTES**
- PVC OR ABS SCHEDULE 40, SOLVENT WELDED JOINTS MAY BE USED ONLY WITH WRITTEN AUTHORIZATION OF APPROVAL BY LOCAL INSPECTING AUTHORITY SUBMITTED BELOW TO ARCHITECT AND ENGINEER PRIOR TO BIDDING. CONDITIONS OF NOTE ② BELOW. SCR-35 SANITARY PIPE WHEN APPROVED.
  - NO PVC OR ABS TO BE USED IN TYPE II CONSTRUCTION, THROUGH OR IN RETURN AIR PLENUMS, IN CITIES WHERE SUCH MATERIAL IS NOT ACCEPTABLE, OR BELOW BUILDING SLAB OR DRIVEWAY SURFACES.
  - PROVIDE AIR CHAMBERS 18" TALL PRIOR TO CONNECTION OF HOT/COLD WATER LINES TO PLUMBING FIXTURES. COLD WATER LINES TO PLUMBING FIXTURES: ALL POTABLE WATER SYSTEMS SOLDERING TO BE 95/5, TIN ANTIMONIAL OR UL, BOCA, UPC APPROVAL FOR SUBSTITUTION.
  - SCREWED GAS CONNECTION FOR 2" AND SMALLER; WELDED CONNECTION FOR 2" AND LARGER, AND IN RETURN AIR PLENUMS.
  - THREADS AND WELDS PAINTED PRIOR TO WRAPPING, ALL EXTERIOR PIPING (ESPECIALLY ON ROOF) TO BE PAINTED (COLOR BY ARCHITECT) TO MATCH ADJACENT SURFACE. PROVIDE CATHODIC UNDERGROUND PROTECTION ON GAS PIPING AS RECOMMENDED BY LOCAL KPL GAS SERVICE (FOR GOVERNING AUTHORITY)
  - CONNECT ALL GAS TO EQUIPMENT THROUGH GAS COCK, UNION AND DIRT LEG.

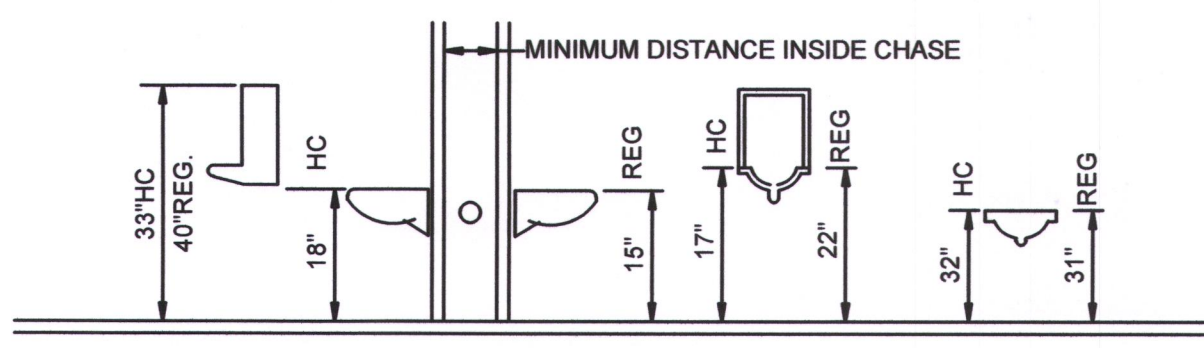
**PLUMBING CONNECTION/MOUNT.**

| FIXTURE                                     | HOT WATER | COLD WATER | WASTE        | VENT         |
|---|-----------|------------|--------------|--------------|
| LAVATORY OR SINK<br>WATER CLOSET, TANK TYPE | 1/2"      | 1/2"       | 1-1/2"<br>4" | 1-1/2"<br>3" |

| FIXTURE                  | MOUNTING HEIGHT  |
|--------------------------|------------------|
| LAVATORY OR SINK         | 31" FLOOR TO RIM |
| HANDICAPPED LAVATORIES   | 34" FLOOR TO RIM |
| WATER CLOSET             | 15" FLOOR RIM    |
| HANDICAPPED WATER CLOSET | 18" FLOOR TO RIM |

PLUMBING CONTRACTOR TO REFERENCE PLUMBING FLOOR PLANS AND DETAIL SHEET AND SPECIFICATIONS FOR SPECIFIC FIXTURE IDENTIFICATION USED.

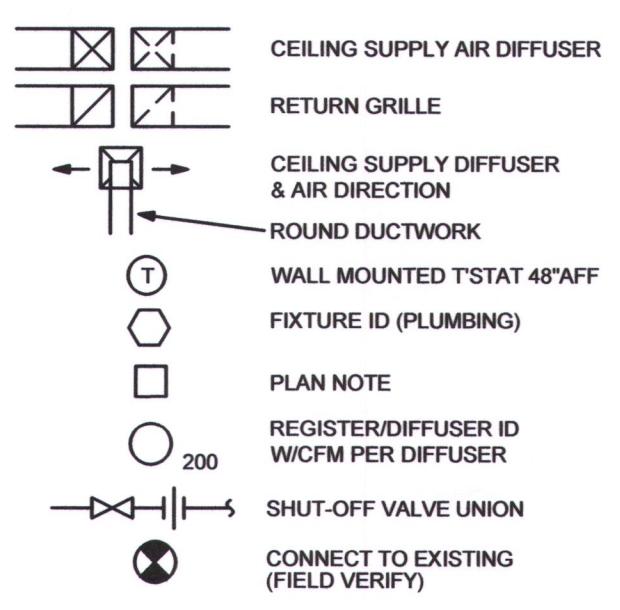


**PIPING INSULATION SCHEDULE**

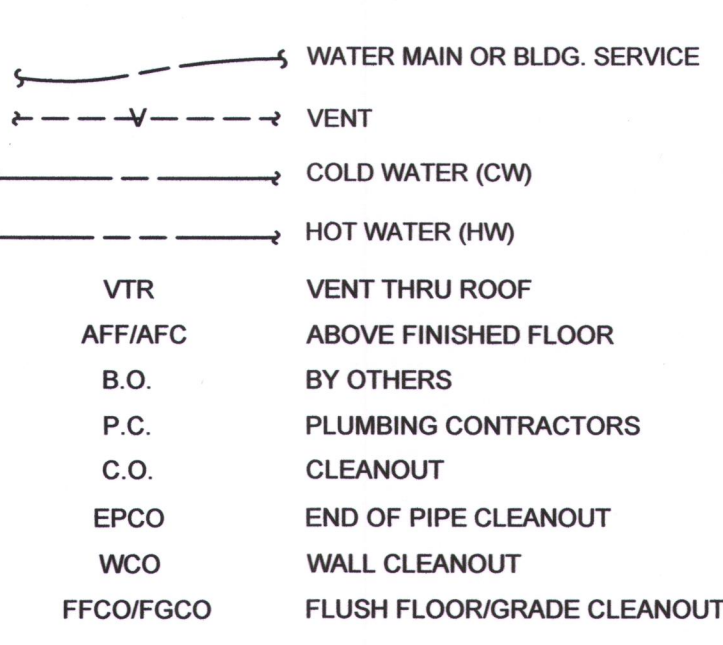
| PIPE SYSTEM                                   | INSULATION | THICKNESS | TEMP.         |
|---|------------|-----------|---------------|
| REFRIGERANT SUCTION                           |            | 1/2"      | -20°F TO 70°F |
| DOMESTIC HOT & COLD HORIZONTAL MAINS ONLY     |            | 1/2"      | -20°F TO 70°F |
| HANDICAP "P" TRAP & HOT WATER UNDER LAVATORYS |            | 1/2"      | -20°F TO 70°F |

NOTE: ALL HORIZONTAL HOT & COLD WATER MAINS ARE TO BE INSULATED. VERTICAL MAINS AS NOTED OR SHOWN ON PLANS.  
 INSULATE UNCONDITIONED AND UNCONDITIONAL SPACES.  
 \*\* FLEXIBLE UNICELLULAR (UP THRU 2") UNICELLULAR ELASTOMERIC CLOSED CELL INSULATION, 0.27 BTU-IN/H-SF THERMAL CONDUCTANCE AT 75°F, 3% MAXIMUM WATER ABSORPTION BY WEIGHT. ARMSTRONG AP ARMAFLEX OR RUBATEX.  
 PROVIDE FIBERGLASS INSULATION FOR DOMESTIC WATER & STORM DRAIN PIPING.

**MECHANICAL LEGEND**



**PLUMBING LEGEND**



**GENERAL REQUIREMENTS**

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL BUILDING, MECHANICAL, PLUMBING CODES NATIONAL ELECTRICAL CODE, NATIONAL FIRE PROTECTION CODE, EPA REGULATIONS, AND OCCUPATIONAL SAFETY AND HEALTH ACT.
- CONTRACTOR SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT TO PROVIDE COMPLETE AND FUNCTIONING INSTALLATIONS, AND ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE SPECIFIED.
- CONTRACTOR SHALL PROTECT ALL EXISTING WORK TO REMAIN, AND SHALL REPAIR ANY DAMAGED INCIDENTAL TO PERFORMANCE OF NEW WORK.
- INTERFERENCE WITH OWNERS OPERATIONS OR INTERRUPTION OF SERVICES SHALL BE FULLY COORDINATED WITH OTHERS.
- ACCEPTANCE OF WORK SHALL BE SUBJECT TO OWNER'S REPRESENTATIVE APPROVAL OF WORK IN PLACE AS WELL AS SHOP DRAWINGS AND SAMPLES OF MATERIALS AND EQUIPMENT WHICH SHALL BE CHECKED BY CONTRACTOR BEFORE SUBMITTAL.
- CONTRACTOR SHALL SUBMIT MARKED UP CLEAN PRINTS OF AS-BUILT CONDITIONS SHOWING CONCEALED DEVIATIONS FROM DESIGN.
- CONTRACTOR SHALL KEEP PREMISES OF WORK AREA CLEAN DAILY, BROOM CLEAN AT PROJECT COMPLETION, AND SHALL REMOVE ALL REFUSE FROM SITE REGULARLY.
- CONTRACTOR SHALL BECOME COMPLETELY FAMILIAR WITH EXISTING CONDITIONS BEFORE STARTING NEW WORK. CONCEALED CONDITIONS SHALL BE ADDRESSED WITH DUE CAUTION SUCH THAT UTILITIES AND SYSTEMS ARE PROTECTED.
- CONTRACTOR SHALL CUT AND PATCH HOLES IN EXISTING CONSTRUCTION AS REQUIRED FOR NEW WORK WITH DUE CAUTION SUCH AS STRUCTURAL AND WEATHER-PROOF INTEGRITY IS MAINTAINED WITHOUT IMPARTMENT.
- CONTRACTOR SHALL WARRANTY ALL NEW WORK FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE AND SHALL REPAIR OR REPLACE AND DEFECTIVE WORK INCLUDING MATERIAL, LABOR AND EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER.
- EXISTING CONDITIONS INDICATED ON THE DRAWINGS ARE TAKEN FROM THE BEST INFORMATION AVAILABLE ON PREVIOUS CONTRACT DRAWINGS AND FROM VISUAL SITE INSPECTIONS AND ARE NOT TO BE CONSTRUCTED AS "AS-BUILT" CONDITIONS, BUT ARE TO INDICATE THE INTENT OF THIS WORK.
- ALL PERMITS AND LICENSES THAT ARE REQUIRED BY GOVERNING AUTHORITIES FOR THE PERFORMANCE OF MECHANICAL AND ELECTRICAL WORK SHALL BE PROCURED AND PAID FOR BY THE CONTRACTOR.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL EQUIPMENT IN SUCH A MANNER AS TO CONTROL THE TRANSMISSION OF NOISE AND VIBRATION FROM ANY INSTALLED EQUIPMENT OR SYSTEM, SO THE SOUND LEVEL SHALL NOT EXCEED NC35, IN ANY OCCUPIED SPACE. CONTRACTOR SHALL BE RESPONSIBLE FOR THE CORRECTION OF ANY OBJECTIONABLE NOISE IN ANY OCCUPIED AREA DUE TO IMPROPERLY INSTALLED EQUIPMENT.
- MECHANICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF DIFFUSERS, REGISTERS AND GRILLS WITH ARCHITECTURAL REFLECTED CEILING PLAN AND ELECTRICAL LIGHT LAYOUT.
- MECHANICAL CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF ROOF TOP EQUIPMENT AND DUCT PENETRATIONS WITH STRUCTURAL.
- MECHANICAL CONTRACTOR SHALL SIZE AND INSTALL REFRIGERANT PIPING TO EQUIPMENT AS RECOMMENDED BY EQUIPMENT MANUFACTURER, INCLUDE ALL NECESSARY CONTROLS AND INTERLOCK WIRING, INSULATE SUCTION PIPING WITH 3/4" THICK ARMAFLEX (OUTDOOR INSULATION SHALL BE ULTRAVIOLET PROTECTED).
- RECTANGULAR DUCT TO BE CONSTRUCTED OF PRIME GALVANIZED SHEET METAL LINED WITH 1/2", 3 lb. DENSITY FIBERGLASS INSULATION. ROUND FLEXIBLE DUCT TO BE TERMAFLEX TYPE MKC OR EQUAL WITH 1" FIBERGLASS INSULATION EXTERNALLY WRAPPED. PLANS REFLECT COMPENSATION OF 1/2" INTERIOR INSULATION LINER.
- MECHANICAL CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO SUBMITTING A BID. FIELD CHECK AND VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING EQUIPMENT AND REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
- MECHANICAL CONTRACTOR SHALL COORDINATE ALL WIRING AND ELECTRICAL INTERLOCKS WITH THE ELECTRICAL CONTRACTOR.
- PLUMBING CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO SUBMITTING A BID. FIELD VERIFY ALL UTILITIES LOCATION, SIZE ACCESSIBILITY AND FEES. REPORT ANY DISCREPANCIES TO THE ENGINEER/ARCHITECT IMMEDIATELY.
- PLUMBING CONTRACTOR TO PROVIDE WHEELHANDLE STOPS AND AIR CHAMBERS ON ALL HOT & COLD WATER LINE PRIOR TO CONNECTION TO EACH FIXTURES.
- PLUMBING CONTRACTOR SHALL ANCHOR DRAIN LINES FROM FURNACE COIL AND FROM WATER HEATER DRAIN PAN OVER FLOOR DRAIN.

**PLUMBING FIXTURE SCHEDULE**

**WATER CLOSET - GERBER, AQUA SAVER 221-718 18" AFF. TO RIM VITREOUS CHINA, ELONGATED FLOOR OUTLET, SIPHON JET ACTION, TANK TYPE TOILET WHITE, SOLID PLASTIC - KOHLER #K-A714 OPEN FRONT SEAT LESS COVER. PROVIDE FLEXIBLE SUPPLY PIPE WITH WHEEL HANDLE STOP. 1/2", 4"WASTE, 2"VENT.**

**LAVATORY - AMERICAN STANDARD #9141.011 WALL HUNG VITREOUS CHINA WHITE WITH #7516.172 GOOSENECK FAUCET DRAIN PACKAGE. PROVIDE CONCEALED WALL SUPPORT & 4" WRIST BLADES. 1/2"H & CW, 1-1/2"WASTE, 1-1/2"VENT, 2" BELOW SLAB. MOUNTING HEIGHT 31"A.F.F.**

**FLOOR DRAIN - JOSAM 32000 CAST IRON, ROUND 7" NIKOLAY MEDIUM DUTY LOOSE SET ANTI-TILTING GRATE. SIZE TO SUIT PIPE SIZE AS SHOWN ON DWG. OR EQUAL.**

**JANITOR SINK - FLOOR MOUNTED BASIN W/AMERICAN STANDARD 8341.075 FAUCET WITH VACUUM BREAKER. INCLUDE VINYL BUMPER FOR EXPOSED SIDE & PROVIDE P-TRAP FOR DRAIN. 1/2"H & CW, 3"WASTE, 2"VENT.**

**DRINKING FOUNTAIN - HALSEY TAYLOR #HAC8FSBL-QADA BARRIER FREE COOLER, 120V, 1Ø, 4 AMP. 1/2" CW, 1 1/2" WASTE, 1 1/4" VENT**

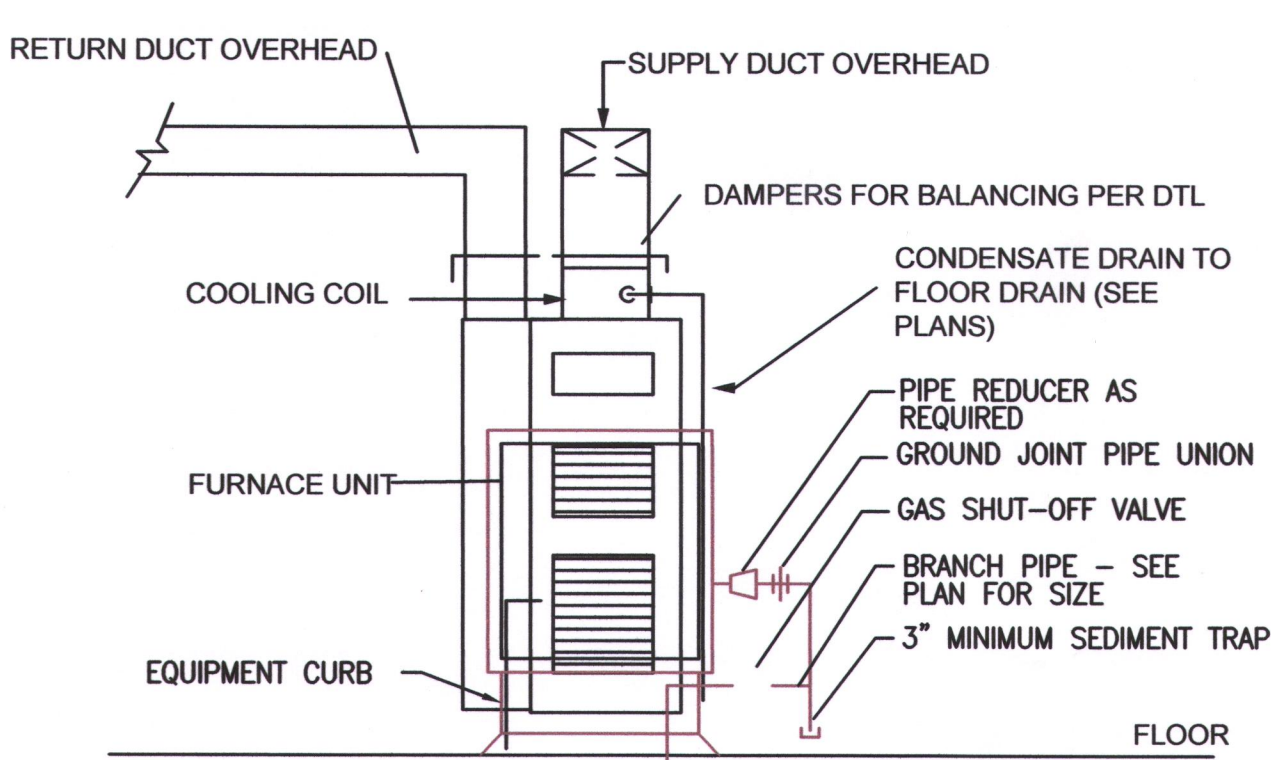
**GAS FIRED MECHANICAL EQUIPMENT SCHEDULE**

- FURN** FURNACES SHALL BE CARRIER CONFORT 92 SERIES WITH 90,000BTU HEATING, 90% EFFICIENT WITH 50 CFM OF FRESH AIR ENTERING INTO THE RETURN AIR DUCT. COMBUSTION AIR AND FLUE GASES SHALL GO OUT THE ROOF IN PVC PIPING. EQUIVALENT BY TRANE & LENNOX IS ACCEPTABLE. PROVIDE HUMIDIFIER
- CU-A** PROVIDE MATCHING 1.5 TON CONDENSING UNIT, 208V-1PH
- EF-1** EXHAUST FAN - SERVING TOILETS. BRDAN #684, 100 CFM, 120V, 1Ø PROVIDE DAMPER AND EXTEND DUCT OUT THE ROOF. PROVIDE CAP AND FLASH WATERTIGHT

**DIFFUSER & REGISTER SCHEDULE**

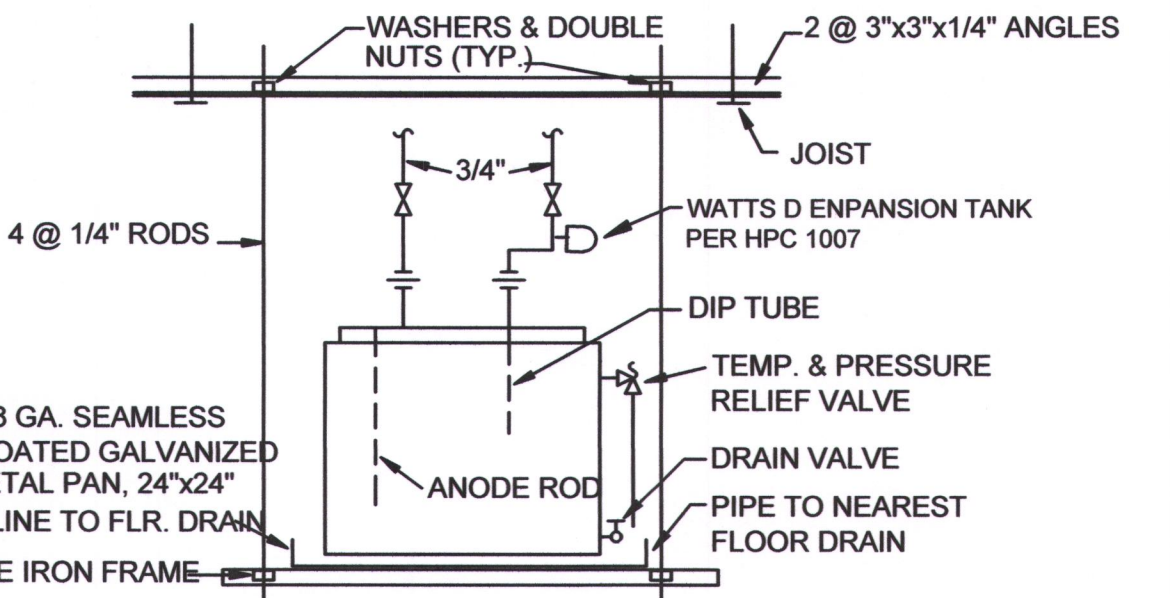
| IDENT. | MANUF. | MODEL  | SIZE    | FINISH |        |
|--------|--------|--------|---------|--------|--------|
| (A)    | TITUS  | TMS-8" | 24"x24" | WHITE  | SUPPLY |
| (B)    | TITUS  | TMS-6" | 12"x12" | WHITE  | SUPPLY |
| (C)    | TITUS  | 300RL  | 24"x24" | WHITE  | RETURN |
|        |        |        |         |        |        |
|        |        |        |         |        |        |

CONTRACTOR SHALL VERIFY ALL CEILING TYPES AND DUCT SIZES FOR DIFFUSERS



**TYPICAL FURNACE DETAIL**

NO SCALE  
 PIPING ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST AS REQUIRED.



**ELECTRIC WATER HEATER**

NO SCALE APPROX. 120 LBS OPERATING WEIGHT.

10 GALLON WATER HEATER: NATIONAL #NSG-10 GLASSLINED, 10 GAL. CAPACITY, 1.5 KW, 120V, 1Ø WITH MAGNESIUM ANODE. PIPE RELIEF VALVE DISCHARGE DOWN TO TRAPPED CONNECTION TO VENT ABOVE CEILING.

APPROVED EQUALS: MOR/FLO AMERICAN, RHEEM. PROVIDE AMTRON #ST-5 EXPANSION TANK

**TENANT INFILL FOR**

**JOHNSON LOGISTICS LLC**

**AT**

**2736 NE McBAINE DRIVE LEE'S SUMMIT MISSOURI**

**DATE:** 9/21/2020

- REVISIONS:**
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**SBC**

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