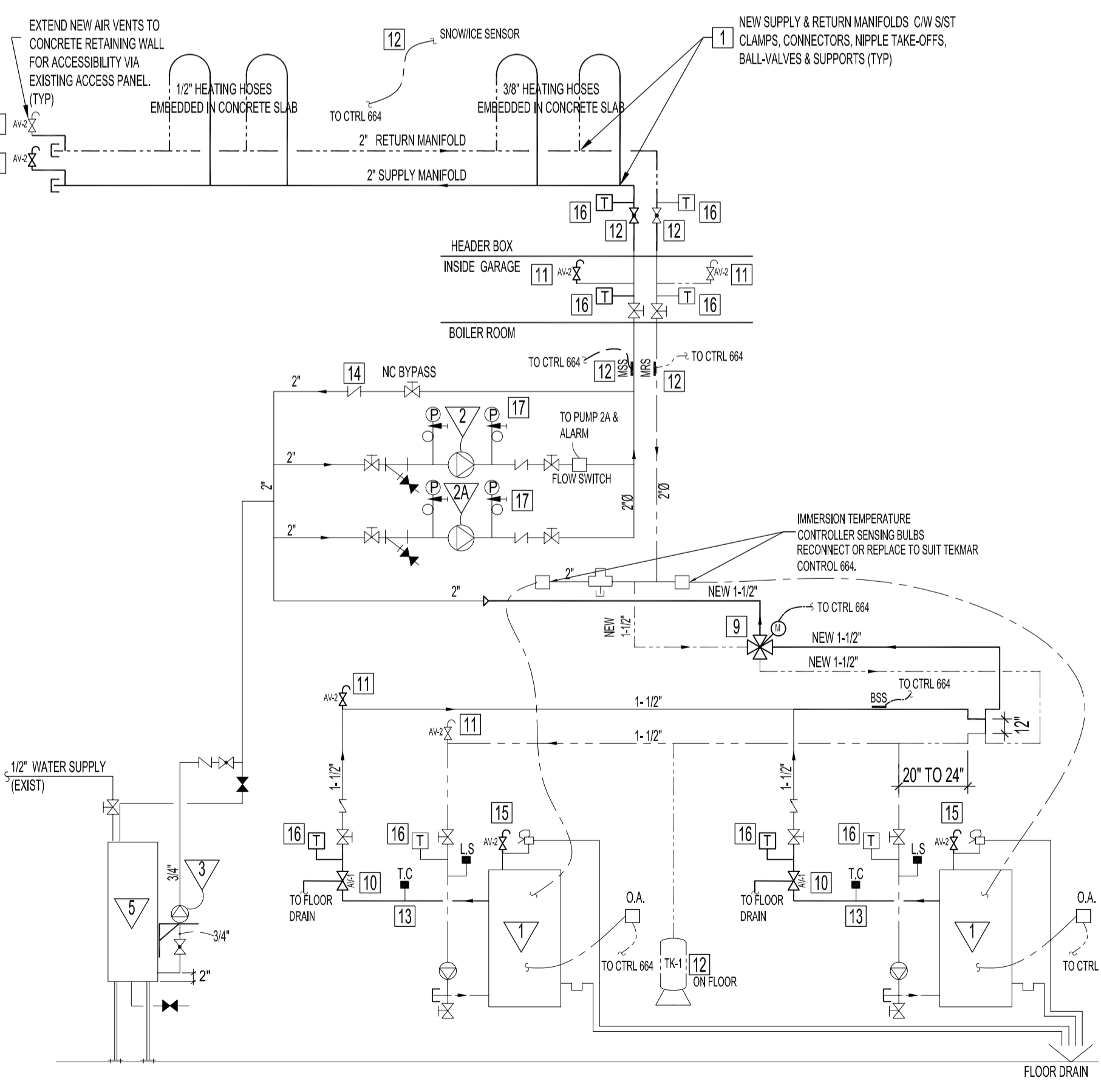


SNOW MELT PIPING SCHEMATIC - DEMOLITION
SCALE: N.T.S NOTE: DASHED LINES INDICATES REMOVAL.



SNOW MELT PIPING SCHEMATIC - RENOVATION
SCALE: N.T.S NOTE: DASHED LINES INDICATES REMOVAL. DARKER/THICKER LINES ARE NEW LINES & COMPONENTS.

- DEMOLITION NOTES:**
- TO BE REMOVED**
- REMOVE ALL EXISTING 2\"/>
 - REMOVE (2) EXISTING FLOOR DRAINS AND REPLACE WITH NEW, SEE RENOVATION NOTES.
 - REMOVE EXISTING EXPANSION TANK, PIPING & FITTINGS BACK TO CONNECTION & CAP LINE.
 - REMOVE EXISTING BOILER THERMOSTATIC BYPASS VALVE ASSEMBLY & REINSTALL EXISTING BOILER TEMP LIMIT CONTROL. SEE RENOVATION NOTES. DO NOT DISPOSE OF BOILER THERMOSTATIC BYPASS VALVE ASSEMBLY, STORE IN A BOX. THE BOX SHALL BE PLACED ON THE DESK IN THE BOILER ROOM.
 - REMOVE EXISTING BYPASS CHECK VALVE & CAP BOTH ENDS OF LINE. DO NOT DISPOSE OF BYPASS CHECK VALVE, STORE IN A BOX. THE BOX SHALL BE PLACED ON THE DESK IN THE BOILER ROOM.

- RENOVATION NOTES:**
- REPLACE EXISTING SUPPLY & RETURN MANIFOLD ASSEMBLIES WITH NEW. MATERIALS, COMPONENTS, SIZES & ORIENTATION SHALL BE THE SAME AS EXISTING - INCLUDING PIPING SUPPORTS, SHUT-OFF VALVES, GAUGES AND VENT/PURGE ASSEMBLIES (MINIMUM). CONTRACTOR SHALL SUPPLY & INSTALL ADDITIONAL COMPONENTS AS REQUIRED BY MANIFOLD MANUFACTURER TO PROVIDE A BALANCE & MONITORING SYSTEM. IF ALTERNATE IS TO BE USED, CONTRACT ADMINISTRATOR APPROVAL IS REQUIRED IN ACCORDANCE WITH BID OPPORTUNITY SECTION 86.
 - MAINTAIN EXISTING SUPPLY & RETURN PIPES LOCATED ON GARAGE WALLS. CONNECT NEW PIPES TO EXISTING PIPING IN GARAGE WALL.
 - SUPPLY & INSTALL NEW ZURN Z-135-6, 8\"/>
 - SUPPLY & INSTALL 3/8\"/>
 - SUPPLY & INSTALL 3/8\"/>
 - SUPPLY & INSTALL 1/2\"/>
 - SEE DWG C1. (SNOWICE SENSOR)
 - SUPPLY & INSTALL 4-WAY MOTORIZED VALVE (SEE LEGEND) AS PER TEKMAR MANUFACTURER'S INSTALLATION MANUAL AND PER DIVISION 15 & 16.
 - SUPPLY & INSTALL MICROBUBBLE ELIMINATOR (VERTICAL PIPING) & CONNECT VENT TO FLOOR DRAIN AS PER MANUFACTURER'S INSTALLATION MANUAL AND PER DIVISION 15.
 - SUPPLY & INSTALL AUTO AIR VENT & CONNECT VENT TO DRAIN AS PER MANUFACTURER'S INSTALLATION MANUAL AND PER DIVISION 15.
 - SUPPLY AND INSTALL (SEE LEGEND)
 - REINSTALL EXISTING BOILER TEMPERATURE LIMIT CONTROL AT SAME LOCATION WITH NEW THERMOWELL & ELBOW TO COMPLETE PIPING WITHOUT EXISTING BOILER THERMOSTATIC BYPASS VALVE.
 - CHANGE DIRECTION OF EXISTING CHECK VALVE TO ALLOW FOR SYSTEM CIRCULATOR BYPASS.
 - REMOVE & REPLACE EXISTING AUTO VENT WITH NEW (SEE LEGEND) & CONNECT VENT TO DRAIN AS PER MANUFACTURER'S INSTALLATION MANUAL AND PER DIVISION 15.
 - REPLACE EXISTING THERMOMETERS WITH PRESSURE/TEMPERATURE GAUGES & ASSOCIATED FITTINGS (SEE LEGEND).
 - CHANGE STANDBY PUMP 2A TO SPEED 2. ENSURE MAIN CIRCULATING PUMP IS SET AT SPEED 3.

EXISTING EQUIPMENT

- GLYCOL BOILER - BURNHAM XG 2006A, NATURAL GAS FIRED, POWER VENT, 164,000 BTU/HR INPUT, 138,000 BTU/HR OUTPUT WITH BUILT-IN CIRCULATOR VIZLOGIC CONTROL, ELECTRIC IGNITION, 120V/1PH.
- MAIN CIRCULATING PUMP - UMC 65-80, 30 U.S. GPM @ 25 FT HEAD AT SPEED 3
- STAND-BY PUMP - UPC 65-160, 30 U.S. GPM @ 38 FT HEAD AT SPEED 2 (MEDIUM)
- CHARGE PUMP
- EXPANSION TANK (TO BE REMOVED INCLUDING ASSOCIATED PIPING & CAPPED.)
- GLYCOL MIXING TANK

LEGEND

--- TO BE REMOVED
 --- SUPPLY
 --- RETURN
 --- SHUT OFF GATE VALVE
 --- THROTTLING GLOBE VALVE (SUPPLY & INSTALL)
 --- CHECK VALVE CRANE #1
 --- STRAINER
 --- 1/2\"/>

TEMPERATURE GAUGE & PRESSURE GAUGE. REPLACE EXISTING TEMPERATURE GAUGE WITH TEMPRESS WINTERS TRIDATORS T401, 25\"/>

90° TURN BRASS MANUAL PETCOCK AIR VENT
 --- LIQUID FILLED PRESSURE GAGE
 --- RELIEF VALVE
 --- O.A. OUTDOOR AIR TEMPERATURE SENSOR. REPLACE EXISTING WITH NEW TO SUIT TEKMAR SNOW DETECTOR & MELTING CONTROL 664. SUPPLY & INSTALL INCLUDING WIRING & ALL COMPONENTS.
 --- L.S. LEVEL SWITCH
 --- T.C. TEMPERATURE LIMIT CONTROL
 --- AMTROL AIR PURGER FITTING
 --- AIRTRON TANK FITTING
 --- SNOW/ICE SENSOR (SUPPLY & INSTALL)
 --- TEKMAR T23 (1-1/2\"/>

SPIROVENT JUNIOR VJ1125FT (1-1/4\"/>

SPIROTOP AUTOMATIC AIR VENT VTR055FT. CONNECT TO DRAIN AS PER MANUFACTURER INSTALLATION MANUAL. SUPPLY & INSTALL.
 --- TEKMAR SENSORS WIRED TO TEKMAR SNOW DETECTOR & MELTING CONTROL 664 (SUPPLY & INSTALL INCLUDING WIRING, RELAYS, CONTROLS):
 --- BSS - BOILER SUPPLY SENSOR
 --- MSS - MIX SUPPLY SENSOR
 --- MRS - MIX RETURN SENSOR
 --- EXPANSION TANK. CONNECT TO MID-POINT BETWEEN TWO BOILER INLETS (SUPPLY & INSTALL COMPLETE WITH FITTING, PIPING, BRACKETS) 13.5 GALLONS STAND MODEL HGTV-30

PLUMBING SPECIFICATIONS

- 1. GENERAL**
- CONTRACTOR SHALL SUPPLY ALL LABOUR AND MATERIAL FOR A COMPLETE PLUMBING PIPING INSTALLATION AS INDICATED ON THE MECHANICAL DRAWING.
 - THE APPLICABLE CODES ARE CONSIDERED TO BE MINIMUM STANDARD REQUIREMENTS. IT IS NOTED IN SOME CASES, THE CODE REQUIREMENTS ARE EXCEEDED, AS SHOWN ON DRAWINGS.
- 2. PRODUCTS**
- A. GENERAL**
- EQUIPMENT AND MATERIALS ARE TO BE NEW AND CSA CERTIFIED, WHERE APPLICABLE
 - EQUIPMENT SCHEDULES ARE SHOWN ON THE MECHANICAL DRAWINGS
- B. SHOP DRAWINGS**
- SUBMIT FIVE (5) COPIES OF MANUFACTURER'S SHOP DRAWINGS FOR ALL NEW EQUIPMENT.
 - SUBMIT SHOP DRAWINGS FOR CONTRACT ADMINISTRATOR'S APPROVAL PRIOR TO PLACING ANY ORDER.
- C. COLD, HOT WATER AND VENT PIPING AND FITTINGS**
- | PIPE APPLICATION | PIPE MATERIAL | FITTING MATERIAL |
|--|-----------------------------|---|
| COLD, HOT AND HOT WATER RECIRC. ABOVE GROUND | TYPE 'L' HARD COPPER TUBING | 'STREAMLINE' OR EQUAL SOLDER JOINT CAST BRASS C/W SILVER SOLDERED JOINT |
| COLD WATER, BURIED | TYPE 'K' SOFT COPPER TUBING | FLARED TUBE UIG SERVICE |
| SOIL, WASTE & VENT ABOVE GROUND OR NOT MORE THAN 2\"/> | | |
- D. VALVES (BASED ON CRANE NO.)**
- | SIZE | JOINT | GLOBE | CHECK | VERT. CHECK |
|-------------|-------|-------|-------|-------------|
| UP TO 2\"/> | | | | |
- E. HANGERS**
- COPPER PIPING HANGERS, GRINWELL.
 - DRAINAGE PIPING HANGER, GRINWELL.
 - GALVANIZED HANGER ROD SIZE 1/4\"/>
 - PIPE SUPPORT SPACING AS FOLLOWS:
- | SIZE (inch diameter) | COPPER | C.I. |
|----------------------|--------|------|
| 3/8\", 1/2\"/> | | |
- F. SOLDER MATERIAL FOR COPPER SHALL BE LEAD FREE, SILVABRITE 100. WATER HAMMER ARRESTORS SHALL BE ZURN #1700**
- 3. EXECUTION**
- A. INSTALLATION**
- THE LATEST EDITION OF ALL CODES AND STANDARDS SHALL APPLY. OBTAIN ALL WORK PERMITS, APPROVALS, AND THE LIKE TO COMPLETE THE WORK READY FOR OPERATION.
 - CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOUR AND PLANT NECESSARY TO COMPLETE THE WORK AS SHOWN ON DRAWINGS OR HEREIN.
 - ALL WORKMANSHIP AND FABRICATION SHALL MEET STANDARDS SET FOR THIS TRADE. ALL WORK TO BE DONE BY COMPETENT AND EXPERIENCED WORKMEN.
 - IN THE CASE OF THE CONTRACTOR USING PRODUCTS OTHER THAN SPECIFIED, CONTRACT ADMINISTRATOR APPROVAL IS REQUIRED IN ACCORDANCE WITH BID OPPORTUNITY SECTION 86, THAT MAY INCUR ADDITIONAL COSTS DUE TO DIMENSION DIFFERENCE, MODIFICATION TO EXISTING STRUCTURES, POWER, AND CONTROL REQUIREMENTS; CONTRACTOR MUST BEAR ALL ADDITIONAL COSTS TO MAKE SYSTEMS FUNCTIONAL.
 - ALL EQUIPMENT AND PIPING REQUIRING SUPPORT SHALL BE SECURED TO THE BUILDING STRUCTURE.
 - WIRE HANGERS OR PERFORATED STRAPS WILL NOT BE PERMITTED.
 - HANGERS AND SUPPORTS SHALL NOT DAMAGE OR PIERCE INSULATION.
 - ALL HORIZONTAL PIPING SHALL BE SUPPORTED WITH GALV. HANGER ROD, 'CANSTRUT' OR PAINTED IRON ANGLE MEMBERS, CLAMPS AND SADDLES.
 - PIPE LINES SHALL RUN PARALLEL AND GROUP CLOSELY TO EACH OTHER. VERTICAL AND HORIZONTAL PIPE RUNS SHALL BE PARALLEL ALONG BUILDING LINES.
 - ALL CHANGES IN DIRECTION SHALL BE MADE WITH FITTINGS.
 - ALL PIPES SHALL BE CUT ACCURATELY TO MEASUREMENTS TAKEN ON SITE
 - GRADE ALL WATER PIPE FOR PROPER DRAINAGE AND INSTALL 1/2\"/>
 - UNIONS AND FLANGES SHALL BE PROVIDED AT ALL EQUIPMENT REQUIRING DISCONNECTION FOR REPAIRS OR REPLACEMENT, LOCATED BETWEEN SHUT OFF VALVES AND EQUIPMENT. ALL UNIONS SHALL BE ACCESSIBLE.
 - INSTALL WATER HAMMER ARRESTOR AT PLUMBING RISERS, FIXTURE GROUPS, AND QUICK SHUT OFF VALVE OUTLETS. AT COMPLETION OF WORK, WATER SYSTEM MUST BE WATER HAMMER FREE UNDER NORMAL OPERATION.
 - SHUT OFF VALVES SHALL BE PROVIDED WHERE INDICATED AND SPECIFIED. IF NOT INDICATED, OR SPECIFIED DIRECTLY, VALVES SHALL BE INSTALLED ON MAIN BRANCHES AT POINT OF TAKE OFF FROM SUPPLY MAIN, ON EACH INDIVIDUAL PIECE OF EQUIPMENT INLET AND OUTLET TO PERMIT UNIT REMOVAL WITHOUT AFFECTING OPERATION OF SYSTEM. LOCATE VALVES FOR ACCESS AND OPERATION. DO NOT LOCATE VALVE STEMS BELOW HORIZONTAL.
 - ALL FLOOR DRAINS SHALL HAVE A 18\"/>
 - PROVIDE CLEAN OUTS IN ALL DRAINS, AND SOIL PIPE WHERE OBSTRUCTIONS MIGHT OCCUR, AT THE BASE OF EACH STACK, AT CHANGE OF DIRECTION MORE THAN 45 DEGREES, AT THE END OF ALL HORIZONTAL PIPES, AND AT 50' INTERVALS ALONG STRAIGHT RUNS AS WHERE SHOWN ON DRAWINGS.
 - ALL WATER PIPING SHALL BE DEGREASED, FLUSHED, CLEANED AND PRESSURE TESTED BEFORE CONCEALING AND FILLING.
 - PROVIDE CHROME PLATED ESCUTCHEON PLATES FOR ALL EXPOSED PIPING THROUGH FINISHED WALLS AND FLOORS.
 - WHERE OPENINGS ARE MADE IN BUILDING STRUCTURE, SEAL OPENINGS TO PROVIDE WEATHER TIGHT WATER PROOF SEAL.
 - PROVIDE 3/8\"/>
 - BEFORE START OF WORK ON INSTALLATION OF PIPING AND SEWERS, CHECK ALL LEVELS TO ENSURE ADEQUATE FALL ON THE VARIOUS SEWERS AND PIPES. IN THE EVENT THE CONTRACTOR FAILS TO DO THESE CHECKS AND THEN NOTIFIES CONTRACT ADMINISTRATOR OF DISCREPANCIES, ANY SUBSEQUENT EXPENSE SHALL BE BORNE BY THE SUB-CONTRACTOR.
 - THE PLANS ARE CONSIDERED DIAGRAMMATIC ONLY AND THE CONTRACT ADMINISTRATOR RESERVES THE RIGHT TO CHANGE LOCATION OF EQUIPMENT OR PIPING WITHIN 10 FEET OF WHERE SHOWN ON PLANS, PROVIDED SUCH CHANGE IS MADE BEFORE INSTALLATION.
 - IF, IN THE OPINION OF THE CONTRACT ADMINISTRATOR, THE PIPING AND EQUIPMENT IS NOT ADEQUATELY BRACED OR SUPPORTED, ADDITIONAL BRACING OR SUPPORT MUST BE PROVIDED AT NO EXTRA COST TO THE CITY.
 - SYSTEM SCHEMATICS SHOWN ON THE DRAWINGS ARE MINIMUM REQUIREMENT. EQUIPMENT INSTALLATION, INCLUDING ALL CONTROLS, FITTINGS, AND ACCESSORIES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION. THE CONTRACTOR SHALL BEAR AND INCLUDE ALL COSTS FOR SUCH INSTALLATIONS.

NOTES :

SEE NOTES ON DRAWING C1.

HEAT HOSE TO BE 3/8\"/>

NOTE MINIMUM TUBE BEND RADIUS IS 3\"/>

THE SYSTEM SHALL BE PRESSURE TESTED TO A MINIMUM OF TWO TIMES THE OPERATING PRESSURE OR 60PSIG WITH WATER OR AIR, PRIOR TO AND DURING CONCRETE POUR AS WELL AS THE FINAL SLAB INSTALLATION.

FLUSH THE HEATING SYSTEM INCLUDING STRAINERS TO REMOVE ANY DEBRIS FROM RENOVATION BEFORE FILING THE BOILERS. FLUSH THE SYSTEM WITHOUT THE BOILERS CONNECTED. CHEMICALS USE FOR FLUSHING OR ADDED TO THE SYSTEM INCLUDING GLYCOL SHALL BE APPROVED BY THE CHEMICAL MANUFACTURER FOR USE IN BOILERS. PETROLEUM BASED CLEANING OR SEALING COMPOUNDS SHALL NOT BE USED IN THE BOILER SYSTEM. THE SYSTEM SHALL BE PRESSURE TESTED TO A MINIMUM OF TWO TIMES THE OPERATING PRESSURE OR 60 PSIG WITH WATER OR AIR, PRIOR TO BOILERS START-UP.

SUPPLY & FILL SYSTEM WITH 50-50 BY VOLUME OF DOWFOST PROPYLENE GLYCOL. CHARGE SYSTEM 8 psig TO 10 psig AT PUMP INLET & PROVIDE START UP.

ALL INDOOR SNOW MELT SYSTEM PIPING, FITTINGS & COMPONENTS MISSING INSULATION SHALL BE INSULATED WITH APPROVED 1/2\"/>

ALL INDOOR SNOW MELT SYSTEM PIPING, FITTINGS & COMPONENTS SHALL BE INSULATED WITH APPROVED 1/2\"/>

ALL OUTDOOR SNOW MELT SYSTEM PIPING, FITTINGS & COMPONENTS SHALL BE INSULATED WITH APPROVED 1/2\"/>

DRAWING M2 IS A NEW DRAWING WITH PIPING SCHEMATIC, NOTES, LEGEND, PLUMBING SPECIFICATIONS, DEMOLITION NOTES & RENOVATION NOTES MIGRATED FROM ORIGINAL DRAWING M1. SOME NEW NOTES HAVE BEEN REVISED AND ADDED. REVISED PIPING SCHEMATIC. REMOVED BOILER THERMOSTATIC BYPASS VALVE ASSEMBLY & BOILER BYPASS VALVES. REPLACED EXPANSION TANK & THERMOMETERS WITH TEMPRESS GAUGES. SPIROVENT JUNIOR WAS VJ125M 4-WAY MIXING VALVE WAS QUANTITY (2), NOW (1) & WAS 1-1/4\"/>

| NO. | REVISION/DESCRIPTION | BY | DATE |
|-----|----------------------|----|------|
| | | | |

DRAWN BY DTA **CHECKED BY** USER **APPROVED** USER
DATE 20070412

CITY OF WINNIPEG PLANNING, PROPERTY & DEVELOPMENT DEPARTMENT CIVIC ACCOMMODATIONS DIVISION 300 - 65 GARRY ST. R3C 4K4

PROJECT
 DISTRICT 5 POLICE STATION
 REPLACEMENT OF CONCRETE RAMP SNOW MELT SYSTEM
 227 PROVENCHER BLVD.

SHEET TITLE
 MECHANICAL
 PIPING SCHEMATIC
 PLUMBING SPECIFICATIONS

| SCALE | PROJECT NO. | SHEET NO. |
|----------|-------------|-----------|
| AS NOTED | 2005-108 | M2 |