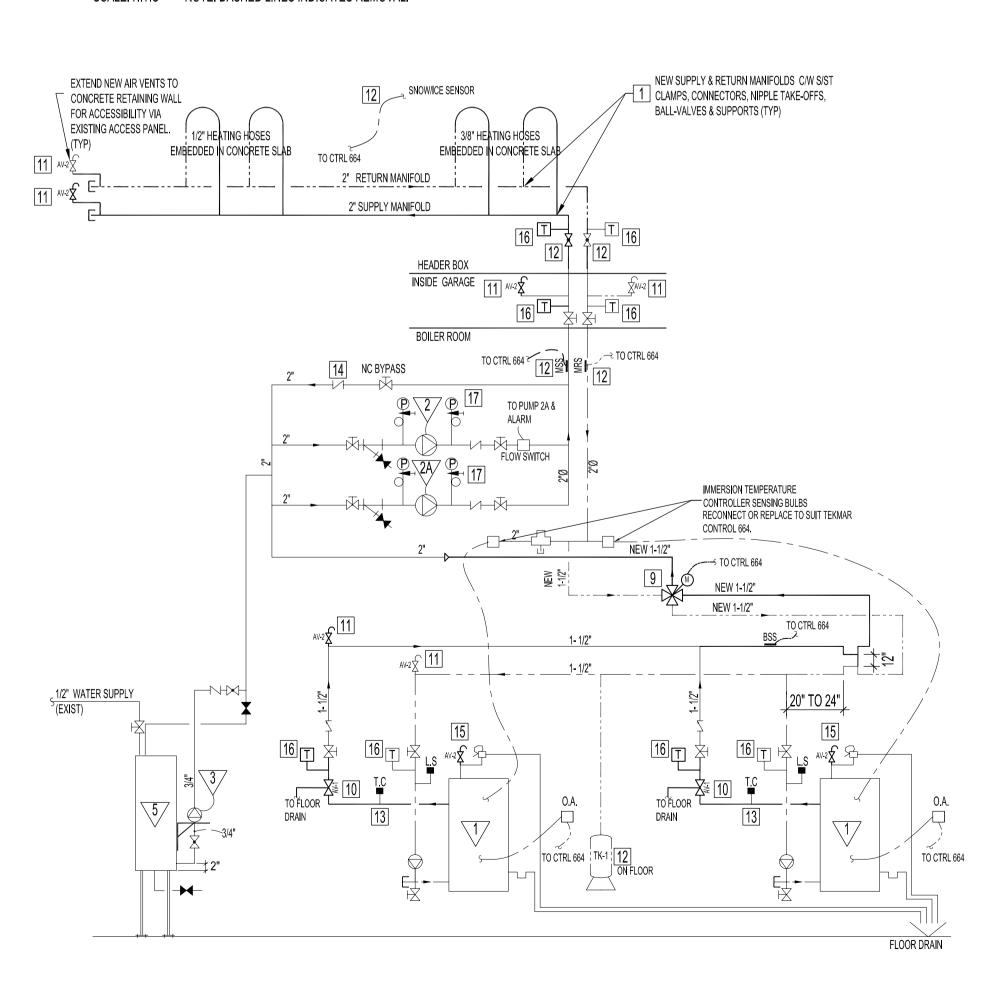
SNOW MELT PIPING SCHEMATIC - DEMOLITION SCALE: N.T.S NOTE: DASHED LINES INDICATES REMOVAL



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" Ø SUPPLY & RETURN MANIFOLDS, PIPES, PIPE SUPPORTS, GAUGES AND HEAT HOSES.
- REMOVE (2) EXISTING FLOOR DRAINS AND REPLACE WITH NEW, SEE RENOVATION NOTES.
- (3) REMOVE EXISTING EXPANSION TANK, PIPING & FITTINGS BACK TO CONNECTION & CAP
- 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

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 B6.
- MAINTAIN EXISTING SUPPLY & RETURN PIPES LOCATED ON GARAGE WALLS. CONNECT NEW PIPES TO EXISTING PIPING IN GARAGE WALL.
- 3 SUPPLY & INSTALL NEW ZURN Z-135-6, 8" MAIN ROOF DRAIN C/W S/ST DRAINAGE EXTENSIONS & HARDWARE, CONNECT TO EXISTING 4" WEEPING TILE TO PROVIDE A COMPLETE DRAIN SYSTEM. REPORT CONDITION OF WEEPING TILES PRIOR TO NEW CONNECTIONS.
- 4 SUPPLY & INSTALL 3/8" "ONIX" HEAT HOSE @ 8" O/C FOR 5 LOOPS.
- 5 SUPPLY & INSTALL 3/8" "ONIX" HEAT HOSE @ 6" O/C FOR 16 LOOPS.
- 6 SUPPLY & INSTALL 3/8" "ONIX" HEAT HOSE @ 4" O/C FOR 2 LOOPS.
- 7 SUPPLY & INSTALL 1/2" "ONIX" HEAT HOSE @ 4" O/C FOR 2 LOOPS.
- 8 SEE DWG C1. (SNOW/ICE SENSOR)
- 9 SUPPLY & INSTALL 4-WAY MOTORIZED VALVE (SEE LEGEND) AS PER TEKMAR MANUFACTURER'S INSTALLATION MANUAL AND PER DIVISON 15 & 16.
- [10] SUPPLY & INSTALL MICROBUBBLE ELIMINATOR (VERTICAL PIPING) & CONNECT VENT TO FLOOR DRAIN AS PER MANUFACTURER'S INSTALLATION MANUAL AND PER DIVISON 15.
- 11 SUPPLY & INSTALL AUTO AIR VENT & CONNECT VENT TO DRAIN AS PER MANUFACTURER'S INSTALLATION MANUAL AND PER DIVISON 15.
- 12 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
- REMOVE & REPLACE EXISTING AUTO VENT WITH NEW (SEE LEGEND) & CONNECT VENT TO DRAIN AS PER MANUFACTURER'S INSTALLATION MANUAL AND PER DIVISON 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

EXISTING EQUIPMENT

CONTROL, ELECTRIC IGNITION, 120V/1PH.

MAIN CIRCULATING PUMP- UMC 65-80, ✓ 30 U.S. GPM @ 25 FT HEAD AT SPEED 3

EXPANSION TANK (TO BE REMOVED INCLUDING

5 GLYCOL MIXING TANK

LEGEND

---- TO BE REMOVED ----- SUPPLY

- ---- RETURN
- CHECK VALVE CRANE #41
- TEMPERATURE GAUGE & PRESSURE GUAGE. REPLACE EXISTING TEMPERATURE GUAGE WITH TEMP/PRESS WINTERS TRIDICATORS T401, 2.5" DIAL WITH EXTENSION BACK CONNECTION, (SUPPLY & INSTALL).
- 90° TURN BRASS MANUAL PETCOCK AIR VENT
- O.A. OUTDOOR AIR TEMPERATURE SENSOR, REPLACE EXISTING WITH NEW TO SUIT TEKMAR SNOW DETECTOR & MELTING CONTROL 664. SUPPLY & INSTALL
- ∠ | AIRTROL TANK FITTING
- SNOW / ICE SENSOR (SUPPLY & INSTALL)
- PIPING). CONNECT AUTO AIR VENT TO DRAIN AS PER MANUFACTURER INSTALLATION MANUAL. SUPPLY & INSTALL.
- MANUFACTURER INSTALLATION MANUAL. SUPPLY & INSTALL.
- GALLONS STAND MODEL HGTV-30

MRS - MIX RETURN SENSOR

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

- STAND-BY PUMP UPC 65-160, 30 U.S. GPM @ 38 FT HEAD AT SPEED 2 (MEDIUM)
- √3 CHARGE PUMP
- ASSOCIATED PIPING & CAPPED.)

- SHUT OFF GATE VALVE
- THROTTLING GLOBE VALVE (SUPPLY & INSTALL)
- STRAINER
- 1/2" DRAIN VALVE WITH HOSE CONNECTION AND END CAP
- (P) LIQUID FILLED PRESSURE GAGE
- RELIEF VALVE.
- INCLUDING WIRING & ALL COMPONENTS.
- L.S LEVEL SWITCH
- TEMPERATURE LIMIT CONTROL
- AMTROL AIR PURGER FITTING

- TEKMAR 723 (1-1/2") BRASS 4-WAY MIXING VALVE C/W TEKMAR ACTUATING MOTOR 741 WIRED TO TEKMAR SNOW DETECTOR & MELTING CONTROL 664 SUPPLY ALL REQUIRED COMPONENTS, SUPPORTS, CONNECTORS AND INSTALL TO FULLY OPERATE AS A SNOW MELTING SYSTEM.
- SPIROVENT JUNIOR VJV125FT (1-1/4") MICROBUBBLE ELIMINATOR (VERTICAL
- SPIROTOP AUTOMATIC AIR VENT VTP050FT. CONNECT TO DRAIN AS PER
- BSS TEKMAR SENSORS WIRED TO TEKMAR SNOW DETECTOR & MELTING CONTROL 664 (SUPPLY &INSTALL INCLUDING WIRING, RELAYS, CONTROLS) BSS - BOILER SUPPLY SENSOR MSS - MIX SUPPLY SENSOR
- EXPANSION TANK CONNECT TO MID-POINT BETWEEN TWO BOILER INLETS (SUPPLY & INSTALL COMPLETE WITH FITTING, PIPING, BRACKETS) 13.5

PLUMBING SPECIFICATIONS

1. GENERAL

- A. CONTRACTOR SHALL SUPPLY ALL LABOUR AND MATERIAL FOR A COMPLETE PLUMBING PIPING INSTALLATION AS INDICATED ON THE MECHANICAL DRAWING.
- B. 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 2. EQUIPMENT SCHEDULES ARE SHOWN ON THE MECHANICAL DRAWINGS
- B. SHOP DRAWINGS 1. SUBMIT FIVE (5) COPIES OF MANUFACTURES' SHOP DRAWINGS FOR ALL NEW

NOTES :

SEE NOTES ON DRAWING C1

APPROXIMATELY 4" TO 5".

WELL AS THE FINAL SLAB INSTALLATION.

RETARDANT PLASTIC JACKET MAY BE USED).

INSULATED WITH APPROVED 1/2" THICK ARMAFLEX.

HEAT HOSE TO BE 3/8" & 1/2" "ONIX" RADIANT TUBING (HEAT HOSE) WITH ALUMISHIELD

HEAT HOSE SHALL BE SPACED AS SHOWN AND BE PLACED APPROXIMATELY 6" FROM

THE MINIMUM CONCRETE COVER FOR HEAT HOSE SHALL BE 1" WITH A MAXIMUM OF

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

FLUSH THE HEATING SYSTEM INCLUDING STRAINERS TO REMOVE ANY DEBRIS FROM

RENOVATION BEFORE FILLING 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

THE OPERATING PRESSURE OR 60 PSIG WITH WATER OR AIR, PRIOR TO BOILERS

SUPPLY & FILL SYSTEM WITH 50-50 BY VOLUME OF DOWFROST PROPYLENE GYLCOL.

WITH CANVAS COVER & FIRE RETARDANT ADHESIVE (APPROVED ULC LISTED FIRE

ALL NEW INDOOR SNOW MELT SYSTEM PIPING, FITTINGS & COMPONENTS SHALL BE

ALL OUTDOOR SNOW MELT SYSTEM PIPING. FITTINGS & COMPONENTS SHALL BE

INSULATED WITH APPROVED 1/2" THICK FIBERGLASS INSULATION COMPLETE WITH CANVAS

COVER & FIRE RETARDANT ADHESIVE (APPROVED ULC LISTED FIRE RETARDANT PLASTIC

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

CHARGE SYSTEM 8 psig TO 10 psig AT PUMP INLET & PROVIDE START UP.

BOILER SYSTEM. THE SYSTEM SHALL BE PRESSURE TESTED TO A MINIMUM OF TWO TIMES

RADIANT INSTALLATION MANUAL FOR ONIX RADIANT TUBING SYSTEMS.

NOTE MINIMUM TUBE BEND RADIUS IS 3" FOR 3/8" ONIX & 4" FOR 1/2" ONIX.

OXYGEN BARRIER. RADIANT INSTALLATION SHALL BE IN ACCORDANCE WITH THE WATTS

2. SUBMIT SHOP DRAWINGS FOR CONTRACT ADMINISTRATOR'S APPROVAL PRIOR TO PLACING ANY ORDER. C. COLD, HOT WASTE AND VENT PIPING AND FITTINGS

PIPE APPLICATION FITTING MATERIAL COLD, HOT AND HOT WATER RECIRC. C/W SILVER SOLDERED JOINT ABOVE GROUND COLD WATER, BURIED FLARED TUBE U/G SERVICE

SOIL. WASTE & VENT CAST IRON M.J. STAINLESS STEEL ABOVÉ GROUND OR NOT MORE THAN 2 BELOW BURIED BELOW 2" DWV COPPER SOLDER JOINT

PVC-DWV SCHED. 40 SOIL AND WASTE, BURIED PVC SCHED. 40 <u>JOINT</u> <u>GATE</u> <u>GLOBE</u> <u>CHECK</u>

UP TO 2" SOLDER 1320C 1310 SCREW COPPER PIPING HANGERS, GRINNELL.

4. PIPE SUPPORT SPACING AS FOLLOWS: SIZE (inch diameter) COPPER 5 FEET 3/8".1/2" 3/4".1" 6 FEET 1 1/4" TO 2" 8 FEET

2. DRAINAGE PIPING HANGER, GRINNELL.

GALVANISED HANGER ROD SIZE 1/4"

F. SOLDER MATERIAL FOR COPPER SHALL BE LEAD FREE, SILVABRITE 100 G. WATER HAMMER ARRESTORS SHALL BE ZURN #1700

3. EXECUTION

2" AND UP

- 1. 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. 2. CONTRACTOR SHALL FURNISH ALL MATERIALS. LABOUR AND PLANT NECESSARY TO COMPLETE THE WORK AS SHOWN ON DRAWINGS OR HEREIN
- 3. ALL WORKMANSHIP AND FABRICATION SHALL MEET STANDARDS SET FOR THIS TRADE. ALL WORK TO BE DONE BY COMPETENT AND EXPERIENCED
- 4. IN THE CASE OF THE CONTRACTOR USING PRODUCTS OTHER THAN SPECIFIED, CONTRACT ADMINISTRATOR APPROVAL IS REQUIRED IN ACCORDANCE
- WITH BID OPPORTUNITY SECTION B6, 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 5. ALL EQUIPMENT AND PIPING REQUIRING SUPPORT SHALL BE SECURED TO THE BUILDING STRUCTURE.
- 6. WIRE HANGERS OR PERFORATED STRAPS WILL NOT BE PERMITTED.
- 7. HANGERS AND SUPPORTS SHALL NOT DAMAGE OR PIERCE INSULATION. 8. ALL HORIZONTAL PIPING SHALL BE SUPPORTED WITH GALV. HANGER ROD.
- 'CANSTRUT' OR PAINTED IRON ANGLE MEMBERS, CLAMPS AND SADDLES. 9. PIPE LINES SHALL RUN PARALLEL AND GROUP CLOSELY TO EACH OTHER.
- VERTICAL AND HORIZONTAL PIPE RUNS SHALL BE PARALLEL ALONG BUILDING LINES.
- 10. ALL CHANGES IN DIRECTION SHALL BE MADE WITH FITTINGS. 11. ALL PIPES SHALL BE CUT ACCURATELY TO MEASUREMENTS TAKEN ON SITE 12. GRADE ALL WATER PIPE FOR PROPER DRAINAGE AND INSTALL 1/2" DRAIN
- VALVE WITH 1/2 THREADED HOSE END AT LOW POINT IN MECH. ROOM. 13. 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. 14. INSTALL WATER HAMMER ARRESTOR AT PLUMBING RISES, FIXTURE GROUPS, AND QUICK SHUT OFF VALVE OUTLETS. AT COMPLETION OF WORK, WATER
- SYSTEM MUST BE WATER HAMMER FREE UNDER NORMAL OPERATION. 5. 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 FACH 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 16. ALL FLOOR DRAINS SHALL HAVE A 18 X 18 CHLORINATED POLYETHYLENE(CPE) WATERPROOF MEMBRANE INSTALLED AROUND BODY OF DRAIN AND BURIED IN THE CONCRETE, TO FORM A WATER TIGHT BARRIER THE MEMBRANE MUST FORM
- A WATER TIGHT SEAL WITH DRAIN BODY. 17. 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. 18. ALL WATER PIPING SHALL BE DEGREASED, FLUSHED, CLEANED AND PRESSURE

TESTED BEFORE CONCEALING AND FILLING.

PROVIDED AT NO EXTRA COST TO THE CITY

SNOW MELT SYSTEM DESCRIPTION

TEKMAR FACTORY TRAINED PERSONNEL.

- 19. PROVIDE CHROME PLATED ESCUTCHEON PLATES FOR ALL EXPOSED PIPING THROUGH FINISHED WALLS AND FLOORS.
- 20. WHERE OPENINGS ARE MADE IN BUILDING STRUCTURE, SEAL OPENINGS TO PROVIDE
- WEATHER TIGHT WATER PROOF SEAL. 21. PROVIDE '3M' BRAND FIRE BARRIER CP-25WB CAULK FOR ALL PIPING THROUGH
- FIRE RATED WALLS AND FLOORS ASSEMBLIES. 22. 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 ONTRACT ADMINISTRATOR OF DISCREPANCIES, ANY SUBSEQUENT EXPENSE SHALL BE
- BORNE BY THE SUB-CONTRACTOR. 23. 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. 24. IF. IN THE OPINION OF THE CONTRACT ADMINISTRATOR. THE PIPING AND EQUIPMENT IS NOT ADEQUATELY BRACED OR SUPPORTED, ADDITIONAL BRACING OR SUPPORT MUST BE
- 25. 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.

(SUPPLY & INSTALL WITH ALL COMPONENTS TO ENABLE OPERATIONS DESCRIBED BELOW)

THE SINGLE-ZONE CONCRETE RAMP SNOW MELT SYSTEM SHALL BE CONTROLLED BY THE

NEW TEKMAR SNOW DETECTOR, MELTING CONTROL 664 & EXISTING BOILERS' VIZLOGIC

SYSTEM. THE CONTROL AUTOMATICALLY ADJUSTS THE MIXED SUPPLY WATER TO THE

PROTECTION UTILIZING OUTDOOR RESET, BOILER LOOP PUMP & TEKMAR SENSORS AS

SHOWN IN THE PIPING SCHEMATIC. SLAB PROTECTION SHALL BE CONTROL VIA THE CONTROL & THE SNOW/ICE SENSOR 090. THE SYSTEM SHALL ALLOW FOR MANUAL

OVERRIDE, ADJUSTABLE WARM WEATHER SHUT DOWN & COLD WEATHER CUT OUT.

SNOW MELTING SYSTEM BY CONTROLLING TWO EXISTING BOILERS AND A 4-WAY MOTORIZED MIXING VALVE. THE CONTROL SHALL PROVIDE SYSTEM PROTECTION & BOILER

INSTALLATION & COMMISSIONING OF SNOW MELT SYSTEM SHALL BE PERFORMED BY

APPROVED DTA CHECKED BY USER APPROVAL



PLANNING, PROPERTY & CIVIC ACCOMMODATIONS DIVISION 300 - 65 GARRY ST. R3C 4K4

DRAWING M2 IS A NEW DRAWING WITH PIPING SCHEMATIC, DTA 20070411

NOTES, LEGEND, PLUMBING SPECIFICATIONS, DEMOLITION

NOTES & RENOVATION NOTES MIGRATED FROM ORIGINAL

BOILER BYPASS VALVES. REPLACED EXPANSION TANK &

THERMOMETERS WITH TEMP/PRESS GAUGES. SPIROVENT

3 TO 5, INCLUSIVE. ADDED RENOVATION NOTES 13 TO 17,

ADDED. REVISED PIPING SCHEMATIC.

DRAWING M1. SOME NEW NOTES HAVE BEEN REVISED AND

REMOVED BOILER THERMOSTATIC BYPASS VALVE ASSEMBLY &

JUNIOR WAS VJR125TM, 4-WAY MIXING VALVE WAS QUANTITY (2).

NOW (1) & WAS 1-1/4". CHANGED DIRECTION OF CHECK VALVEON

SYSTEM CIRCULATOR BYPASS LINE. ADDED DEMOLITION NOTES

REVISION/DESCRIPTION

REPLACEMENT OF CONCRETE RAMP

227 PROVENCHER BLVD. SHEET TITLE

MECHANICAL

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

PLUMBING SPECIFICATIONS

Winnipeg DEVELOPMENT DEPARTMENT **PROJECT**

DISTRICT 5 POLICE STATION

SNOW MELT SYSTEM

PIPING SCHEMATIC

DRAWING SHEET SIZE: A1 (841mm x 594mm) PLOT 1:1