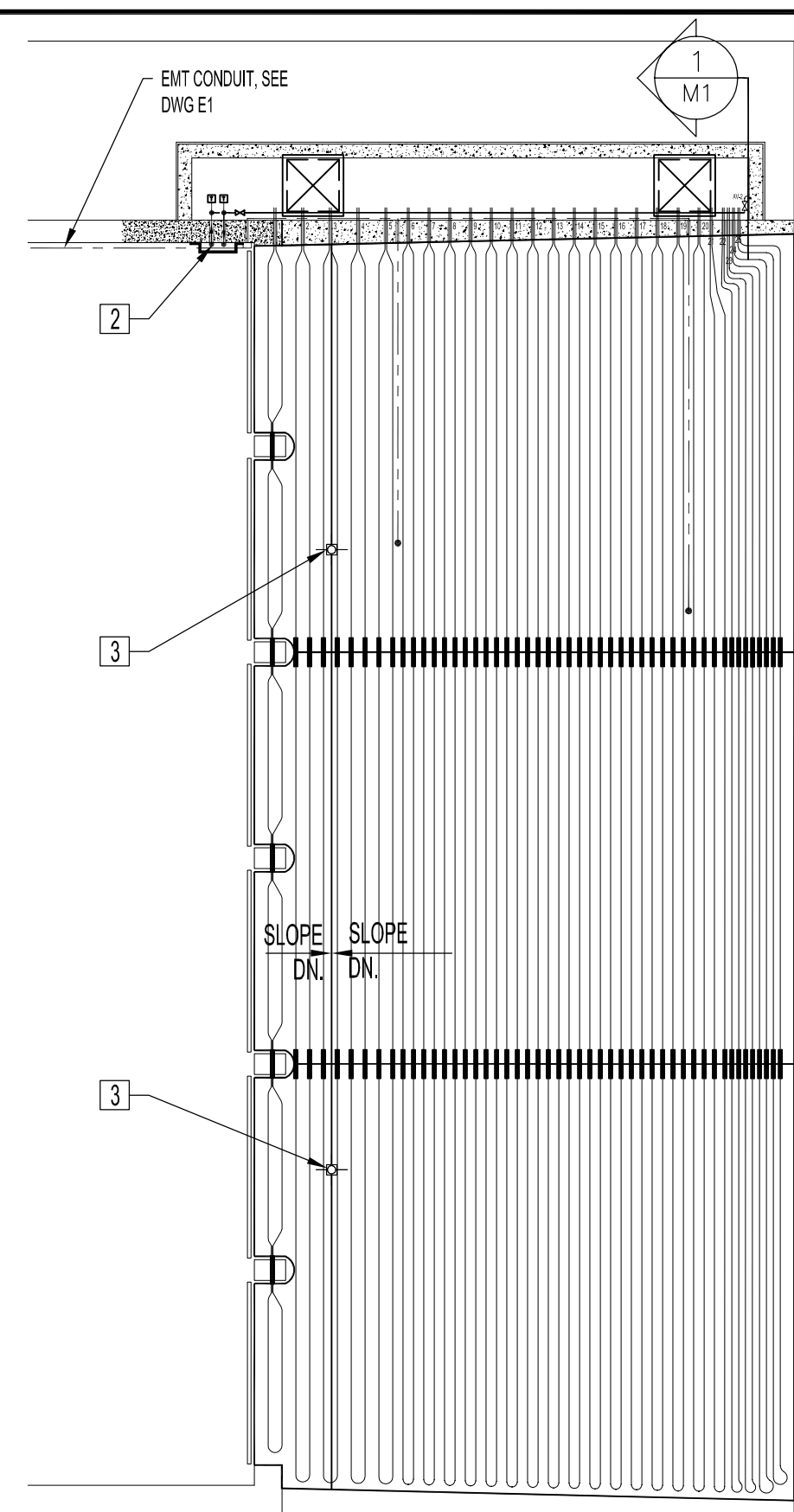
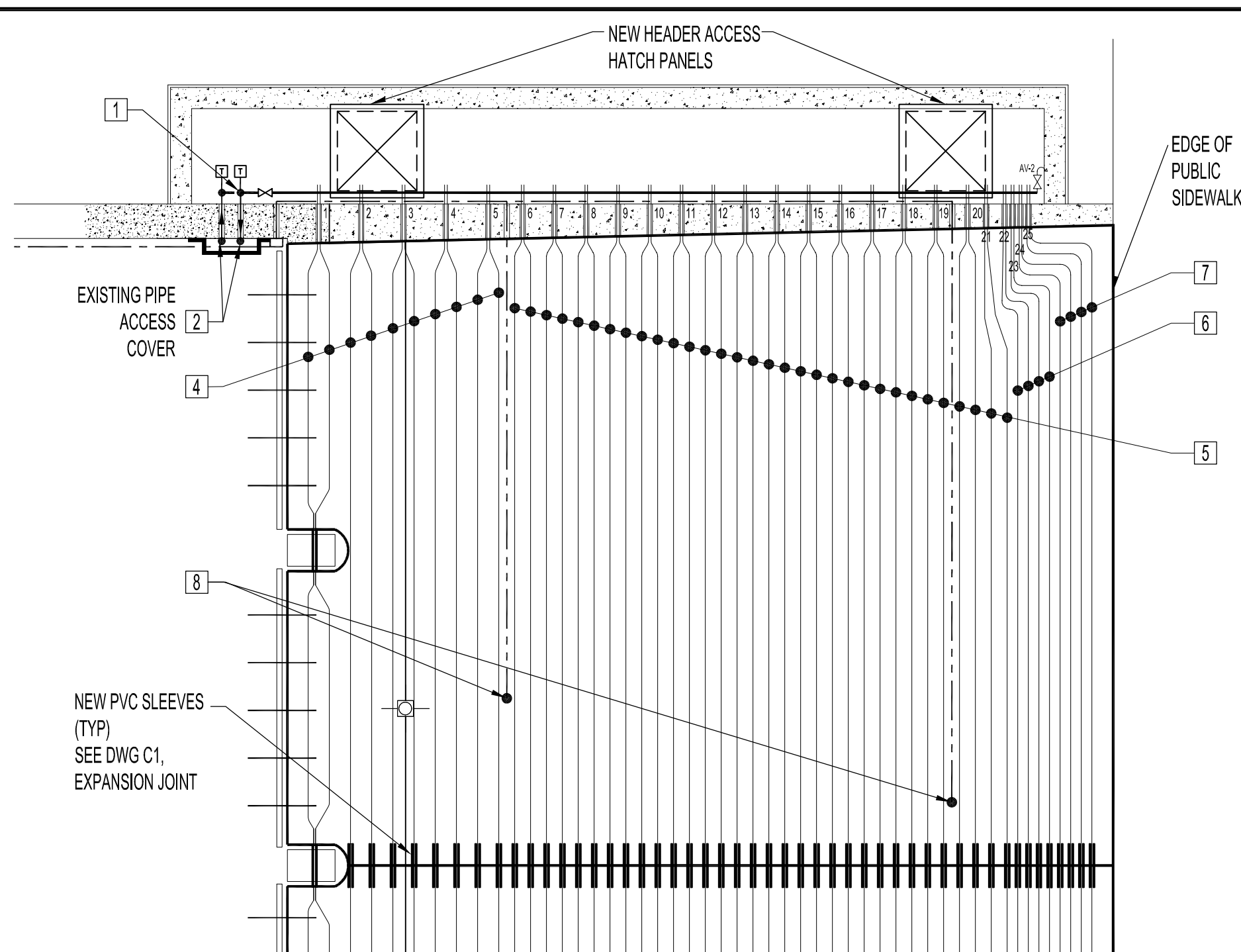


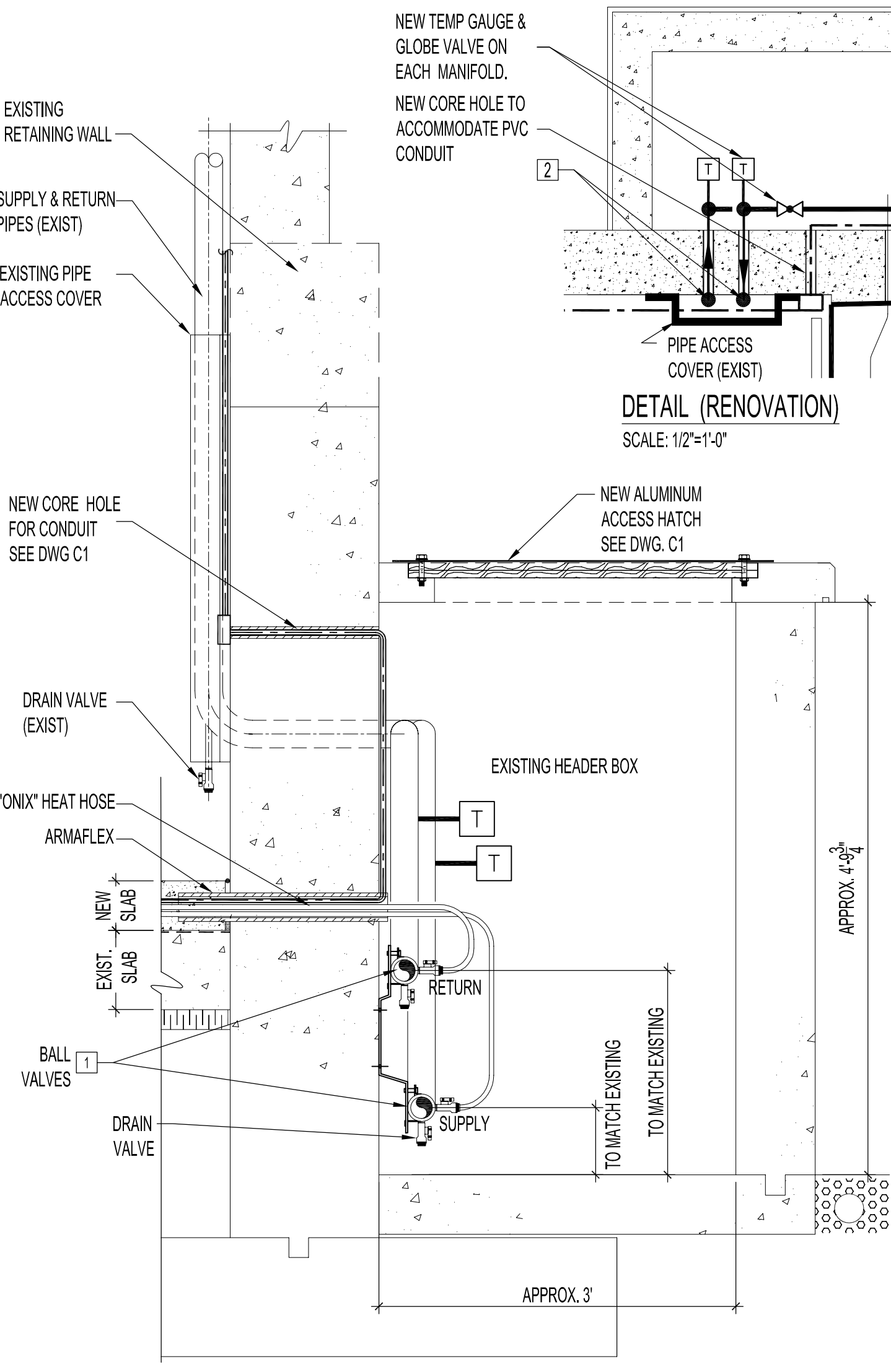
PLAN VIEW - EXTERIOR RAMP MECHANICAL DEMOLITION
SCALE: 1/8"=1'-0"



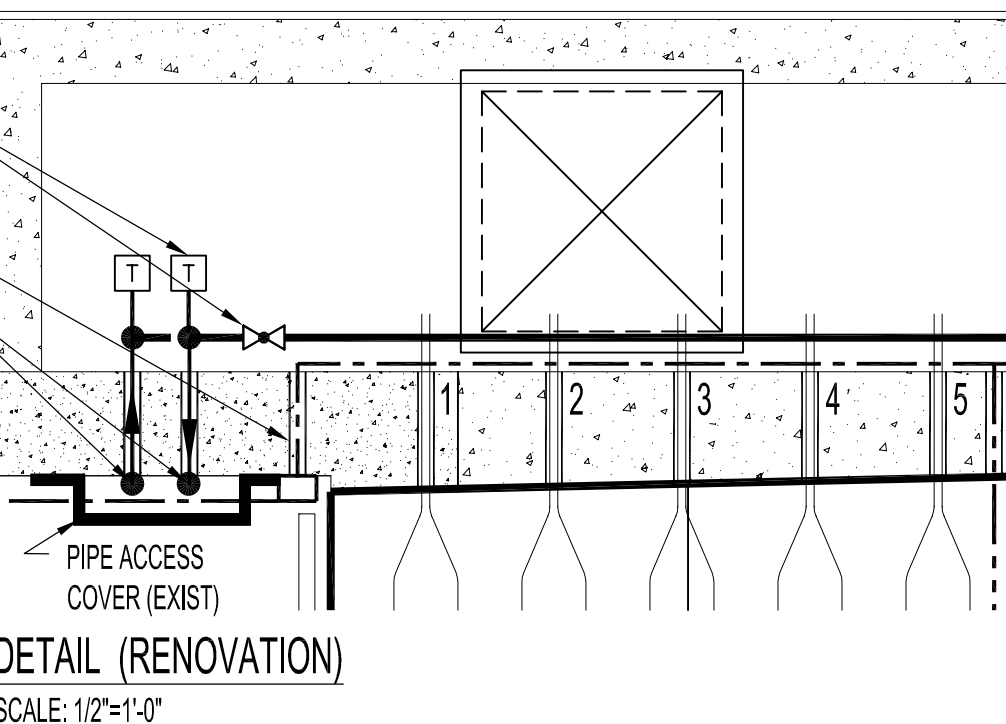
PLAN VIEW - EXTERIOR RAMP MECHANICAL RENOVATION
SCALE: 1/8"=1'-0"



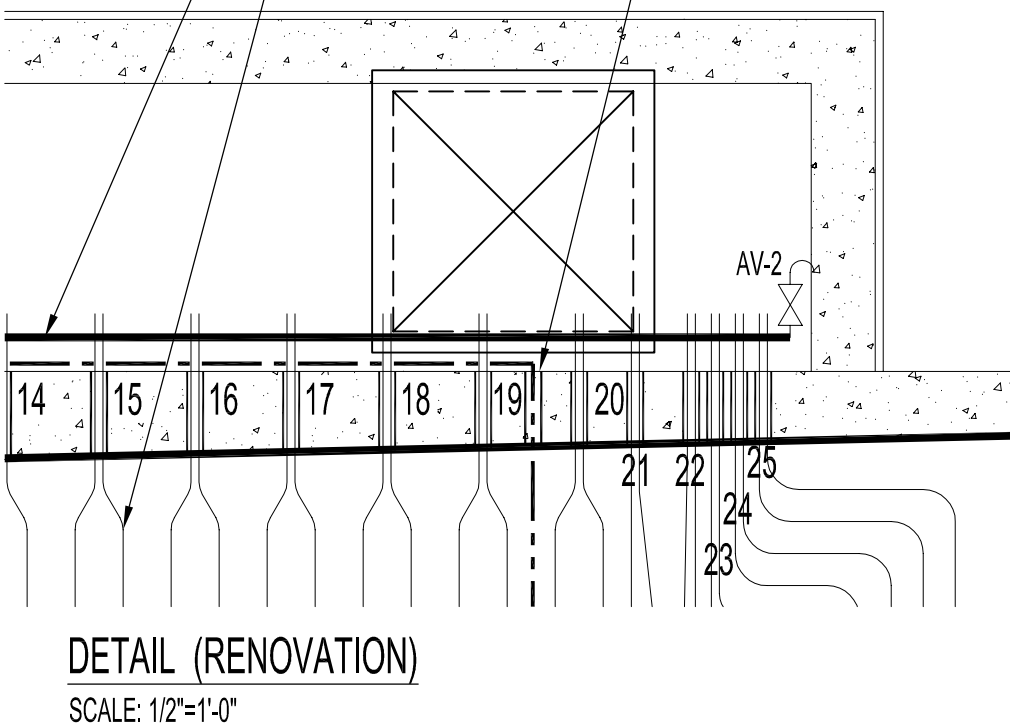
ENLARGED PLAN - RENOVATION
SCALE: 1/4"=1'-0"



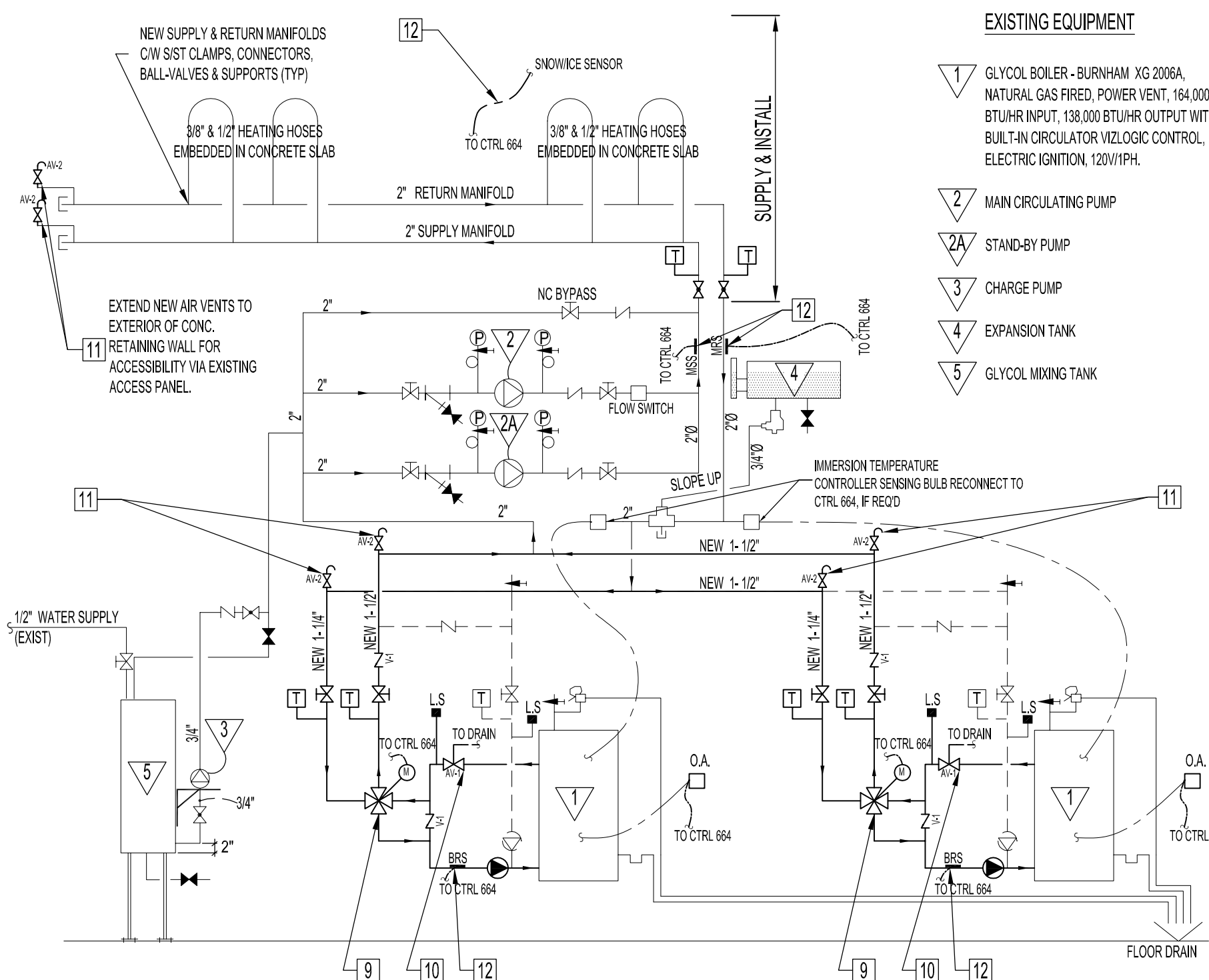
HEADER BOX SECTION - RENOVATION
SCALE: 1"=1'-0" (SUPPLY & INSTALL, UNLESS NOTED EXIST)



DETAIL (RENOVATION)
SCALE: 1/2"=1'-0"



DETAIL (RENOVATION)
SCALE: 1/2"=1'-0"



SNOW MELT PIPING SCHEMATIC - RENOVATION
SCALE: N.T.S. NOTE: DASHED LINES INDICATES REMOVAL, DARKER LINES ARE NEW LINES AND 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.

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. 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.
- SUPPLY & INSTALL NEW ZURN Z-135-6, 8" MAIN ROOF DRAIN C/W SIV DRAINAGE EXTENSIONS & HARDWARE. CONNECT TO EXISTING 4" WEEPING TILE TO PROVIDE A COMPLETE DRAIN SYSTEM. REPORT CONDITION OF WEEPING TILES PRIOR TO NEW CONNECTIONS.
- SUPPLY & INSTALL 3/8" ONIX HEAT HOSE @ 8" OIC FOR 5 LOOPS.
- SUPPLY & INSTALL 3/8" ONIX HEAT HOSE @ 6" OIC FOR 16 LOOPS.
- SUPPLY & INSTALL 3/8" ONIX HEAT HOSE @ 4" OIC FOR 10 LOOPS.
- SUPPLY & INSTALL 1/2" ONIX HEAT HOSE @ 4" OIC FOR 2 LOOPS.
- SEE DWG C1.
- SUPPLY & INSTALL 4-WAY MOTORIZED VALVE AS PER TEKMAR MANUFACTURERS INSTALLATION MANUAL AND PER DIVISION 15 & 16.
- SUPPLY & INSTALL MICROBUBBLE SEPARATOR & CONNECT VENT TO DRAIN AS PER MANUFACTURERS INSTALLATION MANUAL AND PER DIVISION 15.
- SUPPLY & INSTALL AUTO AIR VENT & CONNECT VENT TO DRAIN AS PER MANUFACTURERS INSTALLATION MANUAL AND PER DIVISION 15.
- SUPPLY AND INSTALL (SEE LEGEND FOR DESCRIPTIONS)

EXISTING EQUIPMENT

- ▽ GLYCOL BOILER - BURNDHURM XG 200A, NATURAL GAS FIRED, POWER VENT, 154,000 BTU/HR INPUT, 138,000 BTU/HR OUTPUT WITH BUILT-IN CIRCULATOR, MICROLOGIC CONTROL, ELECTRIC IGNITION, 120V/1PH.
- ▽ MAIN CIRCULATING PUMP
- ▽ STAND-BY PUMP
- ▽ CHARGE PUMP
- ▽ EXPANSION TANK
- ▽ GLYCOL MIXING TANK

SNOW MELT SYSTEM DESCRIPTION

(SUPPLY & INSTALL WITH ALL COMPONENTS TO ENABLE OPERATIONS DESCRIBED BELOW)
INSTALLATION & COMMISSIONING OF SNOW MELT SYSTEM SHALL BE PERFORMED BY TEKMAR FACTORY TRAINED PERSONNEL.

THE SINGLE-ZONE CONCRETE RAMP SNOW MELT SYSTEM SHALL BE CONTROLLED BY THE NEW TEKMAR SNOW DETECTOR AND MELTING CONTROL 664. THE CONTROL AUTOMATICALLY ADJUSTS THE MIXED SUPPLY WATER TO THE SNOW MELTING SYSTEM BY CONTROLLING TWO EXISTING BOILERS EACH WITH A 4-WAY MOTORIZED VALVE. THE CONTROL SHALL PROVIDE SYSTEM PROTECTION & BOILER PROTECTION UTILIZING OUTDOOR RESET, BOILER LOOP PUMP & BOILER RETURN SENSOR AS SHOWN IN THE PIPING SCHEMATIC. SLAB PROTECTION SHALL BE CONTROL VIA THE CONTROL & THE SNOWMELT SENSOR 090. THE SYSTEM SHALL ALLOW FOR MANUAL OVERRIDE, ADJUSTABLE WARM WEATHER SHUT DOWN & COLD WEATHER CUT OUT.

PLUMBING SPECIFICATIONS

- 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.
 - PRODUCTS**
 - EQUIPMENT AND MATERIALS ARE TO BE NEW AND CSA CERTIFIED, WHERE APPLICABLE
 - EQUIPMENT SCHEDULES ARE SHOWN ON THE MECHANICAL DRAWINGS
 - 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.
 - COLD, HOT WASTE AND VENT PIPING AND FITTINGS**
- | PIPE APPLICATION | PIPE MATERIAL | FITTING MATERIAL |
|---|-----------------------------|---|
| COLD, HOT AND HOT WATER RECUR. 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" BELOW | CAST IRON | M.J. STAINLESS STEEL SPOURINGS |
| BURIED BELOW 2" | DIV COPPER | SOLDER JOINT |
| SOIL AND WASTE, BURIED | PVC SCHED. 40 | PVC-DIV SCHED. 40 |
- | D. VALVES (BASED ON CRANE NO.) | | | | |
|--------------------------------|--------|-------|-------|-------|
| SIZE | JOINT | GATE | GLOBE | CHECK |
| UP TO 2" | SOLDER | 1320C | 1310 | 1342 |
| OVER 2" | SCREW | 428 | 5 | 41 |
- 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"	5 FEET	
3/4", 1"	6 FEET	
1 1/4" TO 3"	8 FEET	
2" AND UP		6 FEET
 - SOLDER MATERIAL FOR COPPER SHALL BE LEAD FREE, SILVABRITE 100.
 - WATER HAMMER ARRESTORS SHALL BE ZURN #1700

EXECUTION

- 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 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.
 - ALL EQUIPMENT AND PIPING REQUIRING SUPPORT SHALL BE SECURED TO THE BUILDING STRUCTURE.
 - WIRE HANGERS OR SUPPORTED STRAPS WILL NOT BE PERMITTED.
 - HANGERS AND REPAIRS SHALL NOT DAMAGE OR PIERCE INSULATION.
 - ALL HORIZONTAL PIPING SHALL BE SUPPORTED WITH GALV. HANGER ROD, 'CANSTRAUT' 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 PIPES FOR PROPER DRAINAGE AND INSTALL 1/2" DRAIN VALVE WITH 1/2" THREADED HOSE END AT LOW POINT IN MECH. ROOM.
 - 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 RENOVATION 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" X 18" OR GRATED 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.
 - PROVIDE CLEAN CUTS 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" BRAND FIRE BARRIER CP-258B CAULK FOR ALL PIPING THROUGH FIRE RATED WALLS AND FLOORS ASSEMBLIES.
 - 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" & 1/2" ONIX RADIANT TUBING (HEAT HOSE) WITH ALUMINUM OXYGEN BARRIER. RADIANT INSTALLATION SHALL BE IN ACCORDANCE WITH THE WATTS RADIANT INSTALLATION MANUAL FOR ONIX RADIANT TUBING SYSTEMS. HEAT HOSE SHALL BE SPACED AS SHOWN AND BE PLACED APPROXIMATELY 6" FROM OUTSIDE EDGE.
- NOTE MINIMUM TUBE BEND RADIUS IS 3" FOR 3/8" ONIX & 4" FOR 1/2" ONIX. THE MINIMUM CONCRETE COVER FOR HEAT HOSE SHALL BE 1" WITH A MAXIMUM OF APPROXIMATELY 4" TO 5".
- 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 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 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.
- ALL PIPING, FITTINGS & COMPONENTS SHALL BE INSULATED WITH APPROVED 1" THICK MINIMUM INSULATION & COVERING.

LEGEND

- ⊗ SHUT OFF GATE VALVE
- ⊗ THROTTLING GLOBE VALVE
- ⊗ CHECK VALVE CRANE #41 (SUPPLY & INSTALL)
- ⊗ STRAINER
- ⊗ 1/2" DRAIN VALVE WITH HOSE CONNECTION AND END CAP
- ⊗ TEMPERATURE GAGE
- ⊗ 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.
- ⊗ LEVEL SWITCH
- ⊗ AMTROL AIR PURGER FITTING
- ⊗ AIRTROL TANK FITTING
- ⊗ SNOW I/C SENSOR
- ⊗ TEKMAR 722 (1-1/4") BRASS 4-WAY MIXING VALVE C/W TEKMAR ACTUATING MOTOR 741 WIRED TO TEKMAR SNOW DETECTOR & MELTING CONTROL 664. SUPPLIED ALL REQUIRED COMPONENTS, SUPPORTS, CONNECTORS AND INSTALL TO FULLY OPERATE AS A SNOW MELTING SYSTEM.
- ⊗ SPROVENT JUNIOR V.8125TM (1-1/4") MICROBUBBLE SEPARATOR. CONNECT AUTO AIR VENT TO DRAIN AS PER MANUFACTURER INSTALLATION MANUAL. SUPPLY & INSTALL.
- ⊗ SPROTOP AUTOMATIC AIR VENT VTR950FT. CONNECT TO DRAIN AS PER MANUFACTURER INSTALLATION MANUAL. SUPPLY & INSTALL.
- ⊗ TEKMAR SENSORS WIRED TO TEKMAR SNOW DETECTOR & MELTING CONTROL 664 (SUPPLY & INSTALL):
BRS - BOILER RETURN SENSOR
MRS - MIX SUPPLY SENSOR
MRS - MIX RETURN SENSOR

NO.	REVISION/DESCRIPTION	BY	DATE
SEALS			

DRAWN BY	CHECKED BY	APPROVED
RC/PD/TA	USER APPROVAL	

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
PLAN VIEW, SECTION, DETAIL
PIPING SCHEMATIC
PLUMBING SPECIFICATIONS

SCALE	PROJECT NO.	SHEET NO.
AS NOTED	2005-108	M1