

SPECIFICATIONS

HVAC SPECIFICATIONS

GENERAL REQUIREMENTS:

A. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND FREE FROM FLAWS AND DEFECTS OF ANY NATURE. MATERIALS LISTED FOR ARE TO BE CONSIDERED AS STANDARD QUALITY. HOWEVER, IMPLIES NO PART OF CONTRACTOR TO SUBSTITUTE OTHER MATERIALS AND METHODS WITHOUT WRITTEN AUTHORITY FROM ARCHITECT/ENGINEER.

B. ALL WORK SHALL BE PERFORMED BY SKILLED MECHANICS, UNDER COMPETENT SUPERVISION, EMPLOYING LATEST AND BEST PRACTICES OF THE TRADE. WORK SHALL BE INSTALLED IN ACCORDANCE WITH RECOMMENDATIONS OF ASHRAE GUIDE, AND EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS. IN THE EVENT THERE IS ANY CONFLICT OR DOUBT, CONSULT ENGINEER FOR CLARIFICATION AND APPROVAL.

SCOPE

A. INSTALL AND INSULATE ALL PIPING, AS HEREIN SPECIFIED AND AS INDICATED ON MECHANICAL DRAWINGS.

B. START, TEST, CLEAN AND PLACE INTO OPERATION ALL SYSTEMS.

WARRANTIES:

A. THE CONTRACTOR AGREES TO CORRECT DEFECTS IN WORKMANSHIP, NEW MATERIALS, NEW EQUIPMENT, AND THE OPERATION OF SYSTEM FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE. EQUIPMENT AND MATERIALS, REPAIRED OR REPLACED ARE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF CORRECTION.

B. THE CONTRACTOR AGREES TO REPAIR ANY DAMAGE TO THE STREET OR EXISTING PIPING LOCATED IN THE WORK AREA RESULTING FROM DEFECTS IN WORKMANSHIP, MATERIALS, EQUIPMENT, AND SYSTEM OPERATION.

C. THE CONTRACTOR AGREES TO REMOVE ANY ITEM NOT SPECIFIED OR GIVEN APPROVAL AND MATERIALS, REPAIRED OR APPROVED ITEM.

D. THE CONTRACTOR AGREES THAT ANY ITEM SUBMITTED FOR APPROVAL THAT DOES NOT CONFORM TO THESE SPECIFICATIONS SHALL HAVE ACCOMPANYING NOTE OF CORRECTION.

E. THE CONTRACTOR AGREES THAT THE SYSTEM AS INSTALLED SHALL COMPLY WITH ALL CODE REQUIREMENTS.

F. THE CONTRACTOR AGREES THAT THE SYSTEM AS INSTALLED SHALL COMPLY WITH ALL CODE REQUIREMENTS.

OPERATING AND MAINTENANCE INSTRUCTIONS:

A. THE CONTRACTOR SHALL ACQUANT AND INSTRUCT THE OWNER'S REPRESENTATIVE WITH ALL DETAILS OF PERFORMANCE, OPERATION, AND MAINTENANCE OF THE SYSTEMS. IN ADDITION, THE CONTRACTOR SHALL FURNISH TWO COPIES OF A BROCHURE TO THE OWNER THROUGH THE ARCHITECT/ENGINEER, WHICH SHALL CONTAIN PRINTED OPERATING AND MAINTENANCE INSTRUCTIONS, PARTS LIST, CONTROL DIAGRAM, ETC. INCLUDING A LIST OF SPARE PARTS AND ANY SPECIAL TOOLS RECOMMENDED BY THE EQUIPMENT MANUFACTURERS TO BE STOCKED BY THE OWNER. THE MANUALS SHALL INCLUDE A COMPLETE SET OF ALL APPROVED SHOP DRAWINGS FURNISHED UNDER THESE SPECIFICATIONS.

B. THE BASIS OF OWNER'S INSTRUCTIONS SHALL BE WRITTEN FOR INCLUSION IN THE MAINTENANCE AND OPERATING INSTRUCTIONS DATA SPECIFIED ABOVE. OBTAIN CERTIFICATES, SIGNED BY THE OWNER'S REPRESENTATIVE, THAT THESE INSTRUCTIONS HAVE BEEN RECEIVED AND UNDERSTOOD.

C. THE CONTRACTOR SHALL PLACE THE SYSTEMS IN FULL OPERATION BEFORE TESTING BEGINS. THE CONTRACTOR SHALL MAKE CORRECTIONS IN THE SYSTEM.

START-UP:

A. THE CONTRACTOR SHALL PLACE THE SYSTEMS IN FULL OPERATION BEFORE TESTING BEGINS. THE CONTRACTOR SHALL MAKE CORRECTIONS IN THE SYSTEM.

SUBMITTALS

A. THE ENGINEER WILL REVIEW AND TAKE APPROPRIATE ACTION ON SHOP DRAWINGS, PRODUCT DATA AND OTHER SUBMITTALS REQUIRED BY THE CONTRACT DOCUMENTS. SUCH REVIEW SHALL BE FOR GENERAL COMPLIANCE WITH THE DESIGN AND WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. IT SHALL NOT INCLUDE THE REVIEW OF QUANTITIES, DIMENSIONS, WEIGHTS, FABRICATION PROCESSES, CONSTRUCTION METHODS, COORDINATION WITH THE WORK OF OTHER TRADES, OR CONSTRUCTION SAFETY PRECAUTIONS, ALL OF WHICH ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

B. CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AS SPECIFIED IN THE CONTRACT DOCUMENTS. ANY SUBSTITUTIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO SUBMITTAL. CONTRACTOR IS RESPONSIBLE FOR REVIEW OF ANY EQUIPMENT SUBSTITUTIONS BEFORE SUBMITTING TO THE ENGINEER TO VERIFY THAT SUBSTITUTED EQUIPMENT AT A MINIMUM IS EQUAL TO EQUIPMENT SPECIFIED IN THE CONSTRUCTION DOCUMENTS.

C. AS BUILT DRAWINGS SHALL HAVE THE INFORMATION TRANSFERRED FROM THE PROJECT JOB DRAWINGS INCLUDING ALL ADDENDUM, SUPPLEMENTAL INSTRUCTIONS, CHANGE ORDERS, AND SIMILAR INFORMATION.

D. QUALIFIED DRAFTSMEN SHALL PERFORM THIS TASK.

PROJECT JOB DRAWINGS AND AS-BUILT DRAWINGS

A. THE CONTRACTOR SHALL KEEP A RECORD SET OF DRAWINGS ON THE JOB AND, AS CONSTRUCTION PROGRESSES, SHALL SHOW THE ACTUAL INSTALLED LOCATION OF ALL ITEMS, MATERIAL, AND EQUIPMENT ON THE PROJECT JOB DRAWINGS.

B. AT THE TIME OF FINAL INSPECTION, TWO CORRECTED SETS OF PRINTS SHALL BE DELIVERED TO THE ENGINEER. ALL DRAWING COSTS TO BE BY THE CONTRACTOR.

C. AS BUILT DRAWINGS SHALL HAVE THE INFORMATION TRANSFERRED FROM THE PROJECT JOB DRAWINGS INCLUDING ALL ADDENDUM, SUPPLEMENTAL INSTRUCTIONS, CHANGE ORDERS, AND SIMILAR INFORMATION.

D. QUALIFIED DRAFTSMEN SHALL PERFORM THIS TASK.

HVAC PIPE

A. PROVIDE TEMPORARY END CAPS AND CLOSURES ON PIPING AND FITTINGS. MAINTAIN IN PLACE UNTIL INSTALLATION. PROTECT PIPING SYSTEMS FROM ENTRY OF FOREIGN MATERIALS BY TEMPORARY COVERS, COMPLETING SECTIONS OF THE WORK, AND ISOLATING PARTS OF COMPLETED SYSTEM.

B. HIGH PRESSURE STEAM PIPING (150 PSIG MAXIMUM) STEEL PIPE: ASTM A 53/A 53M, SCHEDULE 40, BLACK. FITTINGS: ASME B16.3 MALLEABLE IRON CLASS 250, OR ASTM A 234/A 234M WROUGHT STEEL WELDING TYPE. JOINTS: AWS D1.1 WELDED.

C. LOW PRESSURE AND PUMPED STEAM CONDENSATE PIPING STEEL PIPE: ASTM A 53/A 53M, SCHEDULE 80, BLACK. FITTINGS: ASME B16.3 MALLEABLE IRON CLASS 125, OR ASTM A 234/A 234M WROUGHT STEEL. JOINTS: AWS D1.1 WELDED.

D. PREPARATION: REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAN END FERROUS PIPE. REMOVE SCALE AND DIRT ON INSIDE AND OUTSIDE BEFORE ASSEMBLY. KEEP OPEN ENDS OF PIPE FREE FROM SCALE AND DIRT. WHENEVER WORK IS SUSPENDED DURING CONSTRUCTION PROTECT OPEN ENDS WITH TEMPORARY PLUGS OR CAPS.

E. AFTER COMPLETION, FILL, CLEAN, AND TREAT SYSTEMS.

F. INSTALLATION: INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. ROUTE PIPING IN ORDERLY MANNER, FOLDED AND PARALLEL, AND MAINTAIN GRADIENT. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.

PIPE INSULATION

A. ALL INSULATION MATERIALS SHALL BE STORED IN AN AREA PROTECTED FROM THE WEATHER AND KEPT DRY BEFORE AND DURING APPLICATIONS. ALL PIPING SHALL BE CLEANED OF FOREIGN SUBSTANCES AND FREE OF SURFACE MOISTURE PRIOR TO AND DURING THE APPLICATION OF INSULATION. MAKE CERTAIN THAT ALL WELD BEADS ARE GRIND SMOOTH WITH THE SURFACE OF THE PIPE PRIOR TO APPLICATION OF THE INSULATION. THE PIPE SHALL BE PRIMED WITH A RUST-INHIBITING PAINT OR OTHER PROTECTIVE COATING.

B. INSULATION: FOAMGLAS INSULATION, ASTM C 552, THERMAL INSULATION, 3" THICK, BY PITTSBURGH CORNING CORPORATION.

C. JACKETING: PITTSBURGH JACKETING SUPPLIED BY PITTSBURGH CORNING CORPORATION, PITTSBURGH 727 (PI-250) SEALANT BY PITTSBURGH CORNING.

D. ASPHALT COATING: PITTSBURGH 300 FINISH, BY PITTSBURGH CORNING CORPORATION.

E. HIGH-TEMPERATURE SEALANT: PG HI-TEMP/RVY SILICONE ADHESIVE FI-232.

F. INSTALL INSULATION AND JACKETING AS PER MANUFACTURERS RECOMMENDATIONS.

G. THE EXCAVATION SHALL BE KEPT FREE OF STANDING WATER DURING INSULATION AND JACKETING APPLICATION.

H. AFTER APPLICATION OF THE JACKETING SYSTEM TO ALL STRAIGHT AND IRREGULAR SECTIONS OF INSULATION, VISUALLY INSPECT ALL LAPS, SEAMS, BUTT STRIPS AND GLOVE-COATED AREAS TO ENSURE THAT THESE AREAS ARE SEALED FROM WATER ENTRY IN ACCORDANCE WITH THE SPECIFICATIONS AND APPROPRIATE PRODUCT DATA SHEETS.

I. SEE CIVIL FOR MORE INFORMATION ON TRENCHING AND BACKFILLING.

J. SEE CIVIL FOR MORE INFORMATION ON TRENCHING AND BACKFILLING.

K. SEE CIVIL FOR MORE INFORMATION ON TRENCHING AND BACKFILLING.

L. SEE CIVIL FOR MORE INFORMATION ON TRENCHING AND BACKFILLING.

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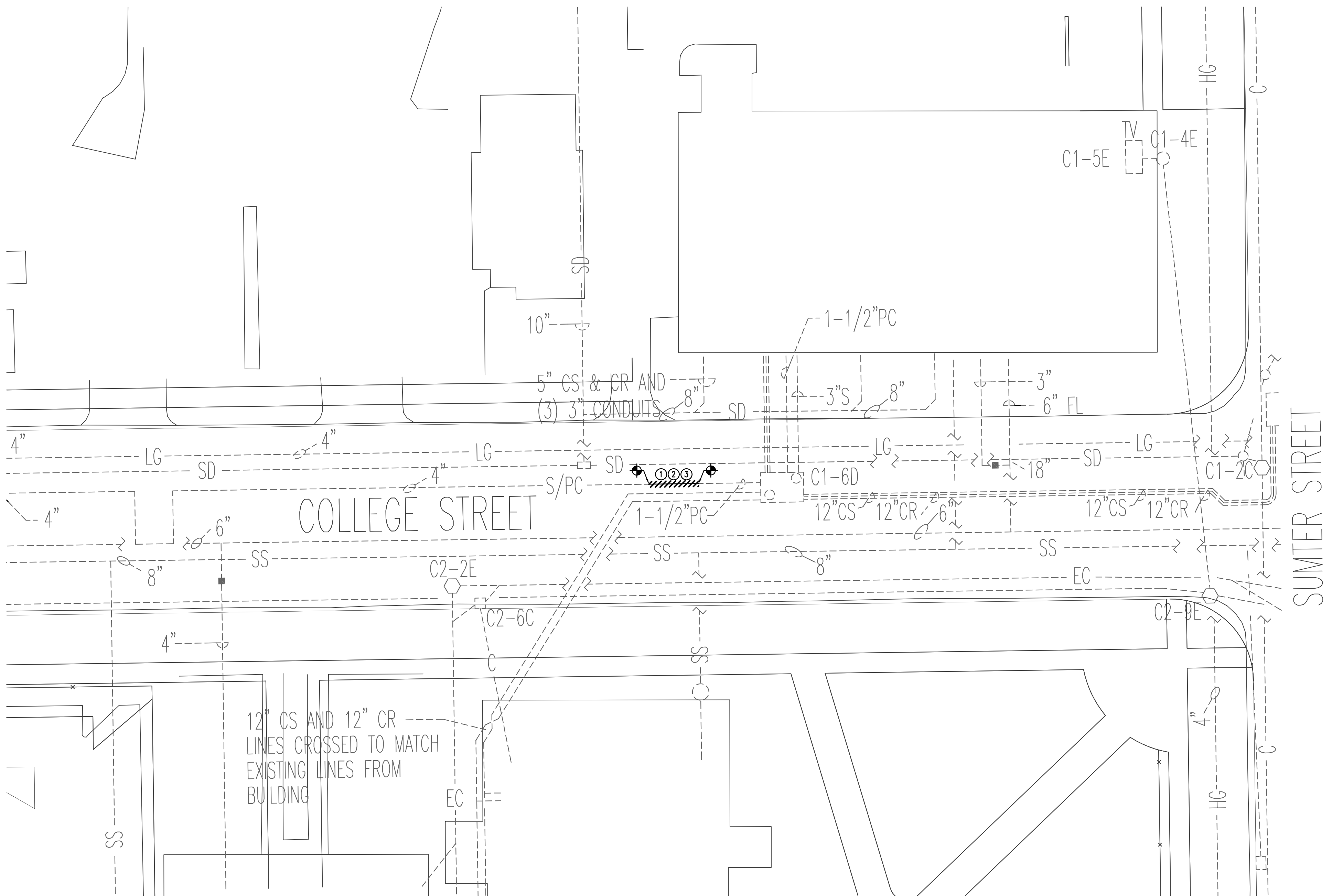
U. SEE CIVIL FOR MORE INFORMATION ON TRENCHING AND BACKFILLING.

V. SEE CIVIL FOR MORE INFORMATION ON TRENCHING AND BACKFILLING.

W. SEE CIVIL FOR MORE INFORMATION ON TRENCHING AND BACKFILLING.

X. SEE CIVIL FOR MORE INFORMATION ON TRENCHING AND BACKFILLING.

Y. SEE CIVIL FOR MORE INFORMATION ON TRENCHING AND BACKFILLING.



1 PIPING SITE PLAN
1"=20'

KEYNOTES

- CONTRACTOR SHALL EXCAVATE THIS APPROXIMATE LOCATION TO DISCOVER EXISTING LEAK IN EITHER STEAM SUPPLY OR PUMPED CONDENSATE RETURN PIPING. IF IT IS EXPECTED THE LEAK IS IN THE CONDENSATE RETURN PIPE AT A DEPTH OF APPROXIMATELY 56 INCHES.
- REMOVE APPROXIMATELY 15 FEET OF DAMAGED/LEAKING PIPE AND REPLACE WITH NEW WELDED STEEL PIPE. IF PIPING IS NOT SUITABLE FOR REPAIR OR REQUIRES EXPANDED SCOPE, NOTIFY ENGINEER OF RECORD IMMEDIATELY.
- EXPECT SCH 80 STEEL 1-1/2" PUMPED CONDENSATE LINE WITH WELDED CONNECTION OR SCH 40 STEEL 4" STEAM SUPPLY PIPING. CONTRACTOR SHALL BASE PRICING AROUND REPAIRING CONDENSATE RETURN PIPE.

ABBREVIATIONS

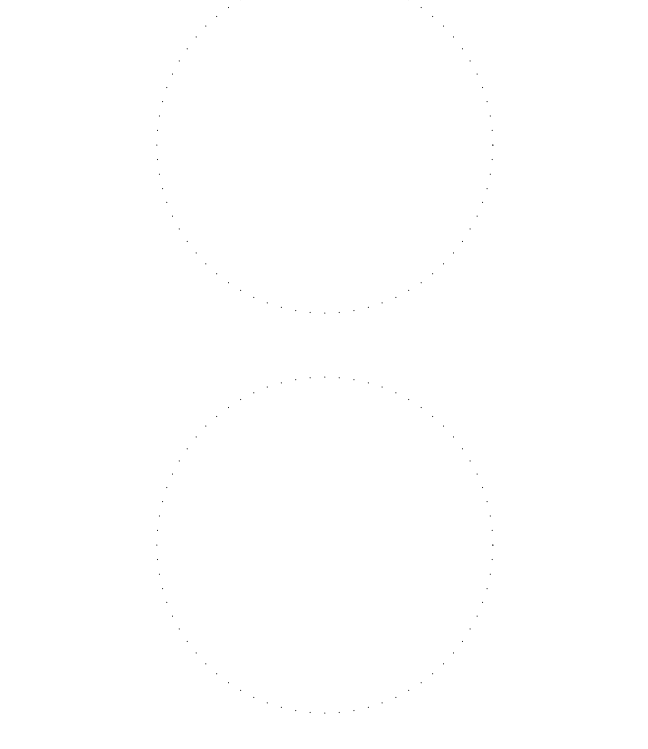
S	Steam	MIN	Minimum
PC	Pumped Condensate	N/A	Not Applicable
CS	Chilled Water Supply	NC	Not in Contract
CR	Chilled Water Return	NTS	Not To Scale
ELEC	Electric or Electrical	SPEC	Specifications
MAX	Maximum	TP	Typical

MECHANICAL GENERAL NOTES

- DO NOT SCALE DRAWINGS
- ALL PIPING LOCATIONS SHALL BE COORDINATED WITH THE WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS TO AVOID INTERFERENCE.
- CORRECT SETTINGS ON ALL BALANCING FITTINGS SHALL BE PERMANENTLY MARKED.

MECHANICAL DEMOLITION NOTES

- DRAWINGS SHOW GENERAL INTENT OF DEMOLITION. QUANTITIES, LOCATIONS, SIZES AND EQUIPMENT ARE SHOWN TO INDICATE TYPE OF SYSTEM INSTALLED AND DOES NOT NECESSARILY REPRESENT EXACT CONDITIONS. CONTRACTOR SHALL FIELD VERIFY BEFORE BIDDING.
- DEMOLITION OF EQUIPMENT, SYSTEMS, AND COMPONENTS SHALL INCLUDE ALL SUPPORTS, INSULATION, PIPING, ACCESSORIES, AND APPURTENANCES NOT REQUIRED FOR THE INSTALLATION OF THE NEW SYSTEM.



number	item	date

