

IFB 233058: ADDENDUM NO. 2
Amendments/Changes/ Clarification

Project: HPCS-4 Power & Cooling

IFB ISSUE DATE: January 31, 2013
CLOSING DATE: February 22, 2013

IFB No. 233058 is hereby clarified with the following:

*****REMINDER: Please note that all General Contractors, must be Approved on the Battelle ASP Website Prior To Submission of their bids.*****

The following questions and answers are also included in this addendum:

1. Sheet WS9614 2 of 3 note 1 Directs the contractor to provide cap and valves on existing 4" chilled water. Where are the nearest isolation valves located on the existing (2) supply and (2) return lines that are shown (This will determine how much fluid needs to be captured).
Ans: Attached are building drawings of the 4" chilled water line to be isolated. The Isolation valves for the line are in Room 1142.
2. Sheet WS 9614 2 of 3 note 1 directs the contractor to cap and valve existing chw. What type of material is the existing pipe made of and will the flange for the valve need to be welded, glued or grooved?
Ans: The 4" pipes to be isolated are carbon steel. Contractor method of flange installation is not specified but welding is assumed.
3. Sheet WS9627 2 of 3 note 5 directs the contractor to "wet tap" the existing 8" chilled water. Detail C1 indicates the valves for the branch lines are to be on the horizontal. In order to utilize a wet tap method the valves must be in a straight run of pipe attached to the existing without any bends in order to drill thru them for the wet tap. Is there physically enough room for the valves to be on the vertical coming off of the 8" in order to use the wet tap method?
Ans: The specified isolation butterfly valve is to be installed as shown. This would be in addition to wet tap method and material needed to accomplish the tap. The location of the wet tap was exposed for contractor examination during the walk down February 7. Location of tap was chosen to provide sufficient room for tap and transition to a horizontal run into the room.
4. Sheet WS9627 2 of 3 note 5 directs the contractor to wet tap the existing 8". The valves that are specified to be used on 2-1/2" and above are butterfly valves. It is impossible to wet tap thru a butterfly valve, what type of valve would then be specified for this location?
Ans: The valve and other equipment required to accomplish the wet tap is by the contractor. Method and material is to be reviewed by PNNL prior to work.
5. Has anyone asked about drawing WS9634-5 I can't find it?
Ans: Drawing WS9634 sheet 5 listed in Div. 1 of the specification is in error. The drawing consists of 4 sheets

6. Can we use other manufacture on the electrical panels? (Cutler Hammer, G.E. or Siemens)

Ans: See specification section Panelboards and Switchboards, 262413, Part 2

7. Section 230900, 1.1, C: Specifies that the contractor is to provide all labor and materials to integrate into the existing FMCS system. Section 230900 4.1, E: Specifies that the contractor is only to provide support for integration into the existing FMCS system. Please clarify if the controls contractor is to provide integration support or if the controls contractor is to provide all labor for the controls integration. If the new building management system is not a Johnson Controls system will additional graphics need to be provided with the new building management system?

Ans: Integration support is required. The controls contractor shall integrate the HPCS-4 controls system with the existing JCI controls system, including but not limited to, creating graphics on both Alerton and JCI systems and pulling points from the HPCS-4 control system to the JCI system

8. Section 230900, 2.1, E: Instrumentation and Control specification indicates that Automated Logic is the basis of design for the building management system but the project drawings appear to be based upon an Alerton control system. Please clarify the basis of design.

Ans: Basis of design is Alerton; Automated Logic is an alternate acceptable manufacture.

9. Drawing WS9627, Control Valve Schedule: The part number called out for control valve 3020-PCHW-FCV-001 indicates that this valve will have bronze trim. Will a control valve with stainless steel trim be required for this project?

Ans: Stainless steel trim is required.

10. Drawing WS9629 indicates that the return duct will require the installation of a new device called out as sheet note 8. Should this flag note actually be sheet note 5?

Ans: Correct, sheet note 8 should be identified as sheet note 5.

11. Drawing WS9627 Sheet 1 of 3, Sheet Note 7 references Detail 2 on Sheet 4. There is no sheet 4. Could you provide the referenced Detail?

Ans: The Sheet Note 7 is in error. The flowmeter installation is actually represented in detail 3 on sheet 3, "BTU Meter Detail".

The above stated clarifications are the only changes being made at this time.

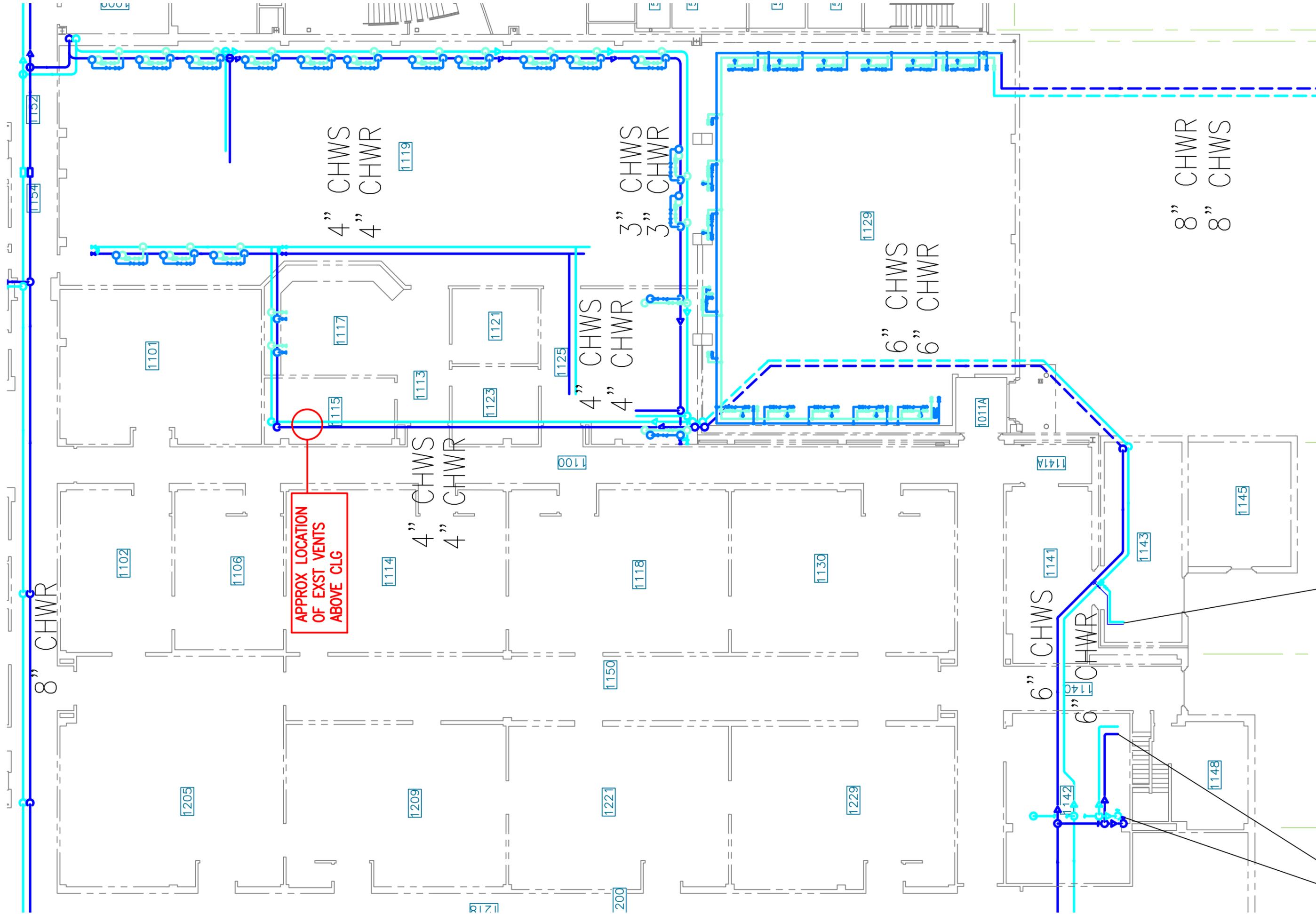
Failure to acknowledge receipt of this addendum with submittal of your Bid could be cause to reject your offer. All other requirements of the IFB remain as originally stated.

Thank you,

Garrett V. Hyatt

Garrett V. Hyatt
Sr. Contract Specialist

cc: File, Bidders List



APPROX LOCATION OF EXST VENTS ABOVE CLG

8" CHWR

4" CHWS
4" CHWR

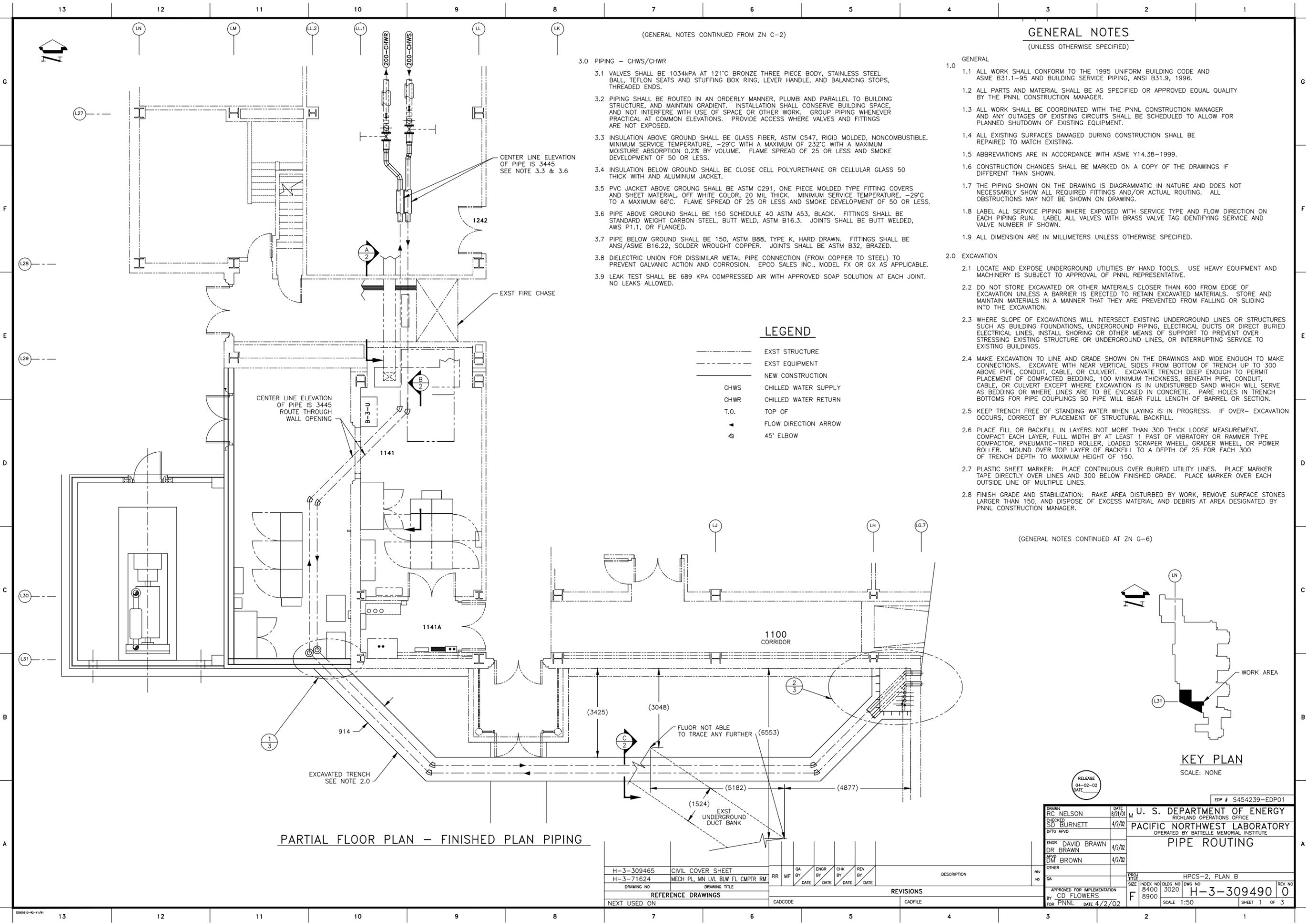
4" CHWS
4" CHWR

3" CHWS
3" CHWR

6" CHWS
6" CHWR

6" CHWS
6" CHWR

8" CHWR
8" CHWS



(GENERAL NOTES CONTINUED FROM ZN C-2)

GENERAL NOTES
(UNLESS OTHERWISE SPECIFIED)

- 3.0 PIPING - CHWS/CHWR
- 3.1 VALVES SHALL BE 1034KPA AT 121°C BRONZE THREE PIECE BODY, STAINLESS STEEL BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE, AND BALANCING STOPS, THREADED ENDS.
 - 3.2 PIPING SHALL BE ROUTED IN AN ORDERLY MANNER, PLUMB AND PARALLEL TO BUILDING STRUCTURE, AND MAINTAIN GRADIENT. INSTALLATION SHALL CONSERVE BUILDING SPACE, AND NOT INTERFERE WITH USE OF SPACE OR OTHER WORK. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS. PROVIDE ACCESS WHERE VALVES AND FITTINGS ARE NOT EXPOSED.
 - 3.3 INSULATION ABOVE GROUND SHALL BE GLASS FIBER, ASTM C547, RIGID MOLDED, NONCOMBUSTIBLE. MINIMUM SERVICE TEMPERATURE, -29°C WITH A MAXIMUM OF 232°C WITH A MAXIMUM MOISTURE ABSORPTION 0.2% BY VOLUME. FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPMENT OF 50 OR LESS.
 - 3.4 INSULATION BELOW GROUND SHALL BE CLOSE CELL POLYURETHANE OR CELLULAR GLASS 50 THICK WITH AND ALUMINUM JACKET.
 - 3.5 PVC JACKET ABOVE GROUND SHALL BE ASTM C291, ONE PIECE MOLDED TYPE FITTING COVERS AND SHEET MATERIAL, OFF WHITE COLOR, 20 MIL THICK. MINIMUM SERVICE TEMPERATURE, -29°C TO A MAXIMUM 66°C. FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPMENT OF 50 OR LESS.
 - 3.6 PIPE ABOVE GROUND SHALL BE 150 SCHEDULE 40 ASTM A53, BLACK. FITTINGS SHALL BE STANDARD WEIGHT CARBON STEEL, BUTT WELD, ASTM B16.3. JOINTS SHALL BE BUTT WELDED, AWS P1.1, OR FLANGED.
 - 3.7 PIPE BELOW GROUND SHALL BE 150, ASTM B88, TYPE K, HARD DRAWN. FITTINGS SHALL BE ANSI/ASME B16.22, SOLDER WROUGHT COPPER. JOINTS SHALL BE ASTM B32, BRAZED.
 - 3.8 DIELECTRIC UNION FOR DISSIMILAR METAL PIPE CONNECTION (FROM COPPER TO STEEL) TO PREVENT GALVANIC ACTION AND CORROSION. EPCO SALES INC., MODEL FX OR GX AS APPLICABLE.
 - 3.9 LEAK TEST SHALL BE 689 KPA COMPRESSED AIR WITH APPROVED SOAP SOLUTION AT EACH JOINT. NO LEAKS ALLOWED.

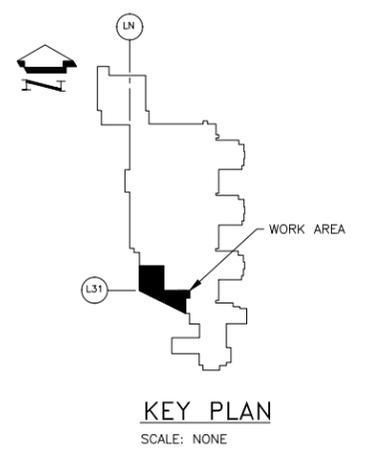
- GENERAL
- 1.0 ALL WORK SHALL CONFORM TO THE 1995 UNIFORM BUILDING CODE AND ASME B31.1-95 AND BUILDING SERVICE PIPING, ANSI B31.9, 1996.
 - 1.2 ALL PARTS AND MATERIAL SHALL BE AS SPECIFIED OR APPROVED EQUAL QUALITY BY THE PNNL CONSTRUCTION MANAGER.
 - 1.3 ALL WORK SHALL BE COORDINATED WITH THE PNNL CONSTRUCTION MANAGER AND ANY OUTAGES OF EXISTING CIRCUITS SHALL BE SCHEDULED TO ALLOW FOR PLANNED SHUTDOWN OF EXISTING EQUIPMENT.
 - 1.4 ALL EXISTING SURFACES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO MATCH EXISTING.
 - 1.5 ABBREVIATIONS ARE IN ACCORDANCE WITH ASME Y14.38-1999.
 - 1.6 CONSTRUCTION CHANGES SHALL BE MARKED ON A COPY OF THE DRAWINGS IF DIFFERENT THAN SHOWN.
 - 1.7 THE PIPING SHOWN ON THE DRAWING IS DIAGRAMMATIC IN NATURE AND DOES NOT NECESSARILY SHOW ALL REQUIRED FITTINGS AND/OR ACTUAL ROUTING. ALL OBSTRUCTIONS MAY NOT BE SHOWN ON DRAWING.
 - 1.8 LABEL ALL SERVICE PIPING WHERE EXPOSED WITH SERVICE TYPE AND FLOW DIRECTION ON EACH PIPING RUN. LABEL ALL VALVES WITH BRASS VALVE TAG IDENTIFYING SERVICE AND VALVE NUMBER IF SHOWN.
 - 1.9 ALL DIMENSION ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
- 2.0 EXCAVATION
- 2.1 LOCATE AND EXPOSE UNDERGROUND UTILITIES BY HAND TOOLS. USE HEAVY EQUIPMENT AND MACHINERY IS SUBJECT TO APPROVAL OF PNNL REPRESENTATIVE.
 - 2.2 DO NOT STORE EXCAVATED OR OTHER MATERIALS CLOSER THAN 600 FROM EDGE OF EXCAVATION UNLESS A BARRIER IS ERECTED TO RETAIN EXCAVATED MATERIALS. STORE AND MAINTAIN MATERIALS IN A MANNER THAT THEY ARE PREVENTED FROM FALLING OR SLIDING INTO THE EXCAVATION.
 - 2.3 WHERE SLOPE OF EXCAVATIONS WILL INTERSECT EXISTING UNDERGROUND LINES OR STRUCTURES SUCH AS BUILDING FOUNDATIONS, UNDERGROUND PIPING, ELECTRICAL DUCTS OR DIRECT BURIED ELECTRICAL LINES, INSTALL SHORING OR OTHER MEANS OF SUPPORT TO PREVENT OVER STRESSING EXISTING STRUCTURE OR UNDERGROUND LINES, OR INTERRUPTING SERVICE TO EXISTING BUILDINGS.
 - 2.4 MAKE EXCAVATION TO LINE AND GRADE SHOWN ON THE DRAWINGS AND WIDE ENOUGH TO MAKE CONNECTIONS. EXCAVATE WITH NEAR VERTICAL SIDES FROM BOTTOM OF TRENCH UP TO 300 ABOVE PIPE, CONDUIT, CABLE, OR CULVERT. EXCAVATE TRENCH DEEP ENOUGH TO PERMIT PLACEMENT OF COMPACTED BEDDING, 100 MINIMUM THICKNESS, BENEATH PIPE, CONDUIT, CABLE, OR CULVERT EXCEPT WHERE EXCAVATION IS IN UNDISTURBED SAND WHICH WILL SERVE AS BEDDING OR WHERE LINES ARE TO BE ENCASED IN CONCRETE. PARE HOLES IN TRENCH BOTTOMS FOR PIPE COUPLINGS SO PIPE WILL BEAR FULL LENGTH OF BARREL OR SECTION.
 - 2.5 KEEP TRENCH FREE OF STANDING WATER WHEN LAYING IS IN PROGRESS. IF OVER- EXCAVATION OCCURS, CORRECT BY PLACEMENT OF STRUCTURAL BACKFILL.
 - 2.6 PLACE FILL OR BACKFILL IN LAYERS NOT MORE THAN 300 THICK LOOSE MEASUREMENT. COMPACT EACH LAYER, FULL WIDTH BY AT LEAST 1 PAST OF VIBRATORY OR RAMMER TYPE COMPACTOR, PNEUMATIC-TIRED ROLLER, LOADED SCRAPER WHEEL, GRADER WHEEL, OR POWER ROLLER. MOUND OVER TOP LAYER OF BACKFILL TO A DEPTH OF 25 FOR EACH 300 OF TRENCH DEPTH TO MAXIMUM HEIGHT OF 150.
 - 2.7 PLASTIC SHEET MARKER: PLACE CONTINUOUS OVER BURIED UTILITY LINES. PLACE MARKER TAPE DIRECTLY OVER LINES AND 300 BELOW FINISHED GRADE. PLACE MARKER OVER EACH OUTSIDE LINE OF MULTIPLE LINES.
 - 2.8 FINISH GRADE AND STABILIZATION: RAKE AREA DISTURBED BY WORK, REMOVE SURFACE STONES LARGER THAN 150, AND DISPOSE OF EXCESS MATERIAL AND DEBRIS AT AREA DESIGNATED BY PNNL CONSTRUCTION MANAGER.

LEGEND

- EXST STRUCTURE
- - - EXST EQUIPMENT
- NEW CONSTRUCTION
- CHWS CHILLED WATER SUPPLY
- CHWR CHILLED WATER RETURN
- T.O. TOP OF
- ▲ FLOW DIRECTION ARROW
- ⊙ 45° ELBOW

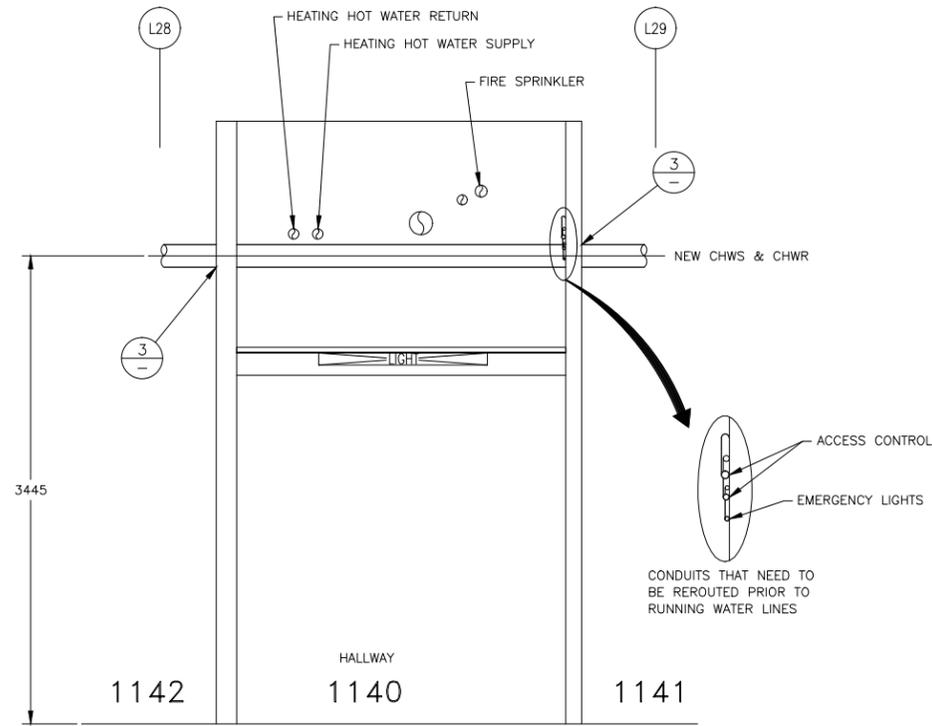
(GENERAL NOTES CONTINUED AT ZN G-6)

PARTIAL FLOOR PLAN - FINISHED PLAN PIPING

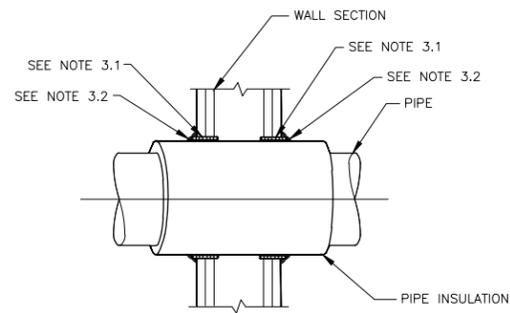


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H-3-71624	MECH PL, MN LVL BLW FL CMPTR RM				
REVISIONS					
REFERENCE DRAWINGS		CADCODE			
NEXT USED ON		CADFILE			

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ENGR: DAVID BRAUN DR: BRAUN APVD: DM BROWN	DATE: 4/2/02 DATE: 4/2/02 DATE: 4/2/02	HPCS-2, PLAN B PIPE ROUTING
APPROVED FOR IMPLEMENTATION BY: CD FLOWERS FOR: PNNL DATE: 4/2/02	PROJ. TITLE: HPCS-2, PLAN B SIZE: 8400 3020 INDEX NO: 8900 BLDG NO: 3020 DWG NO: H-3-309490 SCALE: 1:50	REV NO: 0 SHEET 1 OF 3



A ELEVATION
1 SCALE: 1:20



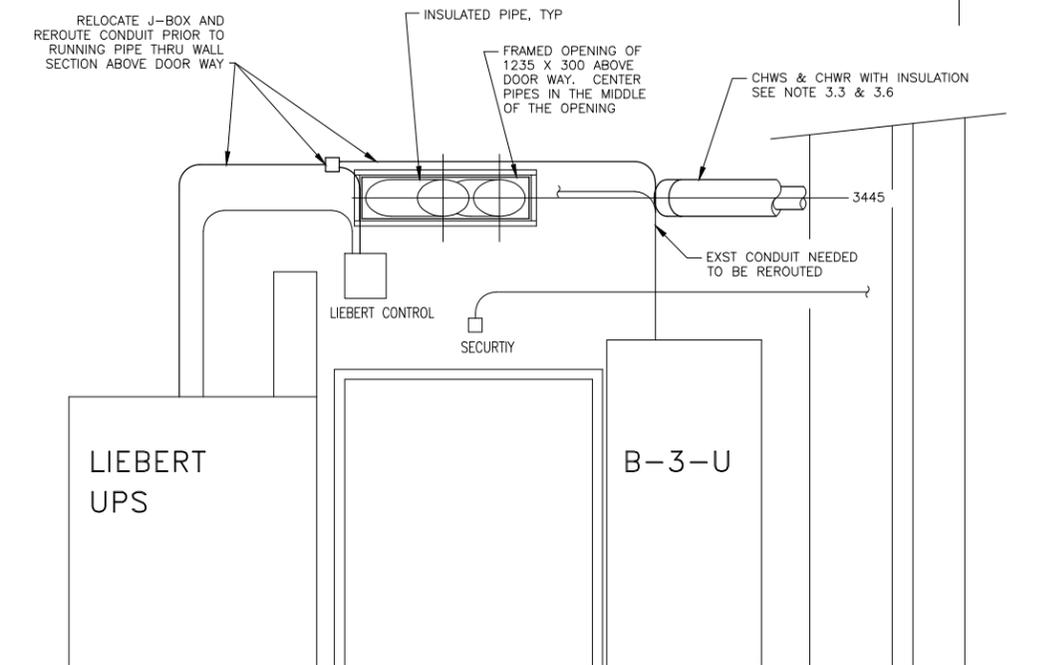
UL SYSTEM WL5001

3 DETAIL - FIRE WALL PENETRATION
SCALE: NONE

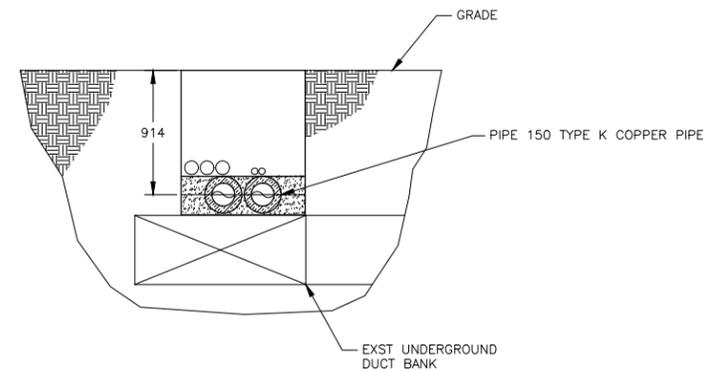
NOTES:

- 1.0 THOUGH PENETRANTS: ONE METALLIC PIPE TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE TO BE RIGIDLY SUPPORT ON BOTH SIDES OF WALL ASSEMBLY.
- 2.0 PIPE COVERING: NOM 1" OR 2" THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN. 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH ALL SERVICES JACKET. LONGITUDINAL JOINT SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SEALED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH THE PRODUCT. WHEN NOM 1" THICK PIPE COVERING IS USED, THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IN THE GYPSUM WALLBOARD LAYER ON EACH SIDE OF THE WALL SHALL BE 1/4" TO A MAX. OF 3/8". WHEN NOM 2" THICK PIPE COVERING IS USED, THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IN THE GYPSUM WALLBOARD LAYERS ON EACH SIDE OF THE WALL SHALL BE MIN. 1/2" TO MAX. 3/4".

NOTE: THE PIPE COVERING MATERIAL BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.
- 3.0 FIRESTOP SYSTEM: INSTALL SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY. THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:
 - 3.1 FILL, VOID OR CAVITY MATERIALS - WRAP STRIP - NOM 1/4" THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON THE ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2" WIDE STRIPS. NOM 2" WIDE STRIP TIGHTLY WRAPPED AROUND PIPE COVERING(FOIL SIDE OUT) WITH SEAM BUTTED. WRAP STRIP LAYER SECURELY BOUND WITH STEEL WIRE OR ALUMINUM FOIL TAPE AND SLID INTO INTO ANNULAR SPACE APPROXIMATELY 1 1/4" SUCH THAT APPROXIMATELY 3/4" OF THE WRAP STRIP WIDTH PROTRUDES FROM THE WALL SURFACE. ONE LAYER OF WRAP STRIP REQUIRED WHEN NOM 1" THICK PIPE COVERING IS USED. TWO LAYERS OF WRAP STRIP ARE REQUIRED WHEN NOM 2" THICK PIPE COVERING IS USED. MINNESOTA MINING & MFG. CO - FS-195+.
 - 3.2 FILL, VOID OR CAVITY MATERIALS - CAULK - MIN. 1/4" DIAMETER CONTINUOUS BEAD APPLIED TO THE WRAP STRIP/WALL INTERFACE AND TO THE EXPOSED EDGE OF THE WRAP STRIP LAYER APPROXIMATELY 3/4" FROM THE WALL SURFACE. MINNESOTA MINING & MFG. CO - CP 25WB+.



B ELEVATION
1 SCALE: 1:20



C ELEVATION - TRENCH
1 SCALE: 1:20

RELEASE
04-02-02
DATE

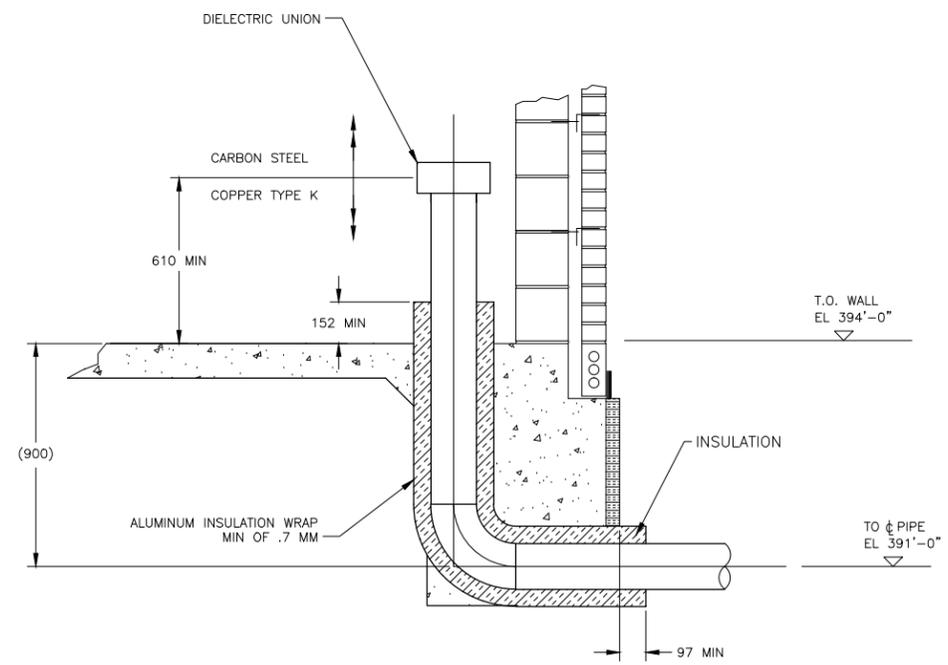
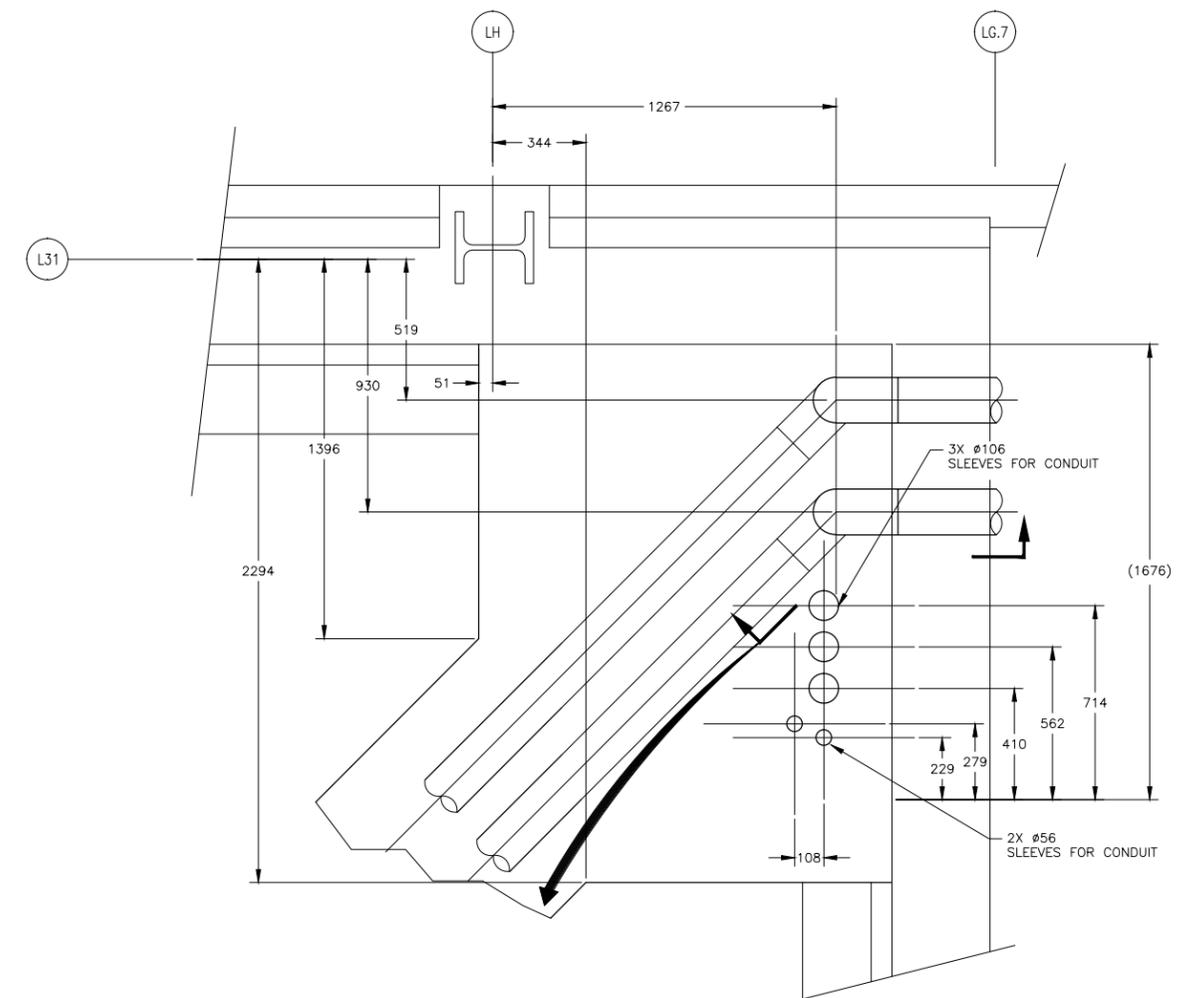
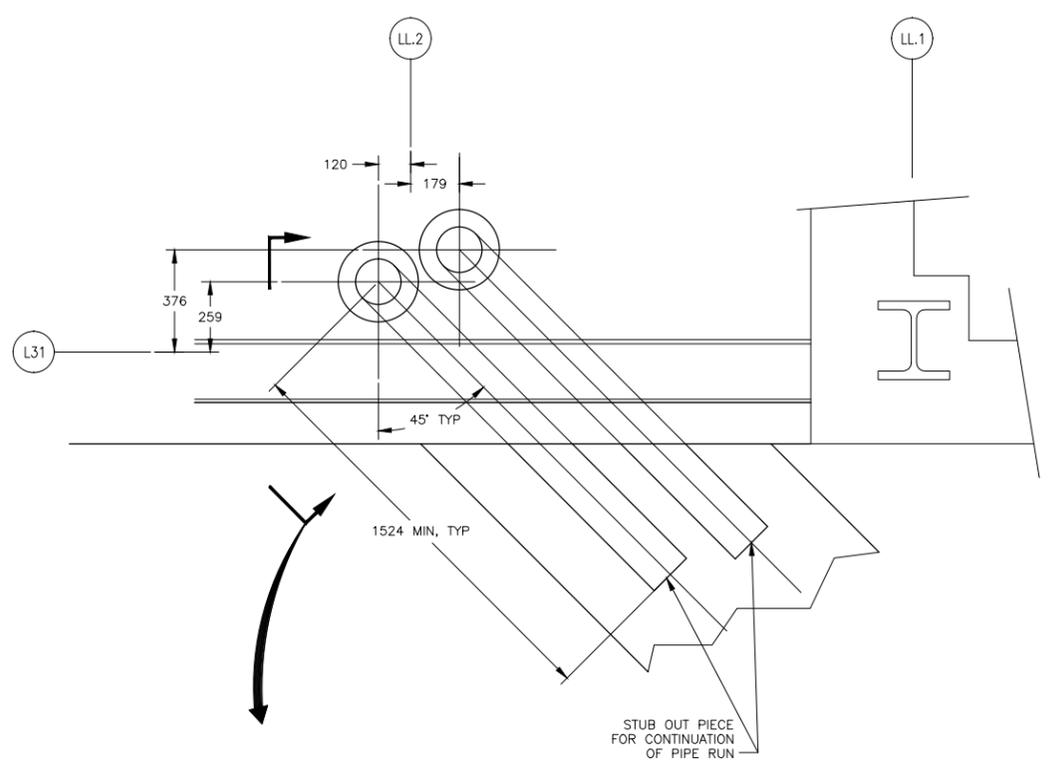
EDP # S454239-EDP01

DRAWN RC NELSON		DATE 8/21/01	U. S. DEPARTMENT OF ENERGY RICHLAND OPERATIONS OFFICE	
CHECKED SD BURNETT		DATE 4/7/02	PACIFIC NORTHWEST LABORATORY OPERATED BY BATELLE MEMORIAL INSTITUTE	
ENGR DAVID BRAUN		DATE 4/7/02	PIPE ROUTING DETAILS	
DR DAVID BRAUN		DATE 4/7/02		
APPROVED FOR IMPLEMENTATION BY CD FLOWERS FOR PNNL DATE 4/2/02		DATE 4/2/02	HPCS-2, PLAN B	
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	NEXT USED ON		SCALE 8900	SHEET 2 OF 3

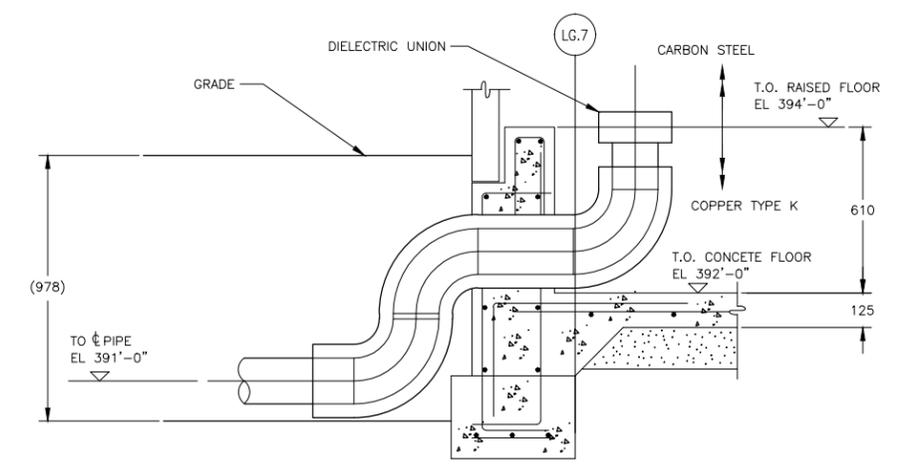
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DATE	DATE	DATE	DATE	DATE	DATE		
CADCODE				CADFILE			

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G F E D C B A



1
1
DETAIL - PIPE EMBEDMENT



2
1
DETAIL - PIPE EMBEDMENT

RR	MF	QA BY	ENGR BY	CHK BY	REV BY	DATE	DATE	DATE	DATE	DESCRIPTION	REV NO
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CADFILE											

EDP # S454239-EDP01

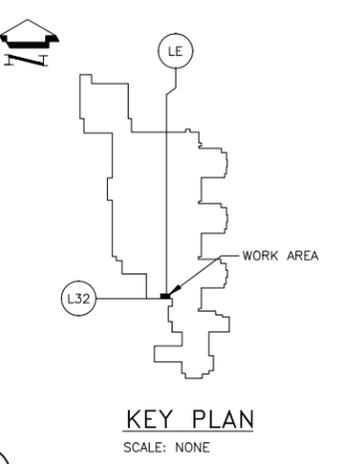
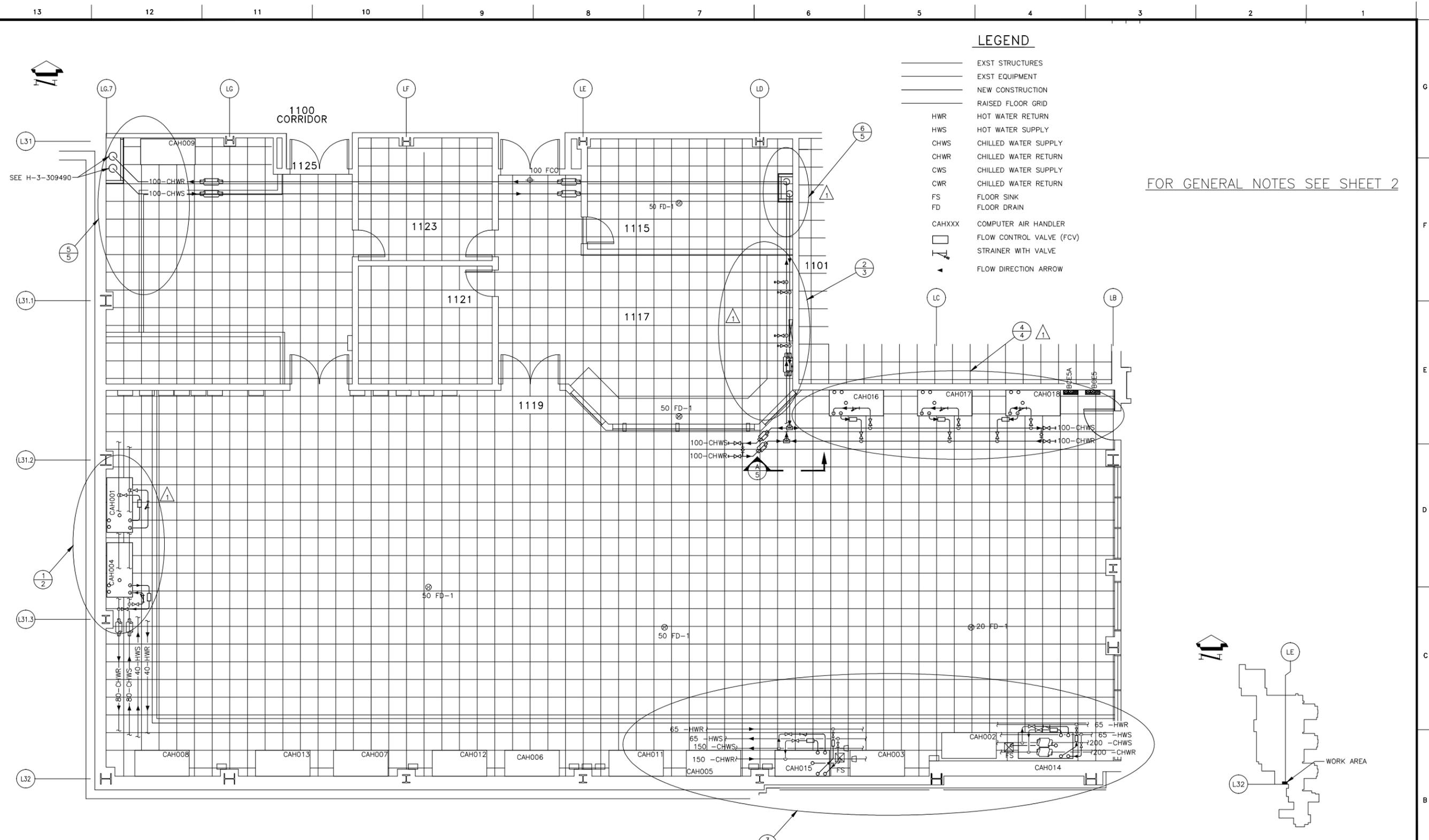
DRAWN RC NELSON CHECKED SD BURNETT DFTG APVD ENGR DAVID BRAUN DR BRAUN APVD DM BROWN	DATE 8/21/01 DATE 4/2/02 DATE 4/2/02 DATE 4/2/02	U. S. DEPARTMENT OF ENERGY RICHLAND OPERATIONS OFFICE PACIFIC NORTHWEST LABORATORY OPERATED BY BATELLE MEMORIAL INSTITUTE PIPE ROUTING DETAILS HPCS-2, PLAN B
APPROVED FOR IMPLEMENTATION BY CD FLOWERS FOR PNNL DATE 4/2/02	SIZE 3400 8900	BLDG NO 3020 DWG NO H-3-309490 SCALE 1:10
REV NO 0	SHEET 3 OF 3	REV NO 0

13 12 11 10 9 8 7 6 5 4 3 2 1

LEGEND

- EXST STRUCTURES
- EXST EQUIPMENT
- NEW CONSTRUCTION
- RAISED FLOOR GRID
- HWR HOT WATER RETURN
- HWS HOT WATER SUPPLY
- CHWS CHILLED WATER SUPPLY
- CHWR CHILLED WATER RETURN
- CWS CHILLED WATER SUPPLY
- CWR CHILLED WATER RETURN
- FS FLOOR SINK
- FD FLOOR DRAIN
- CAHXXX COMPUTER AIR HANDLER
- FCV FLOW CONTROL VALVE (FCV)
- SV STRAINER WITH VALVE
- ▲ FLOW DIRECTION ARROW

FOR GENERAL NOTES SEE SHEET 2



PARTIAL FLOOR PLAN – FINISHED PLAN PIPING

DRAWING NO	DRAWING TITLE
H-3-309490	PIPE ROUTING
H-3-309465	CIVIL COVER SHEET
H-3-309464	PIPING & LOCATION OF NEW AIR HANDLING UNITS
H-3-71624	MECH PL, MN LVL BLW FL CMPTR RM

RR	MF	QA	ENGR	CHK	REV	DATE	DATE	DATE	DATE	DESCRIPTION	REV
6/16/02			5/16/02	5/14/02	5/17/02					DAVID BRAUN for PNNL 5/16/02 MODIFIED PER ECN S454239-01-0-02-02	1

DRAWN: R.C. NELSON		DATE: 6/11/01	U. S. DEPARTMENT OF ENERGY	
CHECKED: S.D. BURNETT		DATE: 4/2/02	RICHLAND OPERATIONS OFFICE	
DFTG: APVD			PACIFIC NORTHWEST NATIONAL LABORATORY	
			OPERATED BY BATELLE MEMORIAL INSTITUTE	
ENGR: DAVID BRAUN		DATE: 4/2/02	HPCS-2, PLAN B	
DR: DAVID BRAUN		DATE: 4/2/02	PIPING AND LOCATION OF NEW AIR HANDLING UNITS	
REV: DM BROWN		DATE: 4/2/02	HPCS-2, PLAN B	
OTHER:			HPCS-2, PLAN B	
REV NO: 1			HPCS-2, PLAN B	
APPROVED FOR IMPLEMENTATION BY: CD FLOWERS		DATE: 4/2/02	HPCS-2, PLAN B	
FOR: PNNL			HPCS-2, PLAN B	
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8900			SCALE: 1:50	SHEET 1 OF 5

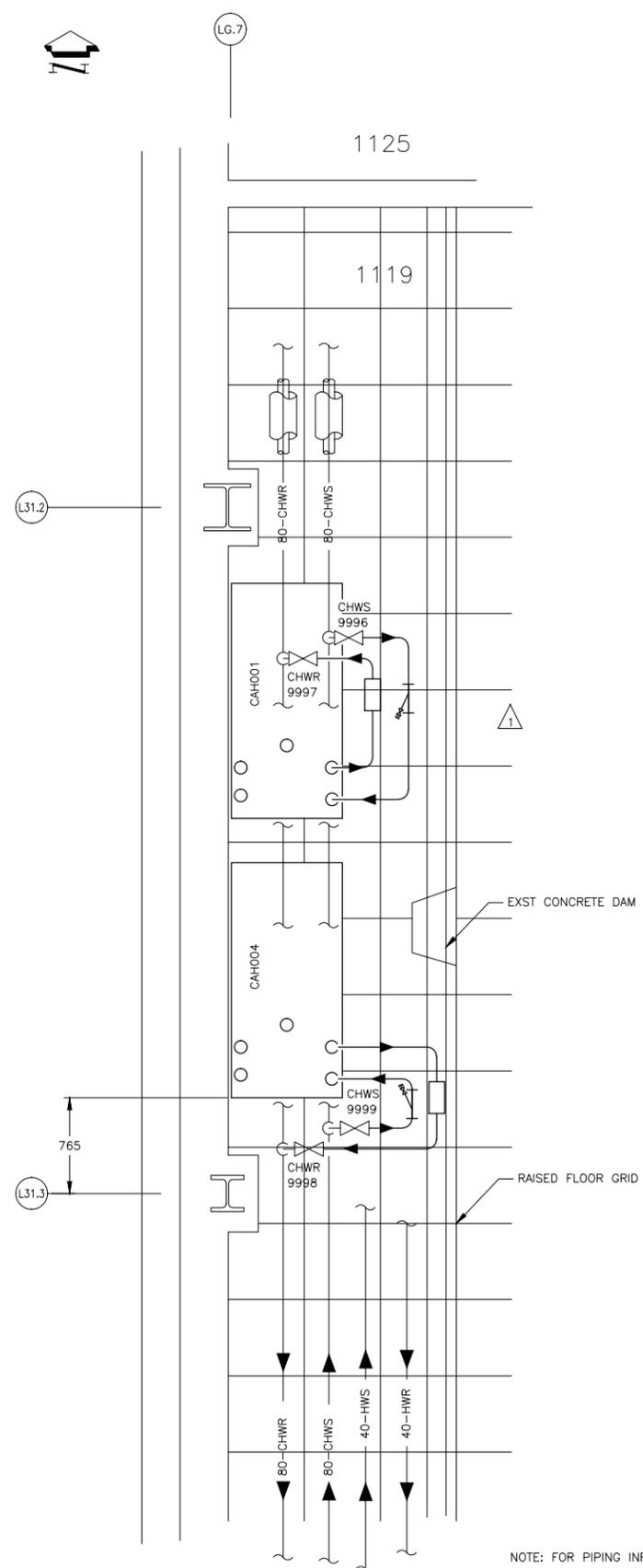
RELEASE
04-02-02
DATE

EDP # S454239-EDP01

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(UNLESS OTHERWISE SPECIFIED)

- 1.0 GENERAL
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 - ABBREVIATIONS ARE IN ACCORDANCE WITH ASME Y14.38-1999.
 - CONSTRUCTION CHANGES SHALL BE MARKED ON A COPY OF THE DRAWINGS IF DIFFERENT THAN SHOWN.
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 - LABEL ALL SERVICE PIPING WHERE EXPOSED WITH SERVICE TYPE AND FLOW DIRECTION ON EACH PIPING RUN. LABEL ALL VALVES WITH BRASS VALVE TAG IDENTIFYING SERVICE AND VALVE NUMBER IF SHOWN.
 - ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
- 2.0 AIR HANDLING UNITS
- INSTALL NEW LIEBERT AIR CONDITIONERS, MODEL NUMBER FH376C-AAM, NOMINAL 30-TON WATER-COOLED LIEBERT DELUXE SYSTEM/3 COMPUTER ROOM A/C UNITS.
SPECIFICATIONS: 480VAC, THREE PHASE ELECTRICAL SERVICE, STANDARD MICROPROCESSOR CONTROL, HOT WATER REHEAT, NO HUMIDIFIER.
REQUIRED ACCESSORIES: UNDER FLOOR STAND FOR 24" SUSPENDED FLOOR SYSTEM WITH BACK DRAFT DAMPER, EC42-E REMOTE MONITORING UNIT FOR CONNECTION TO JOHNSON CONTROLS METASYS BUILDING CONTROL SYSTEM, 2 WAY CHILLED WATER CONTROL VALVE, DOWN FLOW DESIGN, UNDER FLOOR LEAK DETECTOR, LOCKING DISCONNECT SWITCH, WATER FLOW SWITCH.
 - REMOVE PLUGS AND CAPS FROM THE END OF EXISTING VALVES LOCATED UNDER RAISED FLOOR. FIELD ROUTE NEW 2" CHWS AND CHWR AND 3/4" HWS AND HWR LINES TO THE APPROPRIATE SPOT SUPPLIED BY THE VENDOR, VEMCO - LIEBERT DISTRIBUTOR.
 - TRIM RAISED FLOOR TILES TO ALLOW PROPER FIT AROUND BASE OF NEW AIR HANDLING UNITS. REPOSITION VERTICAL FLOOR SUPPORTS AS NECESSARY TO PROVIDE PROPER FLOOR SUPPORT. PRIOR TO COMPLETION, CONTACT PROJECT REPRESENTATIVE TO VERIFY ADEQUATE ADEQUATE RAISED FLOOR SUPPORTS IN MODIFIED AREAS HAS BEEN MET.
- 3.0 NEW CONSTRUCTION
- GYPSUM WALLBOARD SHALL BE UNITED STATES GYPSUM, 15 THICK, SHEETROCK BRAND FIRE CODE TYPE "X".
 - TAPE AND FINISH ALL JOINTS WITH JOINT CEMENT. PREPARE FOR SMOOTH PAINTED SURFACE.
 - ASSEMBLY AND WORKMANSHIP SHALL CONFORM TO STANDARDS PRESCRIBED IN THE USG "GYPSUM CONSTRUCTION" HANDBOOK AND THE USG "STEEL FRAMING" MANUAL.
 - FRAMING RUNNERS SHALL BE 87.5 x 0.6 GALVANIZED METAL.
 - FRAMING STUDS SHALL BE 87.5 x 0.6 GALVANIZED METAL AT 450 ON CENTER.
 - FRAMING STRUCTURAL STUDS SHALL BE 87.5 x 1.9 GALVANIZED METAL.
 - FINISH WITH 1 COAT DRYWALL ACRYLIC-LATEX PRIMER SERIES J, TWO COATS LATEX, SEMI GLOSS ACRYLIC ENAMEL. COLOR TO MATCH EXISTING. BENJAMIN MOORE OR EQUAL.
- 4.0 NEW CONSTRUCTION - AIR HANDLING UNITS / PIPING
- FIELD ROUTE 150 PIPE THROUGH FOOTING AT THE NORTH WEST CORNER OF ROOM 1125 AS SHOWN. EXTEND 150 PIPE UP NEW CHASE TO AREA ABOVE CEILING GRID, IN THE PROCESS REDUCE TO 100 PIPE AND FIELD ROUTE TO NEW PIPE CHASE IN ROOM 1115 AS SHOWN. EXTEND 100 PIPE TO SPACE UNDER RAISED FLOOR AND FIELD ROUTE TO NEW AIR HANDLING UNITS IN ROOM 1115.
 - RELOCATE CAH001 AND CAH004 FROM SOUTHEAST CORNER OF ROOM 1119 TO WEST WALL OF ROOM 1119 AS SHOWN. RELOCATE FLOW CONTROL VALVES AND WYE STRAINER WITH CAH001 AND CAH004. FIELD ROUTE NEW 50 PIPE TO APPROPRIATE CONNECTIONS.
 - INSTALL NEW 30 TON UNITS, CAH014 AND CAH015, IN SOUTHEAST CORNER WERE CAH001 AND CAH004 WAS LOCATED. FIELD ROUTE NEW 50 CHILLED WATER LINES, SUPPLY AND RETURN, AS REQUIRED TO APPROPRIATE CONNECTIONS. FIELD ROUTE NEW 20 HOT WATER, SUPPLY AND RETURN, LINES TO APPROPRIATE CONNECTIONS.
 - INSTALL NEW 30 TON UNIT, CAH016, CAH017 AND CAH018, ON THE NORTH WALL OF ROOM 1119 AS SHOWN. FIELD ROUTE NEW 50 PIPE TO APPROPRIATE CONNECTIONS.
 - FIELD LOCATE AND VERIFY CONCRETE CURB IN WALL BETWEEN ROOMS 1117 AND 1119, ADJUST PIPE ELEVATION ACCORDINGLY.

- 5.0 PIPING - CHWS/CHWR
- VALVES SHALL BE 1034 KPA AT 121°C BRONZE THREE PIECE BODY, STAINLESS STEEL BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE, AND BALANCING STOPS, THREADED ENDS.
 - PIPING SHALL BE ROUTED IN AN ORDERLY MANNER, PLUMB AND PARALLEL TO BUILDING STRUCTURE, AND MAINTAIN GRADIENT. INSTALLATION SHALL CONSERVE BUILDING SPACE, AND NOT INTERFERE WITH USE OF SPACE OR OTHER WORK. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS. PROVIDE ACCESS WHERE VALVES AND FITTINGS ARE NOT EXPOSED.
 - INSULATION SHALL BE GLASS FIBER, ASTM C547, RIGID MOLDED, NONCOMBUSTIBLE. MINIMUM SERVICE TEMPERATURE, -29°C WITH A MAXIMUM OF 232°C WITH A MAXIMUM MOISTURE ABSORPTION 0.2% BY VOLUME. FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPMENT OF 50 OR LESS.
 - PVC JACKET SHALL BE ASTM C291, ONE PIECE MOLDED TYPE FITTING COVERS AND SHEET MATERIAL, OFF WHITE COLOR, 20 MIL THICK. MINIMUM SERVICE TEMPERATURE, -40°C TO A MAXIMUM 66°C. FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPMENT OF 50 OR LESS.
 - STRAINER SHALL BE TREADED BRASS, 861 KPA, WYE PATTERN WITH 0.8 PERFORATED SCREEN. A VALVE AND PLUG SHALL BE REQUIRED.
 - FLOW CONTROL VALVES FOR CHWR LINES SHALL BE GRISWOLD CONTROLS MODEL NUMBER IY38BUU WITH A FLOW RATE OF 273 LPM.
- 6.0 PIPING - HWS/HWR
- ALL PIPING SHALL BE HARD DRAWN COPPER TUBING, AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM B 88, TYPE L). FITTING FOR COPPER TUBING SHALL BE WROUGHT COPPER JOINTS.
 - SOLDER AND FLUX FOR WATER PIPING: HIGH TEMPERATURE SOLDERS WITH A FLOW POINT ABOVE ABOVE 593°C SHALL BE USED FOR JOINING COPPER TUBING AND FITTINGS. THE FLUX SHALL BE AS RECOMMENDED BY THE MANUFACTURER OF THE SOLDER. ONE OF THE FOLLOWING SOLDERS MAY BE USED: SILFOS - 704°C FLOW POINT, EASY FLO #3 - 688°C FLOW POINT, HARRIS "BRIDGET" LEAD FREE SOLDER, "SILVABRITE" 100.
 - VALVES SHALL BE CLASS 150 BRONZE, BALL NIBCO T-580, GATE NIBCO T-134 OR CHECK NIBCO T-433.
 - INSULATION SHALL BE GLASS FIBER, ASTM C547, RIGID MOLDED, NONCOMBUSTIBLE. MINIMUM SERVICE TEMPERATURE, -29°C WITH A MAXIMUM OF 232°C WITH A MAXIMUM MOISTURE ABSORPTION 0.2% BY VOLUME. FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPMENT OF 50 OR LESS.
 - PVC JACKET SHALL BE ASTM C291, ONE PIECE MOLDED TYPE FITTING COVERS AND SHEET MATERIAL, OFF WHITE COLOR, 20 MIL THICK. MINIMUM SERVICE TEMPERATURE, -40°C TO A MAXIMUM 66°C. FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPMENT OF 50 OR LESS.
 - FLOW CONTROL VALVES FOR HWR LINES SHALL BE GRISWOLD #3532FA AT 30 LPM.
- 7.0 BACK MOUNTED ACOUSTICAL PANEL AP-2
- BACK-MOUNTED EDGE REINFORCED ACOUSTICAL PANEL: MANUFACTURER'S STANDARD PANEL CONSTRUCTION CONSISTING OF FACING MATERIAL LAMINATED TO FRONT, EDGES AND BACK BORDER OF MOLDED GLASS FIBERBOARD CORE, WITH EDGES CHEMICALLY HARDENED TO REINFORCE PANEL PERIMETER AGAINST WARPAGE AND DAMAGE, AND COMPLYING WITH THE FOLLOWING REQUIREMENTS:
CORE DENSITY SHALL BE 96 - 112 KG PER CUBIC METER.(R=0.7 NOMINAL INSULATION VALUE).
MANUFACTURER: KNOLL
STYLE: CASUAL ELEGANCE W920
CONTENT: 100% POLYESTER
WIDTH: 1676 MM
THICKNESS: 19 MM
FINISH: TEFLON-SOIL AND STAIN REPELLENT
COLOR: W920/1 NEUTRAL
EDGE DETAIL AND CORNER DETAIL: SQUARE
 - MECHANICALLY-MOUNTED EDGE-REINFORCED PANELS: METAL PANEL CLIP AND BASE SUPPORT BRACKET SYSTEM AND CONSISTING OF TWO PART PANEL CLIP, WITH ONE PART OF EACH CLIP MECHANICALLY ATTACHED TO THE BACK OF PANEL AND THE OTHER TO WALL SUBSTRATE, DESIGNED TO SUPPORT PANELS LITERALLY; AND BASE SUPPORT BRACKETS DESIGNED TO SUPPORT FULL WEIGHT OF PANELS; WITH BOTH DESIGNED TO ALLOW PANEL REMOVAL.
 - ACCEPTABLE MANUFACTURER AND PRODUCT: SOUNDSOAK "CONCEPT COLLECTION"; ARMSTRONG WORLD INDUSTRIES, INC.



1 1
DETAIL - WEST WALL

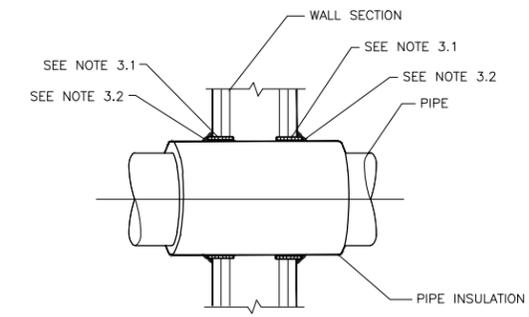
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		BY	BY	BY			
		DATE	DATE	DATE			
APPROVED FOR IMPLEMENTATION							
BY CD FLOWERS							
FOR PNNL DATE 4/2/02							
PROJ		TITLE		INDEX NO		BLDG NO	
F		HPCS-2, PLAN B		8400		3020	
SIZE		DWG NO		H-3-309491		REV NO	
8900		1				1	
SCALE		SHEET		2		OF 5	
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RELEASE
04-02-02
DATE

EDP # S454239-EDP01

U. S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
PACIFIC NORTHWEST NATIONAL LABORATORY
OPERATED BY BATTTELLE MEMORIAL INSTITUTE

PIPING AND LOCATION
OF NEW AIR
HANDLING UNITS



UL SYSTEM WL5001

DETAIL - FIRE WALL PENETRATION
SCALE: NONE

NOTES:

- 1.0 THROUGH PENETRANTS: ONE METALLIC PIPE TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE TO BE RIGIDLY SUPPORT ON BOTH SIDES OF WALL ASSEMBLY.
- 2.0 PIPE COVERING: NOM 1" OR 2" THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN. 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH ALL SERVICES JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SEALED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH THE PRODUCT. WHEN NOM 1" THICK PIPE COVERING IS USED, THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IN THE GYPSUM WALLBOARD LAYER ON EACH SIDE OF THE WALL SHALL BE 1/4" TO A MAX. OF 3/8". WHEN NOM 2" THICK PIPE COVERING IS USED, THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IN THE GYPSUM WALLBOARD LAYERS ON EACH SIDE OF THE WALL SHALL BE MIN. 1/2" TO MAX. 3/4".

NOTE: THE PIPE COVERING MATERIAL BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.
- 3.0 FIRESTOP SYSTEM: INSTALL SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY. THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:
 - 3.1 FILL, VOID OR CAVITY MATERIALS - WRAP STRIP - NOM 1/4" THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON THE ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2" WIDE STRIPS. NOM 2" WIDE STRIP TIGHTLY WRAPPED AROUND PIPE COVERING(FOIL SIDE OUT) WITH SEAM BUTTED. WRAP STRIP LAYER SECURELY BOUND WITH STEEL WIRE OR ALUMINUM FOIL TAPE AND SLID INTO INTO ANNULAR SPACE APPROXIMATELY 1 1/4" SUCH THAT APPROXIMATELY 3/4" OF THE WRAP STRIP WIDTH PROTRUDES FROM THE WALL SURFACE. ONE LAYER OF WRAP STRIP REQUIRED WHEN NOM 1" THICK PIPE COVERING IS USED. TWO LAYERS OF WRAP STRIP ARE REQUIRED WHEN NOM 2" THICK PIPE COVERING IS USED. MINNESOTA MINING & MFG. CO - FS-195+.
 - 3.2 FILL, VOID OR CAVITY MATERIALS - CAULK - MIN. 1/4" DIAMETER CONTINUOUS BEAD APPLIED TO THE WRAP STRIP/WALL INTERFACE AND TO THE EXPOSED EDGE OF THE WRAP STRIP LAYER APPROXIMATELY 3/4" FROM THE WALL SURFACE. MINNESOTA MINING & MFG. CO - CP 25WB+.

FOR GENERAL NOTES SEE SHEET 2

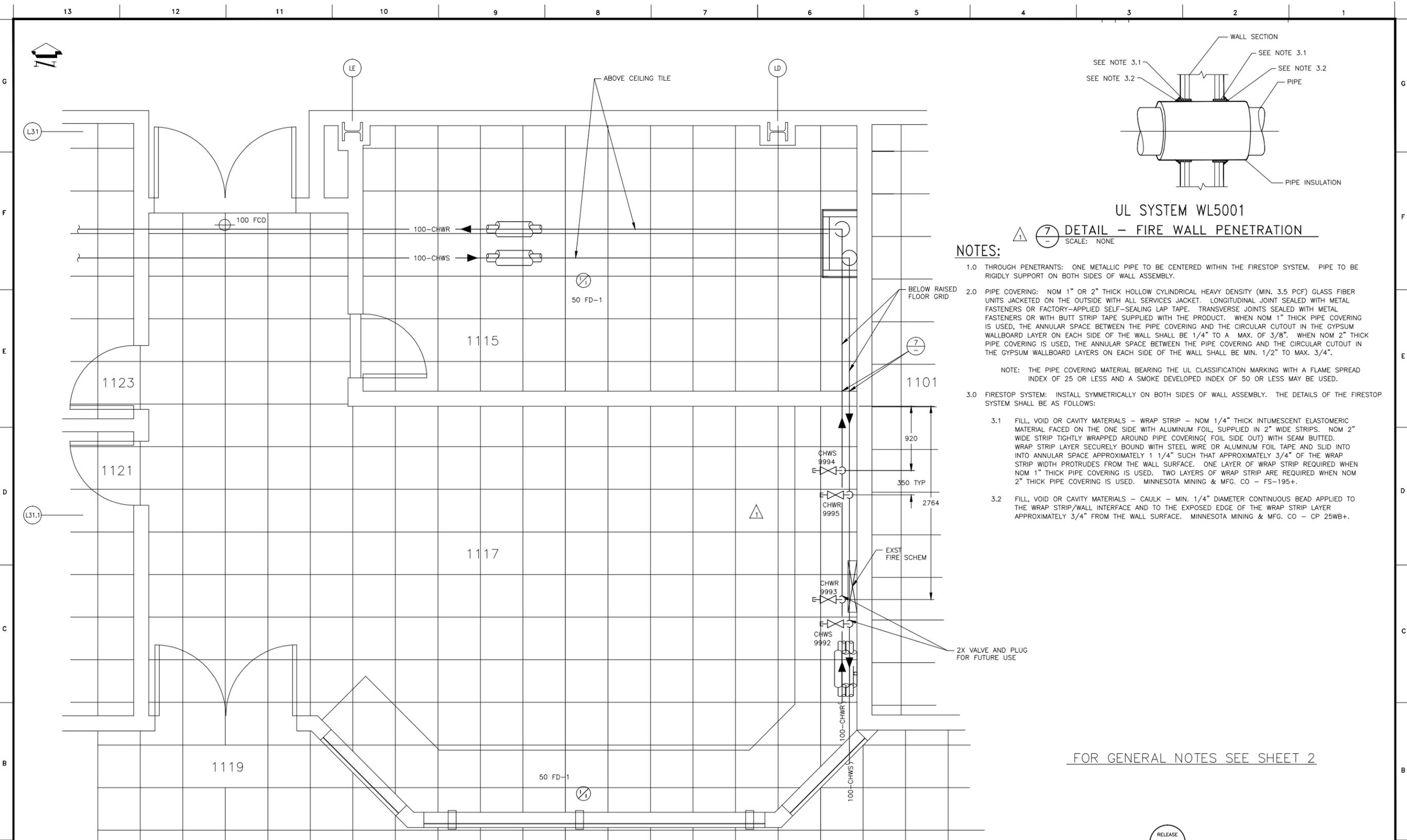
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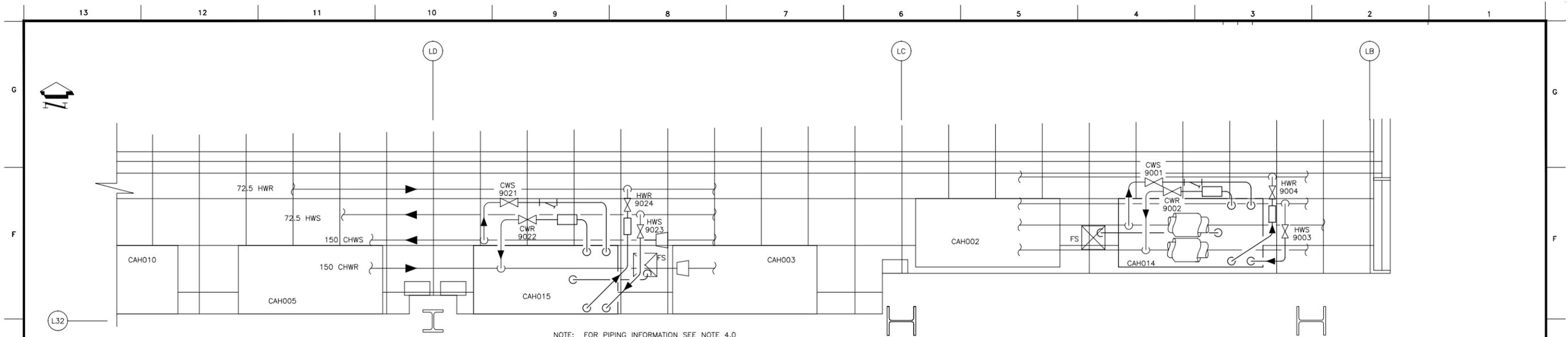
EDP # S454239-EDP01

DRAWN R.C. NELSON	DATE 6/11/01	M	U. S. DEPARTMENT OF ENERGY RICHLAND OPERATIONS OFFICE
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ENGR DAVID BRAUN	DATE 4/2/02		PIPING AND LOCATION OF NEW AIR HANDLING UNITS
APVD DM BROWN	DATE 4/2/02		HPCS-2, PLAN B
PROJ NO	SIZE F	INDEX NO 8400	BLDG NO 3020
OTHER	DATE 4/2/02	DWG NO H-3-309491	REV NO 1
APPROVED FOR IMPLEMENTATION BY CD FLOWERS	DATE 4/2/02	SCALE 1:20	SHEET 3 OF 5

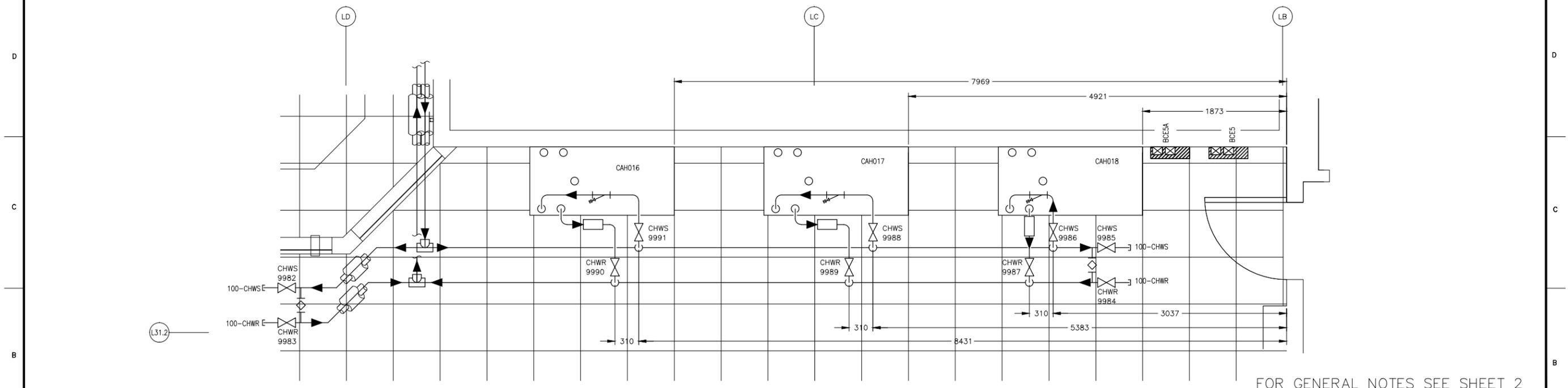
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NEXT USED ON							
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CADFILE							

NOTE: FOR PIPING INFORMATION SEE NOTE 4.0
2
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DETAIL - ROOM 1115 & 1117





3
1
DETAIL - ROOM 1119



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1
DETAIL - ROOM 1119

FOR GENERAL NOTES SEE SHEET 2

NOTE: FOR PIPING INFORMATION SEE NOTE 4.0 & 5.0

RELEASE
04-02-02
DATE

EDP # S454239-EDP01

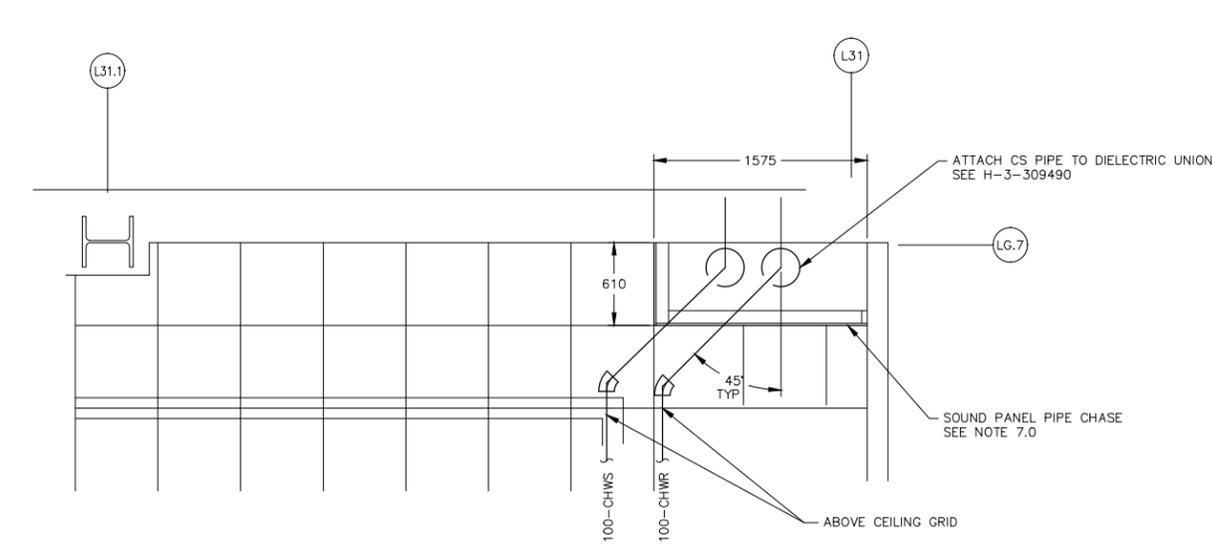
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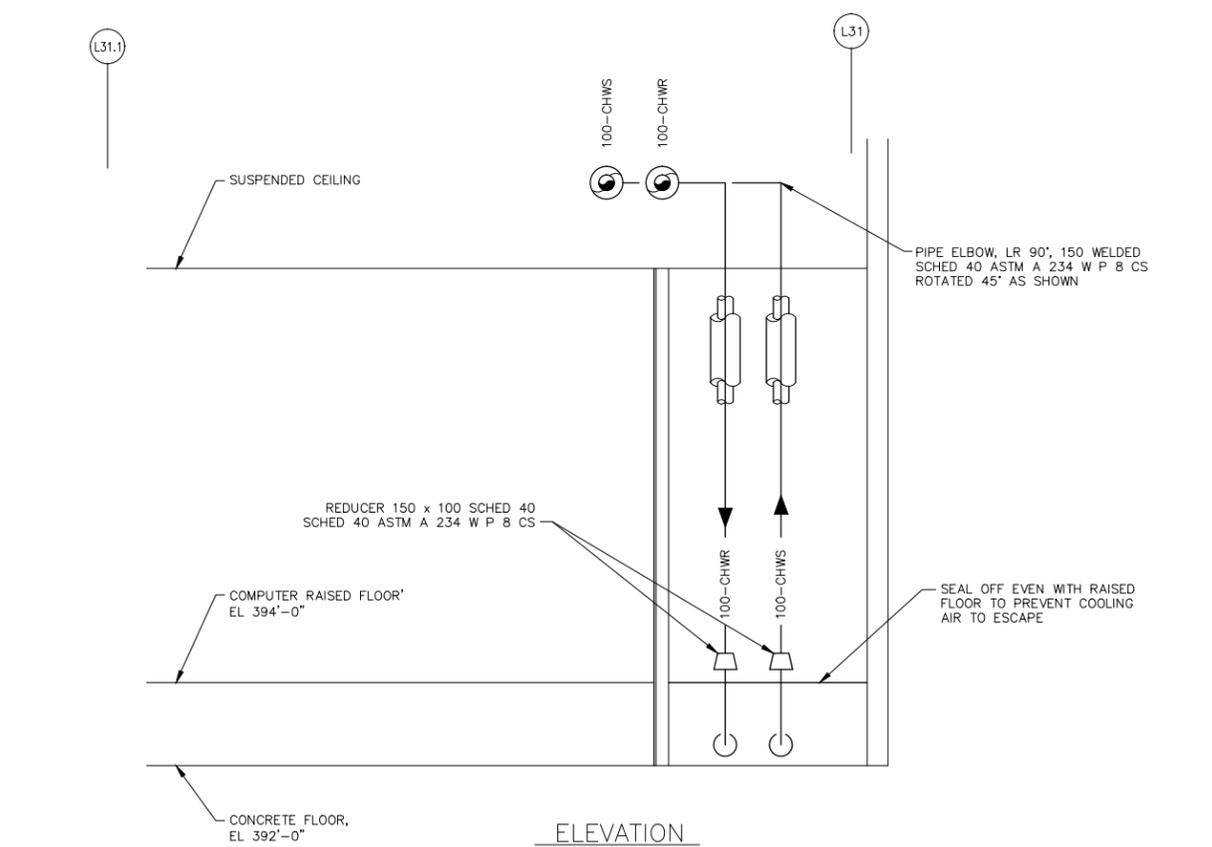
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OTHER			SIZE INDEX NO BLDG NO DWG NO F 8400 3020 H-3-309491 1	
APPROVED FOR IMPLEMENTATION BY CD FLOWERS		DATE 4/2/02	SCALE 1:20 SHEET 4 OF 5	

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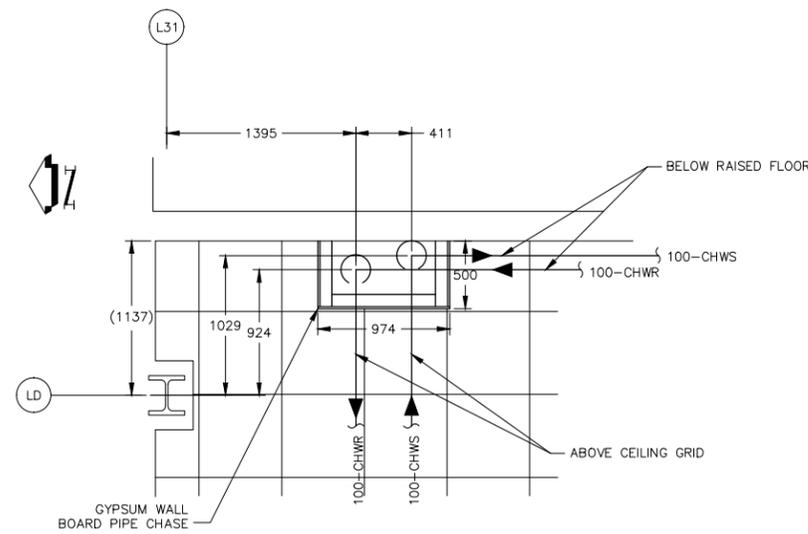


PLAN

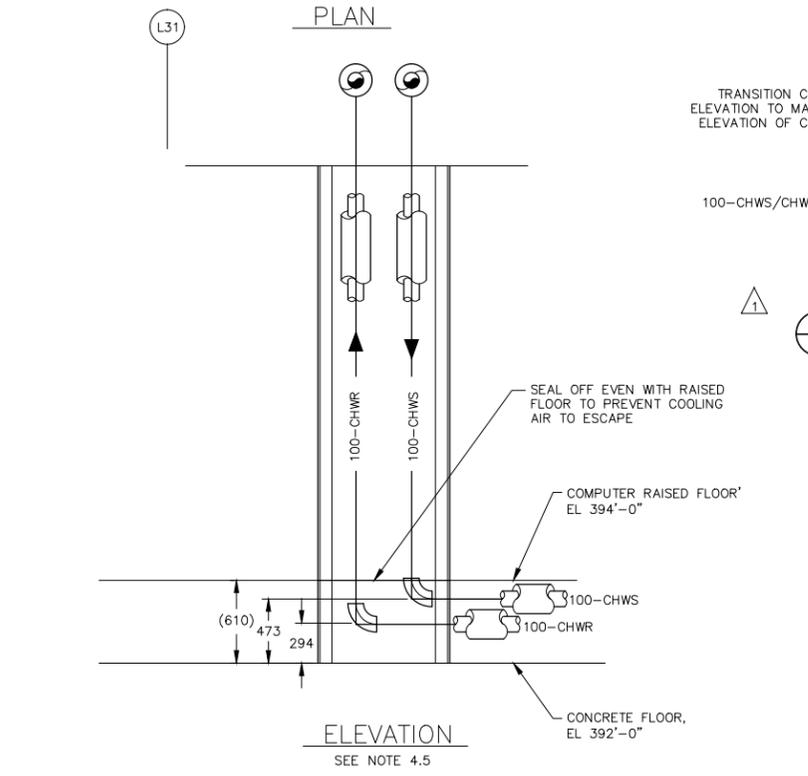


ELEVATION

5
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DETAIL - ROOM 1125

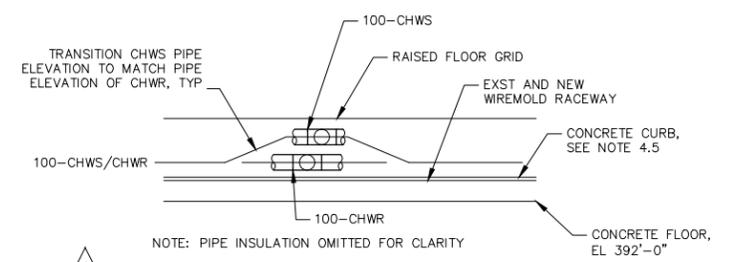


PLAN



ELEVATION

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DETAIL - ROOM 1115



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ELEVATION - ROOM 1119

RELEASE FOR GENERAL NOTES SEE SHEET 2
DATE 04-02-02

EDP # S454239-EDP01

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U. S. DEPARTMENT OF ENERGY RICHMOND OPERATIONS OFFICE PACIFIC NORTHWEST NATIONAL LABORATORY OPERATED BY BATTTELLE MEMORIAL INSTITUTE HPCS-2, PLAN B H-3-309491 SHEET 5 OF 5												INDEX NO 8400 3020 8900		BLDG NO 3020		DWG NO H-3-309491		SCALE 1:20		REV NO 1	

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