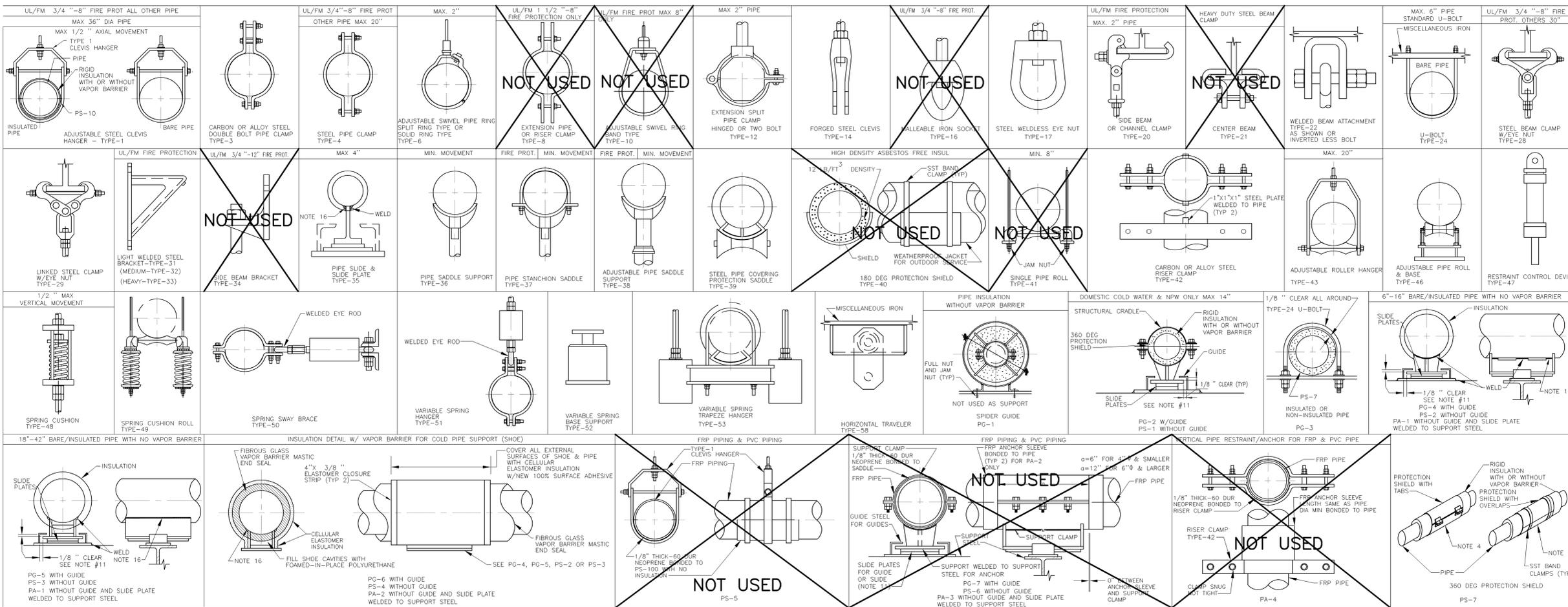


Date (mm dd yyyy)	Issued For	Rev.
09-21-2007	TITLE 1 60% REVIEW	A
10-24-2007	TITLE 1 100% COMPLETE	B
12-07-2007	TITLE II DESIGN 30% REVIEW SUBMITTAL	C
03-28-2008	TITLE II DESIGN 60% REVIEW SUBMITTAL	D
07-31-2008	TITLE II DESIGN 90% REVIEW SUBMITTAL	E
08-25-2008	TITLE II DESIGN 100% OWNER REVIEW	F
02-19-2009	TITLE II CONSTRUCTION BID ISSUE	G



ROD SIZE	650°F
1/2"	1130 LBS
3/4"	2710 LBS
1"	4960 LBS
1 1/4"	8000 LBS

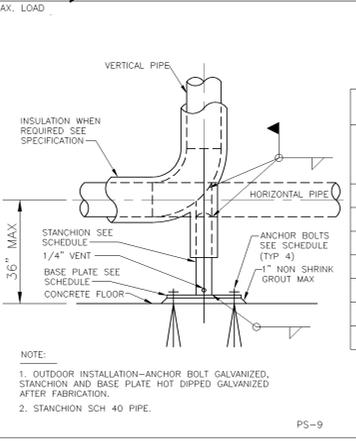
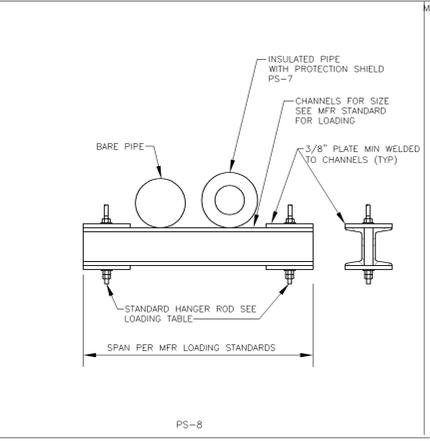
  

ROD SIZE	1810 LBS
3/8"	610 LBS
5/8"	1810 LBS
3/4"	2710 LBS
7/8"	3770 LBS

T = MAX LATERAL MOVEMENT OF PIPE  
L = MINIMUM LENGTH OF ROD BETWEEN POINTS OF LOAD

T	L
6"	86"
5.5"	79"
5"	72"
4.5"	65"
4"	58"
3.5"	50"
3"	43"
2.5"	36"
2"	29"
1.5"	22"
1"	15"
5"	7"

TABLE "H"



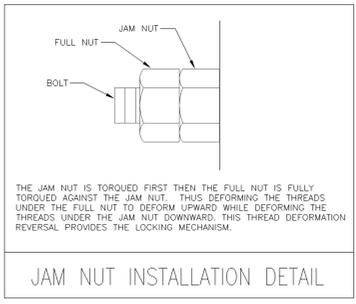
SCHEDULE					
ELBOW SIZE	STANCHION SIZE	ANCHOR BOLT SIZE	EMBEDMENT MIN	BASE PLATE SIZE	MAX ALLOWABLE STANCHION LOAD @ 100 DEG F
14"	8"	3/4"	4 1/2"	15"X15"X3/4"	2000 LBS
12"	6"	3/4"	4 1/2"	14"X14"X1/2"	1610 LBS
10"	6"	3/4"	4 1/2"	14"X14"X1/2"	1450 LBS
8"	4"	3/4"	4 1/2"	10"X10"X1/2"	1080 LBS
6"	4"	3/4"	4 1/2"	10"X10"X1/2"	1250 LBS
4"	2"	3/4"	4 1/2"	9"X9"X1/2"	1125 LBS

- NOTES:
- USE CLEVIS HANGERS ON OUTSIDE OF PROTECTION SHIELD FOR INSULATED COLD PIPES W/ VAPOR BARRIER.
  - USE ROLLER HANGERS RESTING ON PROTECTION SADDLES FOR INSULATED HOT PIPES.
  - THE SELECTION OF TYPE & MATERIAL SHALL BE MADE BY THE CONTRACTOR AND SUBMITTED FOR APPROVAL, PER SHOP DRAWING REQUIREMENT.
  - THE DESIGN SHALL BE IN ACCORDANCE WITH MSS-SP-58 OR AS SPECIFIED.
  - FOR SHIELDS USED WITH ROLLERS OR POINT LOADING REFER TO TABLE 5 OF MSS-SP-69.
  - ANCHOR BOLTS & CONCRETE FASTENERS MAY BE USED AS SPECIFIED IN SPECIFICATIONS/DRAWINGS.
  - SEE TYPE-50 WHERE NECESSARY TO DAMPEN PIPING MOTION.
  - ALL NUTS INDICATED ON RODS AND BOLTS SHALL BE LOCK TYPE.
  - INSULATED PIPE SHALL HAVE CONTINUITY OF INSULATION/VAPOR BARRIER AT ALL SUPPORT DEVICES.
  - ALL HANGING DEVICES SHALL BE HOT DIP GALVANIZED AFTER FABRICATION FOR USE WHEN EXPOSED TO OUTDOOR CONDITIONS.
  - PRE-INSULATED HANGER SYSTEMS LIMITED TO 150°F MAX. TEMPERATURE.
  - FOR TYPE PG-2, PG-4, PG-5, PG-6 & PG-8 SLIDE PLATES NOT REQUIRED FOR INDOOR AMBIENT AND COLD PIPES UNLESS INDICATED ON DRAWINGS. GREASE BETWEEN SUPPORT AND SUPPORTING STEEL. USE MOLYBDENUM DISULPHIDE GREASE UNLESS OTHERWISE NOTED.
  - TYPE-3 OR TYPE-4 MAY BE USED IF TABLE "H" REQUIREMENTS ARE MET.
  - ALL STRAPS (BANDS) FOR INSULATION AND PROTECTION SADDLES SHALL BE STAINLESS STEEL (SST).
  - OUTDOOR PIPE SUPPORTS SHALL BE HOT DIPPED GALVANIZED.
  - NOT ALL SYSTEMS MAY BE REQUIRED IN EVERY CONTRACT PACKAGE.
  - WELDING PIPE TO SUPPORT STEEL USE FILET TYPE WELD AND SIZE OF WELD TO BE SAME AS THICKNESS OF PIPE.

- SELECTION PROCEDURE:
- LOCATE THE SYSTEM, TEMPERATURE & INSULATION CONDITION IN THE FIRST THREE COLUMNS.
  - READ ACROSS THE COLUMN HEADINGS FOR THE TYPE OF COMPONENT TO BE USED.
  - NUMBERS IN SCHEDULE REFER TO TYPES AS DETAILED ABOVE. THESE CORRESPOND TO MSS SP-58 EXCEPT FOR PS, PG & PA PREFIXED TYPES, THESE ARE OFFELS STANDARDS.
  - NOTES ON DETAILS REGULATE USE LIMITATIONS ON EACH TYPE OF DETAIL.
  - "PS, PG & PA" DESIGNATED TYPES UTILIZE SP-58 MATERIALS GUIDELINES AS STANDARDS SPECIFIED.
  - UL/FM LIMITATIONS FOR FIRE PROTECTION PIPE NOTED.

### HANGER AND SUPPORT SELECTION SCHEDULE

SYSTEM	TEMPERATURE RANGE	INSULATION	HORIZONTAL PIPE ATTACHMENTS	VERTICAL PIPE ATTACHMENTS	BUILDING STRUCTURE ATTACHMENTS	REMARKS
FIRE PROTECTION						SEE SPECIFICATIONS
INDOOR AND OUTDOOR PIPING SEE SPECIFICATIONS	33°F - 140°F	YES	TYPE-1, TYPE-40, TYPE 43, TYPE 46, TYPE-49, PG-1, PG-2, PG-3, PG-4, PG-5, PG-6, PG-7, PS-1, PS-2, PS-3, PS-4, PS-5, PS-6, PS-9, PA-1, PA-2 AND PA-3	PS-9	TYPE-28, TYPE-29	
		NO	TYPE-1, PA-1	TYPE-42 & PS-9	TYPE-28, TYPE-29	
SANITARY-PVC STORM-PVC	33°F - 68°F	YES HORIZONTAL STORM	TYPE-1		TYPE-28, TYPE-29	
		NO VERTICAL STORM		PA-4		
FRP PIPING			PS-5	PA-4	TYPE-28, TYPE-29	



This drawing has been prepared solely for the use of Brookhaven National Laboratory and there are no representations of any kind made by Giffels, Partnership to any party with whom Giffels, Partnership has not entered into a contract.

This drawing shall not be used for construction purposes until the seal and signature of the responsible registrant appears on the drawing, and proper permit forms and related fees are transmitted by the Owner, Owner's Agent or Contractor to the Authority Having Jurisdiction.

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Project No.: SF070003

**BROOKHAVEN NATIONAL LABORATORY**

UNDER CONTRACT WITH  
**UNITED STATES DEPARTMENT OF ENERGY**  
PLANT ENGINEERING DIVISION  
UPTON, NEW YORK 11973

JOB TITLE: CENTRAL CHILLED WATER FACILITY PHASE II  
DWG. TITLE: MECHANICAL PIPE SUPPORTS

JOB NO.	SHEET NO.	REVISION	DATE	ENCL.	APPR.	DLA

SCALE: NO SCALE  
ES&H RISK LEVEL: APPR. BY W. HARRISON  
BLDG. NO.: 11705  
BLDG. NO.: 600  
M-004