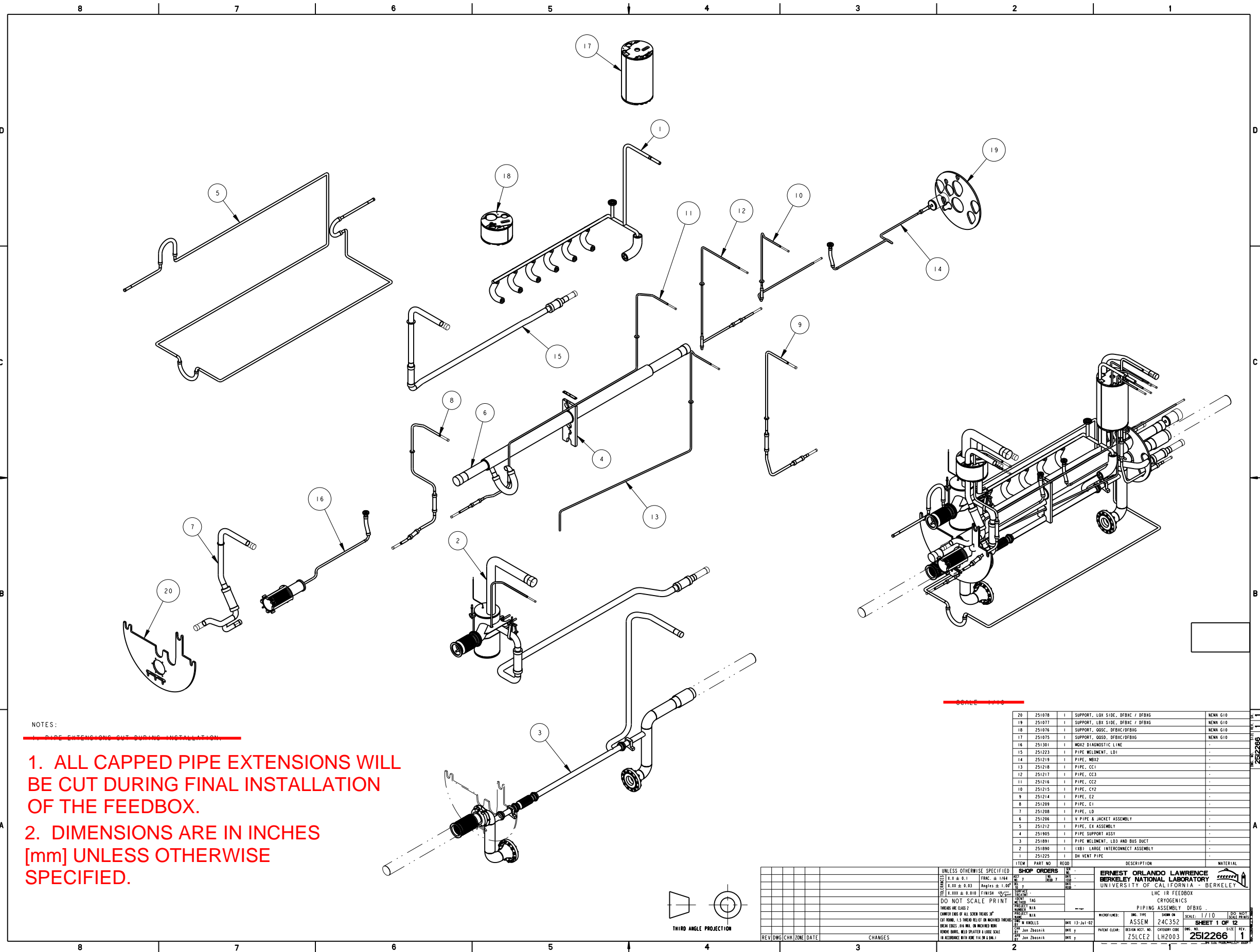


Daryl Oshatz

Tom Peterson

DULIE- I AM GENERALLY CONFUSED AS TO WHY YOU'RE SPECIFYING TUBE SIZE, WALL THICKNESS, AND FLEX HOSE DETAILS THROUGHOUT 25I226. ISN'T THIS INFORMATION SPECIFIED AT THE PIPE SUBASSEMBLY LEVEL - FOR EXAMPLE IN THE 25I215 DRAWING. IF WE DO IT BOTH PLACES ONE MUST BE REFERENCE AND ITS A LOT OF EXTRA WORK. AM I MISSING SOMETHING?

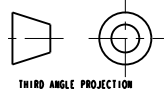
NAME: ARHARRIS OBJECT: 25I226\_1 DATE: 13-Jul-02 20:36:39



NOTES:

~~PIPE EXTENSIONS CUT DURING INSTALLATION~~

1. ALL CAPPED PIPE EXTENSIONS WILL BE CUT DURING FINAL INSTALLATION OF THE FEEDBOX.
2. DIMENSIONS ARE IN INCHES [mm] UNLESS OTHERWISE SPECIFIED.



REV	DATE	BY	CHK	DESCRIPTION

ITEM	PART NO	REQD	DESCRIPTION	MATERIAL
20	251078	1	SUPPORT, LHX SIDE, DFBAC / DFBAG	NEMA GIO
19	251077	1	SUPPORT, LBY SIDE, DFBAC / DFBAG	NEMA GIO
18	251076	1	SUPPORT, GQSC, DFBAC/DFBAG	NEMA GIO
17	251075	1	SUPPORT, GQSD, DFBAC/DFBAG	NEMA GIO
16	251201	1	NOZZLE DIAGNOSTIC LINE	-
15	251223	1	PIPE, WELMENT, LDI	-
14	251219	1	PIPE, MBR2	-
13	251218	1	PIPE, CC1	-
12	251217	1	PIPE, CC3	-
11	251216	1	PIPE, CC2	-
10	251215	1	PIPE, CY2	-
9	251214	1	PIPE, E2	-
8	251209	1	PIPE, E1	-
7	251208	1	PIPE, LD	-
6	251206	1	V PIPE & JACKET ASSEMBLY	-
5	251212	1	PIPE, EX ASSEMBLY	-
4	251905	1	PIPE SUPPORT ASSY	-
3	251091	1	PIPE WELMENT, LDI AND BUS DUCT	-
2	251090	1	LHX - LARGE INTERCONNECT ASSEMBLY	-
1	251225	1	DN VENT PIPE	-

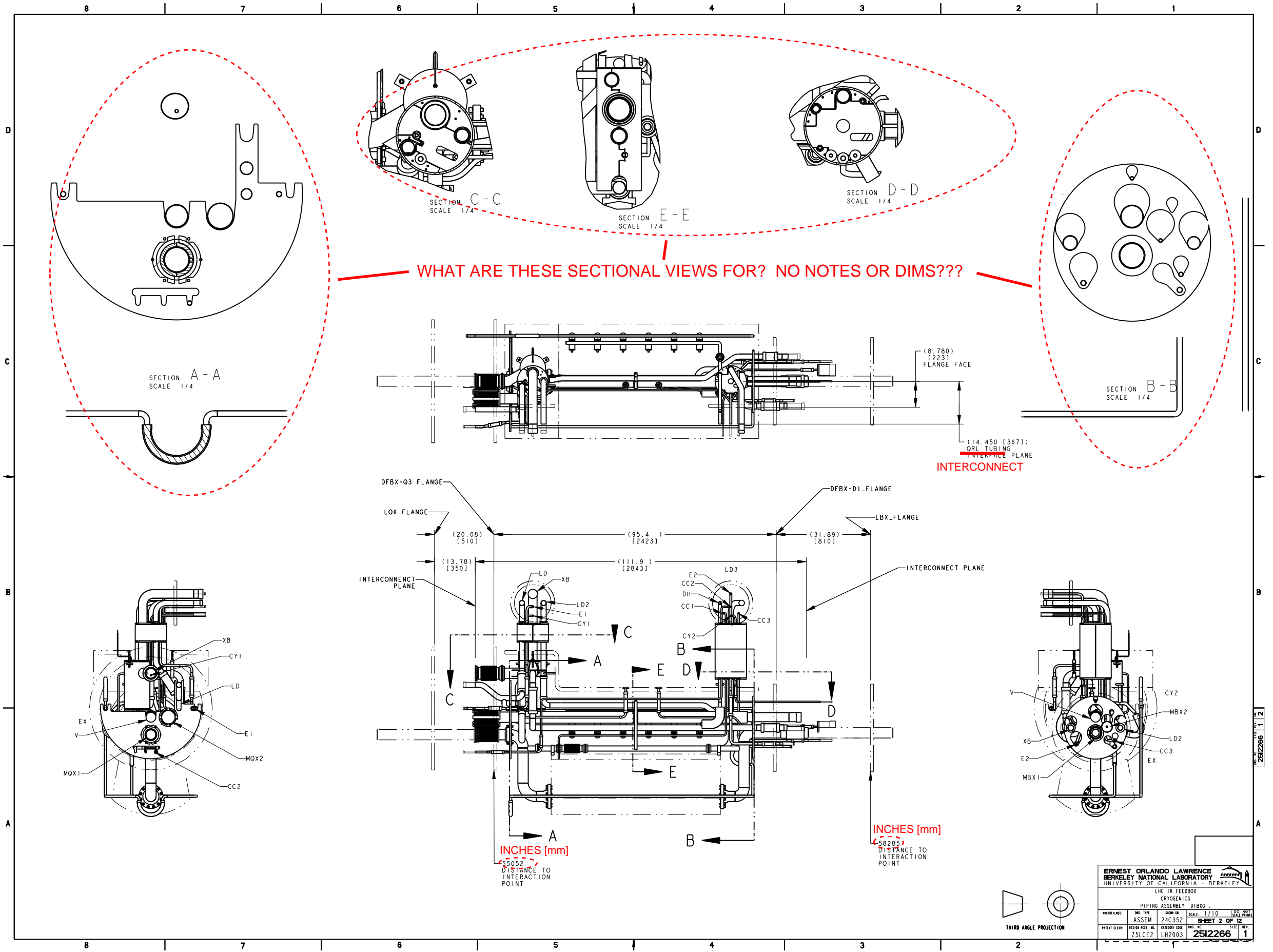
UNLESS OTHERWISE SPECIFIED  
 X.X ± 0.1 FRACTION ± 1/64  
 X.XX ± 0.03 ANGLES ± 1.00°  
 X.XXX ± 0.010 FINISH 125  
 DO NOT SCALE PRINT  
 THREADS PER CLASS 2  
 CORNER RADIUS OF ALL CORNERS 3/16"  
 CAP SCREWS: 1.5 THREADED RELIEF OR MACHINED THREADS  
 HOLE DRILLS: 50% DIA. OR MACHINED HOLE  
 REMOVE BURRS, WELD SPATTER & LOOSE SCALE  
 IN ACCORDANCE WITH ASME B31.3 & 8.01.1

SHOP ORDERS  
 QTY: 1  
 DATE: 13-Jul-02  
 BY: W. KROLLS  
 CHECKED: Jan Zbosnik  
 DATE: y  
 BY: Jan Zbosnik  
 DATE: y

ERNEST ORLANDO LAWRENCE  
 BERKELEY NATIONAL LABORATORY  
 UNIVERSITY OF CALIFORNIA - BERKELEY

LHC IR FEEDBOX  
 CRYOGENICS  
 PIPING ASSEMBLY, DFBAG

SCALE: 1/10  
 SHEET 1 OF 12  
 25I2266  
 1

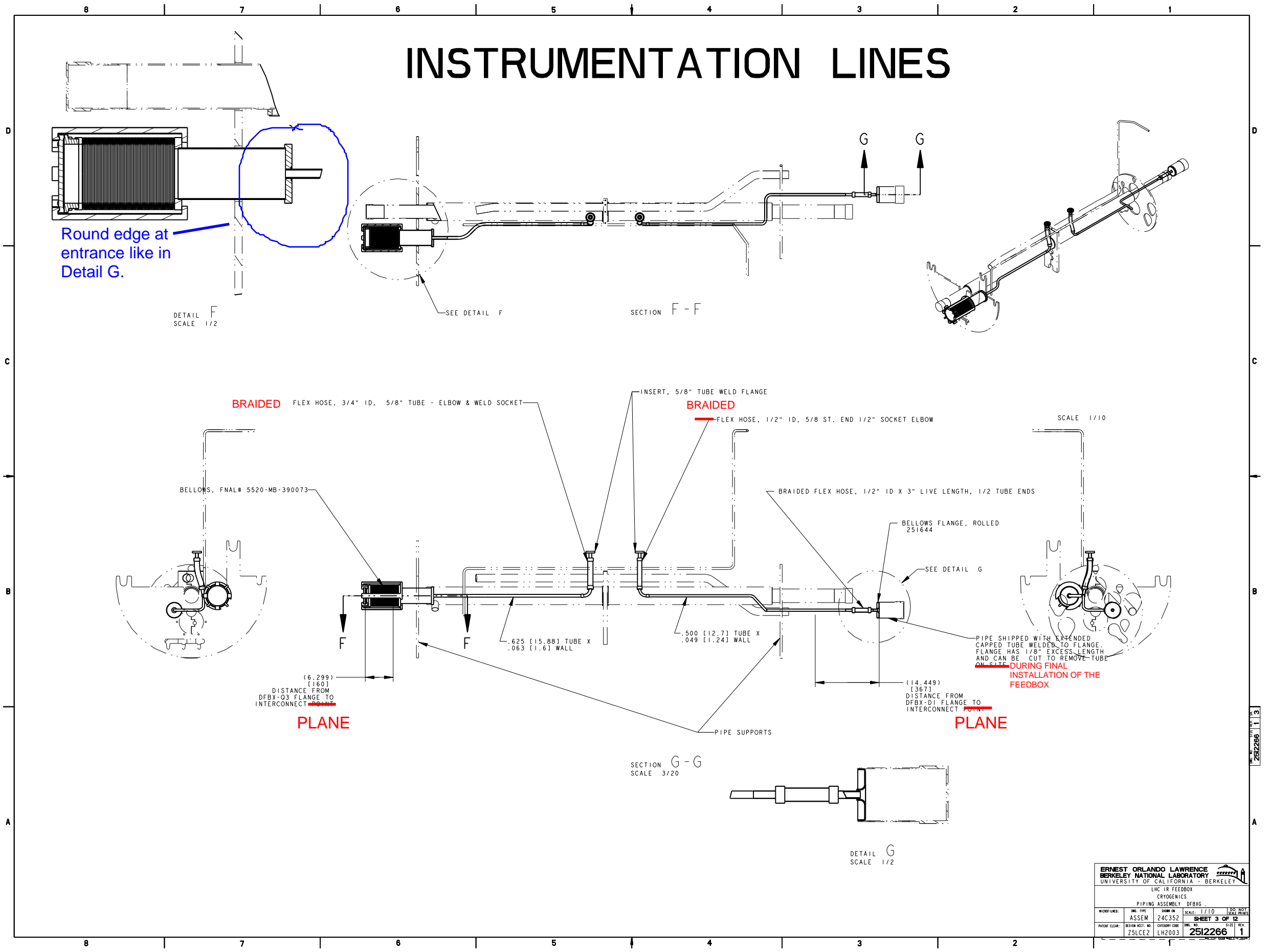


WHAT ARE THESE SECTIONAL VIEWS FOR? NO NOTES OR DIMS???

ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY			
LHC IR FEEDBOX CRYogenics			
PIPING ASSEMBLY, DFBIG			
DRG. TYPE	DRG. NO.	SCALE	SHEET NO.
ASSEM	24C352	1/10	2 OF 12
PATENT CLEAR.	DESIGN ACCT. NO.	CATEGORY CODE	DRG. NO.
ZSLCE2	LH2003	2512266	1

NAME: ARHARRIS OBJECT: 251226\_3 DATE: 13-Jul-02 20:37:56

# INSTRUMENTATION LINES

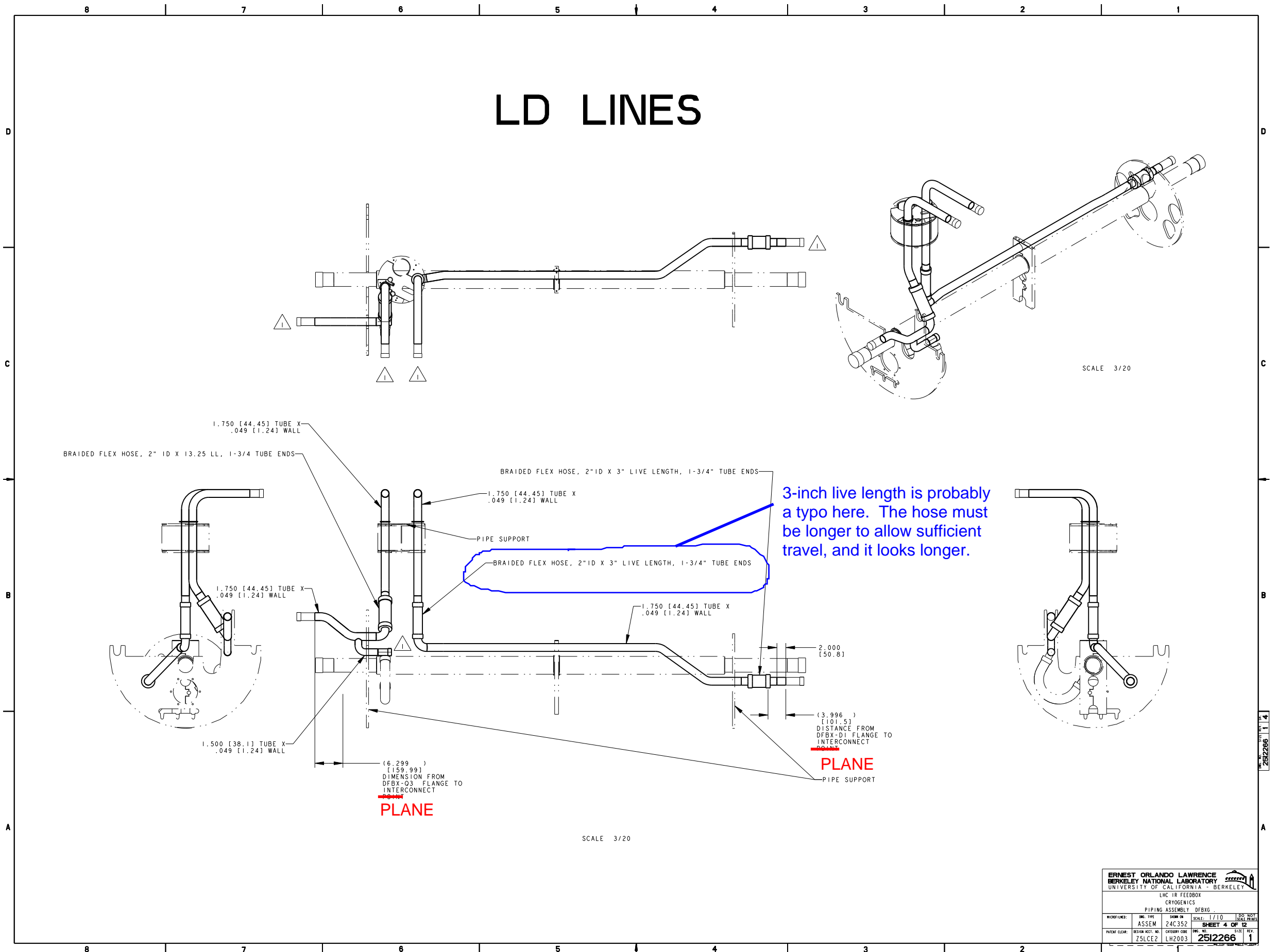


ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY			
LHC IR FEEDBOX CRYOGENICS			
PIPING ASSEMBLY, DFBXG			
DESIGNER:	DATE:	SCALE:	SHEET NO.:
ASSEM	24C352	1/10	3 OF 12
PATENT CLEAR:	DESIGN ACCT. NO.:	CATEGORY CODE:	REV. NO.:
ZSLCEZ	LH2003	2512266	1

2512266 1 13

NAME: ARHARRIS OBJECT: 251226\_4 DATE: 13-Jul-02 20:38:30

# LD LINES



3-inch live length is probably a typo here. The hose must be longer to allow sufficient travel, and it looks longer.

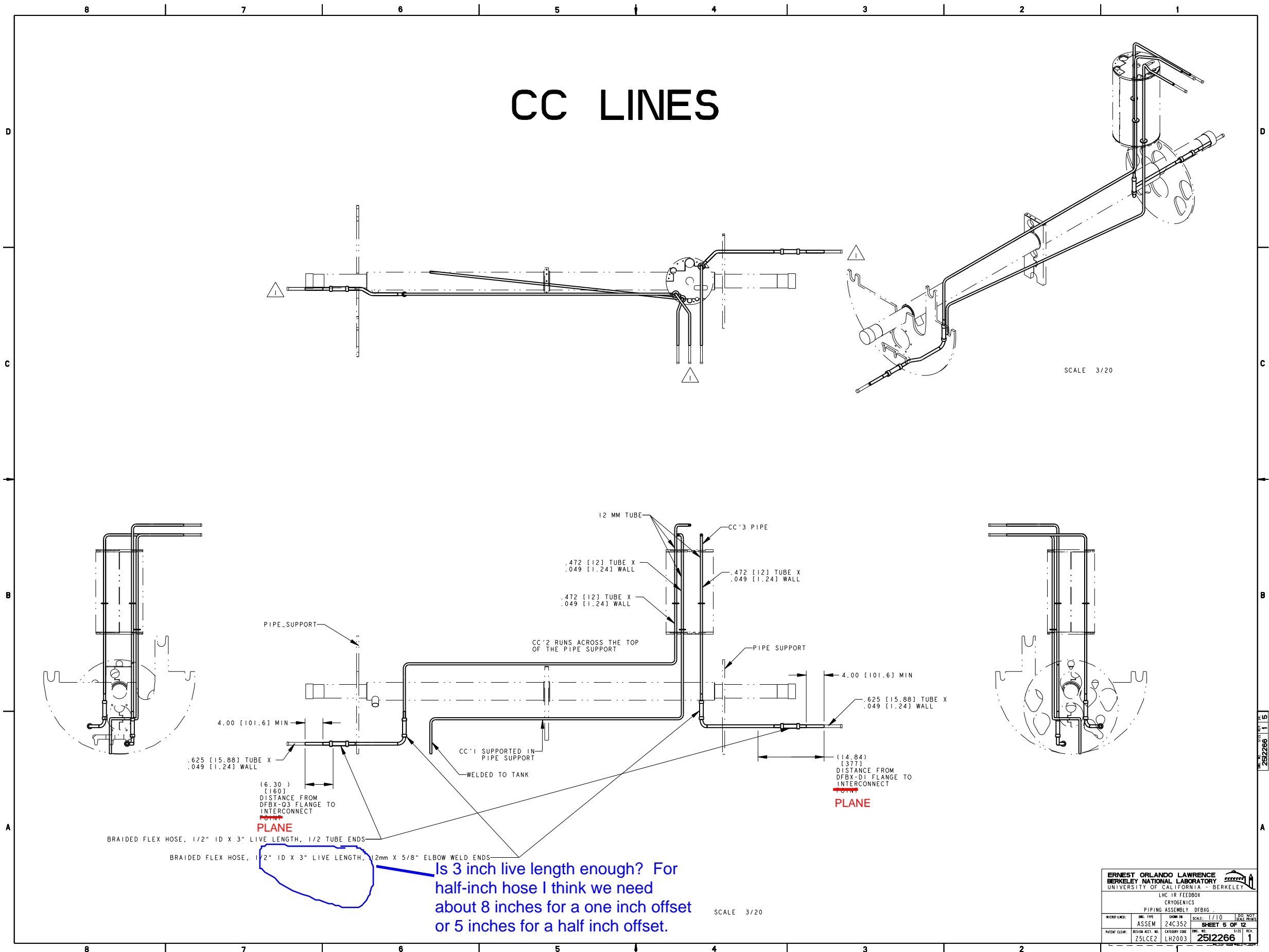
SCALE 3/20

SCALE 3/20

ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY			
LHC IR FEEDBOX CRYogenics			
PIPING ASSEMBLY, DFBIG			
WORK NUMBER:	DESIGN TYPE:	SHOW OR:	SCALE: 1/10
ASSEM	24C352		
PATENT CLEAR:		DESIGN ACCT. NO.:	REV. NO.:
ZSLCEZ		LH2003	2512266
SHEET 4 OF 12			1

NAME: ARHARRIS OBJECT: 251226\_5 DATE: 13-Jul-02 20:38:33

# CC LINES

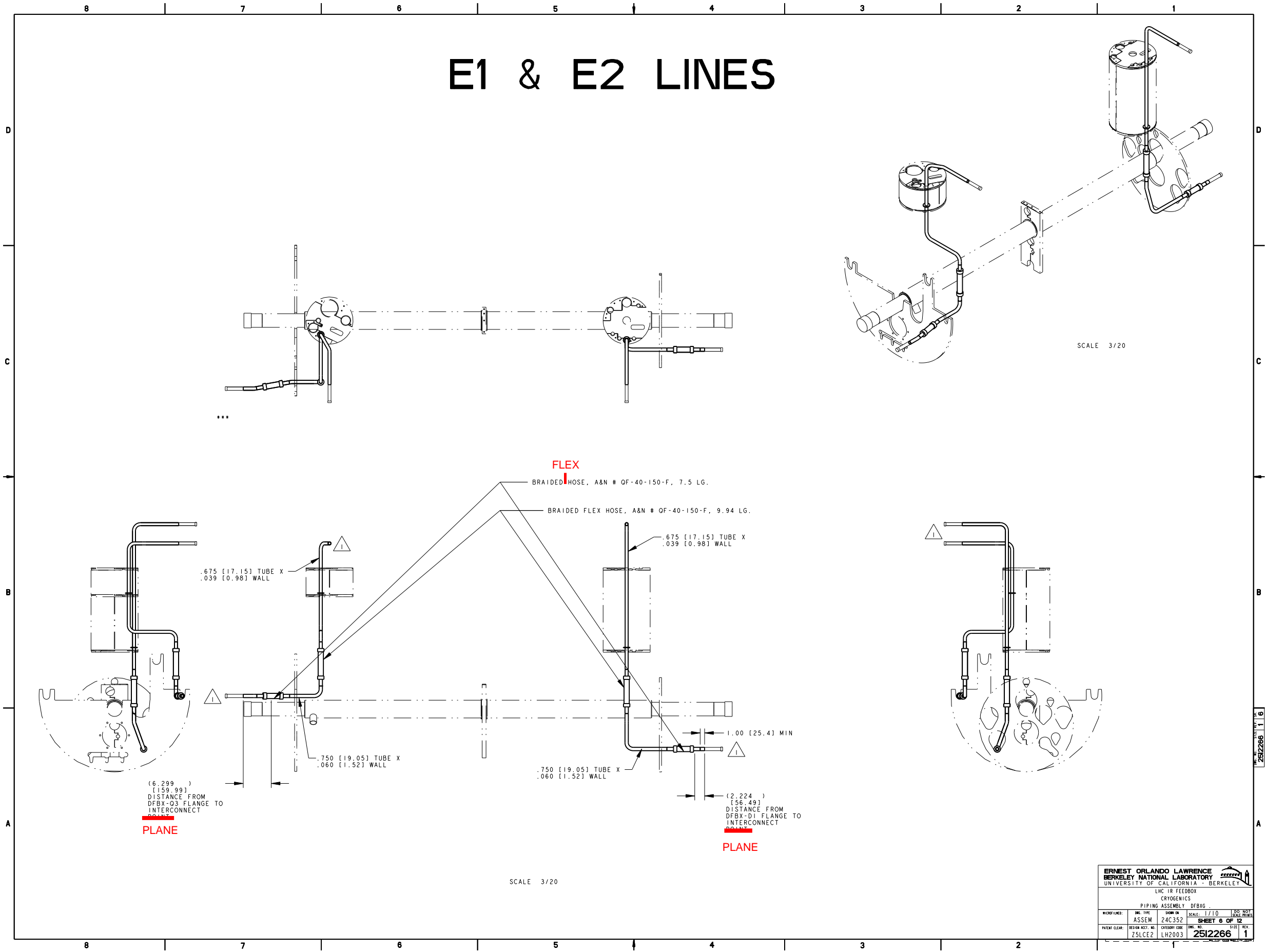


Is 3 inch live length enough? For half-inch hose I think we need about 8 inches for a one inch offset or 5 inches for a half inch offset.

ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY			
LHC IR FEEDBOX CRYogenics			
PIPING ASSEMBLY DFBX			
DESIGNER:	DATE:	SCALE:	SHEET NO.
ASSEM	24C352	1/10	5 OF 12
DESIGN ACCT. NO.	CATEGORY CODE	DRW. NO.	SIZE
ZSLCE2	LH2003	2512266	1

NAME: ARHARRIS OBJECT: 251226\_6 DATE: 13-Jul-02 20:38:37

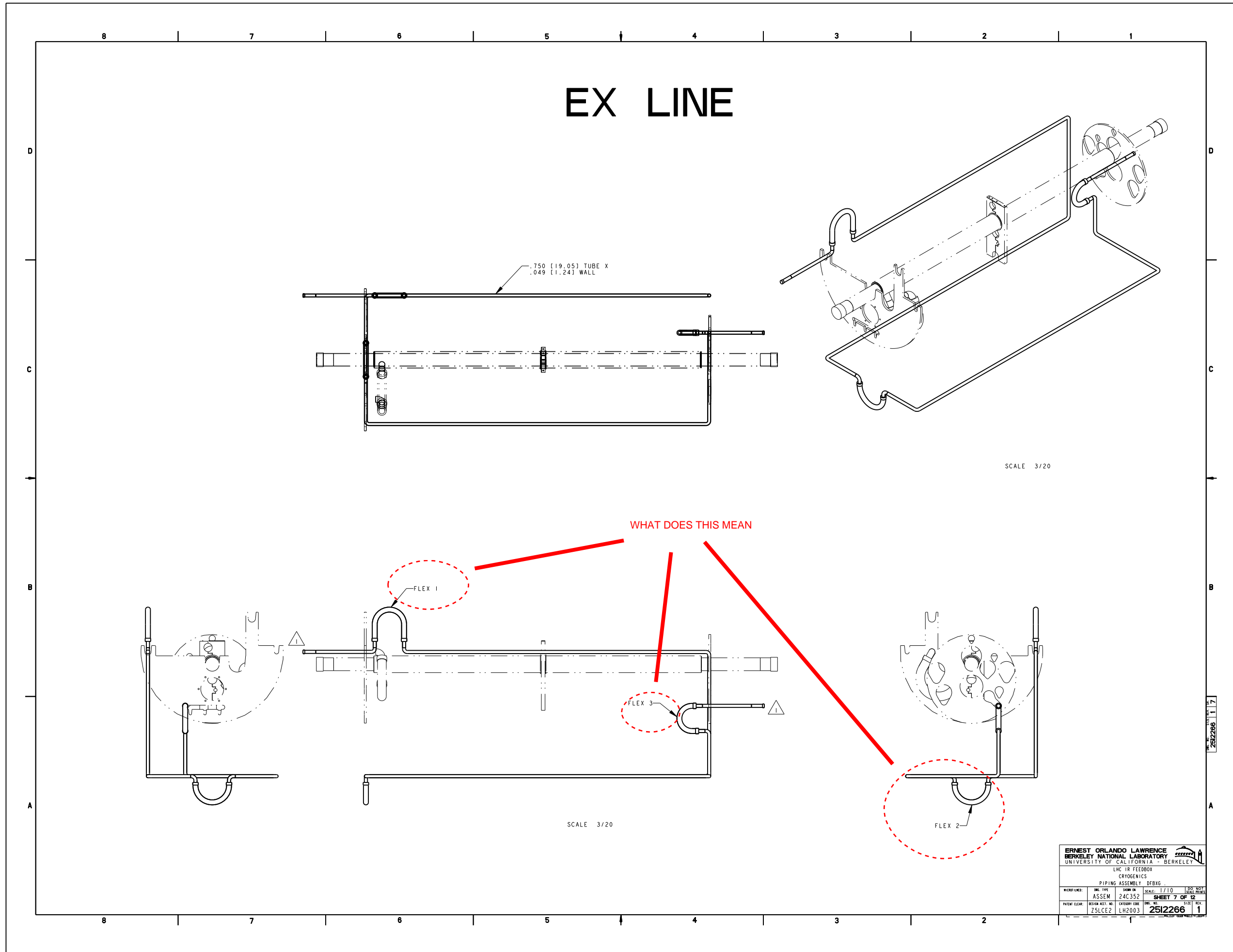
# E1 & E2 LINES



ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY			
LHC IR FEEDBOX CRYOGENICS			
PIPING ASSEMBLY, DFBX			
DRG. TYPE	SHOW OR	SCALE	250
ASSEM	24C352	1/10	INCH
SHEET 6 OF 12		REV.	
PATENT CLEAR.	DESIGN ACCT. NO.	CATEGORY CODE	DRG. NO.
ZSLCEZ	LH2003	2512266	1

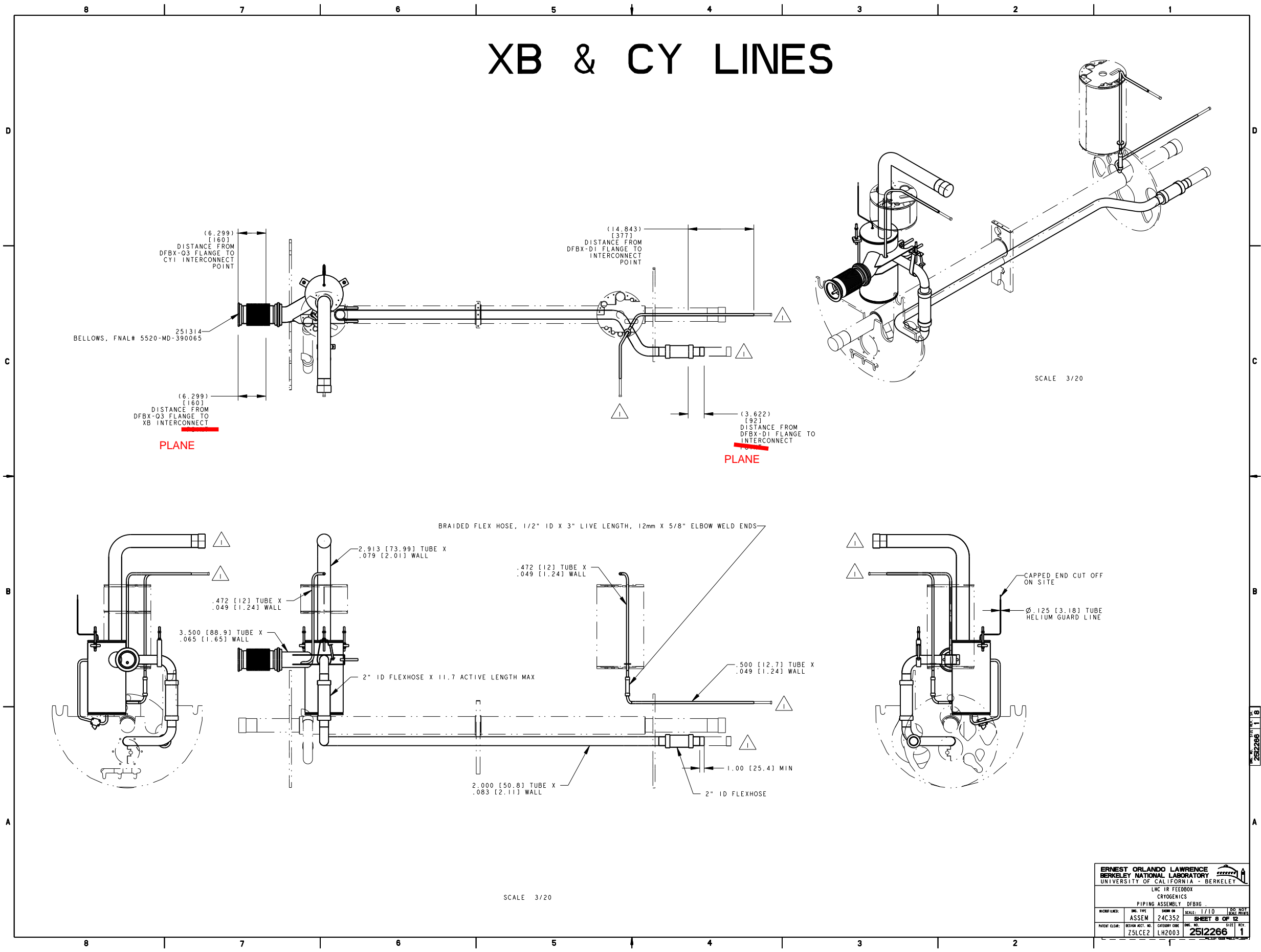
2512266 1 6

NAME: ARHARRIS OBJECT: 251226\_7 DATE: 13-Jul-02 20:38:40



NAME: ARHARRIS OBJECT: 251226\_8 DATE: 13-Jul-02 20:38:43

# XB & CY LINES



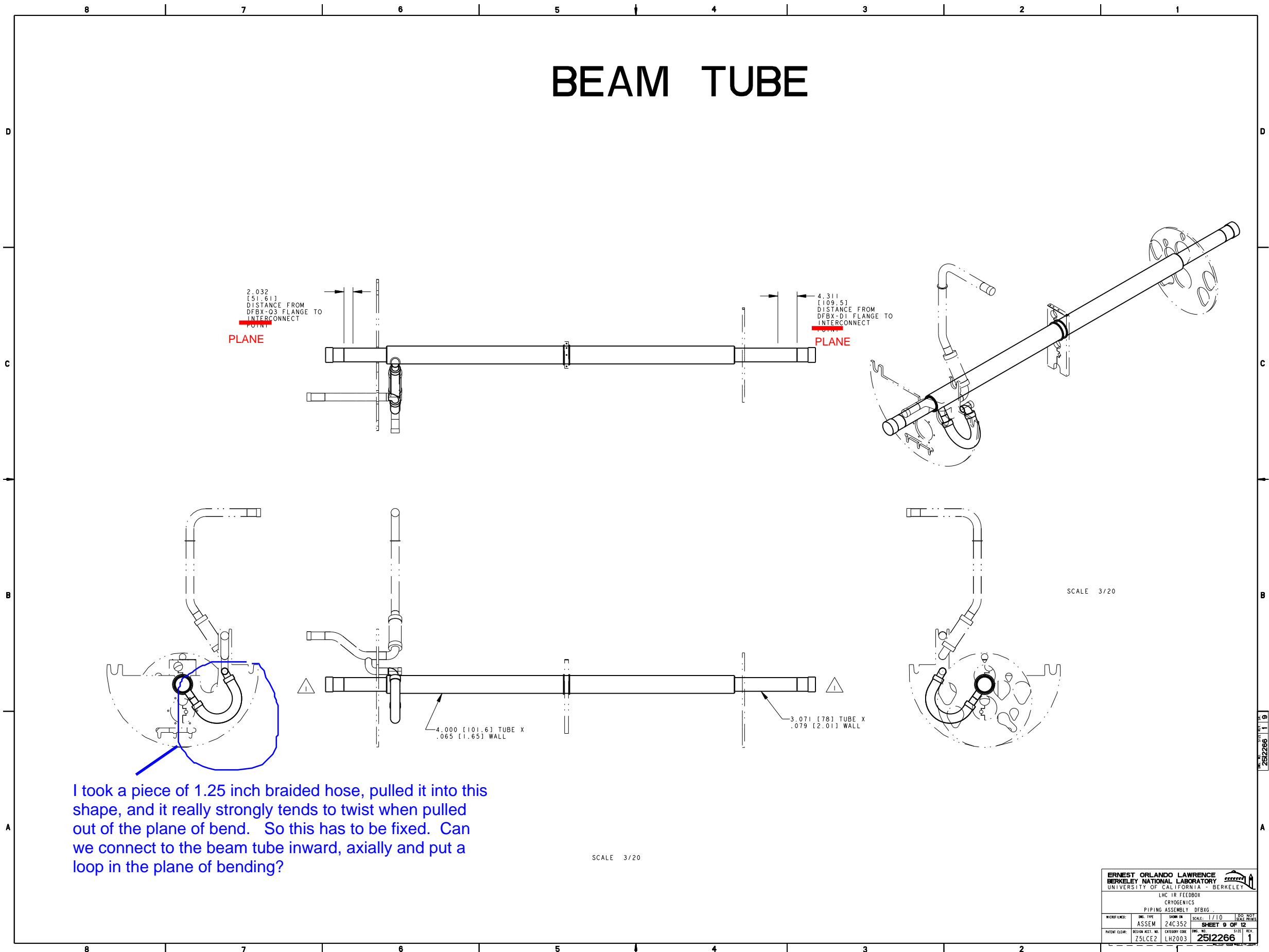
ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY			
LHC IR FEEDBOX CRYogenics			
PIPING ASSEMBLY DFBIG			
DESIGNER:	DATE:	SCALE:	SHEET NO.
ASSEM	24C352	1/10	8 OF 12
DESIGN NO.:	CATEGORY CODE:	DRG. NO.:	SIZE:
ZSLCEZ	LH2003	2512266	1

2512266 1 B



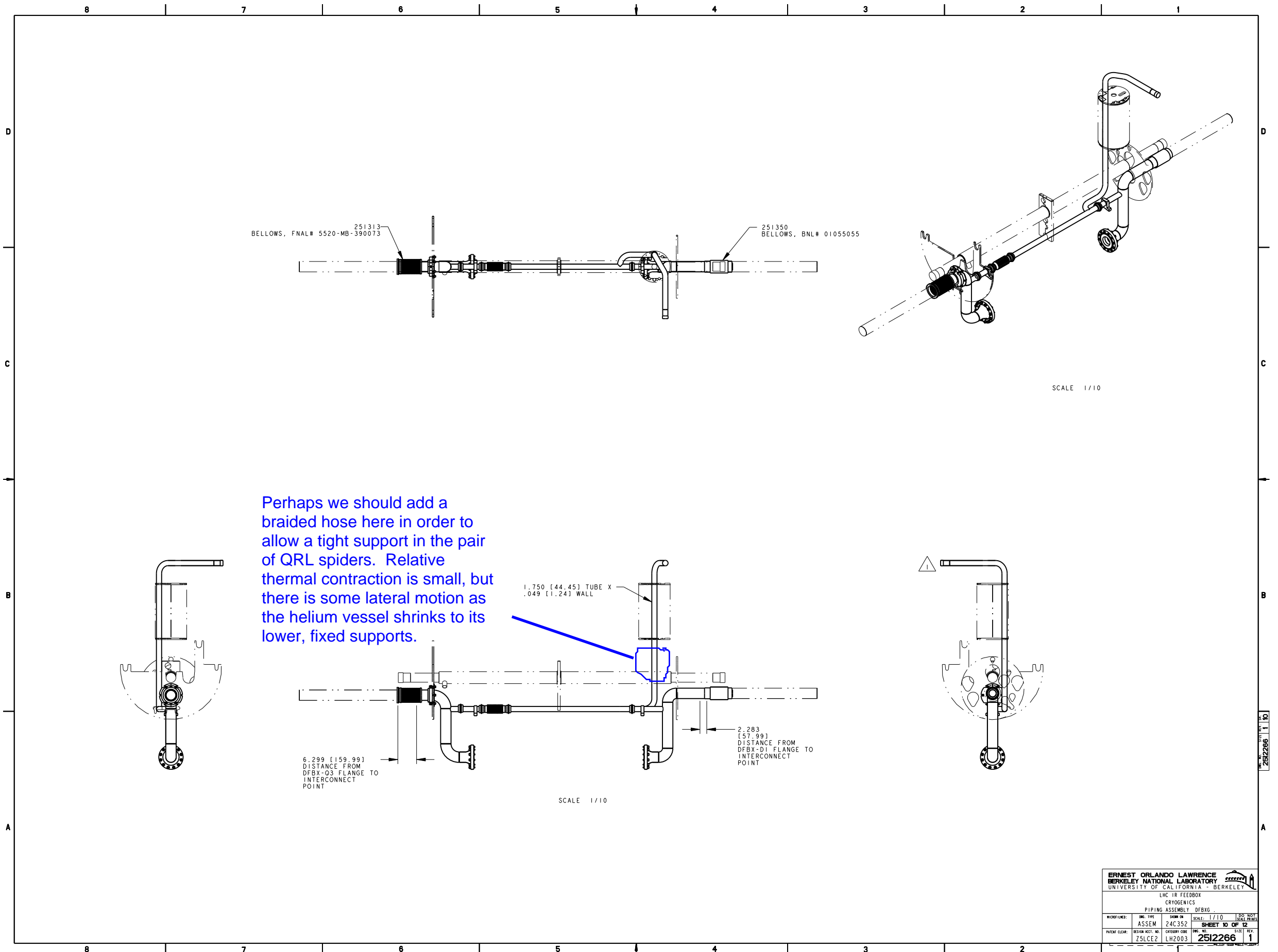
NAME: ARHARRIS OBJECT: 251226\_9 DATE: 13-Jul-02 20:39:01

# BEAM TUBE



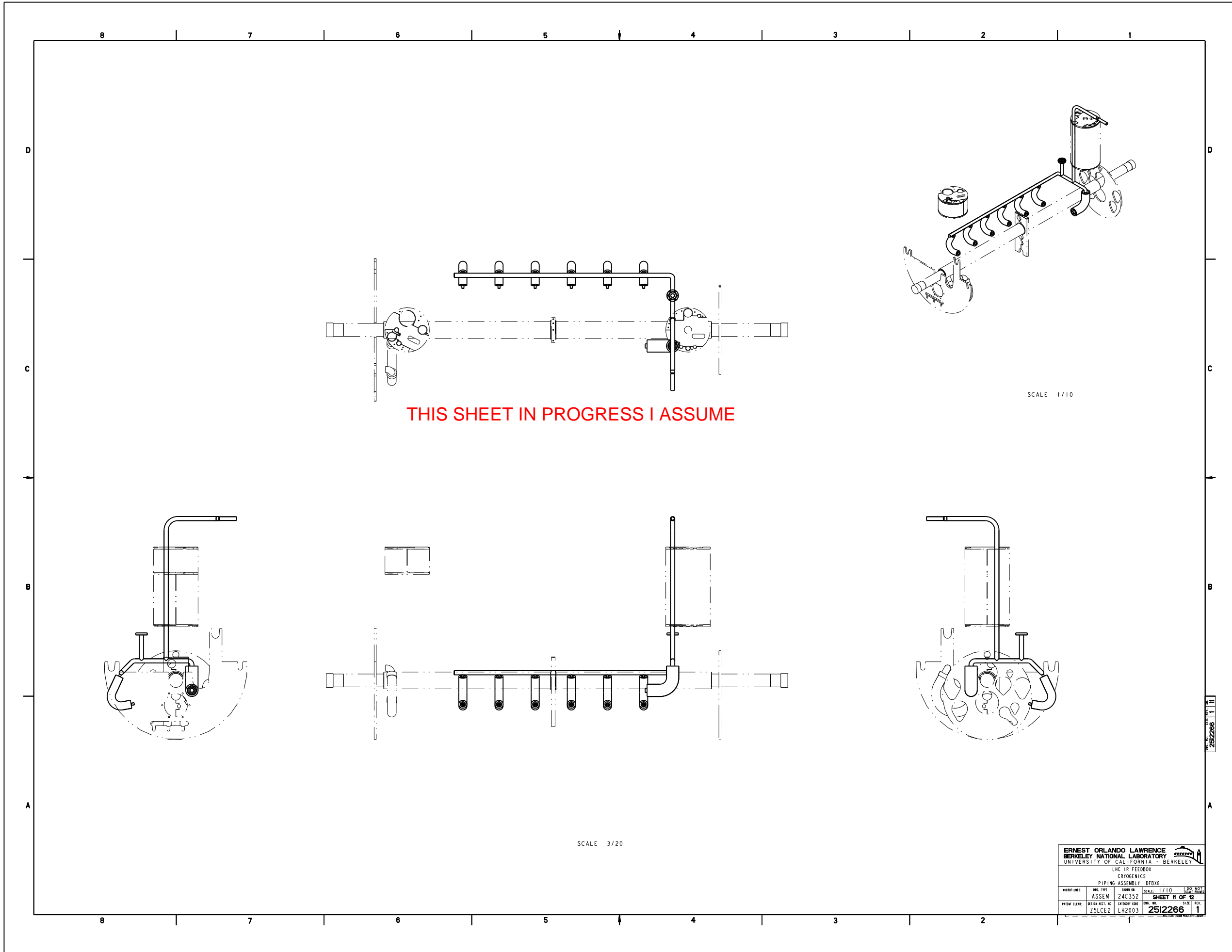
I took a piece of 1.25 inch braided hose, pulled it into this shape, and it really strongly tends to twist when pulled out of the plane of bend. So this has to be fixed. Can we connect to the beam tube inward, axially and put a loop in the plane of bending?

ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY			
LHC IR FEEDBOX CRYogenics			
PIPING ASSEMBLY DFBIG			
WORK FILE:	DES. TYPE	SHOW IN	SCALE: 1/10
ASSEM	24C352		SHEET 9 OF 12
PATENT CLEAR:	DESIGN ACCT. NO.	CATEGORY CODE	DRG. NO.
ZSLCEZ	LH2003	2512266	1



ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY			
LHC IR FEEDBOX CRYGENICS			
PIPING ASSEMBLY DFBXG			
DESIGNER:	DATE:	SCALE:	250
ASSEM	24C352	1/10	INCH
SHEET 10 OF 12		REV.	
PATENT CLEAR:	DESIGN ACCT. NO.:	CATEGORY CODE:	REV. NO.:
ZSLCEZ	LH2003	2512266	1

2512266



THIS SHEET IN PROGRESS I ASSUME

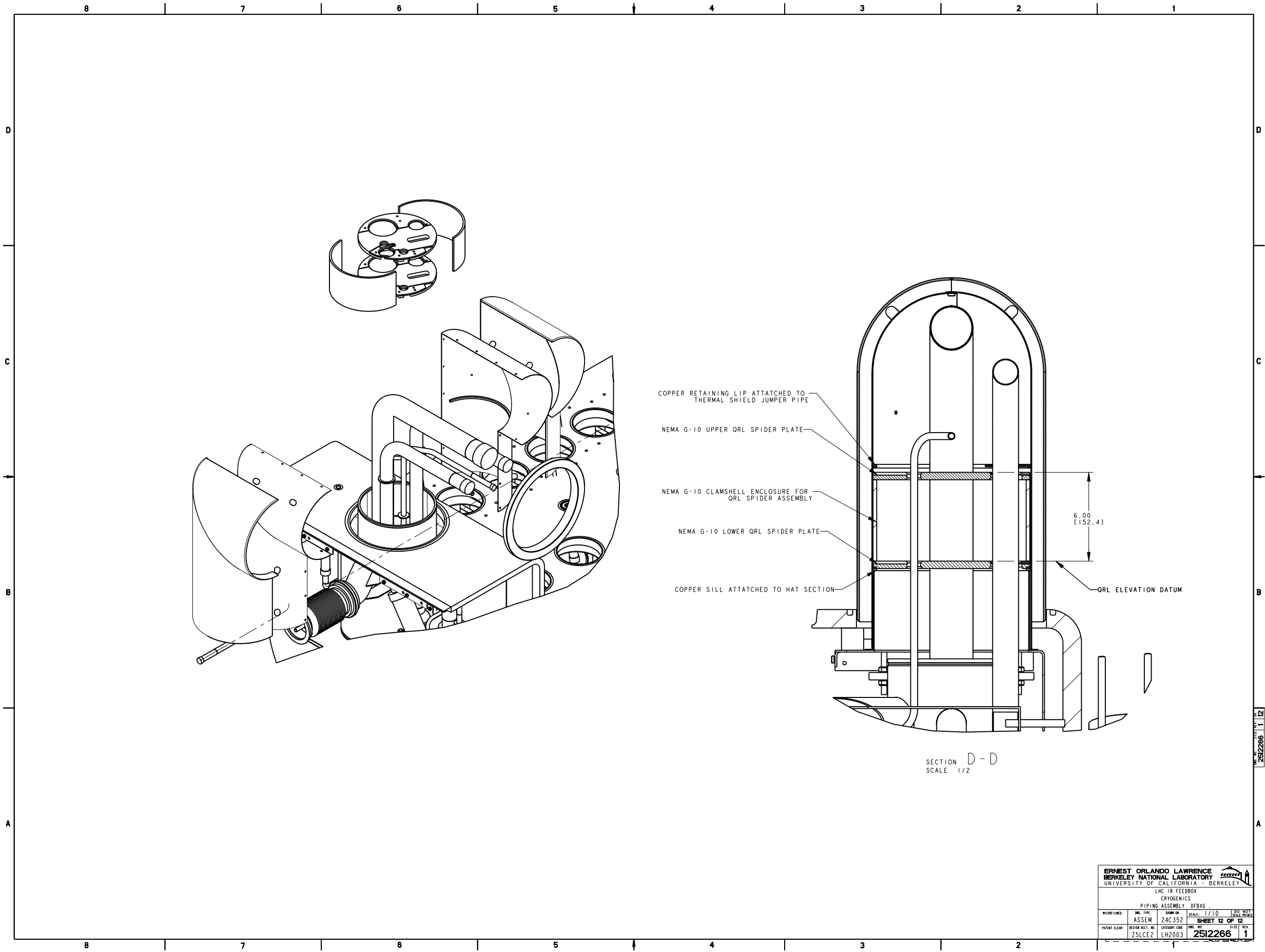
SCALE 1/10

SCALE 3/20

ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY			
LHC IR FEEDBOX CRYOGENICS			
PIPING ASSEMBLY DFRIG			
WORK FILE:	DES. TYPE	SHOW IN	SCALE: 1/10
ASSEM	24C352		SHEET 11 OF 12
PATENT CLEAR:	DESIGN ACCT. NO.	CATEGORY CODE	DRG. NO.
ZSLCEZ	LH2003	2512266	1

2512266

NAME: ARHARRIS OBJECT: 251226\_12 DATE: 13-Jul-02 20:39:43



ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY			
LHC IR FEEDBOX CRYOGENICS			
PIPING ASSEMBLY DFRIG			
WORK LEVEL:	ORL TYPE	SHOW OR	SCALE: 1/10
	ASSEM	24C352	SHEET 12 OF 12
PATENT CLEAR:	DESIGN ACCT. NO.	CATEGORY CODE	DRG. NO.
	ZSLCE2	LH2003	2512266