

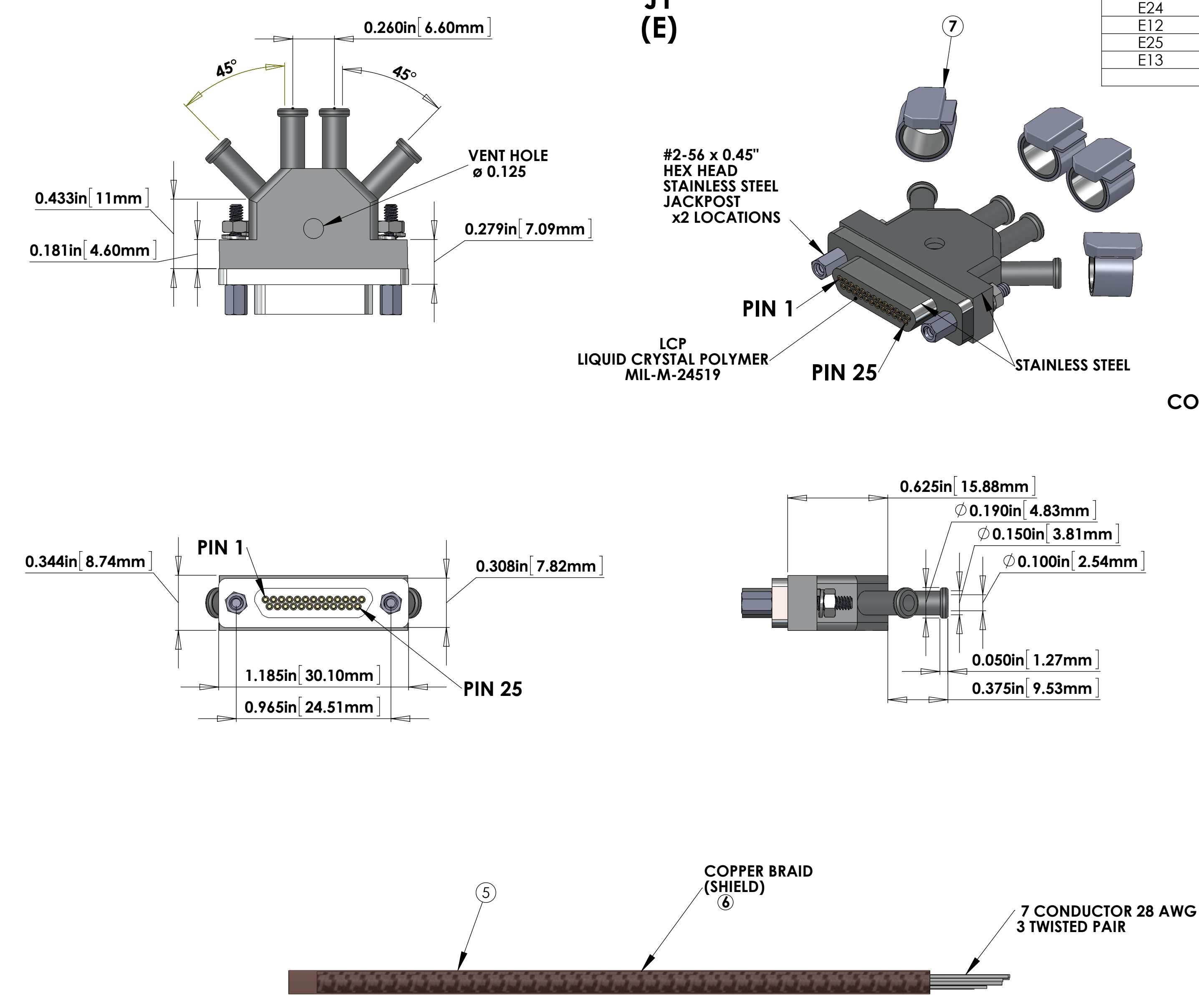
NOTES CONTINUED:
 (5) SCRIBE, ENGRAVE, OR MECHANICALLY STAMP (NO INKS OR DYES) DRAWING PART NUMBER AND REVISION ON NOTED SURFACE FOLLOWED ON THE NEXT LINE BY A THREE DIGIT SERIAL NUMBER. SERIAL NUMBERS START AT 001 FOR THE FIRST ARTICLE AND PROCEED CONSECUTIVELY. USE OF HIGH CHARACTERS, DIXXXXXXX, Y, Z, IN, O, I, A, VIBRATORY TOOLS, MAY BE USED.
 6. APPROXIMATE WEIGHT = XXXX LB.
 7. MACHINE ALL SURFACES TO REMOVE OXIDES AND MILL FINISH. USE OF ABRASIVE REMOVAL TECHNIQUES IS NOT ALLOWED. REFER TO LIGO-E0900364.
 8. ALL PARTS SHALL BE MANUFACTURED IN ACCORDANCE WITH LIGO SPECIFICATION E0900364.
 9. ALL HEH-COIL HOLES TO BE PREPARED ACCORDING TO EMIHART HEH-COIL PRODUCT CATALOG-HE2600-REV.4
 NOTES 9, 10, 13 and 14 DO NOT APPLY TO THIS PART

10. ALL HEH-COIL INSERTS TO BE INSTALLED BY LIGO PERSONNEL AFTER DELIVERY OF FINISHED PARTS. USE NITRONIC 60 THREADED INSERTS.
 11. ALL MATERIAL IS TO BE VIRGIN MATERIAL (i.e. NO WELD REPAIRS, PULPS OR RECYCLED MATERIAL). NO REPAIRS SHALL BE MADE UNLESS APPROVED IN ADVANCE. AND IN WRITING, BY LIGO LABORATORY. REFER TO LIGO-E0900364.
 12. SURFACE FINISH TO BE AS PROCESSED FROM MILL/SUPPLIER. FREE FROM SCRATCHES OR GOUGES.
 13. PART WILL BE PORCELAIN COATED PER LIGO SPECIFICATION E4000083 AFTER FABRICATION. THE INDICATED HOLES WILL BE MASKED PRIOR TO PORCELAIN COATING FOR APPROXIMATELY 23-IN-HOLE DIAMETER CENTERED ON BOTH SIDES OF THE HOLE.
 14. DIMENSIONS APPLY BEFORE PORCELAIN COATING UNLESS SPECIFIED.
 15. BEND RADIUS: UNLESS OTHERWISE NOTED, THE BEND RADIUS SHOULD BE THE MINIMUM REQUIRED TO FORM WITHOUT CRACKING OR REQUIRING ADDITIONAL WORK WHEN FORMING. IN PARTICULAR F. SHEET METAL S TO BE PORCELAIN COATED, THE BEND RADIUS SHALL BE A MINIMUM OF .12" OUTSIDE RADIUS OF BEND UNLESS OTHERWISE NOTED.

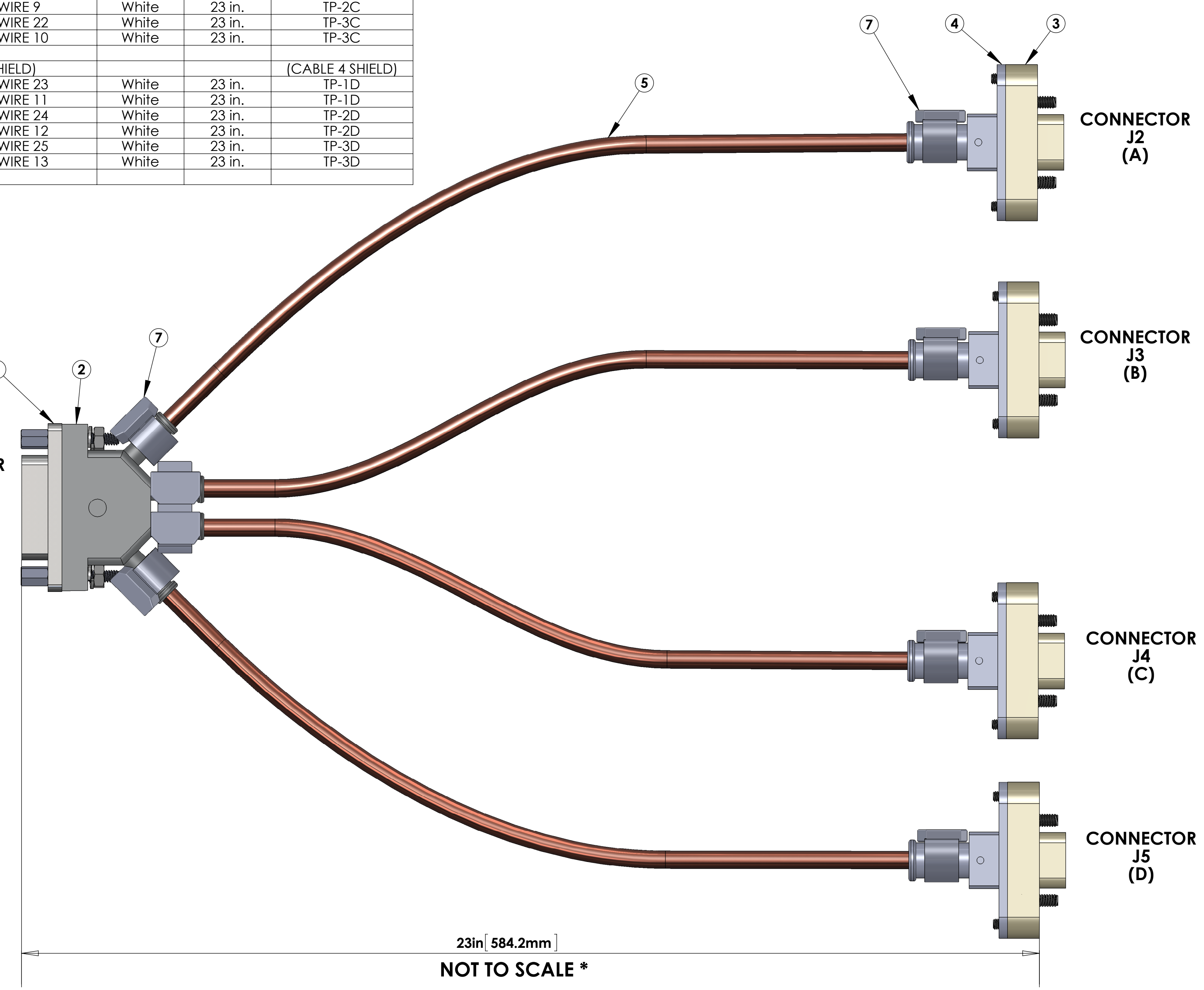
V25AM-23-B CABLE ASSEMBLY CIRCUIT SUMMARY				
V-µD25 M/S1-23-4 µD9 F/S5:B				
FROM				
CONNECTOR J1 - 25 PIN MALE MICRO_D CONNECTOR				
PIN	WIRE NAME	COLOR	LENGTH	TWISTED PAIR
E1	(CONNECTOR SHELL)			
E1	(CABLE 1) SHIELD			(CABLE 1) SHIELD
E1	(CABLE 1) WIRE 1	White	23 in.	SINGLE WIRE
E14	(CABLE 1) WIRE 14	White	23 in.	TP-1A
E2	(CABLE 1) WIRE 2	White	23 in.	TP-1A
E15	(CABLE 1) WIRE 15	White	23 in.	TP-2A
E3	(CABLE 1) WIRE 3	White	23 in.	TP-2A
E16	(CABLE 1) WIRE 16	White	23 in.	TP-3A
E4	(CABLE 1) WIRE 4	White	23 in.	TP-3A
E1	(CABLE 2) SHIELD			(CABLE 2) SHIELD
E17	(CABLE 2) WIRE 17	White	23 in.	TP-1B
E5	(CABLE 2) WIRE 5	White	23 in.	TP-1B
E18	(CABLE 2) WIRE 18	White	23 in.	TP-2B
E6	(CABLE 2) WIRE 6	White	23 in.	TP-2B
E19	(CABLE 2) WIRE 19	White	23 in.	TP-3B
E7	(CABLE 2) WIRE 7	White	23 in.	TP-3B
E1	(CABLE 3) SHIELD			(CABLE 3) SHIELD
E20	(CABLE 3) WIRE 20	White	23 in.	TP-1C
E8	(CABLE 3) WIRE 8	White	23 in.	TP-1C
E21	(CABLE 3) WIRE 21	White	23 in.	TP-2C
E9	(CABLE 3) WIRE 9	White	23 in.	TP-2C
E22	(CABLE 3) WIRE 22	White	23 in.	TP-3C
E10	(CABLE 3) WIRE 10	White	23 in.	TP-3C
E1	(CABLE 4) SHIELD			(CABLE 4) SHIELD
E23	(CABLE 4) WIRE 23	White	23 in.	TP-1D
E11	(CABLE 4) WIRE 11	White	23 in.	TP-1D
E24	(CABLE 4) WIRE 24	White	23 in.	TP-2D
E12	(CABLE 4) WIRE 12	White	23 in.	TP-2D
E25	(CABLE 4) WIRE 25	White	23 in.	TP-3D
E13	(CABLE 4) WIRE 13	White	23 in.	TP-3D

TEST LIST		TEST LIST		TEST LIST		TEST LIST	
FROM	TO	FROM	TO	FROM	TO	FROM	TO
J1	J2	J1	J3	J1	J4	J1	J5
PIN	PIN	PIN	PIN	PIN	PIN	PIN	PIN
J1 - 1, SHELL	J2 - 5 - SHELL	J1 - 1, SHELL	J3 - 5 - SHELL	J1 - 1, SHELL	J4 - 5 - SHELL	J1 - 1, SHELL	J5 - 5 - SHELL
J1 - 14	J2 - 1	J1 - 17	J3 - 1	J1 - 20	J4 - 1	J1 - 23	J5 - 1
J1 - 2	J2 - 6	J1 - 5	J3 - 6	J1 - 8	J4 - 6	J1 - 11	J5 - 6
J1 - 15	J2 - 2	J1 - 18	J3 - 2	J1 - 21	J4 - 2	J1 - 24	J5 - 2
J1 - 3	J2 - 7	J1 - 6	J3 - 7	J1 - 9	J4 - 7	J1 - 12	J5 - 7
J1 - 16	J2 - 4	J1 - 19	J3 - 4	J1 - 22	J4 - 4	J1 - 25	J5 - 4
J1 - 4	J2 - 9	J1 - 7	J3 - 9	J1 - 10	J4 - 9	J1 - 13	J5 - 9

CONNECTOR J1 (E)



CONNECTOR J1 (E)



V25AM-23-B CABLE ASSEMBLY CIRCUIT SUMMARY

TO		
CONNECTOR J2 - 9 PIN FEMALE MICRO_D CONNECTOR (PEEK)		
PIN	WIRE NAME	SIGNAL
A5	(CONNECTOR SHELL)	SHIELD
A5	(CABLE 1) SHIELD	SHIELD
A5	(CABLE 1) WIRE 1	SHIELD
A1	(CABLE 1) WIRE 14	PD1-K
A6	(CABLE 1) WIRE 2	PD1-A
A2	(CABLE 1) WIRE 15	LED1-A
A7	(CABLE 1) WIRE 3	LED1-K
A4	(CABLE 1) WIRE 16	COIL1-FN
A9	(CABLE 1) WIRE 4	COIL1-ST

V25AM-23-B CABLE ASSEMBLY CIRCUIT SUMMARY

TO		
CONNECTOR J3 - 9 PIN FEMALE MICRO_D CONNECTOR (PEEK)		
PIN	WIRE NAME	SIGNAL
B5	(CONNECTOR SHELL)	SHIELD
B5	(CABLE 2) SHIELD	SHIELD
B5	(CABLE 2) WIRE 1	SHIELD
B1	(CABLE 2) WIRE 17	PD2-K
B6	(CABLE 2) WIRE 5	PD2-A
B2	(CABLE 2) WIRE 18	LED2-A
B7	(CABLE 2) WIRE 6	LED2-K
B4	(CABLE 2) WIRE 19	COIL2-FN
B9	(CABLE 2) WIRE 7	COIL2-ST

V25AM-23-B CABLE ASSEMBLY CIRCUIT SUMMARY

TO		
CONNECTOR J4 - 9 PIN FEMALE MICRO_D CONNECTOR (PEEK)		
PIN	WIRE NAME	SIGNAL
C5	(CONNECTOR SHELL)	SHIELD
C5	(CABLE 3) SHIELD	SHIELD
C5	(CABLE 3) WIRE 1	SHIELD
C1	(CABLE 3) WIRE 20	PD3-K
C6	(CABLE 3) WIRE 8	PD3-A
C2	(CABLE 3) WIRE 21	LED3-A
C7	(CABLE 3) WIRE 9	LED3-K
C4	(CABLE 3) WIRE 22	COIL3-FN
C9	(CABLE 3) WIRE 10	COIL3-ST

V25AM-23-B CABLE ASSEMBLY CIRCUIT SUMMARY

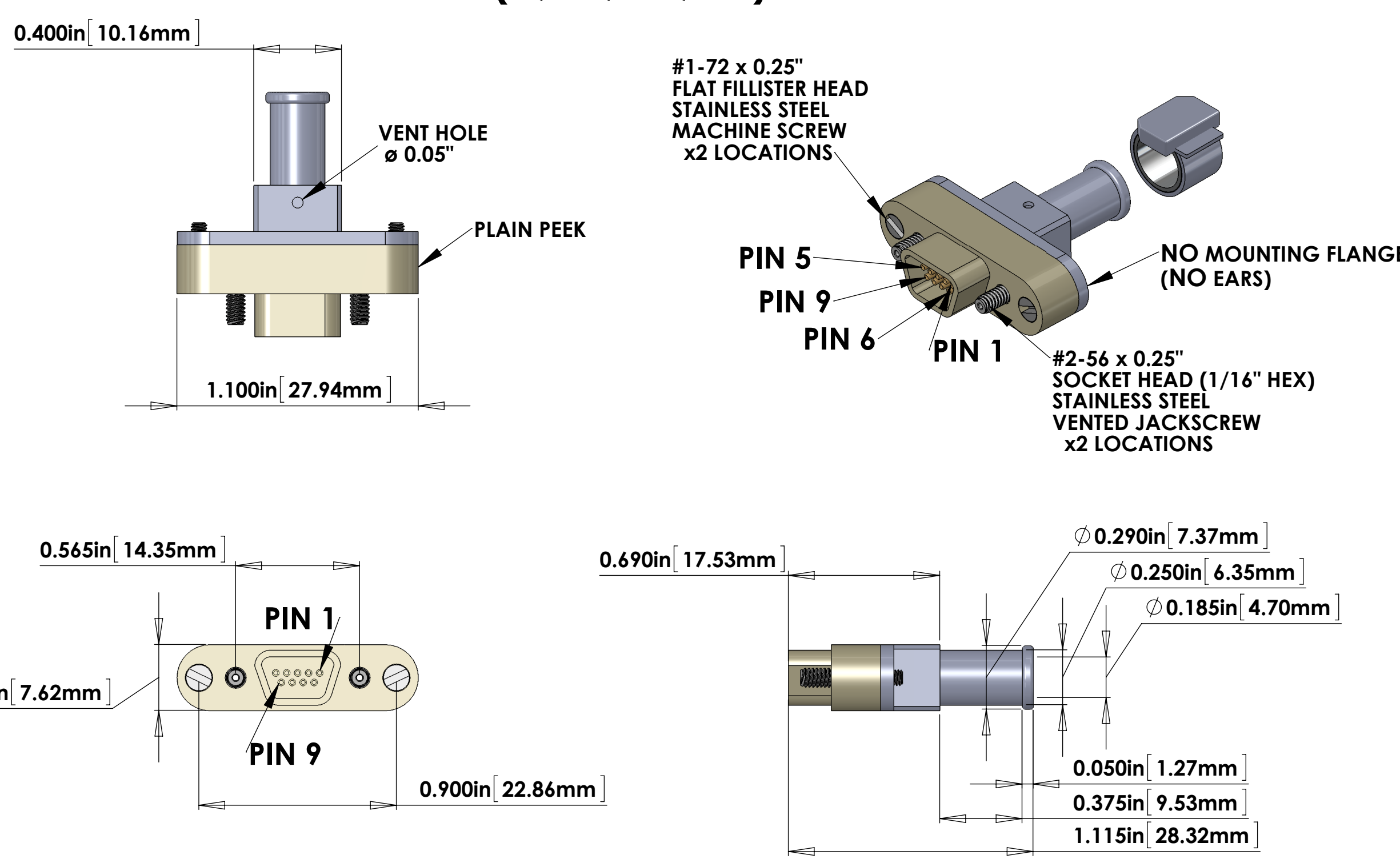
TO		
CONNECTOR J5 - 9 PIN FEMALE MICRO_D CONNECTOR (PEEK)		
PIN	WIRE NAME	SIGNAL
D5	(CONNECTOR SHELL)	SHIELD
D5	(CABLE 4) SHIELD	SHIELD
D5	(CABLE 4) WIRE 1	SHIELD
D1	(CABLE 4) WIRE 23	PD4-K
D6	(CABLE 4) WIRE 11	PD4-A
D2	(CABLE 4) WIRE 24	LED4-A
D7	(CABLE 4) WIRE 12	LED2-K
D4	(CABLE 4) WIRE 25	COIL4-FN
D9	(CABLE 4) WIRE 13	COIL4-ST

BILL OF MATERIALS				
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	LENGTH
1	GLENAIR #DCDM25P-S-MC225-240 TICOR # 040-1243-0025	MicroD25 MALE CONNECTOR (J1) FOR UHV (STAINLESS STEEL SHELL OVER LCP)	1	
2		MicroD25 CONNECTOR BACKSHELL FOR UHV (STAINLESS STEEL) WITH QUAD ø0.100" i.d. PORTS	1	
3	TICOR # TS0094 WITH 60in. FLYING LEADS WITH BACKSHELL	MicroD9 FEMALE CONNECTOR (J2,J3,J4,J5) FOR UHV (PEEK)	4	
4		MicroD9 CONNECTOR BACKSHELL FOR UHV (STAINLESS STEEL) WITH ø0.185" i.d. PORT	4	
5	C1	7 COND. (3 TWISTED PAIR) CABLE WITH 6 COPPER BRAID (SHIELD)	4	23in.*
6	CONTINENTAL PART #24x3x40BC	COPPER BRAID - CONTINENTAL CORDAGE PART #24x3x40BC	4	
7	GLENAIR # 600-052 or BAND-IT # A10086	GLENAIR # 600-052 STANDARD BRAID CLAMP or BAND-IT PART # A10086 (0.240" WIDE) ("BAG OF 100" # A10089)	8	

* NOTE: THE OVERALL LENGTH IS MEASURED FROM PIN TIP (25 PIN) TO PIN TIP (9 PIN) OF THE CABLE. USE WHATEVER LENGTH IS NECESSARY FOR THE INTERNAL WIRING OF THE CONNECTORS AND STRIP LENGTH TO ACHIEVE THE CORRECT OVERALL LENGTH.

NOTES: (UNLESS OTHERWISE SPECIFIED)
 A. MATERIAL: a. 25 PIN D CONNECTOR SHELL - J1 (E) STAINLESS STEEL OVER LCP - (LIQUID CRYSTAL POLYMER per MIL-M-24519).
 b. 9 PIN D CONNECTOR SHELL - J2 (A), J3 (B), J4 (C), J5 (D) - PEEK - VICTREX 450GL30.
 c. BACKSHELL - STAINLESS STEEL WITH VENT HOLE.
 d. CONTACTS - BERYLLIUM COPPER ALLOY C17300, 0.00050 MIN. GOLD OVER NICKEL.
 e. HARDWARE: STAINLESS STEEL, PASSIVATED.
 f. PEEK BRAID - PEEK CARBON FIBRE LOADED.

B. CABLE 7 COND. 28 AWG. (40 STRD 44 AWG) WITH PFA INSULATION. 3 TWISTED PAIRS (4 TO 5 TWISTS PER INCH). OVERALL 40AWG COPPER BRAID 90% COVERAGE. OVERALL CABLE O.D. WILL BE APPROX. 0.240 IN.
 C. CONNECTORS WILL BE SUPPLIED WITH HARDWARE. SCREWS SHOULD BE THE PROPER LENGTH FOR MATING.



V-µD25 M/S1-23-4 µD9 F/S5:B (NO PEEK)	
STANDARD USE FOR THIS CABLE	
SUBSYSTEM	STANDARD USE
SUS	QUAD SUSPENSIONS UIM

DIMENSIONS ARE IN		MATERIAL		FINISH		NEXT ASSY	
XX ±	.XXX ±	Material <not specified>		µinch			

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)			
1.	INTERPRET DRAWING PER ASME Y14.5-1994		
2.	REMOVE ALL SHARP EDGES, .005-.015, FOR MACHINED PARTS. ROUND ALL EDGES APPROXIMATELY R.02 FOR SHEET METAL PARTS.		
3.	DO NOT SCALE FROM DRAWING.		
4.	ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.		

LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		PART NAME	
ADVANCED LIGO	SUS	CUSTOM CABLE SPECIFICATION V25AM-23-B	
DESIGNER	J. HEFFNER	APR/15/2012	SIZE DWG. NO.
DRAFTER	E. BROWN	JUL/13/2012	E D1000563
CHECKER			
APPROVAL			

REV.	DATE	DCN #	DRAWING TREE #